

Cypress Wind Power Facility

Generating capacity	11 MW
Mean annual output	34 million kW.h
Mean annual wind speed	30 kilometres/hour

Wind turbine characteristics

Manufacturer and model	Vestas V47 – 660
Rated output	660 kW
Rotor diameter	47 metres
Blade length	23 metres
Number of blades	3
Rotor speed	28.5 revolutions/minute
Generator speed	1800 revolutions/minute
Operational wind speed	15 – 90 kilometres/hour

Steel support towers

Height	50 metres
Diameter at base	3.8 metres
Diameter at top	2 metres

Foundations

Depth	7.6 metres
Diameter	4.4 metres

Anchor bolts

Number of anchor bolts	80
Length	7.9 metres
Diameter	35 millimetres

Glossary

Kilowatt (kW)

A unit of bulk power; 1,000 watts.

Kilowatt hour (kW.h)

A unit of bulk energy; 1,000 watt hours. The measurement is generally used for billing residential customers.

Megawatt (MW)

A unit of bulk power; 1,000 kilowatts. The unit generally used to describe the output of a commercial generator.

Kilovolt (kV)

A unit of pressure, or push, of an electric current; 1,000 volts.

POWERING SASKATCHEWAN

History of the Facility

An initial wind resource assessment in 1993/94 identified the area around Gull Lake as one of the windiest locations in Saskatchewan. More recently, computer modeling of the wind regime in southwestern Saskatchewan and other relevant information for siting wind plants identified several candidate sites for wind power development.

Four of these sites were chosen as preferable locations and evaluated for six months with wind monitoring towers. Based on the resulting wind data and an assessment of grid interconnection costs, the Cypress site was chosen for the project. SaskPower carried out an environmental assessment for each phase of the Cypress Wind Power Facility.

The Cypress Wind Power Facility was constructed in two phases.

- In 2002, nine wind turbines were constructed and commissioned into service in October. Total capacity was 6 MW.

- In 2003, seven wind turbines were added to the system, bringing the total of the Cypress Wind Power Facility to 16 wind turbines with a generating capacity of 11 MW.

The Cypress Wind Power Facility is an important part of SaskPower's plans to help meet the province's growing needs for energy, while minimizing the impact on the environment.

Our Commitment to Safety

Safety is a top priority at SaskPower and the responsibility for doing business safely is shared by employees across the corporation.

Our Commitment to Environmental Responsibility

Wind power generation represents an exciting opportunity for SaskPower to harness the power of prairie winds, providing electricity without generating greenhouse gas emissions. Electricity from wind power is clean, renewable and inexhaustible.

SaskPower continues to work to minimize the environmental impacts associated with the generation and delivery of electrical energy to our customers. We are committed to sharing the long-term responsibility of a clean, safe and biologically diverse environment for future generations.

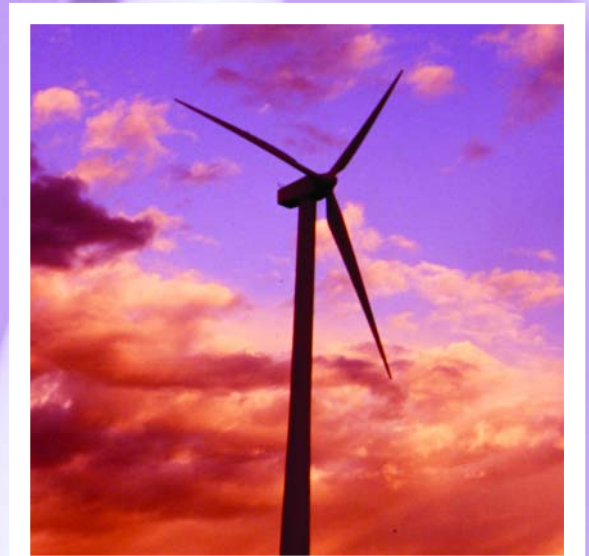
ISO 14001 Registered

We achieved a significant environmental milestone in 2000 when we became the first electric utility in Canada and the first major business headquartered in Saskatchewan to achieve corporate-wide ISO 14001 registration, an international measure of excellence. This leading environmental management system will enable us to better assess and control the environmental aspects of our business.



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CYPRESS WIND POWER FACILITY



WELCOME TO SASKPOWER

HOW A WIND TURBINE WORKS

The location for the Cypress Wind Power Facility was chosen based on wind characteristics of the area, as well as proximity to the electrical grid, road access and land availability.

Control and Transmission

Each of the 16 wind turbines at the Cypress Wind Power Facility is connected via an underground cable to overhead 25 kV distribution lines, which connect to the province-wide electrical grid. Since the wind power is fed into SaskPower's overall power supply, there is a seamless flow of electricity to homes and businesses, no matter how strong the wind is blowing.

This is the second wind power facility in the province. We also purchase electricity from the SunBridge Wind Power Facility, a partnership between SaskPower, Suncor Energy Inc. and Enbridge Inc. Together, these facilities produce 22 MW of green power, which is enough to serve approximately 9,000 Saskatchewan homes.

