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July 1, 2009

Ms. Patricia Van Gerpen Executive Director South Dakota Public Utilities Commission Capitol Building, 1st floor 500 East Capitol Avenue Pierre, SD 57501-5070

Re: In the Matter of Otter Tail Power Company's Renewable, Recycled, and Conserved Energy Objective Compliance Report to the South Dakota Public Utilities Commission

Dear Ms. Van Gerpen:

Enclosed you will find the report of Otter Tail Power Company, to the South Dakota Public Utilities Commission on the Company's efforts and status on compliance with the South Dakota Renewable, Recycled, and Conserved Energy Objective contained in Statutes §49-34A-94 through §49-34A-96 and §49-34A-101 through §49-34A-106. This report is required annually commencing on July 1, 2009 and continuing through July 1, 2017.

If you have any questions regarding this filing, please contact me at 218-739-8417 or bhdraxten@otpco.com.

Sincerely,

/s/ BRIAN DRAXTEN Brian Draxten Manager, Resource Planning

wao Enclosures By electronic filing Renewable, Recycled, and Conserved Energy Objective Compliance Report to the South Dakota Public Utilities Commission

> Report RP09-3 Otter Tail Power Company Resource Planning Department July 1, 2009

PREFACE

This document is the report of Otter Tail Power Company, to the South Dakota Public Utilities Commission on the Company's efforts and status on compliance with the South Dakota Renewable, Recycled, and Conserved Energy Objective contained in Statutes \$49-34A-94 through \$49-34A-96 and \$49-34A-101 through \$49-34A-106. This report is required annually commencing on July 1, 2009 and continuing through July 1, 2017.

Questions and comments regarding the information and data contained herein should be addressed to Kerry Kaseman at 218-739-8693 or <u>kkaseman@otpco.com</u>.

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INTRODUCTION

Pursuant to South Dakota Codified Laws §49-34A-105, Otter Tail Power Company (Otter Tail or Company), makes this information filing electronically to the South Dakota Public Utilities Commission. This filing is the Company's first annual report on efforts to meet the state renewable, recycled, and conserved energy objective that 10% of all electricity sold at retail be obtained from renewable, recycled, and conserved energy sources by 2015.¹

As the following pages of this report demonstrate, Otter Tail is well on the way to implementing renewable resources as part of its diverse resource portfolio and expects to be in full compliance of any and all renewable energy objectives and standards within all three state jurisdictions in which Otter Tail serves.

¹ South Dakota Codified Law §49-34A-101.

JURISDICTIONAL REQUIREMENTS

Otter Tail serves retail load in Minnesota, North Dakota, and South Dakota. All three state jurisdictions have some sort of renewable energy objective (REO) or renewable energy standard (RES). Discussion of compliance efforts with any single jurisdiction also requires a discussion of the other two jurisdictions so that a complete understanding of the Company's compliance efforts can be obtained. The following sections describe the requirements in each of the state jurisdictions.

Minnesota

Otter Tail is required to make a good faith effort to comply with the state REO through 2011. Beginning with 2012 the requirement switches to an RES. The state requirements² increase in a step-wise fashion, consisting of:

- 2005 1% of retail sales
- 2010 7% of retail sales
- 2012 12% of retail sales
- 2016 17% of retail sales
- 2020 20% of retail sales
- 2025 25% of retail sales.

Eligible energy technologies for compliance include solar, wind, hydroelectric with a capacity of less than 100 MW, hydrogen,³ or biomass. Biomass includes landfill gas, anaerobic digestion, and mixed municipal solid waste or refuse-derived-fuel from mixed municipal solid waste as a primary fuel. Electricity generated by the combustion of biomass through co-firing with other fuels counts up to the percentage amount of biomass fuel relative to total fuel, only if the generating facility was constructed in compliance with new source performance standards promulgated under the federal Clean Air Act or if the facility employs the maximum achievable or best available control technology for that type of facility.

² These REO and RES requirements only apply to utilities without nuclear generating assets. Utilities with nuclear generating assets have a more aggressive standard as detailed in Minn. Stat. §216B.1691.

