

Northwind 100 AdminView Monitor

Comparing data from Whitefield, NH (real-time) to Monhegan, ME (projected)

The Mountain View Grand Resort shares data on its wind project with the public via an AdminView monitor in the hallway behind the reception desk. AdminView is based on technology developed by Northern Power, the company that manufactures the Northwind 100 turbine. It is web-based, providing real-time data on the turbine's surrounding environment and performance.

When viewing the AdminView monitor, you can learn about the following things:

- **Wind Speed:** A wind vane that sits atop the nacelle reports both the real-time and 10-minute average wind speeds in meters per second (m/s). To convert this to miles per hour (mph), multiply by 2.24. For example, 5 m/s equals 11.2 mph, 10 m/s equals 22.4 mph, and 15 m/s equals 33.6 mph. The Northwind 100's cut-in speed (point at which it begins to produce power) is 3.5 m/s (7.8 mph). Its cut-out speed (point at which the blades feather into the wind) is 25 m/s (56 mph). Its survival speed is 59.5 m/s (133 mph).
 - o **On Monhegan**, modeled data found that the *annual* average wind speed at a hub height of 121 feet is 7.16 m/s or 16.0 mph. The anemometer that has been on one of the water tanks since December has so far suggested that the actual wind speeds may be slightly higher but further data analysis must take place in order to make a better comparison.
- **Real-Time and Historical Power Production:** Real-time output will vary from 0 to 100 kilowatts (kW; the turbine's maximum output). If the wind is not blowing more than 3.5 m/s (7.8 mph), the blades will still spin but the turbine will not be producing any power.
 - o **On Monhegan**, a 100 kW turbine is projected to produce 314,000 kilowatt-hours (kWh) per year, with the vast majority of the production taking place during the windier winter months.
- **Wind Direction:** The wind vane atop the nacelle also reports wind direction to the computer inside the turbine, helping it to decide how to optimally position itself. Based on wind direction, the yaw motor will turn the nacelle very slowly into the wind.
 - o **On Monhegan**, the modeled wind data tells us that the wind primarily blows out of the northwest in the winter and the southwest in the summer.

If Monhegan were to install a Northwind 100 turbine atop Lighthouse Hill, an AdminView monitor (or another type of Northern Power's monitors such as StudentView or PublicView) could be purchased for the island.

For more information on Northern Power's monitoring technology, visit:
<http://www.northernpower.com/technology/smartview-platform.php>