



UTILITIES CO.

A Division of MDU Resources Group, Inc.

400 North Fourth Street
Bismarck, ND 58501
(701) 222-7900

October 19, 2017

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

Re: Case No. PU-17-_____
2018 Avoided Costs Updates

Montana-Dakota Utilities Co. (Montana-Dakota), a Division of MDU Resources Group Inc., herewith requests Commission approval to revise its Occasional Power Purchase Non-Time Differentiated Rate 95 and Parallel Generation Peaking Facility Purchase Rate 96 Time Differentiated. This filing is made in compliance with the Order in Case No. 10,000 and in accordance with the Cogeneration and Small Power Producer Rules, Section 69-09-07-09 of the North Dakota Administrative Code.

The methodology used to develop the proposed energy and capacity payments is consistent with the approved avoided cost rate tariffs. The proposed energy payments for Rates 95 and 96 were generated using Montana-Dakota's production costing model PLEXOS® for Power Systems (PLEXOS), reflecting a test year of calendar year 2018. The proposed energy payments under Rates 95 and 96 reflect a decrease in the energy payment per Kwh attributable to a decrease in the forecasted Midcontinent Independent System Operators, Inc. (MISO) market prices and natural gas prices from those included in the currently approved energy payments. The proposed energy payments are shown on Attachment A.

The proposed capacity payments under Rate 96 reflect the projected levelized cost of a new peaking facility at an estimated cost of \$905/kW. An updated capital structure coupled with Montana-Dakota anticipating a capacity surplus until 2024, lowers the capacity payments applicable under Rate 96 from the authorized capacity payments. The workpapers supporting the proposed capacity payment are provided in Attachment B.

Montana-Dakota has reviewed the metering charges applicable under Rates 95 and 96 and has determined no change in the daily metering charges is necessary in this annual update.

Included herein is a second set of the affected tariffs on which Montana-Dakota has indicated the revisions requested by lining through the existing language which the Company proposes to delete and clearly highlighting the new language proposed.

Montana-Dakota serves two customers under Rate 95 as of September 30, 2017. The proposed annual change in revenue, assuming the same customer loads and generation as the past twelve months, would be a decrease in energy payments of approximately \$2. A monthly history of the energy purchased under Rate 95 is included as Attachment C.

Montana-Dakota respectfully requests that the rate schedules set forth herein be approved with an effective date of service rendered on and after January 1, 2018.

The original and seven (7) copies of this Letter of Transmittal and tariffs have been provided to the North Dakota Public Service Commission.

Montana-Dakota submitted a check for the amount of \$600.00 on January 18, 2017 pursuant to the requirements of North Dakota Century Code Section 49-05-05. This payment will cover the filing fee associated with this update.

Montana-Dakota respectfully requests that this filing be accepted as being in full compliance with the filing requirements of this Commission.

Please acknowledge receipt by stamping or initialing the duplicate copy of this letter attached hereto and returning the same in the enclosed self-addressed envelope.

If you have any questions regarding this filing, please contact me at (701) 222-7856 or tamie.aberle@mdu.com.

Sincerely,



Tamie A. Aberle
Director of Regulatory Affairs

Attachments



Montana-Dakota Utilities Co.

A Division of MDU Resources Group, Inc.

400 N 4th Street
Bismarck, ND 58501

State of North Dakota Electric Rate Schedule

NDPSC Volume 4
18^h Revised Sheet No. 44
Canceling 17th Revised Sheet No. 44

OCCASIONAL POWER PURCHASE Rate 95 NON-TIME DIFFERENTIATED

Page 1 of 2

Availability:

To any qualifying cogeneration and small power production facilities for the purpose of generating occasional electric energy in parallel with the Company's system. This schedule is applicable to cogeneration and small power production facilities with a design capacity of 100 Kw or less, that are Qualifying Facilities (QF) as defined under 18 CFR, Part 292.

Rate:

Metering charge for single phase service: \$0.05 per day
With instrument transformers: \$0.16 per day

Metering charge for three phase service: \$0.11 per day
With instrument transformers: \$0.28 per day

Energy delivered to and accepted by Company by a QF shall be paid for by Company in accordance with one of the following two options, elected by the QF:

1. Simultaneous Purchase and Sale:

Energy sales to QF - Service provided to such customers by the Company shall be billed at the appropriate rate, by class of customers (i.e., residential, small and general electric service, etc.) that is currently on file with the Commission.