³ Provided that after January 1, 2010 the hydrogen must be generated from the other eligible energy technologies listed.

North Dakota

The state REO is 10% of retail sales by the year 2015, and includes both renewable energy and recycled energy. The calculation contains a provision to reduce the amount of retail sales by any hydroelectric energy that cannot be counted toward the REO.⁴ Renewable electricity and recycled energy includes electricity generated from solar, wind, biomass,⁵ geothermal, hydrogen,⁶ hydroelectric (must be from a facility with an inservice date of no earlier than January 1, 2007 or from efficiency improvements to a facility existing as of August 1, 2007), and recycled energy systems producing electricity from currently unused waste heat resulting from combustion or other processes into electricity and which do not use an additional combustion process. Recycled energy does not include any system whose primary purpose is the generation of electricity.

South Dakota

The state REO is 10% of retail sales by the year 2015, and includes renewable, recycled, and conserved energy.⁷ The calculation contains a provision to reduce the amount of retail sales by any hydroelectric energy from a facility with an in-service date prior to July 1, 2008.⁸ Renewable and recycled energy include electricity generated from solar, wind, biomass,⁹ geothermal, hydrogen,¹⁰ hydroelectric (statutes seem to imply it must be from a facility with an in-service date of no earlier than July 1, 2008), and recycled energy systems producing electricity from currently unused waste heat resulting from combustion or other processes into electricity and which do not use an additional combustion process. Recycled energy does not include any system whose primary purpose is the generation of electricity. In the case of conserved energy, the objective

⁴ North Dakota Century Code §49-02-30.

⁵ Including agricultural crops and wastes and residues, wood and wood wastes and residues, animal wastes, and landfill gas.

⁶ Provided that the hydrogen is generated from a source listed in this section of North Dakota Century Code §49-02-25.

⁷ South Dakota Codified Laws §49-34A-101.

⁸ South Dakota Codified Laws §49-34A-103.

⁹ Includes agricultural crops and wastes and residues, wood and wood wastes and residues, animal and other degradable organic wastes, and landfill gas.

¹⁰ Provided that the hydrogen is generated from a source listed in this section of South Dakota Codified Laws §49-34A-94.

will be measured by methods established by rules promulgated by the commission pursuant to chapter 1-26.

MIDWEST RENEWABLE ENERGY TRACKING SYSTEM

Otter Tail has registered almost all renewable energy resources within the Midwest Renewable Energy Tracking System (M-RETS). There is a number of small customer owned units, generally less than 50 kW each, which the Company has not registered. The customers self-serve a portion of their own load with Otter Tail receiving the remaining surplus energy. Otter Tail pays the cost of, both initial and annual fees, to register a facility in M-RETS and the cost per renewable energy credit (REC) can become quite high on these small units. For 2008, the amount of unregistered renewable energy was about 301 MWh, only about 0.10% of the over 308,000 MWh of registered renewable energy.

Otter Tail has developed an account structure within M-RETS to help segregate RECs by type and usage. For customer-owned facilities that self-serve customer load, all of the generation is reported within M-RETS. Otter Tail then transfers RECs associated with the energy used to self-serve load into an account in the customer's name, for their use as they deem appropriate. The RECs associated with energy purchased by Otter Tail will remain in the Otter Tail account.

The Otter Tail M-RETS accounts include a retirement account by state jurisdiction by year. Thus it will be easy to verify the amount of RECs retired annually for compliance with each state's requirements. RECs associated with **TailWinds**, the Company's green pricing program, are retired into separate state jurisdiction accounts to ensure proper accounting for the green pricing tracker balance.

Retired RECs will be tracked on a calendar basis. The M-RETS system became operational in the last half of 2007. While Otter Tail began recording renewable energy within M-RETS late in 2007, the Company began full use of the M-RETS system for reporting verification beginning with the first full calendar year commencing January 1, 2008.

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Otter Tail has not sold or purchased any RECs separate from the renewable energy. All energy currently being used for compliance is energy generated by Otter Tail or energy purchased by Otter Tail under power purchase agreements.

