

**BASIN ELECTRIC  
POWER COOPERATIVE**

1717 EAST INTERSTATE AVENUE  
BISMARCK, NORTH DAKOTA 58503-0564  
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June 17, 2009

**RECEIVED**

Ilona A. Jeffcoat-Sacco  
Executive Director  
North Dakota Public Service Commission  
600 E. Boulevard, Dept. 408  
Bismarck, ND 58505-0480

JUN 18 2009

**PUBLIC SERVICE COMMISSION**

**Re: Basin Electric Power Cooperative – North Dakota Renewable Energy and Recycled Objective Report**

Dear Ms. Jeffcoat-Sacco:

Enclosed please find Basin Electric Power Cooperative's Renewable Energy and Recycled Objective Report per N.D. Cent. Code Chapter 49-02-34 (2009). This report is filed on behalf of the following members within North Dakota:

- Capital Electric Cooperative
- Central Power Electric Cooperative, a wholesale electrical generation and transmission cooperative who supplies power to the following members: Dakota Valley Electric, McLean Electric Cooperative, North Central Electric Cooperative, Northern Plains Electric Cooperative, and Verendrye Electric Cooperative.
- KEM Electric Cooperative
- Mor-Gran-Sou Electric Cooperative
- Roughrider Electric Cooperative
- Upper Missouri G&T Electric Cooperative a wholesale electrical generation and transmission cooperative who supplies power to the following members: Burke-Divide Electric Cooperative, Goldenwest Electric Cooperative, Lower Yellowstone Rural Electric Association, McKenzie Electric Cooperative, Mountrail-Williams Electric Cooperative, Sheridan Electric Cooperative, and Slope Electric Cooperative.

Should you have any questions regarding this report, please feel free to contact me at (701) 557-5413 or [cjacobson@bepc.com](mailto:cjacobson@bepc.com).

Sincerely,

Casey J. Jacobson  
Attorney, Office of General Counsel  
Basin Electric Power Cooperative

cc by e-mail:

Lars Nygren, Capital Electric Cooperative  
Tom Meland, Central Power Electric Cooperative  
Kenneth Berreth, KEM Electric Cooperative  
Don Franklund, Mor-Gran-Sou Electric Cooperative  
Clayton Hoffman, Roughrider Electric Cooperative  
Tom Barnett, Upper Missouri G & T Electric Cooperative

Wayne Backman  
Dave Raatz  
Ron Rebenitsch  
Jeremy Woeste  
Kathy Weisenberger

**Basin Electric Power Cooperative**  
**North Dakota Renewable Energy Objective Report**  
**June 17, 2009**

**I. Introduction**

N.D. Cent. Code Chapter 49-02-34 (2009) provides that, "Commencing on June 30, 2009, retail providers shall report annually on the provider's previous calendar year's energy sales. This report must include information regarding qualifying electricity delivered and renewable energy and recycled energy certificates purchased and retired as a percentage of annual retail sales and a brief narrative report that describes steps taken to meet the objective over time and identifies any challenges or barriers encountered meeting the objective. The last annual report must be made on June 30, 2016. Retail providers shall report to the public service commission, which shall make data and narrative reports publicly available and accessible electronically on the Internet. Distribution cooperatives may aggregate their reporting through generation and transmission (G&T) cooperatives."

Basin Electric Power Cooperative (**Basin Electric**) provides power to the following entities and their members in North Dakota:

- Capital Electric Cooperative
- Central Power Electric Cooperative a wholesale electrical generation and transmission cooperative who supplies power to the following members: Dakota Valley Electric, McLean Electric Cooperative, North Central Electric Cooperative, Northern Plains Electric Cooperative, and Verendrye Electric Cooperative.
- KEM Electric Cooperative
- Mor-Gran-Sou Electric Cooperative
- Roughrider Electric Cooperative
- Upper Missouri G&T Electric Cooperative a wholesale electrical generation and transmission cooperative who supplies power to the following members: Burke-Divide Electric Cooperative, Goldenwest Electric Cooperative, Lower Yellowstone Rural Electric Association, McKenzie Electric Cooperative, Mountrail-Williams Electric Cooperative, Sheridan Electric Cooperative, and Slope Electric Cooperative.

In addition, Basin Electric sells power at the retail level to a subsidiary, Dakota Gasification Company.