Energy purchases by Company:

Energy Payment = 2.489¢ per Kwh

2. Net Billing:

Energy generated will be compensated on a net billing basis. The Company will install a meter to measure the energy generated by the QF. The Company will also install a meter to measure the energy consumed by the QF. Metered generation will be subtracted from the metered consumption for the billing period.

Date Filed: October 19, 2017

Effective Date:

Issued By: Tamie A. Aberle
Director of Regulatory Affairs

Case No.:



Montana-Dakota Utilities Co.

A Division of MDU Resources Group, Inc.

400 N 4th Street
Bismarck, ND 58501

State of North Dakota Electric Rate Schedule

NDPSC Volume 4
14th Revised Sheet No. 44.1
Canceling 13th Revised Sheet No. 44.1

OCCASIONAL POWER PURCHASE Rate 95 NON-TIME DIFFERENTIATED

Page 2 of 2

If metered generation is less than metered consumption, the QF will be billed the applicable retail rate. If metered generation is greater than the metered consumption, the QF will be paid for each Kwh an amount equal to:
2.489¢ per Kwh

General Terms and Conditions:

1. Change of Rates: This schedule shall be reviewed annually, updated if necessary, and revised upon the Commission's approval.
2. The Company shall install appropriate metering facilities to record all flows of energy necessary to bill and pay in accordance with the charges and payments contained in this rate schedule.
3. The customer shall, with prior written consent of the Company, furnish, install and wire the necessary service entrance equipment, meter sockets, meter enclosure cabinets, or meter connection cabinets that may be required by the Company to properly meter usage and sales to the Company.
4. A written contract with the Company shall be signed stipulating the terms and conditions of the interconnection and sale of the electricity to the Company. The term of the contract hereunder shall be at least one year but less than five years.
5. In order to qualify for the net billing option, the generating equipment and the load of the facility must be located at the same "physical site". "Physical site" shall mean on the same tract of land and the generator output must be physically connected to the load service entrance.
6. For general terms and conditions covering QF's, see Rate 140.
7. All services provided by the Company under this and all other schedules are governed by the rules and regulations approved by the North Dakota Public Service Commission. Rates charged hereunder may be modified by Company at any time by making a unilateral rate application with the North Dakota Public Service Commission or its successor. The new rates shall be effective upon approval by the Commission.

Date Filed: October 19, 2017

Effective Date:

Issued By: Tamie A. Aberle
Director of Regulatory Affairs

Case No.:



Montana-Dakota Utilities Co.

A Division of MDU Resources Group, Inc.

400 N 4th Street
Bismarck, ND 58501

State of North Dakota Electric Rate Schedule

NDPSC Volume 4
18th Revised Sheet No. 45
Canceling 17th Revised Sheet No. 45

PARALLEL GENERATION PEAKING FACILITY PURCHASE Rate 96 TIME DIFFERENTIATED

Page 1 of 3

Availability:

To any qualifying cogeneration and small power production facilities for the purpose of generating electric energy in parallel with the Company's system. This schedule is applicable to cogeneration and small power production facilities with a design capacity of 1000 Kw or less, that operate as a peaking facility (defined below), and are Qualifying Facilities (QF) as defined under 18 CFR, Part 292.

Rate:

Metering charge for single phase service: \$ 0.15 per day
With instrument transformers: \$ 0.26 per day

Metering charge for three phase service: \$ 0.16 per day
With instrument transformers: \$ 0.33 per day

1. Capacity delivered to the Company:

Levelized payment for term of contract based on Table 1 below.

TABLE 1
Contract Length (YR.)

	5	10	15	20
\$/Kw-mo	3.537	3.537	3.537	3.537

Total capacity payment per month = Monthly capacity payments for a QF will be made pursuant to the applicable contract length from Table 1 presented above. Such payments shall be based upon the amount of qualifying capacity assigned to an eligible resource under BPM-011-Resource Adequacy of the MISO Tariff.

Capacity payments will be paid in the subsequent billing period.