Otter Tail sold 3,696,000 KWh of wind generation, including the REC's, during 2008. This energy came from the Ashtabula wind farm that was in start-up phase prior to the availability of the generation outlet facilities. This energy was sold to Minnkota Power Cooperative through a lower voltage tie during October and November. The generation outlet facilities became available in December, at which point Otter Tail began taking energy from the wind farm.

RENEWABLE AND RECYCLED ENERGY RESOURCES

The breakdown of existing and potential future renewable energy resources for Otter Tail, to the extent known, at the time of this report are shown in Appendix A. The data provided includes the name of the facility, kW rating, vintage, technology and energy source, whether owned or through a PPA, and state eligibility. For customer-owned facilities, the customer name is not provided in order to protect customer information. The information provided includes future resources which may or may not be constructed, but for which development work has commenced. There are additional renewable energy facilities which are under discussion, but these have not been included in the data since they are still in preliminary stages of feasibility studies.

SOUTH DAKOTA RENEWABLE AND RECYCLED ENERGY

The following data is for the January 1, 2008 – December 31, 2008 time period. The data assumes that renewable energy is allocated across the Otter Tail system based on retail kWh sales. The exceptions to this allocation methodology are that Tail*Winds* energy is based on the amount of wind energy sold under the green pricing program in South Dakota. Pursuant to South Dakota Codified Law §49-34A-103, the hydroelectric energy shown in the table below does not count toward compliance, but can be subtracted from retail sales before calculating the percentage of compliance.

South Dakota Renewable and Recycled Energy MWh					
Ja	nuary 1, 2008 – Dece	ember 31, 2008			
Resource	Total kWh	SD Percentage	SD kWh		
Borderline Wind	1,345,000	10.11%	135,980		
FPL Energy ND Wind II	60,610,000	10.11%	6,127,671		
Customer D1	1,142,000	10.11%	115,456		
FPLE Langdon	69,559,000	10.11%	7,032,415		
OTP Langdon	133,640,000	10.11%	13,511,004		
Ashtabula Wind	16,654,000	10.11%	1,683,719		
Big Stone Plant Biomass	868,000	10.11%	87,755		
South Dakota TailWinds	206,400	100.0%	206,400		
Customer A	38,700	10.11%	3,913		
Customer C	3,440	10.11%	348		
Customer E	224,360	10.11%	22,683		
customer F	14,177	10.11%	1,433		
Customer G	3,380	10.11%	342		
Customer H	12,851	10.11%	1,299		
Customer J	2,524	10.11%	255		
Customer K	274	10.11%	28		
Customer L	1,379	10.11%	139		
Customer T	350	10.11%	35		
OTP Owned Hydro	23,260,100	10.11%	2,351,596		
Manitoba Hydro	209,600,000	10.11%	21,190,560 ¹¹		
WAPA Hydro	29,972,800	10.11%	$3,030,250^{12}$		

¹¹ This hydroelectric energy includes only energy under the firm 50 MW contract, which is specified as coming from hydro facilities. (262 days X 16 hours/day X 50 MW)

¹² The WAPA hydroelectric energy is an allocation to five Native American tribes.

South Dakota Renewable and	Recycled Energy Compliance
January 1, 2008 – 1	December 31, 2008
South Dakota Retail Sales	426,079,216 kWh
Less Hydro Energy Adjustment	-26,572,406 kWh
Net SD Retail Sales for REO Compliance	399,506,810 kWh
South Dakota Renewable Energy	28,930,875 kWh
SD REO Compliance Percentage	7.24%

The data does show that Otter Tail is already more than 50% of the way toward compliance with the South Dakota statute. The level of compliance will increase in 2009 as the 48 MW Ashtabula Wind Farm experiences a full year of operation and again in 2010 as the 49.5 MW Luverne Wind Farm will reach commercial operation during the late part of 2009. It is likely that Otter Tail will exceed the South Dakota REO at some future time. At that time, the surplus RECs will likely be sold and/or banked for future use.

