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June 2, 2022

Steve Kahl
Executive Secretary/Director of Administration
North Dakota Public Service Commission
State Capitol - 600 East Boulevard
Bismarck, ND 58505-0480

RE: Otter Tail Power Company's 2021 Annual Report

Dear Mr. Kahl:

Enclosed is Otter Tail Power Company's (Otter Tail's) 2021 Annual Report for North Dakota. As in past years, I am enclosing a copy of Otter Tail Corporation's 2021 Annual Report to Shareholders and SEC Form 10-K for Otter Tail Corporation and Otter Tail's 2021 FERC FORM No. 1. I am also forwarding an electronic copy of the North Dakota Annual Report in .PDF format by email to you at ndpsc@nd.gov.

Pages 1-3 reflect operating statement, rate base, and capital structure values which include Otter Tail's current base rate recoveries as well as recoveries through Otter Tail's renewable, transmission, and generation cost recovery riders on an actual, un-normalized basis. Pages 4-6 reflect the same information on a normalized basis to adjust for the impacts of anomalous items, including weather. Otter Tail's actual 2021 earnings reflected a return on equity (ROE) of 10.09 percent. As shown on page 5 of the attached report, Otter Tail's normalized 2021 results reflected a 9.82 percent ROE.

If you have questions on the information provided, do not hesitate to contact me at (218) 739-8240 or czuniga@otpco.com.

Sincerely,

Cristina Zuniga
Rates Analyst
Regulatory Administration

vjm
Enclosures
By electronic service and First Class mail

1 PU-22-231 Filed 06/02/2022 Pages: 14
2021 Annual Report for North Dakota
Otter Tail Power Company
Chistina Zuniga, Rates Analyst

ELECTRIC

ANNUAL REPORT

OF

OTTER TAIL POWER COMPANY

TO THE

PUBLIC SERVICE COMMISSION OF NORTH DAKOTA

FOR THE

YEAR ENDED DECEMBER 31, 2021

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OTTER TAIL POWER COMPANY

Otter Tail Power Company
2021 North Dakota Annual Report

Operating Statement - With All Riders, Un-Normalized

Line No.	Description	(A) 2021 Total Company	(B) 2021 North Dakota	(C) ND Percent (B / A)	(D) 2020 North Dakota	(E) Annual Change (B-D / D)
	Operating Revenues:					
1	Residential	133,830,574	61,630,604	46.05%	54,675,044	12.72%
2	Small Commercial and Industrial	94,186,817	46,851,028	49.74%	43,377,651	8.01%
3	Large Commercial and Industrial	168,282,847	43,232,903	25.69%	37,233,614	16.11%
4	Other Retail	7,551,996	3,194,127	42.30%	2,934,658	8.84%
5	Total Retail Revenue	403,852,235	154,908,662	38.36%	138,220,966	12.07%
6	Other Electric Revenue	58,666,321	10,965,091	18.69%	10,049,786	9.11%
7	Total Revenue	462,518,555	165,873,754	35.86%	148,270,752	11.87%
	Operating Expenses:					
8	Production Expenses	147,923,154	53,028,831	35.85%	48,691,431	8.91%
9	Transmission Expenses	32,439,322	12,118,883	37.36%	11,159,166	8.60%
10	Distribution Expenses	17,122,676	7,664,469	44.76%	7,708,824	-0.58%
11	Customer Accounting Expenses	12,279,361	5,445,105	44.34%	6,657,277	-18.21%
12	Customer Service and Information Expenses	12,794,005	1,101,255	8.61%	935,570	17.71%
13	Sales Expenses	272,009	30,779	11.32%	10,428	195.16%
14	Administration and General Expenses	41,137,513	15,415,791	37.47%	15,419,874	-0.03%
15	Charitable Contributions	0	0	N/A	0	N/A
16	Depreciation Expense	69,824,048	24,841,693	35.58%	23,273,526	6.74%
17	General Taxes	17,601,364	5,943,109	33.77%	5,861,303	1.40%
18	Total Operating Expenses	351,393,452	125,589,916	35.74%	119,717,399	4.91%
19	Net Operating Income Before Income Taxes	111,125,103	40,283,838	36.25%	28,553,353	41.08%
	Income Tax Expense:					
20	Investment Tax Credit	(5,619,827)	(1,999,708)	35.58%	(902,050)	121.68%
21	Deferred Income Taxes	14,520,989	6,958,698	47.92%	(897,141)	-875.65%
22	Income Taxes	(1,104,509)	0	0.00%	2,985,610	-100.00%
23	Total Income Tax Expense	7,796,654	4,958,990	63.60%	1,186,419	317.98%
24	Net Regulated Earnings	103,328,449	35,324,848	34.19%	27,366,934	29.08%