Date Filed: October 19, 2017

Effective Date:

Issued By: Tamie A. Aberle
Director – Regulatory Affairs

Case No.:



Montana-Dakota Utilities Co.

A Division of MDU Resources Group, Inc.

400 N 4th Street
Bismarck, ND 58501

State of North Dakota Electric Rate Schedule

NDPSC Volume 4

16th Revised Sheet No. 45.1

Canceling 15th Revised Sheet No. 45.1

PARALLEL GENERATION PEAKING FACILITY PURCHASE Rate 96 TIME DIFFERENTIATED

Page 2 of 3

2. Energy Payment:

ON-PEAK

2.724¢ per Kwh

OFF-PEAK

2.475¢ per Kwh

Peak Periods: The On-Peak Period is defined as those hours between 12 p.m. and 8 p.m. local time, Monday through Friday in the months of June through September. The Off-Peak Period is defined as all other hours. Definitions of On-Peak and Off-Peak periods are subject to change with change in the Company's system operating characteristics.

Energy Sales to Qualifying Facilities:

Service provided to such customers by the Company shall be billed at the appropriate rate, by class of customers (i.e., residential, small and general electric service, etc.) that is currently on file with the Commission.

General Terms and Conditions:

1. Change of Rates: This schedule shall be reviewed annually, updated if necessary, and revised upon the Commission's approval.
2. Service under this schedule shall be on a simultaneous purchase and sale basis only.
3. The Company shall install appropriate metering facilities to record all flows of energy necessary to bill and pay in accordance with the charges and payments contained in this rate schedule.
4. The customer shall, with prior written consent of the Company, furnish, install and wire the necessary service entrance equipment, meter sockets, meter enclosure cabinets, or meter connection cabinets that may be required by the Company to properly meter usage and sales to the Company.
5. A written contract with the Company shall be signed stipulating the terms and conditions of the interconnection and sale of the electricity to the Company. The term of the contract hereunder shall be five years or more.

Date Filed: October 19, 2017

Effective Date:

Issued By: Tamie A. Aberle
Director – Regulatory Affairs

Case No.:

Tariffs Reflecting Proposed Changes



Montana-Dakota Utilities Co.

A Division of MDU Resources Group, Inc.

400 N 4th Street
Bismarck, ND 58501

State of North Dakota Electric Rate Schedule

NDPSC Volume 4
17th Revised Sheet No. 44
Canceling 16th Revised Sheet No. 44

OCCASIONAL POWER PURCHASE Rate 95 NON-TIME DIFFERENTIATED

Page 1 of 2

Availability:

To any qualifying cogeneration and small power production facilities for the purpose of generating occasional electric energy in parallel with the Company's system. This schedule is applicable to cogeneration and small power production facilities with a design capacity of 100 Kw or less, that are Qualifying Facilities (QF) as defined under 18 CFR, Part 292.

Rate:

Metering charge for single phase service: \$0.05 per day
With instrument transformers: \$0.16 per day

Metering charge for three phase service: \$0.11 per day
With instrument transformers: \$0.28 per day

Energy delivered to and accepted by Company by a QF shall be paid for by Company in accordance with one of the following two options, elected by the QF:

1. Simultaneous Purchase and Sale:

Energy sales to QF - Service provided to such customers by the Company shall be billed at the appropriate rate, by class of customers (i.e., residential, small and general electric service, etc.) that is currently on file with the Commission.

Energy purchases by Company:

Energy Payment = 2-5842.489¢ per Kwh

2. Net Billing:

Energy generated will be compensated on a net billing basis. The Company will install a meter to measure the energy generated by the QF. The Company will also install a meter to measure the energy consumed by the QF. Metered generation will be subtracted from the metered consumption for the billing period.

Date Filed: June 26, 2017

Effective Date: Service rendered on and after August 7, 2017

Issued By: Tamie A. Aberle
Director of Regulatory Affairs

Case No.: PU-16-666



Montana-Dakota Utilities Co.

A Division of MDU Resources Group, Inc.

