Wind Energy Sector in British Columbia

British Columbia has abundant, high quality wind resources and an expanding wind energy sector that includes wind power development companies and a diverse service and support industry.

British Columbia's world-class wind resources have attracted significant attention and investment from across North America, and many projects are in the planning phase or under construction. British Columbia's policies for wind power projects enable the orderly and secure development of the industry. The policies include a 10-year exemption from participation rents for new wind projects, and establish maximum permissible noise levels for wind farms near residential properties. Wind energy will help B.C. meet the objectives set out under the B.C. Energy Plan: A Vision for Clean Energy Leadership (www.energyplan.gov.bc.ca), and the B.C. Climate Action Plan. (www.livesmartbc.ca/government/plan.html).

Wind energy development in B.C. benefits from:

- Comprehensive wind resource data to help identify areas of interest.
- A cluster of expertise in wind energy and environment monitoring and management, and leading-edge remote environmental/meteorological monitoring systems.
- A new specialized turbine maintenance training facility in Dawson Creek.
- The Innovative Clean Energy Fund to help bring near-commercial clean energy technologies to local and world markets.
- An established wind energy service and support industry that includes engineering/construction firms, tower fabrication specialists and gear machining companies.
- Refundable tax credits of 30 per cent for investments in eligible small businesses in B.C.'s clean energy sector (www.tted.gov.bc.ca/TRI/ICP/Pages/default.aspx)
- The $90 million B.C. Renaissance Capital Fund to finance early-stage ventures in target sectors of the B.C. economy, including clean technologies (www.bcrcf.ca).

British Columbia is well on its way to becoming a clean energy powerhouse:

- Commitment to become electricity self-sufficient by 2016 and to ensure clean or renewable electricity generation continues to account for at least 90 per cent of total generation.
- Legislation to reduce greenhouse gas emissions by 33 per cent by 2020.
B.C. has world-class wind power sites, both inland and in coastal regions on-shore and off-shore. More than 300 potential wind energy sites are currently being investigated for project development.

**WIND ENERGY SITES UNDER INVESTIGATION IN B.C.**

**British Columbia’s wind energy sector currently includes:**

- Thirteen projects in the B.C. environmental assessment process.
- Seven projects that have successfully completed the process and are in the planning/construction phase of development (including one that is Canada’s first off-shore wind farm proposal).
- One wind farm is generating electricity in the northeast, and another is under construction.

### SELECTED LISTING OF B.C.’S WIND ENERGY SECTOR

**COMPANIES**

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<th>Aeolis Windpower Corp.</th>
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<td>Finavera Renewables Inc.</td>
<td>Ramsay Machine Works Ltd.</td>
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**ASSOCIATIONS AND RESEARCH ORGANIZATIONS**

- Canadian Wind Energy Association
- Independent Power Producers Association of British Columbia
- University of Northern British Columbia
- UVIC - IRENE research project
- Northern Lights College
- Vancouver Island University
- British Columbia Institute of Technology
- BC Hydro
AXYS TECHNOLOGIES INC.

AXYS Technologies Inc. designs, manufactures and installs remote environmental monitoring systems worldwide. The company’s newly-developed WindSentinel™ is the world’s first wind resource assessment buoy capable of accurately gathering wind data at heights of conventional offshore wind turbines and across blade spans. The technology gathers wind data by using a laser wind sensor designed to accurately measure wind from moving platforms, and processes and transmits the data via a selection of telemetry options.

AXYS currently has a meteorological station deployed in Hecate Strait that is collecting data on ocean and atmospheric conditions for use in the design of an offshore wind project.

BEAR MOUNTAIN WIND PARK

AltaGas’ Bear Mountain Wind Park, a 34-turbine, 102-megawatt (MW) wind power project located near the City of Dawson Creek is British Columbia’s first wind park. In 2004, Peace Energy Cooperative, a Dawson Creek-based community group, acquired the exclusive right to investigate and develop Bear Mountain for a commercial-scale wind park. With high winds and a close proximity to existing infrastructure, Bear Mountain is an ideal location for a wind park.

In 2006, BC Hydro awarded a contract to Bear Mountain Wind Park. AltaGas broke ground in December 2007 and the $200 million project went live in October 2009 – on budget and ahead of schedule. The project harnesses the Peace River region’s world-class wind resource and produces enough renewable electricity to power most of B.C.’s South Peace region.
NORTHERN LIGHTS COLLEGE

Wind Turbine Maintenance Technician Program

Northern Lights College offers a wind turbine maintenance technician certificate program designed to meet the growing demand for trained wind technicians to service the expanding wind energy sector, locally and world-wide.

Students are provided with the theoretical knowledge and the practical skills required for the support and maintenance of wind turbine output availability. The program is ideally located in the City of Dawson Creek, in the Peace River region – home of B.C.’s first wind farm – where some of the best wind resources in B.C. are found.

UNIVERSITY OF NORTHERN BRITISH COLUMBIA (UNBC)

Centre For Wind Energy And The Environment

UNBC’s Centre for Wind Energy and the Environment is conducting a wind energy research project in the foothills of the Rocky Mountains, near Chetwynd. The multi-disciplinary research team is using radar and other on-the-ground tracking systems to better understand how migrating birds use the landscape around proposed wind farms. They are coupling this data with wind patterns to assess the influence of changes in flight behaviour associated with changes in weather conditions and how this influences conflicts between birds and turbines. This knowledge will be used in advising companies on how they can place or manage turbines to minimize disturbance to important bird migration corridors.

Partners in this research include Stantec Environmental Consultants and B.C.-based Russell Technologies Inc., for the radar systems. Funding is provided by the Natural Sciences and Engineering Research Council of Canada (NSERC) and through Environment Canada.

Photos of UNBC’s Centre for Wind Energy and the Environment courtesy Marc d’Entremont.

For more information on the IRENE Project at UVic’s Institute for Integrated Energy Systems, visit: www.cwee.unbc.ca

The IRENE Project at UVic’s Institute for Integrated Energy Systems is a modular regenerative energy system that can integrate and assess a variety of renewable energy inputs to supply a residential-scale load.

FOR MORE INFORMATION

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Interested in B.C. energy investment opportunities? Visit: www.empr.gov.bc.ca/MACR/investors/Pages/default.aspx