Capital Electric Cooperative, KEM Electric Cooperative, Mor-Gran-Sou Electric Cooperative, Roughrider Electric Cooperative, Central Power Electric Cooperative, Upper Missouri G&T Electric Cooperative and all of their distribution members elected to aggregate their REO resources.

**II. REO Activities**

To achieve the renewable energy objective Basin Electric and its members plan to use the following "ramp up" schedule to meet the voluntary objective that 10% of all electricity sold

at retail by 2015 be obtained from statutorily defined renewable or recycled energy resources.

YEAR	2008	2009	2010	2011	2012	2013	2014	2015
% of	1.25%	2.5%	3.75%	5%	6.25%	7.5%	8.75%	10%

Basin Electric has retired the green tags associated with Basin Electric North Dakota sales to cooperative members North Dakota Midwest Renewable Energy Tracking System (M-RETS) sub-account for the January 1, 2008 through December 31, 2008 reporting period. For verification of this retirement, please see Exhibit 1.

The following table reflects the North Dakota MWh sales and the ND REO for the 2008 reporting period.

<u>2008 Reporting Period:</u>	<u>BEPC MWh Sales</u>	<u>REO%</u>	<u>Green Tags</u>
<b>Total Basin Electric Member Sales:</b>	14,071,282		
<b>Total Basin Electric North Dakota Member Sales:</b>			
Capital Electric Cooperative, Inc.	191,880	1.25%	2,399
Central Power Electric Cooperative	1,409,377	1.25%	17,617
Dakota Gasification Company	1,003,970	1.25%	12,550
KEM Electric Cooperative	42,841	1.25%	536
Mor-Gran-Sou Electric Cooperative	125,107	1.25%	1,564
Roughrider Electric Cooperative	431,182	1.25%	5,390
Upper Missouri G&T Electric Cooperative	1,222,985	1.25%	15,287
<b>Total North Dakota Sales</b>	<b>4,427,342</b>		<b>55,342</b>

### III. Basin Electric Owned or Purchased Renewable Resources

#### Wind Generation

Basin Electric currently owns four wind turbines located near Minot, ND and Chamberlain, SD with a total of 5.2 MW and purchases 100 percent of the output and owns all the environmental attributes unless otherwise noted from:

- NextEra Energy Power & Light owned wind farm located near Edgeley, ND, 40 MW
- NextEra Energy Power & Light owned wind farm located near Wilton, ND, 49.5 MW
- NextEra Energy Power & Light owned wind farm located near and Highmore, SD, 40 MW
- Rosebud Sioux Tribe Wind Project in SD (environmental attributes retained by owner), 0.75 MW
- Pipestone School Wind Project at Pipestone, MN, 0.75 MW

Along with renewable energy purchases from a number of very small consumer wind and solar projects, Basin Electric is developing the additional 270 MW of wind projects listed below:

PrairieWinds ND 1, Inc. (PWND1) a for-profit subsidiary of Basin Electric, was established on February 13, 2008, to build and operate wind generation in North Dakota. PrairieWinds will have two projects to begin with; (i) the PrairieWinds ND 1 wind farm will be located approximately 14 miles south of Minot along U.S. Highway 83. Construction on the 77 turbine wind farm is expected to begin in 2009 with commercial operation in 2010 with a maximum wind output of 115.5 MW. (ii) The Minot 2 Wind Project consists of three additional turbines for a total of 4.5 MW that will be added to the current Minot, ND site. Construction is expected to begin in 2009 with commercial operation in early 2010.

PrairieWinds SD 1, Inc. (PWSD1) a for-profit subsidiary of Basin Electric, was established on February 13, 2008, to build and operate wind generation in South Dakota. Planning for the PWSD1 is progressing, with construction beginning in 2010 and commissioning in late 2010 or early 2011 with a maximum wind output of 150 MW.

