

**BASIN ELECTRIC  
POWER COOPERATIVE**

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BISMARCK, NORTH DAKOTA 58503  
PHONE: 701-223-0441 FAX: 701-557-5336



October 25, 2013



Cara DeSaye  
North Dakota Public Service Commission  
600 East Boulevard Avenue, Dept. 408  
Bismarck, ND 58505

RE: NDPSC Case Number PU-13-793 (Basin Electric Power Cooperative Wind Turbine  
Decommissioning Investigation)

Dear Ms. DeSaye:

Referenced is your letter dated September 30, 2013, requesting the submittal of updated decommissioning information for the Minot Wind Project.

The requested information is enclosed. If you have any questions or concerns regarding this matter, please contact me at 701.557.5495.

Sincerely,

A handwritten signature in blue ink that reads "Kevin L. Solie".

Kevin L. Solie  
Senior Water Quality/Waste Management Coordinator

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Enclosure

cc: Kevin Tschosik

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**Updated decommissioning plan and cost estimate**



# **Minot Wind Project Decommissioning Plan and Cost Estimate**

## **Introduction**

PrairieWinds ND1, Inc. a wholly-owned subsidiary of Basin Electric Power Cooperative (Basin Electric,) owns and operates two wind energy facilities in North Dakota, Minot Wind Project and PrairieWinds ND1. Minot Wind Project consists of two (2) NORDEX 1.3 megawatt (MW) turbines on 60-meter steel towers installed in 2002 and three (3) 1.5 MW General Electric (GE) turbines on 80-meter steel towers installed in 2009. PrairieWinds ND1, consists of seventy-seven (77) 1.5 MW GE turbines on 80-meter steel towers also installed in 2009.

Basin Electric provided a decommissioning plan and cost estimate to the PSC for the combined Minot Wind and PrairieWinds ND1 Projects (82 wind turbines total) in March 2010. Given the relatively large number of turbines and thus economy of scale, per turbine cost for decommissioning and reclamation amounted to approximately \$40,000. Decommissioning costs were envisioned to be entirely offset by the scrap values of steel, aluminum, and copper salvaged from the facility.

The NORDEX turbines at the Minot Wind Project have been in service 10 years. As such, this decommissioning plan and cost estimate applies only to the NORDEX turbines. Decommissioning activities would be the same as described in the March 2010 submittal. Total estimated decommissioning cost per turbine increases significantly, however, since mobilization costs are shared among only two turbines, rather than 82 as in the original estimate. The decommissioning cost per turbine is estimated at \$75,720, while salvage value is estimated at approximately \$42,000, leaving a net deficit of approximately \$33,720 per turbine. A description of decommissioning activities and cost assumptions are provided below.

## **Decommissioning Activities**

Decommissioning and site restoration would include dismantling and removal of all towers, turbine generators, transformers, and overhead cables; removal of underground cables to a minimum depth of twenty-four inches; removal of foundations, buildings, and ancillary equipment to a minimum depth of three feet and removal of surface road material and restoration of the roads and turbine sites to substantially the same physical condition that existed immediately before construction of the commercial wind energy conversion facility or wind turbine in accordance with NDAC 69-09-09. Access roads will be removed unless the affected landowner provides written notice requesting the road or portions of the road be retained.

The site will be restored and reclaimed to the same general topography that existed just prior to the beginning of the construction. Areas disturbed by the construction of the facility and decommissioning activities would be graded, top-soiled, and reseeded according to natural

resource conservation service technical guide recommendations and other agency recommendations again in accordance with NDAC 69-09-09.

Decommissioning would begin within eight (8) months after the facility reaches the end of its useful life, as determined in NDAC 69-09-09-03, and would be completed within eighteen (18) months from the onset of decommissioning activities.

### Decommissioning Cost and Funding

Estimated costs for decommissioning are depicted in the following table:

				Per Turbine
Crane Mobilization		\$ 25,000		\$ 12,500
Crane Demobilization		\$ 25,000		\$ 12,500
Crane Rental per week		\$ 25,000		\$ 25,000
Demolition of Turbine Pedestal			3 days each site	
	Backhoe Jackhammer	\$ 150	per hour	\$ 3,600
	Operator	\$ 70	per hour	\$ 1,680
	Truck	\$ 50	per hour	\$ 1,200
	2 laborers	\$ 50	per hour	\$ 1,200
Trucks to remove Turbine Components				\$ 10,000
Surface Reclamation	Days Required		2 days each site	
	Grader	\$ 150	per hour	\$ 2,400
	Operator	\$ 70	per hour	\$ 1,120
	Wheel loader	\$ 120	per hour	\$ 1,920
	Truck to remove gravel	\$ 50	per hour	\$ 800
	2 Laborers	\$ 50	per hour	\$ 800
Surface Area to be Seeded		Sq. Ft		
Disturbed area around turbine		2,000		
Road Reclamation	Assume 400 feet	16,000	0.41 Acres	\$ 1,000
				\$ 75,720

Notes: Underground cable is 4 feet below surface and assumed to be left undisturbed.

Roughly 210 tons of salvage steel per turbine are available. At a salvage steel price of \$180 per ton, the salvage value is estimated to be \$42,000 per turbine. In addition, copper and aluminum components would also be salvaged, but as this is meant to be a conservative estimate, the values of these metals are not included. Further, it must be acknowledged that commodity prices fluctuate.

The estimated total cost for decommissioning two turbines is \$151,440. The estimated value of the salvage steel is \$84,000. Accordingly, \$67,440 would be required to complete decommissioning and restoration of the two NORDEX turbines at Minot Wind project. The cost of decommissioning would be paid for using funds from internally generated cash flows.