400 N 4th Street
Bismarck, ND 58501

State of North Dakota Electric Rate Schedule

NDPSC Volume 4

13th Revised Sheet No. 44.1

Canceling 12th Revised Sheet No. 44.1

OCCASIONAL POWER PURCHASE Rate 95 NON-TIME DIFFERENTIATED

Page 2 of 2

If metered generation is less than metered consumption, the QF will be billed the applicable retail rate. If metered generation is greater than the metered consumption, the QF will be paid for each Kwh an amount equal to:

~~2-5812~~ 489¢ per Kwh

General Terms and Conditions:

1. Change of Rates: This schedule shall be reviewed annually, updated if necessary, and revised upon the Commission's approval.
2. The Company shall install appropriate metering facilities to record all flows of energy necessary to bill and pay in accordance with the charges and payments contained in this rate schedule.
3. The customer shall, with prior written consent of the Company, furnish, install and wire the necessary service entrance equipment, meter sockets, meter enclosure cabinets, or meter connection cabinets that may be required by the Company to properly meter usage and sales to the Company.
4. A written contract with the Company shall be signed stipulating the terms and conditions of the interconnection and sale of the electricity to the Company. The term of the contract hereunder shall be at least one year but less than five years.
5. In order to qualify for the net billing option, the generating equipment and the load of the facility must be located at the same "physical site". "Physical site" shall mean on the same tract of land and the generator output must be physically connected to the load service entrance.
6. For general terms and conditions covering QF's, see Rate 140.
7. All services provided by the Company under this and all other schedules are governed by the rules and regulations approved by the North Dakota Public Service Commission. Rates charged hereunder may be modified by Company at any time by making a unilateral rate application with the North Dakota Public Service Commission or its successor. The new rates shall be effective upon approval by the Commission.

Date Filed: July 20, 2016

Effective Date: Service rendered on and after September 1, 2016

Issued By: Tamie A. Aberle
Director of Regulatory Affairs

Case No.: PU-16-554



Montana-Dakota Utilities Co.

A Division of MDU Resources Group, Inc.

400 N 4th Street
Bismarck, ND 58501

State of North Dakota Electric Rate Schedule

NDPSC Volume 4
17th Revised Sheet No. 45
Canceling 16th Revised Sheet No. 45

PARALLEL GENERATION PEAKING FACILITY PURCHASE Rate 96 TIME DIFFERENTIATED

Page 1 of 3

Availability:

To any qualifying cogeneration and small power production facilities for the purpose of generating electric energy in parallel with the Company's system. This schedule is applicable to cogeneration and small power production facilities with a design capacity of 1000 Kw or less, that operate as a peaking facility (defined below), and are Qualifying Facilities (QF) as defined under 18 CFR, Part 292.

Rate:

Metering charge for single phase service: \$ 0.15 per day
With instrument transformers: \$ 0.26 per day

Metering charge for three phase service: \$ 0.16 per day
With instrument transformers: \$ 0.33 per day

1. Capacity delivered to the Company:

Levelized payment for term of contract based on Table 1 below.

TABLE 1
Contract Length (YR.)

	5	10	15	20
\$/Kw-mo	<u>7.6193.537</u>	<u>7.6193.537</u>	<u>7.6193.537</u>	<u>7.6193.537</u>

Total capacity payment per month = Monthly capacity payments for a QF will be made pursuant to the applicable contract length from Table 1 presented above. Such payments shall be based upon the amount of qualifying capacity assigned to an eligible resource under BPM-011-Resource Adequacy of the MISO Tariff.

Capacity payments will be paid in the subsequent billing period.

Date Filed: June 26, 2017

Effective Date: Service rendered on and after August 7, 2017

Issued By: Tamie A. Aberle
Director – Regulatory Affairs

Case No.: PU-16-666



Montana-Dakota Utilities Co.

A Division of MDU Resources Group, Inc.

400 N 4th Street
Bismarck, ND 58501

State of North Dakota Electric Rate Schedule

NDPSC Volume 4

15th Revised Sheet No. 45.1

Canceling 14th Revised Sheet No. 45.1

PARALLEL GENERATION PEAKING FACILITY PURCHASE Rate 96 TIME DIFFERENTIATED

Page 2 of 3

2. Energy Payment:

ON-PEAK

2.6052.724¢ per Kwh

OFF-PEAK

2.5802.475¢ per Kwh

Peak Periods: The On-Peak Period is defined as those hours between 12 p.m. and 8 p.m. local time, Monday through Friday in the months of June through September. The Off-Peak Period is defined as all other hours. Definitions of On-Peak and Off-Peak periods are subject to change with change in the Company's system operating characteristics.