### **Recycled Energy Generation**

Basin Electric purchases the energy from four Recycled Energy Generation (REG) power plants "fueled" by hot exhaust off the Northern Border Pipeline compressor stations with one unit in North Dakota and three units in South Dakota, for a total generating capacity of about 22 MW. The natural gas fired compressor stations keep the gas moving inside the pipeline. These compressors are normally 35,000-40,000 horsepower gas turbines that release roughly 900 degree exhaust gases during operation. By installing a heat exchanger in the exhaust stream and using that recovered heat in an organic Rankine cycle attached to a turbine generator set, approximately 5.5 MW of electricity is available at each site. The generation is environmentally benign, using virtually no additional fuel and producing virtually zero emissions. Basin Electric has signed a 25-year contract with the developer for the output of these four sites. Basin Electric has signed an additional contract with the developer for four more sites to be operational in 2009. There will be one site each in Montana and Minnesota and two sites in North Dakota. In addition to the existing 22 MW of recovered energy, these additional sites add a combined output of 22 MW or 5.5 MW each, for a total of 44 MW of recovered energy.

## **IV. REO Challenges and Barriers Encountered**

### **Transmission.**

Obtaining transmission service has been and continues to be a major obstacle in the development of renewable generation. For wind energy, transmission issues are compounded by the fact that wind's intermittency and low capacity factor make those resources less able to bear the burden of transmission upgrades.

### **Costs.**

In the last five years, the cost of wind projects has increased by roughly 220 percent. The current economic turmoil has resulted in a leveling of the cost increases, but costs remain high.

**V. REO Potential Solutions.**

System wide average pricing across a broad region for existing and new transmission appears to be the most practical and feasible method for achieving significant transmission upgrades in the foreseeable future.



# CERTIFICATES IN SUBACCOUNT

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Action	SubAccount	SubAccount ID	Retirement Types	M-RETS ID	Generating Facility	Fuel Type	Certificate Vintage	Certificate Serial Numbers	Quantity	IL	IA AEP	IA Voluntary Green	MB	MN	MN CBED	MT	ND	SD	WI RPS	WI REC Eligible	Muni COTI Certification	Green-Energy	Ecologo Certified	Hydro Certification	WI RRC Certificate		
Transfer	ND REO 2008 BEPC Retirement	885	RPS	M257	FPL Energy North Dakota Wind LLC - Edgeley/Kulm Wind Project	Wind	8/2008	257-ND-08-2008-2767-3500 to 7316	3,817	No	No	No	No	Yes	No	Yes	Yes	Yes	No	No	No	Yes	No	No	No	No	
Transfer	ND REO 2008 BEPC Retirement	885	RPS	M444	Woodland Waste Heat Recovery - OREG1 CS10	WHR	12/2008	444-SD-12-2008-3789-1 to 2690	2,690	No	No	No	No	Yes	No	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No
Transfer	ND REO 2008 BEPC Retirement	885	RPS	M444	Woodland Waste Heat Recovery - OREG1 CS10	WHR	11/2008	444-SD-11-2008-3570-1 to 1616	1,616	No	No	No	No	Yes	No	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No
Transfer	ND REO 2008 BEPC Retirement	885	RPS	M445	Hidewood Waste Heat Recovery - OREG1 CS11	WHR	11/2008	445-SD-11-2008-3571-1 to 1628	1,628	No	No	No	No	Yes	No	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No
Transfer	ND REO 2008 BEPC Retirement	885	RPS	M445	Hidewood Waste Heat Recovery - OREG1 CS11	WHR	10/2008	445-SD-10-2008-3290-1 to 4024	4,024	No	No	No	No	Yes	No	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No
Transfer	ND REO 2008 BEPC Retirement	885	RPS	M445	Hidewood Waste Heat Recovery - OREG1 CS11	WHR	8/2008	445-SD-08-2008-1287 to 3234	1,948	No	No	No	No	Yes	No	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No
Transfer	ND REO 2008 BEPC Retirement	885	RPS	M445	Hidewood Waste Heat Recovery - OREG1 CS11	WHR	12/2008	445-SD-12-2008-3790-1 to 2300	2,300	No	No	No	No	Yes	No	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No
Transfer	ND REO 2008 BEPC Retirement	885	RPS	M445	Hidewood Waste Heat Recovery - OREG1 CS11	WHR	9/2008	445-SD-09-2008-3230-1 to 2504	2,504	No	No	No	No	Yes	No	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No
Transfer	ND REO 2008 BEPC Retirement	885	RPS	M442	St. Anthony Waste Heat Recovery - OREG1 CS7	WHR	12/2008	442-ND-12-2008-3787-1 to 3119	3,119	No	No	No	No	Yes	No	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No