Cypress Generating Capacity

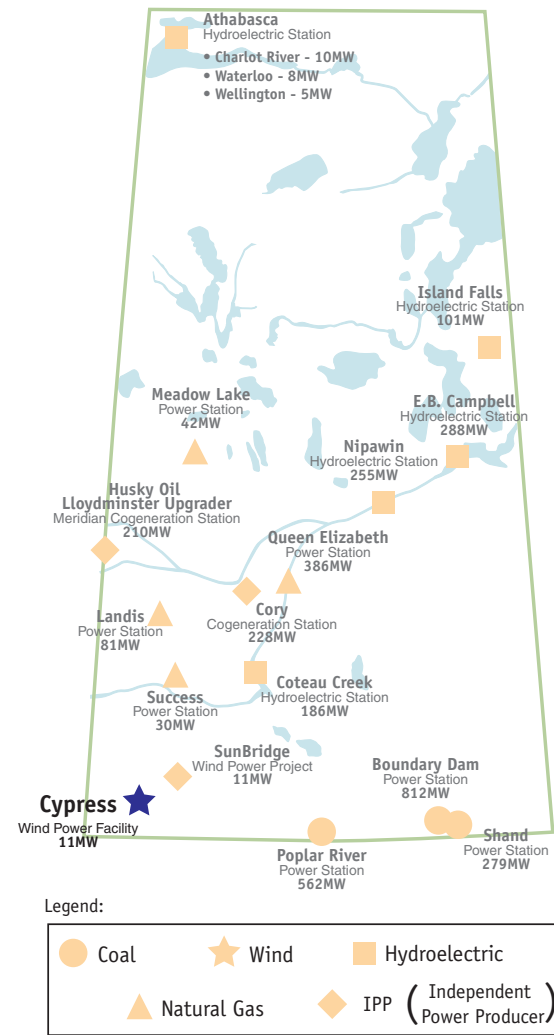
At peak output, the 16 Cypress turbines are able to produce 11 MW of electricity.

The towers are 50 metres high – equivalent to the height of a 12-storey building. Each turbine blade is 23 metres long, with a rotor diameter of 47 metres, or approximately half the length of a football field.

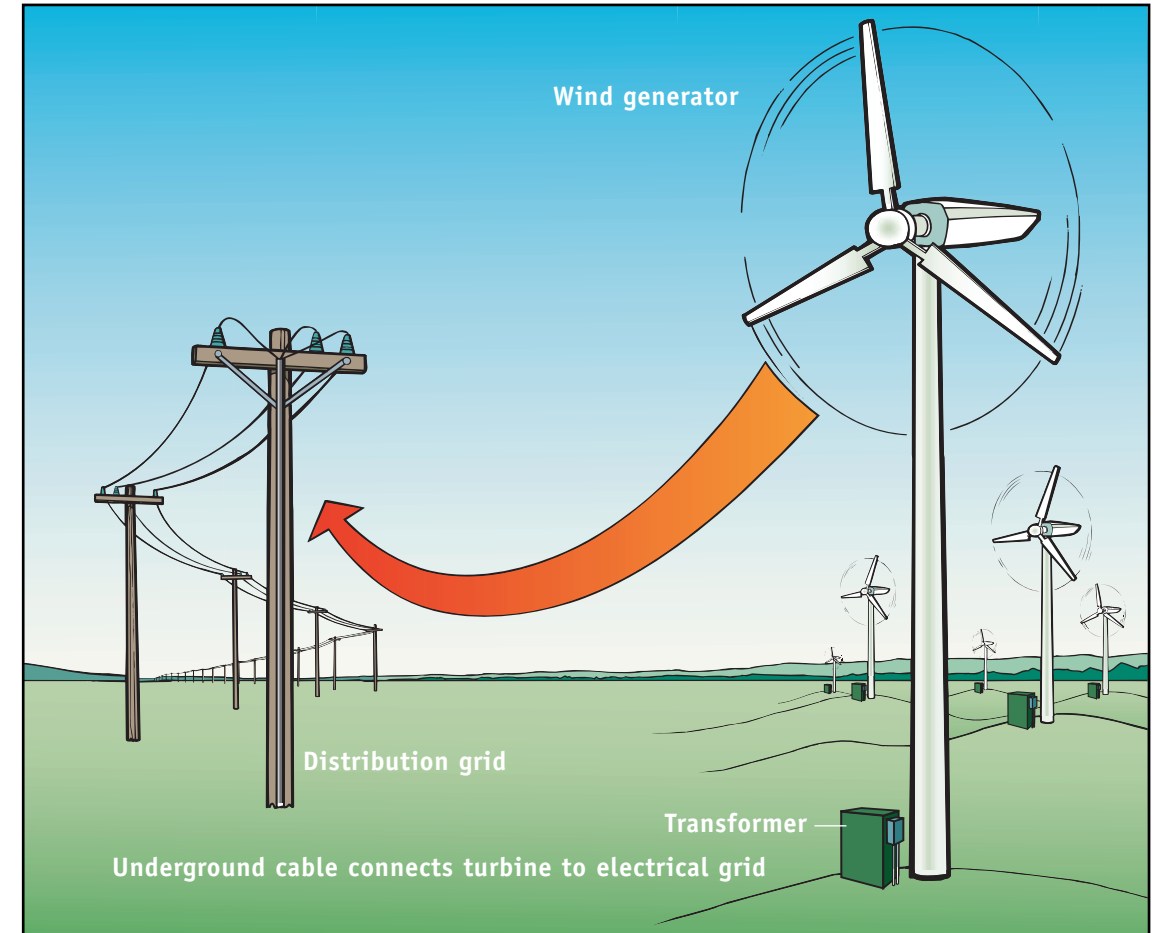
Location

The Cypress Wind Power Facility is located approximately 12 kilometres southwest of Gull Lake.

SaskPower Generation Sources



SaskPower generation - net capacity	3,055 MW
Independent power producers - net capacity	450 MW
Total generation in Saskatchewan - net capacity	3,505 MW



How A Wind Turbine Works

Wind turbines capture the kinetic energy available from wind and convert it into electrical energy. Large blades mounted on tall towers rotate a shaft connected to a gearbox and generator to produce electricity.

A wind turbine 250 metres from a residence produces no more sound than a home refrigerator. Turbines usually operate with wind speeds between 15 and 90 kilometres per hour. They cease operating when temperatures fall below -30C.