Energy Sales to Qualifying Facilities:

Service provided to such customers by the Company shall be billed at the appropriate rate, by class of customers (i.e., residential, small and general electric service, etc.) that is currently on file with the Commission.

General Terms and Conditions:

1. Change of Rates: This schedule shall be reviewed annually, updated if necessary, and revised upon the Commission's approval.
2. Service under this schedule shall be on a simultaneous purchase and sale basis only.
3. The Company shall install appropriate metering facilities to record all flows of energy necessary to bill and pay in accordance with the charges and payments contained in this rate schedule.
4. The customer shall, with prior written consent of the Company, furnish, install and wire the necessary service entrance equipment, meter sockets, meter enclosure cabinets, or meter connection cabinets that may be required by the Company to properly meter usage and sales to the Company.
5. A written contract with the Company shall be signed stipulating the terms and conditions of the interconnection and sale of the electricity to the Company. The term of the contract hereunder shall be five years or more.

Date Filed: July 27, 2016

Effective Date: Service rendered on and after September 1, 2016

Issued By: Tamie A. Aberle
Director – Regulatory Affairs

Case No.: PU-16-554

**Montana-Dakota Utilities Co.
Electric Utility - North Dakota
Lambda
2018**

Month	Year	Lambda		Total \$/MWh
		On-Peak \$/MWh	Off-Peak \$/MWh	
January	2018		\$29.67	\$29.67
February	2018		22.29	22.29
March	2018		23.33	23.33
April	2018		23.29	23.29
May	2018		21.18	21.18
June	2018	\$21.08	19.52	19.89
July	2018	27.52	26.65	26.85
August	2018	33.18	28.50	29.66
September	2018	27.19	27.04	27.07
October	2018		25.83	25.83
November	2018		21.51	21.51
December	2018		28.15	28.15
Average		\$27.24	\$24.75	\$24.89

Montana-Dakota Utilities Co.
Electric Utility - North Dakota
Calculation of Capacity Payments
2018

Rate 96

Capital cost of combustion turbine		\$905	1/
Escalation rate		3.5%	
Levelized Fixed Charge		4.692%	2/
Monthly Capacity Payments:		\$3.537	\$/kW-Month 3/

Rate 96 Capacity Payment formula: $= \$816 \times 1.035^{(2018-2015)} \times .04692 / 12$

- 1/ Cost of combustion turbine based on Heskett III Station in 2015 dollars of \$816 escalated at a rate of 3.5% per year to 2018.
- 2/ See Attachment B pages 2-4.
- 3/ Rate 93 Capacity Payment formula: $= \$816 \times 1.035^{(2018-2015)} \times .04741 / 12$

