MONTANA-DAKOTA UTILITIES CO.
A Division of MDU Resources Group, Inc.

Before the Public Service Commission of North Dakota

Case No. PU-10-___

Direct Testimony
of
Darcy J. Neigum

Q. Please state your name and business address.

A. My name is Darcy J. Neigum and my business address is 400 North Fourth Street, Bismarck, North Dakota 58501.

Q. By whom are you employed and in what capacity?

A. I am the System Operations and Planning Manager of Montana-Dakota Utilities Co. (Montana-Dakota), a Division of MDU Resources Group, Inc.

Q. Please describe your duties and responsibilities with Montana-Dakota.

A. I have manager responsibility for the evaluation and development of new generation resources as well as overseeing the day-to-day operations of the electric control center and system operations planning department. The system operations planning department is responsible for electric resource planning and expansion studies for the Company.

Q. Please outline your educational and professional background.

A. I hold a Bachelor's Degree in Electrical and Electronics Engineering from North Dakota State University as well as a Masters of

Business Administration from the University of Mary. My work experience includes four years as a nuclear plant operator for Westinghouse Electric, three years of experience as a plant engineer for a coal-fired plant in North Dakota, and eleven years of generation development and operational responsibilities which included coal-fired, gas-fired, and renewable generation sources. Over the last ten years, I have been responsible for project management and construction of a 220 MW gas-fired generator in Brazil, a 43 MW gas-fired generator in Montana, a 120 MW coal-fired generator in Montana, 30 MW of wind generation in Montana, 20 MW of wind generation in North Dakota, and a 5 MW heat-recovery generation project in North Dakota. I was also responsible for executive oversight of the operation and technical support for MDU Resources Group's independent power generation business unit prior to its sale in 2007.

Q. What is the purpose of your testimony in this proceeding?

A. The purpose of my testimony is to document the changes in wholesale sales that Montana-Dakota has experienced as a result of its participation in the Midwest ISO Energy Market and to describe the new resource additions that Montana-Dakota has made with respect to supply side generating stations over the past five years.

Q. Please describe the changes in wholesale sales that Montana-Dakota has experienced since 2003?

A. The expiration of a long term purchase contract with Basin Electric occurring in October 2006 coupled with the startup of the Midwest ISO Energy Market on April 1, 2005, significantly changed Montana-Dakota's

opportunities for wholesale sales of excess electric energy. Montana-Dakota's historical ability to enter into traditional bilateral arrangements was replaced with day ahead and real-time offering of available energy into the Midwest ISO Energy Market. The Midwest ISO Energy Market dispatches all available generation resources to meet system reliability requirements and minimize the purchased price of energy to load serving entities on a day ahead and real time basis.

Since the startup of the Midwest ISO Energy Market, Montana-Dakota has seen a drop in wholesale sales as compared to the pre-energy market days. The majority of Montana-Dakota's wholesale sales occurs during off-peak system hours and come from the sale of coal-based generation not utilized to serve Montana-Dakota customer load.

The table below is a summary of Montana-Dakota's historical wholesale sales showing the MWh volumes, revenue, margin and margin per MWh from 2003 through 2009 and the decline discussed above.

Wholesale Sales	2003	2004	2005	2006	2007	2008	2009
MWh	841,637	821,516	615,220	483,943	165,638	223,777	90,788
Revenue	$24,438,532	$26,469,193	$24,136,379	$6,138,964	$5,700,088	$8,043,463	$2,239,005
Margin	$11,752,321	$13,548,491	$15,747,791	$9,847,352	$3,286,769	$4,593,278	$604,256
Margin per MWh	$13.96	$16.49	$25.60	$20.35	$19.84	$ 20.53	$6.65

During the same period of 2003 to 2009, Montana-Dakota's retail sales have increased by an average of 61,140 MWh per year or 2.6 percent per year. This increase in customer load and the loss of the AVS-II contract has decreased the amount of energy that Montana-Dakota has available for wholesale sales.

With the financial market collapse and corresponding demand destruction in parts of the Upper Midwest and Midwest ISO footprint, Montana-Dakota's wholesale sales dropped significantly in 2009 as the average Midwest ISO load dropped five percent or more. The installation of intermittent, primarily wind, generation resources in the Midwest ISO footprint has also reduced Montana-Dakota's ability to make off-peak wholesale sales. This additional off-peak generation has pushed typically base load coal-fired generation down to minimum generation levels during off-peak periods when Montana-Dakota historically saw its greatest opportunity for wholesale sales. In 2009, Montana-Dakota saw frequent minimum generation events and negative system pricing during off-peak periods during the shoulder months and weekends. As of October 2009, the Midwest ISO had a total installed wind capacity of 7,472 MW. This number will continue to increase until the renewable portfolio standard targets for the Midwest ISO load are met.

