



Project Profile: Pincher Creek, Canada

Project name:	Pincher Creek Wind Farm.
Owner:	Canadian Hydro.
Contractor:	Nordex Energy GmbH, Canadian Hydro.
Power utility:	EPCOR.
Installed capacity:	26,000 kW.
Wind turbine type:	N60/1300 kW.
Tower height and type:	45 m. tubular tower.
Number of wind turbines:	20.
Wind speed:	The estimated average wind speed is 9 m/s.
Site:	The wind farm is situated in Pincher Creek, Alberta, Western Canada
Site description:	The wind farm must deal with less than hospitable climatic conditions. Pincher Creek experiences bitterly cold weather in winter.
Wind turbine siting:	The wind farm is close to the Rocky Mountains.
Wind turbine description:	The 20 x N60/1300 kW wind turbines in Pincher Creek are all equipped with Nordex's special cold climate technology.
Building Period:	August – December 2001.
Grid connection:	December 2001.
Extent of delivery:	Nordex was responsible for the supply, supervision of installation and supervises the maintenance.
Calculated annual power output:	71,120,000 kWh
Maintenance:	Nordex Energy GmbH.
Warranty period:	5 years.

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In 2001 Nordex successfully completed a new project in North America. In Pincher Creek, Canada, 20 Nordex N60/1300 kW wind turbines have been hooked up to the electricity grid.

With the installation of 20 x N60 wind turbines at the Pincher Creek wind park in Alberta, the Nordex Group has completed its first project in Canada on schedule. The Nordex turbines supplement the existing Canadian Hydro Developers Inc. units already in operation at the Pincher Creek wind park. The N60 wind turbines have an output of 1.3 MW each, making them almost 3.5 times more powerful than the existing 57 units. With their total output of 26 megawatts, they have boosted the wind park's capacity by a factor of more than 4.6. Moreover, the Nordex N60s were the most powerful wind turbines in operation in Canada at the time of the installation.

Certified for regions with strong wind conditions, the stall-controlled Nordex wind turbines have a rotor diameter of 60 meters. As a result, they are ideal for the average wind speeds of 9 meters per second prevailing at Pincher Creek. Fitted with special "cold climate" technology for permafrost regions, they are configured to handle cold winters with temperatures dropping to as low as minus 30 degrees.

„Canadian Hydro is very excited to announce the extension of our existing wind plant in Pincher Creek, Alberta, with 20 of Nordex's 1.3 MW wind turbines“, stated John Keating, Chief Executive Officer of Canadian Hydro. „This extension is unique as the power will be sold on the Alberta spot market. As such,

it is the largest merchant plant not only in Canada, but in all of North America to date,“ continued Keating. „The unique challenges posed by operating a merchant wind power plant can be addressed by Canadian Hydro due to our extensive experience in Canada's electricity market.”

Canadian Hydro had overseen the construction of the civil/electrical works and assembly of the turbines with the guidance and advice of Nordex. „For Canadian Hydro, this first-of-its-kind wind plant fits in well with a company which has continuously sought out opportunities to deliver clean, economical power to the grid,“ emphasized Keating, who recently received the inaugural National Award in Public Affairs for Management from the Arthur Kroeger College at Carleton University, recognizing innovation and creativity in making Canada a better place to live. „Because of the unique aspects of this project, we wanted to go with a large, established and customer-oriented wind turbine manufacturer that had a lot of working machines in the field – Nordex was a natural selection“, stated Keating.

In the beginning of July 2001, the first load for Pincher Creek consisting of nacelles and towers for 10 x N60/1300 kW turbines were shipped from Århus Port, Denmark, to Thunder Bay Port in Ontario, Canada.

The wind turbines arrived at the Canadian harbour on Lake Ontario three weeks later at the end of July 2001, after a long journey across the Atlantic Ocean and along the Saint Lawrence River, down to the Great Lakes. Trucks transported the turbines the rest of the way from Thunder Bay to Pincher Creek. The

blades for the turbines arrived to Pincher Creek from LM in North Dakota, USA. In August 2001, the erection crew started to install the ten machines while the rest of the wind turbines were shipped from the harbour in Bremen, Germany, directly to Houston, USA. The last turbines arrived in Houston in the beginning of October 2001.

15 wind turbines have been placed at the Cowley Ridge site and about 5 kilometres away, at the Sinnott site, the last 5 Nordex wind turbines have been installed. Nordex was responsible for the supply and the commissioning of the turbines as well as for the supervision of the installation and the maintenance. The maintenance is being performed by the existing crews (Cowley Ridge Wind Power, Inc.) that maintain other wind turbines in the area. The 20 x N60/1300 kW wind turbines have been sold with the 5-year Nordex warranty package, and with the favourable average wind speed of approximately 9 m/s., there are great expectations for the output of one of the largest wind farms so far in this area.