FORECAST OF FUTURE REO/RES COMPLIANCE

At the time of this report, Otter Tail is just beginning construction of the 49.5 MW Luverne Wind Farm. Combined with energy output from the 48 MW the Company owns at the Ashtabula Wind Farm completed in late 2008 and energy output from the 60 MW the Company owns or purchases from the Langdon Wind Farm, Otter Tail is well positioned to comply with the renewable energy objectives and standards in all three states.

The following graph shows the Company's expected available renewable energy compared to the REO/RES requirements going out to 2020. The graph assumes that all RECs are counted in the year they are generated and are not banked for future compliance use. The graph does not include new customer-owned facilities that may be developed. Otter Tail is seeing significant customer interest in owning wind generation. The Company is obligated to purchase any renewable energy offered from customers under the federal Public Utility Regulatory Policies Act of 1978 (PURPA).

The North Dakota and South Dakota requirements are very similar and are combined in the graph. As demonstrated in the graph, Otter Tail expects by 2010 to have sufficient renewable energy available to comply with state REO/RES requirements until beyond 2020.



BARRIERS TO REO/RES COMPLIANCE

The most significant obstacles fall into four basic categories, including:

- Transmission
 - Interconnection queue
 - o Transmission delivery service
 - o LMP prices
- Developer knowledge
- Economic and financing issues

Interconnection Queue

The Midwest Independent Transmission System Operator (MISO) interconnection queue has been a major impediment to the development of any resources due to the significant backlog of requests. In late August 2008 the Federal Energy Regulatory Commission (FERC) approved revisions to the MISO interconnection queue process which Otter Tail believes will help to alleviate the backlog. It is expected that many projects that were simply attempting to reserve a spot in the queue will drop out, and future requests will more likely come from serious projects. Previously projects could submit a request and then remain in suspension for several years, tying up the queue. The ability to suspend a project in the queue is now limited to a much shorter term and only for force majeure reasons. All existing projects in the queue will need to transition to the new process, and MISO has issued a report detailing the status of each interconnection project and the required steps to complete the transition to the new process. The down side to the changes is that developers will have to be ready to make their application deposits and have other benchmarks in place in order to proceed in the new queue process.

<u>Transmission Delivery</u> – As a member of MISO, Otter Tail must have firm delivery transmission service for any project to count as a network resource. At the present time transmission service is severely hampered by transmission constraints and the ability to get delivery service is limited. Otter Tail has benefited from the fact that almost 100% of the Company's system is located to the west of the North Dakota Export Boundary, and

generation can generally be delivered to load without crossing that constraint. However, there are other wind projects being developed in the Otter Tail service territory for other utilities that are using up the available transmission service. Otter Tail is a part of the CAPX 2020 group proposing new major high voltage transmission. If approved and constructed, the CAPX 2020 transmission additions will not alone resolve transmission constraints. CAPX 2020 is studying the situation to determine what other new transmission resources are likely to be required.

LMP Prices

The Location Marginal Price (LMP) is beginning to be impacted by the magnitude of the wind development taking place. The lack of adequate transmission for delivery service is causing wind generation to be economically stranded at times of plentiful wind and less than peak loads. Otter Tail wind resources at times receive less than full MISO market price because of inadequate transmission to move the energy where it is needed. As a result, the LMP price at the wind farm declines and can become negative at times. Otter Tail has to pay MISO to keep the wind generation operating at those times. This situation is being exacerbated as the amount of wind generation on the system increases. Consequently, a portion of the generation value is jeopardized. The only cure is to increase transmission capability. The previously mentioned transmission project efforts will help to alleviate the situation, although even more transmission will be needed.

Developer Knowledge

The larger developers know what they are doing with wind development. Otter Tail has experienced difficulty with small developers, community-based wind developers, and customers who consider building wind generation. These entities generally do not have the background and have not spent the time to learn about wind generation prior to attempting a project.

Economic and Financing Issues

The recent economic downturn is hampering the development of renewable resources. Some major wind developers have already announced intentions to scale back their

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development plans for the near-term future. While Otter Tail has not seen any specific project delays or cancellations in wind projects yet, such actions are expected by most wind industry publications. Small wind development may especially be impacted in their efforts to obtain project financing.