The Midwest ISO's Energy Market was replaced by the Midwest ISO's Ancillary Service Market (ASM) on January 6, 2009. The startup of the ASM reduced the amount of generation resources held in reserve for regulation, spin, and supplemental requirements by over 1,000 MW

according to the Midwest ISO. This allowed additional generation to access the energy market and further reduced Montana-Dakota's opportunities for wholesale sales.

Montana-Dakota has offered its generation units capable of supplying regulation, spin, and supplemental into the ASM market but has seen minimal revenue from offering these services. Going forward, Montana-Dakota expects to see continued decreased wholesale sales and margins as compared to historical levels. For 2010, based on forecasted plant outages and unit availabilities, Montana-Dakota is forecasting wholesale sales of 122,768 MWh, an annual margin of $667,752, and an average margin per sale of $5.37 per MWh.

Q. What generating resource additions has Montana-Dakota made since 2003?

Since 2003, Montana-Dakota has made several new generating resource additions including: a 19.5 MW Wind Project named Diamond Willow which commenced commercial operation in February of 2008, a 5.3 MW heat recovery generating station named Glen Ullin Station #6 which commenced commercial operation in July of 2009, a 19.5 MW Wind Project named Cedar Hills which is scheduled to begin commercial operation in June of 2010, and a 10.5 MW expansion to the Diamond Willow Wind Project which is scheduled to begin commercial operation in June of 2010.

All resource additions were included in Montana-Dakota's most recent filed Integrated Resource Plan dated July 1, 2009.

Q Please describe the Diamond Willow Wind Project?

A. The 19.5 MW Diamond Willow Wind Project, located southeast of Baker, Montana began construction in 2007 and consists of 13 General Electric (GE) wind turbines each rated at 1.5 MW. The Diamond Willow Wind Project began commercial operation in February of 2008 and has been serving the integrated system customers since that time.

Montana-Dakota issued a Request for Proposal (RFP) during the spring of 2007 seeking renewable resources that would qualify for the State of Montana Renewable Portfolio Standard (Montana RPS). As part of the RFP, a developer offered the rights to the Diamond Willow Wind Project to Montana-Dakota which was ultimately selected as the winning proposal from the RFP. Montana-Dakota purchased the wind turbines and substation equipment for the project and hired a general contractor to construct the project roads, foundations and erect the wind turbines.

The Diamond Willow Wind Project connects to Montana-Dakota's 57 kV transmission system which runs through the project site. Diamond Willow achieved an annual capacity factor of 39.6 percent in 2009 and a capacity factor of 39.1 percent for the last ten months of 2008.

Montana-Dakota employs two wind technicians who perform all the operation and maintenance for the Diamond Willow project.

The Diamond Willow project was build for $39.4 million which included the cost of the turbines, associated substation, and transmission interconnection facilities.

The 10.5 MW Diamond Willow expansion project began construction in 2009 and consists of 7 GE wind turbines each rated at 1.5 MW. The Diamond Willow expansion project is scheduled to begin commercial operation in June of 2010. The estimated cost of the expansion is $25.4 million which includes turbine equipment, substation facilities, and transmission interconnection costs.

The interconnection substation for Diamond Willow was expanded with a third 10 MVA transformer to accommodate the expansion project.

Q. Please describe the Glen Ullin heat recovery project?

A. The Glen Ullin heat recovery project, named Glen Ullin Station #6, is a 5.3 MW heat recovery generating facility located near Glen Ullin, North Dakota. The Glen Ullin generating station is interconnected with the exhaust stack of the Northern Border Compressor Station #6.

Glen Ullin generating station takes the exhaust of the Northern Border Compressor Station and passes it through a newly installed heat exchanger located in the exhaust path of the turbine for the compressor station. This heat exchanger heats a closed loop oil system which in turn vaporizes and superheats a volatile pentane liquid which in turn drives a turbine and generator. The exhaust of the turbine is sent to an air-cooled condenser where the pentane gas is cooled and condensed back into a liquid.