Otter Tail Power Company
2021 North Dakota Annual Report

Rate Base - With All Riders, Un-Normalized

Line No.	Description	(A) 2021 Total Company	(B) 2021 North Dakota	(C) ND % (B / A)	(D) 2020 North Dakota	(E) Annual Change
1	Plant in Service	2,649,530,882	905,801,146	34.19%	834,799,990	8.51%
2	Net Capitalized Items - Big Stone Plant			0.00%		0.00%
3	Accumulated Depreciation	(908,575,427)	(343,292,174)	37.78%	(328,763,121)	4.42%
4	Net Plant in Service	1,740,955,455	562,508,972	32.31%	506,036,869	11.16%
5	Plant Held for Future Use	29,657	12,675	42.74%	12,850	-1.36%
6	Construction Work in Progress	147,537,407	9,485,424	6.43%	7,483,072	26.76%
7	Materials and Supplies	24,497,612	9,756,242	39.83%	9,386,307	3.94%
8	Fuel Stocks	8,637,762	2,975,569	34.45%	2,972,301	0.11%
9	Prepayments	5,578,274	1,802,361	32.31%	67,427	2573.05%
10	Customer Advances	(1,617,854)	(522,734)	32.31%	(777,448)	-32.76%
11	Cash Working Capital	7,137,192	5,664,250	79.36%	7,583,388	-25.31%
12	Accumulated Deferred Income Taxes	(302,466,859)	(117,184,911)	38.74%	(110,133,800)	6.40%
13	Total Average Rate Base	1,630,288,646	474,497,848	29.11%	422,630,966	12.27%
	ACTUAL					
14	Rate of Return on Average Rate Base (page 1, Line 24 /line 13)	6.34%	7.44%			
15	Less: Weighted Cost of Ltd (Page 3, line 1 (D))	2.13%	2.13%			
16	Weighted Cost of Pref. Stock (Page 3 line 2 (D))	0.00%	0.00%			
17	Weighted Return on Equity	4.21%	5.31%			
18	% of Equity to Capital Structure (Page 3, line 3 (B))	52.66%	52.66%			
19	Return on Equity (Page 3, line 3 (C))	7.99%	10.09%			

Otter Tail Power Company
2021 North Dakota Annual Report

Average Weighted Cost of Capital - With All Riders, Un-Normalized

		(A)	(B)	(C)	(D)
Line No.	**Description**	**Average Balance**	**Ratio**	**Cost**	**Weighted Cost**
1	Long Term Debt	742,517,050	47.34%	4.50%	2.13%
2	Preferred Equity	0	0.00%	0.00%	0.00%
3	Common Equity	825,898,503	52.66%	10.08%	5.31%
4	Total	1,568,415,553	100.00%		7.44%