SUMMARY

Otter Tail has stepped forward with its development of renewable resources for a variety of reasons and is completing new renewable energy facilities ahead of REO/RES requirements. The most recent Company integrated resource plan called for 160 MW of new wind generation. With the Luverne project, Otter Tail will have completed that amount of wind generation addition to the system. Part of the reason for accelerated implementation is economics, as the cost of wind generation is escalating at a rate as fast or faster than any other generating technology. Also, the federal PTC is not likely to be available for the long term, so Otter Tail is taking advantage by moving forward early. The PTC reduces the cost of wind generation by about 33%.

The Company has also taken advantage of significant wind development incentives in North Dakota. Currently those incentives also have a sunset provision, so early implementation of wind generation has accessed those incentives.

With the current renewable resources in existence and under construction, additional resources for REO/RES compliance will likely not be needed until some time after 2020. This forecast does not include counting the many small customer owned units currently being installed. There are many uncertainties going forward with all forecasts, including load growth, conservation efforts, and customer-owned renewable resources.

Otter Tail expects its next integrated resource plan, which is expected to be completed during the second half of 2009, to provide updated information regarding the long-term view of REO/RES compliance.

Dated this 1st day of July, 2009.

OTTER TAIL POWER COMPANY

By: <u>/s/ KERRY KASEMAN</u> Kerry Kaseman, Sr. Credit Administrator

		Existing Rene	ewable and	Recycled Gener	ating Facilities		
Name	State	kW Rating	Vintage	Technology	Power Source	Owned/PPA	State Eligibility
Customer A	MN	225	1997	Wind	Wind	PPA	MN, ND, SD
Customer B	SD	06	2002	Wind	Wind	APA	Tail <i>Winds¹³</i>
Hendricks	NW	006	2001	Wind	Wind	APA	Tail <i>Winds¹³</i>
Borderline	NW	006	2003	Wind	Wind	APA	MN, ND, SD
FPLE ND Wind II	ND	21,000	2003	Wind	Wind	PPA	MN, ND, SD
Customer C	ND	50	1985	Wind	Wind	APA	MN, ND, SD
FPLE Langdon	ND	19,500	2007	Wind	Wind	PPA	MN, ND, SD
OTP Langdon	ΠN	40,500	2008	Wind	Wind	Owned	MN, ND, SD
Ashtabula Wind	ΠN	48,000	2008	Wind	Wind	Owned	MN, ND, SD
Customer D1	NW	1,650	2005	Wind	Wind	APA	MN, ND, SD
Customer E	ΠN	660	2008	Wind	Wind	APA	MN, ND, SD
Customer F	NW	39.5	2008	Wind	Wind	APA	MN, ND, SD
Customer G	NW	39.5	2008	Wind	Wind	PPA	MN, ND, SD
Customer H	NW	39.5	2008	Wind	Wind	PPA	MN, ND, SD
Customer I	NW	35	2007	Wind	Wind	APA	MN, ND, SD
Customer J	NW	1.8	2008	Wind	Wind	APA	MN, ND, SD
Customer K	MN	1.8	2008	Wind	Wind	PPA	MN, ND, SD
Customer L	ΠN	20	2008	Wind	Wind	APA	MN, ND, SD
Customer T	NW	3	2008	Photovoltaic	Sun	APA	MN, ND, SD
Big Stone Plant	SD	245,784	1975	Steam	Biomass	Owned	ND, SD^{14}
Bemidji Hydro	MN	740	1907	Hydro	Water	Owned	MN
Taplin Gorge	NW	560	1925	Hydro	Water	Owned	NM
Hoot Lake	NM	1,000	1914	Hydro	Water	Owned	MN
Pisgah	NW	520	1918	Hydro	Water	Owned	MN
Wright	MN	400	1922	Hydro	Water	Owned	MN
Dayton Hollow	MN	980	1909	Hydro	Water	Owned	MN
WAPA Allocation	Several	5,566	Various	Hydro	Water	PPA	None
Manitoba Hydro	Manitoba	50,000	Various	Hydro	Water	PPA	None

Appendix A – Renewable and Recycled Energy Resources

¹³ At this time Tail*Winds* energy counts in ND and SD, but not MN. Tail*Winds* is the Company's green pricing tariff and the energy is counted only as customers purchase the energy, not as it is generated. ¹⁴ Only the biomass portion of the fuel is counted. For the January 1, 2008 – December 31, 2008 time period only about .04% of the fuel was biomass.