The Glen Ullin generating station is expected to generate an average of 5.3 MW without the combustion of any additional fuel. The only fuel combusted on-site is used to drive the Northern Border gas

compressor which does not require any additional fuel to support the Montana-Dakota generating equipment. The Glen Ullin Station #6 is considered an intermittent resource because it is only capable of generating if the Northern Border compressor station is operating.

Montana-Dakota has a waste heat purchase and lease agreement with Northern Border. The initial term of the Northern Border agreements is for a 20 year period, with five year extension options available.

Ormat Technologies (Ormat) supplied the equipment and constructed the generating facilities for the Glen Ullin project under an Engineering, Procurement, and Construction Agreement. Ormat is contracted to be the operator for the Glen Ullin generating station for a five year period.

The total cost of Glen Ullin Station #6 was $16.7 million which included the cost of the generating equipment, associated substation, and transmission interconnection facilities. Glen Ullin Station #6 is expected to have an annual capacity factor of 67 percent.

Glen Ullin Station #6 connects to Montana-Dakota's 41.6kV transmission system at the newly constructed Glen Ullin Rodeo Substation.

Q. Please describe the Cedar Hills Wind Project?

A. Cedar Hills Wind is a 19.5 MW wind project, located west of Rhame, North Dakota that Montana-Dakota developed based on experience received during the development and construction of the original Diamond Willow project.

Montana-Dakota looked to develop a new wind project in the vicinity of Diamond Willow for several reasons.

The Diamond Willow project has exhibited that an excellent wind resource exists around the Baker, Montana area. As noted earlier, Diamond Willow's 2009 annual capacity factor was 39.6 percent, and its ten month 2008 capacity factor was 39.1 percent. Also impressive is a wind profile at the Diamond Willow that matches Montana-Dakota's customer load pattern. Most Midwest ISO wind projects generate the majority of their wind output during off-peak hours when customer demand is low.

Siting another wind project near Diamond Willow allows for synergies between the two projects including the sharing of personnel, facilities, tools, and parts.

The Diamond Willow project is located on a Montana-Dakota 57kV transmission circuit which has limited interconnection capability compared to higher voltage transmission facilities. The benefit to utilizing 57kV transmission facilities is the lower cost of interconnection compared to higher voltage facilities. Cedar Hills provides diversity from Diamond Willow by being located on a separate 57kV transmission facility than Diamond Willow.

The Federal Production Tax Credit (PTC) for wind was set to expire in 2009 when Montana-Dakota started looking to develop a new wind project. The PTC provides a tax credit of $21 per MWh of production for a ten year period for qualifying wind generating facilities. Cedar Hills and the

Diamond Willow expansion will both qualify and be eligible for the current PTC. The PTC's will provide a significant savings to Montana-Dakota's customers. The PTC eligibility is currently set to end on December 31, 2012.

Under the Midwest ISO transmission siting and planning practices, available transmission capacity to support new interconnects is allocated on a first come first serve basis. Utilizing the existing capabilities of the transmission system in the Baker and Rhame area, Montana-Dakota is able to efficiently and economically interconnect renewable generation sources onto the existing transmission system before the 2,700 MW of wind projects in the Midwest ISO queue planned to interconnect onto Montana-Dakota's system take up all the available transmission interconnection capability.

The Cedar Hills Project, consisting of 13 GE wind turbines each rated at 1.5 MW, began construction in 2009 and is scheduled to begin commercial operation in June of 2010. The estimated cost of Cedar Hills is $47.4 million which includes turbine equipment, substation facilities, and transmission interconnection costs.

Q. Would you explain how the generation resources you just described will be used to meet the various renewable objectives and requirements applicable in Montana-Dakota service territories?

Yes. The Cedar Hills Wind Project, the Diamond Willow and Diamond Willow expansion projects, along with the Glen Ullin project, will be utilized to help meet the North Dakota and South Dakota Renewable

Objectives and Montana RPS requirements. The North Dakota and South Dakota Renewable Objectives both target that ten percent of customer's energy requirements should come from renewable sources of generation by 2015. The Montana RPS requires five percent of the electricity to serve Montana customers to come from renewable sources beginning in 2008. The Montana RPS requirement increases to ten percent in 2010 and 15 percent in 2015.

Q. **What percentage of Montana-Dakota's energy will come from renewable sources of generation when Cedar Hills and Diamond Willow expansion come online?**

A. 7.3 percent of Montana-Dakota's 2011integrated system customer energy requirements are forecasted to come from the renewable generating sources of Diamond Willow, Cedar Hills, and Glen Ullin Station #6.

Q. Does this conclude your direct testimony?

A. Yes, it does.