**Montana-Dakota Utilities Co.
Electric Utility - North Dakota
2018 Avoided Cost Rate Update
Levelized Fixed Charge Rate - CT**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
	Net	Return	Book	O&M	Ad Valorem	Total	Present	Present	Accum.		Tax	Deferred	
Year	Investment		Depr.		Tax	Charge	Value	Value 1/	Present	LFCR	Depr.	Income	
							Factor		Value		Accel.	Tax	
1	1	1.000	0.10408	0.02500	0.00000	0.00363	0.00000	0.93141	0.00000	0.00000	0.00000	0.05000	0.00945
2	2	0.966	0.10049	0.02500	0.00000	0.00363	0.00000	0.86753	0.00000	0.00000	0.00000	0.09500	0.02646
3	3	0.914	0.09514	0.02500	0.00000	0.00363	0.00000	0.80802	0.00000	0.00000	0.00000	0.08550	0.02287
4	4	0.866	0.09016	0.02500	0.00000	0.00363	0.00000	0.75260	0.00000	0.00000	0.00000	0.07700	0.01966
5	5	0.822	0.08551	0.02500	0.00000	0.00363	0.00000	0.70098	0.00000	0.00000	0.00000	0.06930	0.01675
6	6	0.780	0.08116	0.02500	0.00000	0.00363	0.00000	0.65290	0.00000	0.00000	0.00000	0.06230	0.01410
7	7	0.741	0.07709	0.02500	0.00000	0.00363	0.10572	0.60812	0.06429	0.06429	0.01208	0.05900	0.01285
8	8	0.703	0.07315	0.02500	0.00000	0.00363	0.10178	0.56641	0.05765	0.12194	0.02071	0.05900	0.01285
9	9	0.665	0.06921	0.02500	0.00000	0.00363	0.09784	0.52756	0.05162	0.17356	0.02705	0.05910	0.01289
10	10	0.627	0.06527	0.02500	0.00000	0.00363	0.09390	0.49138	0.04614	0.21970	0.03181	0.05900	0.01285
11	11	0.589	0.06133	0.02500	0.00000	0.00363	0.08996	0.45767	0.04117	0.26088	0.03542	0.05910	0.01289
12	12	0.551	0.05739	0.02500	0.00000	0.00363	0.08602	0.42628	0.03667	0.29754	0.03819	0.05900	0.01285
13	13	0.514	0.05345	0.02500	0.00000	0.00363	0.08208	0.39704	0.03259	0.33013	0.04032	0.05910	0.01289
14	14	0.476	0.04950	0.02500	0.00000	0.00363	0.07813	0.36981	0.02889	0.35903	0.04195	0.05900	0.01285
15	15	0.438	0.04556	0.02500	0.00000	0.00363	0.07419	0.34444	0.02556	0.38458	0.04320	0.05910	0.01289
16	16	0.400	0.04162	0.02500	0.00000	0.00363	0.07025	0.32082	0.02254	0.40712	0.04414	0.02950	0.00170

**Montana-Dakota Utilities Co.
Electric Utility - North Dakota
2018 Avoided Cost Rate Update
Levelized Fixed Charge Rate - CT**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
	Net	Return	Book	O&M	Ad Valorem	Total	Present	Present	Accum.		Tax	Deferred	
Year	Investment		Depr.		Tax	Charge	Value	Value 1/	Present	Value	Depr.	Income	
							Factor			LFCR	Accel.	Tax	
17	17	0.373	0.03884	0.02500	0.00000	0.00363	0.06747	0.29881	0.02016	0.42728	0.04487	0.00000	(0.00945)
18	18	0.358	0.03722	0.02500	0.00000	0.00363	0.06585	0.27832	0.01833	0.44561	0.04547	0.00000	(0.00945)
19	19	0.342	0.03560	0.02500	0.00000	0.00363	0.06423	0.25923	0.01665	0.46226	0.04595	0.00000	(0.00945)
20	20	0.327	0.03399	0.02500	0.00000	0.00363	0.06262	0.24145	0.01512	0.47738	0.04634	0.00000	(0.00945)
21	21	0.311	0.03237	0.02500	0.00000	0.00363	0.06100	0.22489	0.01372	0.49110	0.04666	0.00000	(0.00945)
22	22	0.295	0.03075	0.02500	0.00000	0.00363	0.05938	0.20946	0.01244	0.50354	0.04691	0.00000	(0.00945)
23	23	0.280	0.02913	0.02500	0.00000	0.00363	0.05776	0.19510	0.01127	0.51481	0.04710	0.00000	(0.00945)
24	24	0.264	0.02751	0.02500	0.00000	0.00363	0.05614	0.18172	0.01020	0.52501	0.04725	0.00000	(0.00945)
25	25	0.249	0.02589	0.02500	0.00000	0.00363	0.05452	0.16925	0.00923	0.53424	0.04736	0.00000	(0.00945)
26	26	0.233	0.02428	0.02500	0.00000	0.00363	0.05291	0.15764	0.00834	0.54258	0.04743	0.00000	(0.00945)
27	27	0.218	0.02266	0.02500	0.00000	0.00363	0.05129	0.14683	0.00753	0.55011	0.04748	0.00000	(0.00945)
28	28	0.202	0.02104	0.02500	0.00000	0.00363	0.04967	0.13676	0.00679	0.55690	0.04751	0.00000	(0.00945)
29	29	0.187	0.01942	0.02500	0.00000	0.00363	0.04805	0.12738	0.00612	0.56302	0.04751	0.00000	(0.00945)
30	30	0.171	0.01780	0.02500	0.00000	0.00363	0.04643	0.11864	0.00551	0.56853	0.04750	0.00000	(0.00945)
31	31	0.155	0.01618	0.02500	0.00000	0.00363	0.04481	0.11050	0.00495	0.57348	0.04748	0.00000	(0.00945)
32	32	0.140	0.01457	0.02500	0.00000	0.00363	0.04320	0.10293	0.00445	0.57793	0.04744	0.00000	(0.00945)
33	33	0.124	0.01295	0.02500	0.00000	0.00363	0.04158	0.09587	0.00399	0.58191	0.04740	0.00000	(0.00945)
34	34	0.109	0.01133	0.02500	0.00000	0.00363	0.03996	0.08929	0.00357	0.58548	0.04734	0.00000	(0.00945)
35	35	0.093	0.00971	0.02500	0.00000	0.00363	0.03834	0.08317	0.00319	0.58867	0.04728	0.00000	(0.00945)
36	36	0.078	0.00809	0.02500	0.00000	0.00363	0.03672	0.07746	0.00284	0.59151	0.04722	0.00000	(0.00945)
37	37	0.062	0.00647	0.02500	0.00000	0.00363	0.03510	0.07215	0.00253	0.59405	0.04715	0.00000	(0.00945)
38	38	0.047	0.00486	0.02500	0.00000	0.00363	0.03349	0.06720	0.00225	0.59630	0.04707	0.00000	(0.00945)
39	39	0.031	0.00324	0.02500	0.00000	0.00363	0.03187	0.06259	0.00199	0.59829	0.04700	0.00000	(0.00945)
40	40	0.016	0.00162	0.02500	0.00000	0.00363	0.03025	0.05830	0.00176	0.60005	0.04692	0.00000	(0.00945)

