

LEMPSTER Wind Power Project



Project Overview

The first modern, commercial-scale wind farm in the state, the Lempster Wind Power Project is located in the Town of Lempster in Sullivan County, New Hampshire. The project is located on privately owned land in southwestern New Hampshire, approximately 20 miles north of Keene and 10 miles south of Newport. Home to one of the most wind-rich areas in New Hampshire, the wind farm has 12 wind turbines on the site.

The new wind turbines produce renewable electricity and generate zero emissions. The Lempster Wind Power Project produces enough clean energy on average to power approximately 10,000 New Hampshire homes and offsets carbon dioxide emissions equivalent to taking 5,700 cars off the road each year. The Lempster Wind Power Project, over its project life, will contribute substantial amounts to the community through payments to the Town of Lempster and to landowners.

Project Details

Project Capacity: 24 MW

Number of Wind Turbines: 12 Gamesa 2 MW wind turbines

Project Location: Town of Lempster in Sullivan County, New Hampshire

Approximate Acreage: 1,500 acres with approximately 5 percent of the land actually impacted

Jobs: 120 construction jobs; 3 to 4 permanent operations and maintenance jobs

Iberdrola Renewables'

Commitment to the Community

With over 12,700 MW of renewable energy in operation globally, and more than 4,700 MW of that wind power located in the U.S., Iberdrola Renewables is currently the world's leading provider of wind power.

Iberdrola Renewables' parent, Iberdrola S.A., has the largest renewable asset base and pipeline in the world – over 25,000 MW is under development in the U.S. Iberdrola Renewables is committed to working hard to earn the trust and respect of the communities where the company does business. We demonstrated this commitment at Lempster through an on-the-ground approach to informing the local neighbors and at-large community about project plans.





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Lempster Customer: Public Service New Hampshire

Public Service of New Hampshire (PSNH), the Granite State's largest electric utility, is purchasing all of the energy from the project, and is reselling a portion of the power to the New Hampshire Electric Cooperative (NHEC), the local service provider. PSNH worked with Iberdrola Renewables and NHEC to connect the wind project to New England's regional power grid.

Engineering and Construction

Contractors and crews from all over New Hampshire and New England helped to build the Lempster project. In addition, numerous supplies and services were purchased from New Hampshire firms, including concrete, electrical cable, fuel, sand, food, lodging, and many other products.

Construction Contractors

Project Site Workforce: Average of 60 workers on site, with a peak of 120 for a total of about 80,000 work-hours

Technology

- Turbine Height:** 396 feet (120 meters) to the tip of blade
- Total Turbine Weight:** Approximately 383 tons (767,000 lbs.)
- Turbine Type:** Gamesa 2 MW wind turbine
- Blade Length:** 139 feet
- Tower:** Four-section tubular steel
- Tower Height:** 256 feet (78 meters)
- Turbine Foundation:** Each wind turbine foundation consists of 18, 45-foot steel rock anchors, with a surface steel-reinforced concrete base of approximately five feet.
- Footprint:** Turbines are spaced from 700 to 850 feet apart.
- Concrete:** Approximately 120 cubic yards per turbine



Plant Infrastructure

Turbine Access: 25,800 linear feet (4.9 miles) of gravel surfaced roads

Transmission Interconnection: Interconnected to Public Service New Hampshire Newport substation via a 10.5-mile 34.5 kilovolt (kV) distribution line

Collector Switchyard: 34.5 kV switchyard with pole mounted equipment

Collection System: 34.5 kV Underground collector feeder system

Wind Energy

The U.S. wind industry had 40,181 MW of wind power capacity installed at the end of 2010, with 5,116 MW installed in 2010 alone. The U.S. wind industry has added over 35% of all new generating capacity over the past 4 years. Wind power now generates enough electricity to serve more than 10 million American homes. Today, U.S. wind power capacity represents more than 20% of the world's installed wind power. A U.S. Department of Energy study released in 2008 found that wind could provide 20% of U.S. electricity by 2030. At that level, wind power would support 500,000 jobs and reduce greenhouse gas emissions as much as taking 140 million vehicles off the road.



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