Otter Tail Power Company
2021 North Dakota Annual Report

Operating Statement - With All Riders, Normalized

Line No.	Description	(A) 2021 Total Company	(B) 2021 North Dakota	(C) N. D. % (B / A)	(D) 2020 North Dakota	(E) Annual Change (B-D / D)
	Operating Revenues:					
1	Residential	131,856,126	57,520,245	43.62%	55,059,321	4.47%
2	Small Commercial and Industrial	100,320,002	58,612,154	58.43%	43,776,207	33.89%
3	Large Commercial and Industrial	161,377,751	34,890,079	21.62%	37,283,890	-6.42%
4	Other Retail	7,555,774	3,126,632	41.38%	2,936,454	6.48%
5	Total Retail Revenue	401,109,654	154,149,110	38.43%	139,055,871	10.85%
6	Other Electric Revenue	58,666,321	10,965,091	18.69%	10,049,786	9.11%
7	Total Revenue	459,775,975	165,114,201	35.91%	149,105,657	10.74%
	Operating Expenses:					
8	Production Expenses	148,279,472	53,156,379	35.85%	48,691,431	9.17%
9	Transmission Expenses	32,439,322	12,118,883	37.36%	11,159,166	8.60%
10	Distribution Expenses	17,122,676	7,664,469	44.76%	7,708,824	-0.58%
11	Customer Accounting Expenses	12,279,361	5,445,105	44.34%	6,657,277	-18.21%
12	Customer Service and Information Expenses	12,794,005	1,101,255	8.61%	935,570	17.71%
13	Sales Expenses	272,009	30,779	11.32%	10,428	195.16%
14	Administration and General Expenses	41,137,513	15,415,791	37.47%	15,419,874	-0.03%
15	Charitable Contributions	0	0	N/A	0	N/A
16	Depreciation Expense	69,824,048	24,841,693	35.58%	23,273,526	6.74%
17	General Taxes	17,601,364	5,943,109	33.77%	5,861,303	1.40%
18	Total Operating Expenses	351,749,770	125,717,464	35.74%	119,717,399	5.01%
19	Net Operating Income Before Income Taxes	108,026,204	39,396,737	36.47%	29,388,258	34.06%
	Income Tax Expense:					
20	Investment Tax Credit	(5,619,827)	(1,999,708)	35.58%	(902,050)	121.68%
21	Deferred Income Taxes	13,672,900	6,741,991	49.31%	(897,141)	-851.50%
22	Income Taxes	(1,148,862)	0	0.00%	3,189,336	-100.00%
23	Total Income Tax Expense	6,904,211	4,742,283	68.69%	1,390,145	241.14%
24	Net Regulated Earnings	101,121,993	34,654,454	34.27%	27,998,113	23.77%

Otter Tail Power Company
2021 North Dakota Annual Report

Rate Base - With All Riders, Normalized

Line No.	Description	(A) 2021 Total Company	(B) 2021 North Dakota	(C) N. D. % (B / A)	(D) 2020 North Dakota	(E) Annual Change
1	Plant in Service	2,649,530,882	905,801,146	34.19%	834,799,990	8.51%
2	Net Capitalized Items - Big Stone Plant			0.00%		0.00%
3	Accumulated Depreciation	(908,575,427)	(343,292,174)	37.78%	(328,763,121)	4.42%
4	Net Plant in Service	1,740,955,455	562,508,972	32.31%	506,036,869	11.16%
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6	Construction Work in Progress	147,537,407	9,485,424	6.43%	7,483,072	26.76%
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8	Fuel Stocks	8,637,762	2,975,569	34.45%	2,972,301	0.11%
9	Prepayments	5,578,274	1,802,361	32.31%	67,427	2573.05%
10	Customer Advances	(1,617,854)	(522,734)	32.31%	(777,448)	-32.76%
11	Cash Working Capital	7,189,592	5,704,680	79.35%	7,588,951	-24.83%
12	Accumulated Deferred Income Taxes	(302,466,859)	(117,184,911)	38.74%	(110,133,800)	6.40%
13	Total Average Rate Base	1,630,341,046	474,538,278	29.11%	422,636,529	12.28%

	ACTUAL		
14	Rate of Return on Average Rate Base (page 4, Line 24 /line 13)	6.20%	7.30%
15	Less: Weighted Cost of Ltd (Page 6, line 1 (D))	2.13%	2.13%
16	Weighted Cost of Pref. Stock (Page 6 line 2 (D))	0.00%	0.00%
17	Weighted Return on Equity	4.07%	5.17%
18	% of Equity to Capital Structure (Page 6, line 3 (B))	52.66%	52.66%
19	Return on Equity (Page 6, line 3 (C))	7.73%	9.82%

Otter Tail Power Company
2021 North Dakota Annual Report

Average Weighted Cost of Capital - With All Riders, Normalized

		(A)	(B)	(C)	(D)
Line No.	**Description**	**Average Balance**	**Ratio**	**Cost**	**Weighted Cost**
1	Long Term Debt	742,517,050	47.34%	4.50%	2.13%
2	Preferred Equity	0	0.00%	0.00%	0.00%
3	Common Equity	825,898,503	52.66%	9.82%	5.17%
4	Total	1,568,415,553	100.00%		7.30%

