



Wind Project

Wind Project Construction, Operation, Repowering and Decommissioning

Construction

The construction phase of a wind facility usually begins two to four years after a project is selected in a Hydro-Québec request for proposals. The construction phase usually takes between 12 and 24 months, and covers site and access road construction, turbine transportation and installation, and connection of the wind facility to the Hydro-Québec network. This phase consists of six main stages, which are presented in the following pages.

Wind facility construction work must comply with the *Cadre de référence relatif à l'aménagement de parcs éoliens en milieux agricole et forestier*, developed by the Union des producteurs agricoles (UPA) and Hydro-Québec.

Step 1 : Civil Works

Access roads and construction areas are prepared.



About BluEarth

BluEarth Renewables Inc. is a leading, independent power producer that develops, builds, owns, operates, and acquires wind, hydro, solar, and energy storage facilities across North America. Our portfolio includes over 740 MWac (gross) in operation, under construction, and contracted pre-construction, and over 7 GW of high-quality development projects that are actively being advanced. In addition, we provide third-party operations for over 300 MW of wind and solar across North America.

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Step 2: Turbine Foundations

Foundations for the wind turbines are constructed with concrete and steel.



Step 3: Equipment Delivery

Turbine components including the tower, blades and nacelle are delivered to the site.



Step 4: Turbine Assembly

Turbines are assembled and installed using cranes.



Step 5: Electrical Components

Construction of the electrical collector system, substation and interconnection point with the Hydro-Québec network is complete.



Figure 1: Substation in Hand Hills Wind Facility



Figures 2-3: Collectors Lines

Step 6: Site restoration and Commissioning

The construction site is dismantled, and the site restored in compliance with the *Cadre de référence relatif à l'aménagement de parcs éoliens en milieux agricole et forestier*, developed by the Union des producteurs agricoles (UPA) and Hydro-Québec. The operational phase begins with the production of electricity.



Bull Creek - 29.2 MW project located in the Municipal District of Provost, Alberta



Adams & Danielson - 38.5 MW project in Meeker County, Minnesota



St Columban - 33 MW project in Huron County, Ontario

Operation

Once construction is complete, the wind facility enters the operational phase. Hydro-Québec's requests for proposals generally target power purchase agreements with terms ranging from 25 to 30 years. Throughout this period, maintenance of equipment and access roads is carried out by the project operator, and profits are shared among community partners.



Repowering or Decommissioning

Wind facilities are an important investment in the Canadian electricity grid and provide clean, renewable energy for several decades, typically 20 to 30 years. Once a wind facility reaches the end of its life cycle, consideration is given to either decommission or repower the facility.

Repowering means replacing or upgrading the equipment with more advanced and efficient technology. This would be completed at the facility owner's (BluEarth's) expense and would result in an additional 10 to 30 years of useful life for the equipment.

Decommissioning means to cease production and dismantle the facility. In many cases, metal and electrical parts can be recycled or sold as scrap due to their high value. Around 85-90% of the components of a wind turbine can currently be reused or recycled, including the steel tower, copper cables and electrical equipment.

As part of the contract with Hydro-Québec, the owner must dismantle the facility at its own expense within 12 months of the end of the contract and restore the land to its original function. Financial guarantees would also be put in place 5 years before the end of the contract with Hydro-Québec, ensuring funds are available to dismantle according to best practice.



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