



Government
of Canada

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Wind Power

Capitalize on opportunities
in a growing
Canadian industry

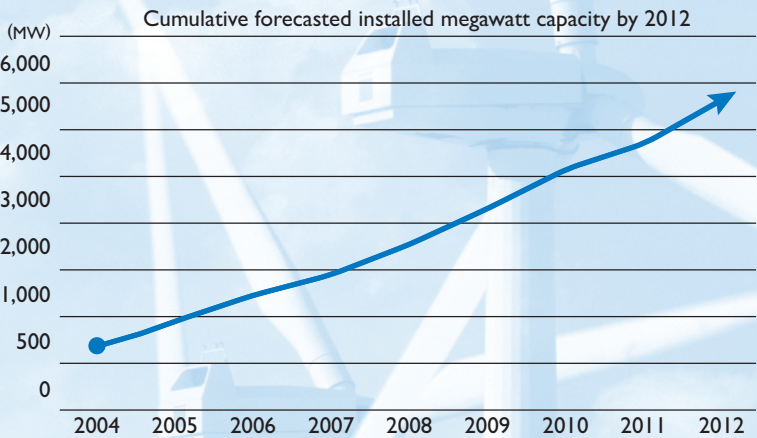
Canada 

Delivering steady growth

Installed capacity of wind energy in Canada tripled between 2000 and 2004, reaching a total of 444 megawatts (MW).¹ Recognizing even stronger growth potential, the Canadian federal and provincial governments are scaling up efforts to support an additional 10-fold increase in the size of this industry in Canada by 2010.

Each year, as the wind power business continues to expand and new technology is developed, more opportunities are opening up for building and servicing this industry in Canada.

Looking ahead to 2012, with a coordinated effort from Canadian industry and governments, the wind power industry could provide more than 13,000 high quality jobs in Canada in areas like manufacturing, installation and maintenance. Annual investments of \$1.8 billion in Canadian content are a real possibility.



With the key advantages that Canada holds, such as the lowest business costs in the industrialized world² and our proximity to the vast U.S. market, we are favourably positioned to make wind energy an increasingly powerful force for growth and opportunity.

The timing is positive. Let's talk business.

Focused squarely on success

Canada is geared up to enlarge its footprint in the wind power business. As part of Budget 2005, the federal government announced that it was going to expand its Wind Power Production Incentive Program (WPPI)³—from 1,000MW to 4,000MW. This program will play a key role in supporting provincial initiatives, which include a mix of renewable portfolio standards and wind energy targets. These initiatives are expected to result in 5,600MW of installed wind energy capacity in Canada by 2012, representing a potential total annual investment of some \$8.4 billion.

The expansion of WPPI is an element of Canada's plan to honour its Kyoto commitment.⁴ Wind energy projects may also be able to take advantage of other climate change initiatives.

The federal government has additional technology development programming that will help contribute to the achievement of these impressive targets. Technology Partnerships Canada (TPC),⁵ a special operating agency of Industry Canada, has a mandate to provide funding support for strategic R&D and demonstration projects that will produce economic, social and environmental benefits to Canadians. Other supports include Sustainable Development Technology Canada⁶ and Climate Change Technology Early Action Measures.⁷ Wind power fits solidly within the parameters of these federal government programs.

The wind industry in Canada is robust, rewarding and challenging—creating an environment in which business can operate with confidence.

Strong returns foreseen

Technological innovation and offshore demand have led to the development of multi-MW Wind Turbine Generator (WTG) technology. In a typical multi-MW installation, 70% or more of the total capital cost is tied to the purchase of the turbines themselves.

Today, Canada imports nearly all large WTG and components, one notable exception being towers. To build on these initial steps and extend our reach, Canada needs to acquire special know-how to manufacture WTG and most of its components. We already have a strong industrial base that can do the job, and expertise in several of the wind components, such as towers, rotor blades, base frames and inverters. Recent commitments have been made to establish blade manufacturing and nacelle assembly facilities in Quebec.

On the manufacturing side

Prime opportunities for companies interested in wind power lie in teaming up with small- and medium-sized WTG manufacturers and component suppliers in Canada and abroad.

Joining up with experienced and capable partners in technology transfer, licensing and joint ventures will help Canadian business to overcome the learning curves and gain the necessary expertise.

Major opportunities with partners are seen in producing more towers, as well as in manufacturing rotor blades, base frames, nacelle covers and spinners, flexible drive shafts, disk brakes, vibration mounts, inverters, control cabinets and generators.

On the service side

A state of change for the service industry is also in the wind.

With a large increase in wind power, Canadian service companies could generate substantial business in maintenance and repair, overhaul and performance upgrades of WTGs and their components, such as gear boxes, generators, hydraulics and rotor blades. To obtain the required know-how and fine-tune the expertise, Canadian companies have the opportunity to team up with the best international service providers.