Otter Tail Power Company
2021 North Dakota Annual Report

Miscellaneous

Line No.	Description	(A) 2021	(B) 2020	(C) 2019	(D) 2018	(E) 2017	(F) 2016	(G) 2015	(H) 2014	(I) 2013	(J) 2012
	Customer Related (ND):										
	Year End # of Customers (1)										
1	Residential	45,584	45,614	45,620	45,862	45,882	45,743	45,689	45,379	45,191	44,951
2	Commercial	12,481	12,430	12,395	11,465	11,439	11,385	11,333	11,286	11,270	11,188
3	Industrial	283	278	277	980	979	978	984	947	950	952
4	Other	888	890	889	497	499	503	509	504	504	504
5	**Total Customers**	59,236	59,212	59,181	58,804	58,799	58,609	58,515	58,116	57,915	57,595
	KWH's Sold										
6	Residential	582,626,650	582,626,650	629,175,343	630,555,383	591,880,809	580,345,390	609,253,548	669,563,374	652,328,505	583,154,678
7	Commercial	470,598,314	470,598,314	517,757,884	309,037,831	300,470,972	291,700,647	296,940,142	339,108,033	319,824,033	281,752,844
8	Industrial	607,703,011	607,703,011	653,782,339	861,510,082	854,040,398	856,544,193	852,769,327	899,948,129	867,335,225	841,489,786
9	Other	26,994,553	26,994,553	29,278,133	29,467,197	29,625,196	29,262,956	29,829,127	30,127,525	29,593,473	29,084,463
10	Subtotal	1,687,922,528	1,687,922,528	1,829,993,699	1,830,570,493	1,776,017,375	1,757,853,186	1,788,792,144	1,938,747,061	1,869,081,236	1,735,481,771
11	Unbilled sales	4,732,945	4,732,945	(9,672,097)	3,250,372	11,845,290	5,681,679	(9,116,877)	(5,251,688)	17,390,019	11,804,152
12	**Total kWh**	1,692,655,473	1,692,655,473	1,820,321,602	1,833,820,865	1,787,862,665	1,763,534,865	1,779,675,267	1,933,495,373	1,886,471,255	1,747,285,923
13	**System Wide Reliability Indices**										
14	SAIDI (total minutes)	79.0	91.3	128.2	85.3	86.5	110.5	100.6	74.2	99.7	84.1
15	SAIFI (frequency)	1.2	1.3	1.5	1.3	1.4	1.7	1.7	1.2	1.3	1.5
16	CAIDI (duration)	66.89	69.1	88.7	64.9	61.5	65.7	58.4	59.9	78.6	57.7

(1) Otter Tail implemented its new customer information system in February 2019. During this conversion, total customer counts by class were updated resulting in the change from 2018 to 2019.

BEFORE THE
NORTH DAKOTA PUBLIC SERVICE COMMISSION

Case No. PU-22-

Otter Tail Power Company's

Report on Status of Smart Metering and Smart Grid Technologies

June 2, 2022

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Otter Tail Power Company 2021 Annual Report to North Dakota

Report on Status of Smart Metering

In its Order dated August 8, 2007, Case No. PU-06-290, the North Dakota Public Service Commission, at ordering paragraph no. 2, required that:

> **"Each jurisdictional electric utility shall include in its annual reports to the Commission, beginning with reports filed for 2007, a discussion of progress towards the feasibility of making smart metering available for all customers."**

References to smart grid and smart metering have been used interchangeably as the utility industry moves to adopt changes that make sense for each of the utilities' service areas. We've used technology to improve employee productivity and customer service for many years. Smart grid investments occur in many aspects of our work and our mission, which is:

> *To produce and deliver electricity as reliably, economically, and environmentally responsibly as possible to the balanced benefit of customers, shareholders, and employees and to improve the quality of life in the area in which we do business.*

The following lists some of the smart grid-type applications that we discussed in past filings and are still in place today. However, this filing does not go into detail for each of these areas:

- Peak-shaving technologies
- Energy storage systems
- Time-varying rates
- Electricity metering
- Power Profiler
- Bill Analyzer
- Interruption Monitoring System

This update focuses on updates to our:

- Customer Information System
- Customer Experience Platform
- Advanced Metering Infrastructure
- Demand Response
- Outage Mangaement System

In addition, we provide high-level information related to technologies that encompass smart metering in our Innovation 2030 (I2030) initiative.