	Planned 8	and Expected F	uture Rene	wable and Recy	cled Generating F	acilities	
Name	State	kW Rating	Vintage	Technology	Power Source	Owned/PPA	State Eligibility
Luverne Wind	ΟN	49,500	2009	Wind	Wind	Owned	MN, ND, SD
Customer D2	NW	1,500	2009	Wind	Wind	PPA	MN, ND, SD
Customer D3	NW	1,500	2009	Wind	Wind	PPA	MN, ND, SD
Customer M	MN	20	2009	Wind	Wind	PPA	MN, ND, SD
Customer N	MN	250	2009	Wind	Wind	PPA	MN, ND, SD
Customer O	MN	1,500	2009	Wind	Wind	PPA	MN, ND, SD
Customer P	MN	7,000-8,000	2010	Binary Cycle	Waste Heat	PPA	ND, SD
Customer Q	MN	4,500	2010	Steam	MSW	PPA	MN
Customer R	NM	25	2009	Wind	Wind	PPA	MN, ND, SD
Customer S	MN	2.4	Unknown	Wind	Wind	PPA	MN, ND, SD

Appendix A – Renewable and Recycled Energy Resources

Appendix B – Calendar Year 2008 RREO Report

Retail Sales		
Total - All States (MWh)	4,215,442	
SD (MWh)	426,079	
Generation Canacity Owned		
Total - All States (MW/)	767 1	Pasad on nomenlate of owned generation facilities and does not count any contracted especity
SD (MW)	270.9	Based on nameplate of owned generation facilities and does not count any contracted capacity.
	210.5	based on namepiate of owned generation racinities and does not count any contracted capacity.
Renewable Generation Capacity Owned		
Total - All States (MW)		
Wind	88.5	
Solar	-	
New Hydro	-	
	4.2	
Biomase	- 245.8	Paprosents Big Stope Plant, which can burn biomass, generally < 1% of annual generation
Geothermal	-	represents big stone mant, which can burn biomass, generally < 176 of annual generation.
Recycled	-	
Total - All States (MW)	338.5	
SD (MW)		
Wind	-	
Solar	-	
Old Hydro	_	
Hudrogen	-	
Biomass	245.8	
Geothermal	-	
Recycled	-	
Total SD (MW)	245.8	
Denovichia Energy Credito Detired for SD		No Depayuphia Energy Cradita ware Datired for CD for 2000
Total Concreted In All States (MW/b)		No Renewable Energy Credits were Retired for SD for 2008.
Wind	_	
Solar	-	
New Hydro	-	
Old Hydro	-	
Hydrogen	-	
Biomass	-	
Geothermal	-	
Recycled	-	
Total - All States (MWh)	-	
Generated in SD (MWh)		
Wind	-	
Solar	-	
New Hydro	-	
Old Hydro	-	
Hydrogen	-	
Biomass	-	
Geothermal	-	
Recycled	-	
Total SD (MWh)	-	
Renewable Energy Credits Retired for Other States Total - Generated In All States (MWh)		
Wind	-	
Solar	-	
New Hydro	-	
Uld Hydro	21,794	
Hydrogen	-	
Diomass	-	
Recycled	-	
Total - All States (MWh)	21,794	

Appendix B – Calendar Year 2008 RREO Report

Calendar Year 2008 RREO Report	Value	Comments
Generated In SD (MWh)		
Wind	-	
Solar	-	
New Hydro	-	
Old Hydro	-	
Hydrogen	-	
Biomass	-	
Geothermal	-	
Recycled	-	
Total SD (MWh)	-	
Conserved Energy & Capacity		
Conserved Energy (MWh)		
Total - All States	16,130	
SD	135	
Conserved Capacity (MW)		
Total - All States	3.5	
SD	0.1	