**Montana-Dakota Utilities Co.
Electric Utility - North Dakota
2018 Avoided Cost Rate Update
Levelized Fixed Charge Rate - CT**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Year	Net Investment	Return	Book Depr.	O&M	Ad Valorem Tax	Total Charge	Present Value Factor	Present Value 1/	Accum. Present Value	LFCR	Tax Depr. Accel.	Deferred Income Tax

- (1) Prior year's Net investment - Book Depreciation - Deferred Income Tax.
- (2) Return (adjusted for taxes) x Net Investment.
- (3) Depreciation rate based on the life of the investment.
- (4) Distribution O&M expense as percent of distribution plant.
- (5) Ad valorem tax rate on distribution plant.
- (6) Sum of return, depreciation, O&M and ad valorem taxes.
- (7) Present value factor reflecting overall rate of return.
- (8) Present value factor x total charge.
- (9) Accumulated present value.
- (10) Levelized fixed charge rate = accumulated present value x $((+ROR*(1+ROR)^{book\ life})/((1+ROR)^{book\ life}-1))$
- (11) Tax depreciation rates for a CT uses a 15 year tax life.
- (12) (Tax life - book life) x tax rate.

1/ Reduced the value of the annual capacity to zero in years 1-6 because the Company is expected to have a capacity surplus during that time period.

Assumptions

ROR	7.364%
ROR with taxes	10.408%
Federal Tax Rate	35.000%
State Tax Rate	4.310%
Combined Federal/State Tax Rate	37.8015%
1 - Tax Rate	62.1985%
Service Life of Asset (in years)	40
Tax Life (in years - 5, 7, 10, 15, 20 , or 39)	15
Property Tax Rate	0.363%

**Montana-Dakota Utilities Co.
Electric Utility - North Dakota**

**Rate 95 Customer History
Twelve Months Ended September 30, 2017**

	<u>Kwh Billed Customers 1/</u>	<u>Kwh Purchased under Rate 95</u>
October 2016	5,584	7
November	7,936	12
December	16,156	2
January 2017	18,040	1
February	12,884	6
March	13,834	8
April	7,691	11
May	5,173	16
June	1,541	141
July	1,315	694
August	1,760	583
September	1,551	474
Total	<u>93,465</u>	<u>1,955</u>

1/ Energy billed customers under other service's applicable tariff