Customer Information System (CIS)

Otter Tail Power Company's utilizes Cayenta Utilities (CU) as its customer information system. The first major upgrade was completed in January 2022. Major upgrades are done approximately every 3 years. Between major upgrades, the system is updated on a quarterly basis to keep the system current. Critical patches are applied to the system as they become available. The 2022 upgrade will ensure we are on the latest version of Cayenta's software as integration with other systems begins as part of our I2030 project list. The integration between CU and the Customer Experience Platform, Outage Management System, and Advanced Metering Infrastructure with Meter Data Management projects will be critical for both internal functions and processes as well as Customer Experience efforts. We continue to build new configurations and enhancements into the CU system to enhance internal processes and to meet the growing needs of real-time customer communications and information. We continue to utilize Cayenta Utilities mobile work management (MWM) tool for our short cycle service orders. Our field representatives receive all of their short cycle orders through an MWM app on their smart phone or other mobile device.

Customer Experieince Platform (CEP)

Otter Tail Power continues to remain focused on providing the best possible experience for our customers. As part of this effort, we have contracted with Accelerated Innovations to develop an online platform that will provide customers enhanced functionality in the areas of bill payment, usage information, and outage communications. A preference center will allow customers to choose the communications they want to receive and the method by which they would like to receive them. A mobile application will allow customers to access account information on the go. This platform is intended to integrate fully with our future Outage Management System as well as MDM/AMI, and will provide the most comprehensive information to the customer when these other systems are in place.

Implementation began in April 2022, and project completion is anticipated by the end of 2022.

Advanced Metering Infrastructure (AMI)

Otter Tail Power continues to move forward with our AMI project as part of our Smart Grid initiative. In August 2020, we presented information regarding our AMI project to the ND PSC during a Periodic Information Exchange (PIE). In February 2021, the Company filed an Advanced Determination of Prudance (ADP) with the ND PSC for the AMI project. In this filing we indicated the AMI communication infrastructure will support many other systems and we specifically expect the AMI system to support our new load management system. In September 2021, the ND PSC approved the ADP with the requirement for the method of recovery to be determined at a later date.

Otter Tail completed the development phase of the project in 2021 and selected Landis and Gyr as the provider of the AMI and Meter Data Management MDM systems. Otter Tail contracted with Allegiant for meter installation. We are currently working through integration and design workshops and planing for meter deployment. Our ongoing cost forecast continues to support the cost information we provided in our ADP filing.

Otter Tail continues work toward initial deployment in late 2022, but integrations to other systems could cause a delay into 2023. Otter Tail expects to complete installation by the end of 2024.

Demand Response (DR)

As part of our Smart Grid initiative, the Company recognizes the need to replace our load management system. The radio communication system that forms the backbone of the Company's program is approaching its obsolescence. Much of the hardware used to support the current "legacy" radio system and its associated load control switches is antiquated and/or obsolete. The communication system installed as part of the AMI implementation will provide the foundation for upgrading to an updated system along with the potential for improvement and expansion of the Company's DR offerings in the future.

Much of the hardware and software used to support the existing DR system is also antiquated and/or obsolete as well. Most of the software that supports the DR system was procured in 2003 and is currently operating with limited support from the vendor, putting it at risk of losing functionality. As a result, the DR system is essentially limited to existing functionality, limiting Otter Tail's ability to grow and enhance its DR offerings.

To determine our future needs, the Company has started initial planning and work toward the development of a new load management system. We have selected the consultant Katama Technologies to aid us in our strategy and Request for Proposal (RFP) developments. With Katama, we have contacted vendors and other utilities to gather background for our strategy and system requirements. We are beginning RFP development and expect to issue RFPs later in 2022. We will continue with development of the project in 2022 and move into execution in 2023. We expect to complete the project in early 2027.

Outage Management System (OMS)

In 2021, Otter Tail issued an RFP for an OMS system and selected Milsoft to provide the solution. In late 2021 and early 2022, Otter Tail Power completed the contract negotaiton with Milsoft. We will start to conduct workshops and integrations in Q2 2022 and expect to place the system in service in late 2022 or early 2023.

Innovation 2030 Initiative (I2030)

As part of our Smart Grid initiatives, our I2030 Portfolio includes projects that support our objectives of increased customer engagement, increased safety and reliability, and increased business efficiency through technology and process opportunities. I2030, a company initiative that began in 2016, continues in the planning, development, and execution stages of several technologies. The Company has completed the deployment of a new Staking system, Enterprise Service Bus, and Financial Information System within the I2030 initiative. Another area under consideration as part of I2030 is a Work Management System. Two other initiatives include replacement of aging Transmission and Distribution assets and a system wide telecommunications strategy. We continue to review our evaluation and business case justifications for all projects within the portfolio.