



Belle River Wind | Town of Lakeshore, Ontario



Belle River Wind Overview



Location	Town of Lakeshore, Ontario
Power Purchaser	IESO
Turbine Model	Siemens SWT-3.2-113
Number of Turbines	40
Power Capacity	100 MW
Energy Equivalent	35,000 homes
Construction Start	Q4 2016
Target Operations	Q4 2017
Project Area	22,000 acres
Permanent Footprint	Approx. 1% of total area
Construction Jobs	More than 200
Permanent Jobs	More than 15

Harvesting the Wind for the Town of Lakeshore

The Belle River Wind project will bring many economic benefits to the Lakeshore community, including generating approximately \$220,000 annually in tax revenue for the Town of Lakeshore, Essex County and local schools. In addition, the Belle River Wind Community Benefit Agreement provides \$4,000,000 to the Town of Lakeshore over the life of the project. This includes an initial contribution of \$2,000,000 and an annual contribution of \$200,000 for the next twenty years.

The Community Benefits Program will support local initiatives including but are not limited to:

- » Community Infrastructure and Services
- » Educational Programs
- » Workforce Training
- » Energy Sustainability
- » Land Stewardship
- » Public Recreation

Belle River Wind Annual Benefits

35,000



Generates enough clean energy to power 35,000 Ontario homes.

4,000,000



Injects more than \$4M of direct spending into the local economy.

60,000



Offsets 300,000 tonnes of CO₂, equivalent to taking 60,000 cars off the roads.

9,000



Conserves enough water to meet the needs of about 9,000 Ontarians.

↳ When compared to coal-fired generation. ←

Project Construction

AMEC Black & McDonald is managing project construction and expects an average of 200 workers on-site with more than 350 workers during peak construction periods.

Workers from southwestern Ontario will be involved in all aspects of project construction – from building access roads and turbine foundations to assembling and installing turbine components.

Subcontractors will be engaged to conduct civil work - grading, excavation, and concrete - electrical work and mechanical assembly. Activities will also include site preparation before construction begins and site restoration at the completion of construction.

Examples of Jobs Include:

- » Civil and Electrical Inspectors
- » Turbine Inspectors
- » Civil Equipment Operators
- » Electrical and General Labourers
- » Environmental Technicians
- » Safety Inspectors, Security



Target Construction Schedule*

Activity	Start	Finish
Site Clearing	Oct 2016	Jun 2017
Access Roads to Turbine Sites	Oct 2016	Jun 2017
Operations & Maintenance Facility	Dec 2016	May 2017
Turbine Foundations	Oct 2016	Jul 2017
Substation & Switchyard	Oct 2016	Jun 2017
Underground Collection System	Oct 2016	Jul 2017
Turbine Deliveries	Jun 2017	Jul 2017
Turbine Installation	Jun 2017	Aug 2017
Turbine Commissioning	Jul 2017	Aug 2017
Land Restoration	Jul 2017	Sep 2017
Commercial Operation	Oct 2017	

*Represents ideal timeline and subject to change.

Ontario-Made Wind Turbines

Belle River Wind will use 40 Ontario-made wind turbines. Siemens and CS Wind invested \$100 million and created more than 1,000 Ontario manufacturing-sector jobs to meet the demand from Samsung-Pattern Development wind projects. The Siemens facility in Tillsonburg manufactures blades, and CS Wind's facility in Windsor uses Ontario steel to manufacture towers.

Turbine model: Siemens SWT-3.2-113

Rotor speed: 6 – 15.5 RPM

Hub height: 99.5 m

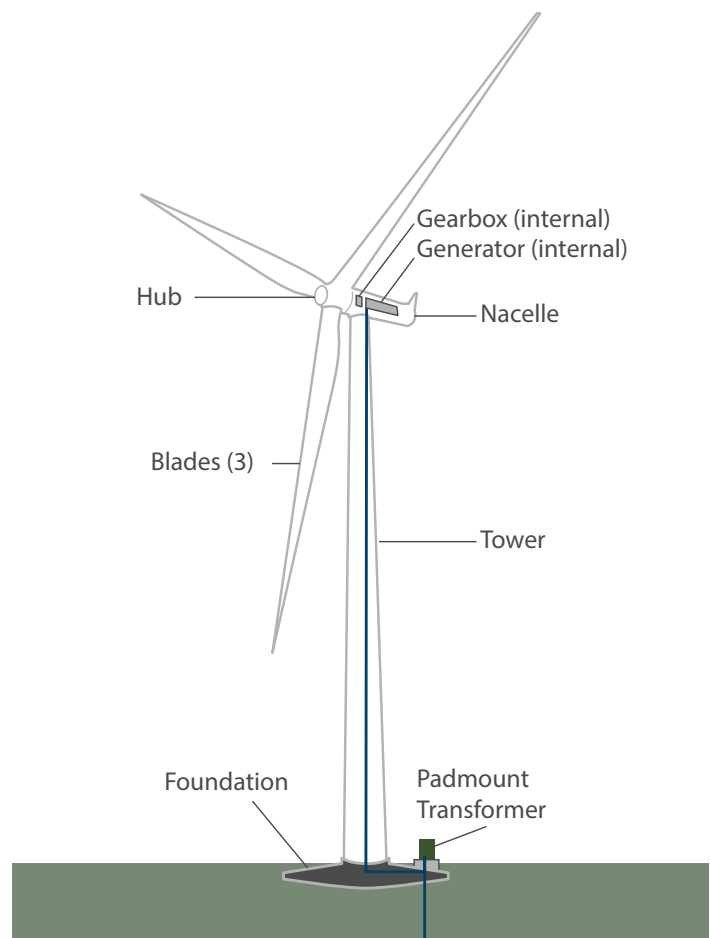
Blade length: 55 m

Rotor diameter: 113 m

Tower base diameter: 4.5 m

How Wind Generates Energy

Wind turbines transform kinetic energy into electrical energy using blades rotated by the wind. The blades then turn a shaft attached to a generator creating an electrical current. Carried by underground cables to a substation, this electricity is sent to the main power grid and transmitted to your home through local power lines.



About the Project Owners

Samsung Renewable Energy Inc.

Samsung Renewable Energy (Samsung) is creating clean, renewable energy for generations to come. Together with its partners, Samsung is making a \$5-billion investment in Ontario. Our investments will create 900 direct renewable energy manufacturing jobs and 9,000 high-skilled jobs in the Province. Built on Samsung C&T's commercial and technical expertise, and the success of its renewable energy projects in other countries, Samsung is creating real jobs, through real investment, benefiting real people. www.samsungrenewableenergy.ca

Pattern Energy Group LP

Pattern Energy Group LP (Pattern Development) is a leading independent renewable energy and transmission development company that develops and constructs renewable energy and transmission assets worldwide with an established footprint in the United States, Canada, Mexico, Chile, and Japan. We are committed to delivering the highest value for our partners and the communities where we work while promoting environmental stewardship and corporate responsibility. www.patterndev.com