With strong long-term backing and support from the federal and provincial governments, and “partnership” endeavours by Canadian companies, the wind power industry in Canada will be able to make great strides in:

- 🌀 establishing WTG nacelle assembly and blade manufacturing facilities
- 🌀 engaging in technology transfers, prototyping and product commercialization
- 🌀 purchasing capital equipment
- 🌀 training technicians in WTG manufacturing, component manufacturing and WTG service and repair
- 🌀 conducting R&D on key WTG components, such as rotor blades and power electronics



Across Canada

Signs of an accelerating industry can be seen in provinces and territories across Canada. As an indication:

-  Prince Edward Island has adopted a renewable energy strategy that will see 15 percent of the Island's electricity needs met by wind energy by 2010, and up to 100 percent from renewable energy by 2015. It is also home to Canada's Atlantic Wind Test Site.
-  By early 2005, Hydro-Québec had signed power purchase agreements for more than 1,000MW of new wind energy development to be in place by 2012.
-  LM Glasfiber, a Danish wind turbine blade manufacturer, is building a factory in Quebec that will employ more than 100 people and have an annual production capacity of about 240MW.
-  Marmen and GE Energy are building plants to construct towers and assemble nacelles in Quebec. The two project sites will create about 160 jobs.
-  The Ontario government is seeking 2,700MW of new renewable capacity by 2010. In late 2004, it announced the development of five wind power projects with a combined capacity of 350MW and early 2005 saw a new request for proposals for another 1,000MW of renewable energy.

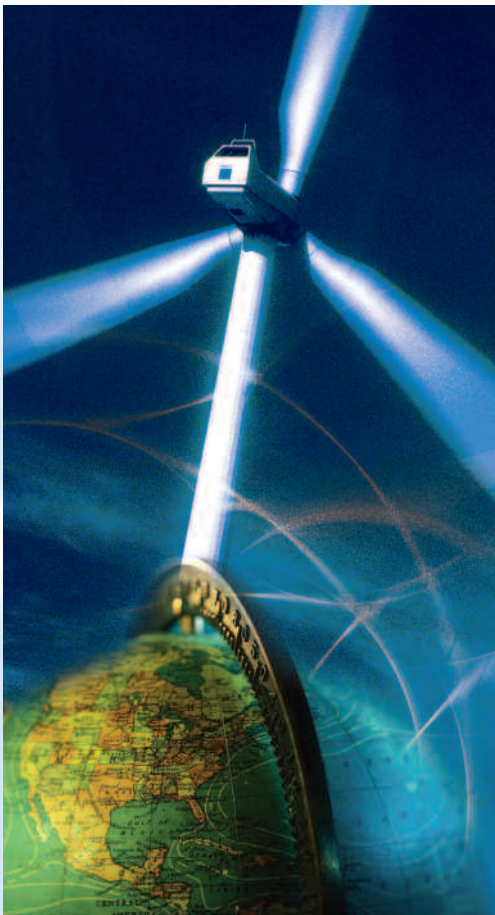
- The Manitoba government is seeking 1,000MW of wind energy development and the first 99MW will be coming on line in 2005.
- SaskPower is proceeding with the 150MW Rushlake Creek Wind Power Project that will go into operation in late 2005. Hitachi Canada International is supplying the towers for this project out of Saskatoon.
- Alberta's Town of Pincher Creek showed tremendous leadership by supporting the development of the area's initial wind farms in 1993. Today, Pincher Creek is the home of a substantial portion of Canada's wind energy development, and the result has been a new local economy based on renewable power production and tourism.



The Canadian advantage

Canada is fast developing as a world-scale player in the wind power business. Our current position in the industry—and our favourable location next door to the United States—provide a solid platform for lucrative opportunities for foreign investors as well.

Canada's business costs in 2004-05 were about 8 percent below those of the United States—which alone is a substantial reason for investing in Canada. In manufacturing, Canada sits fourth in the world for income tax rates behind Luxembourg, the United Kingdom and Australia. In R&D, Canada offers the most generous tax write-offs of the G7 countries. Salaries and wages in Canada are also the second lowest in the industrialized world, behind Italy.⁸ All these advantages add up—and that makes doing business in Canada good business.



Big opportunity in small wind power, too

The primary focus has been on the large WTG side of the wind power business. But Canada also holds distinct advantages in the small wind energy industry as well.

Several small wind turbine manufacturers are doing good business, and new technologies are being developed. Net metering provisions, important for small wind energy development, are also being put in place in Prince Edward Island, Nova Scotia, Quebec and Ontario.

If small wind systems are of interest to you, you can obtain more information at [Natural Resources Canada's Website](#).⁹



Read the *Supply Chain Capabilities in the Canadian Wind Industry* report

For a copy of this recent study of the large wind power industry in Canada, go to: <http://strategis.gc.ca/rei>.

The following Websites and contacts can help you determine your best options.

-  Canadian Wind Energy Association (CanWEA):
<http://www.canwea.ca>
-  Investment Partnerships Canada:
<http://investincanada.gc.ca>
-  Industry Canada: <http://strategis.ic.gc.ca>
-  Canada's Clean Energy Portal:
<http://www.cleanenergy.gc.ca>
-  Canadian Embassy, High Commission or Consulate
closest to you: <http://www.infoexport.gc.ca>

Notes

1. <http://www.canwea.ca/en/QuickFacts.html>
2. <http://competitivealternatives.com>
3. <http://www.canren.gc.ca/programs/index.asp?Cald=107&PgId=622>
4. www.climatechange.gc.ca/kyoto_commitments
5. <http://tpc.ic.gc.ca>
6. <http://www.sdte.ca>
7. www.climatechange.gc.ca/english/team_2004
8. www.investincanada.gc.ca
9. <http://www.canren.gc.ca/wind/index.asp>





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