Wind for Microgrids

Whether it’s in combination with solar, small hydro, diesel or other power sources, the clean, renewable energy of wind power is gaining popularity on microgrids around the world.

**WHAT IS A MICROGRID?** Microgrids are modern, small-scale versions of a centralized utility. They achieve specific local goals, such as reliability, carbon emission reduction, diversification of energy sources, and cost reduction. Microgrids can function either entirely on their own or in coordination with a main grid. Like the main grid, microgrids generate, distribute, and regulate the flow of electricity to consumers, but do so locally. Microgrids are an ideal way to integrate renewable resources on a local level.

**WHY WIND?** Renewable energy creates cleaner, greener, more sustainable communities than fossil fuels. Wind can generate electricity at 1/3 the cost of diesel. Wind is an abundant, free resource. Wind turbines take up less space than an average power plant and eliminates the concerns and risk associated with fossil fuel spills and contamination. Newer technologies make wind energy production much more efficient and reliable than in the past.

**Why Northern Power?**

For almost forty years, Northern Power Systems has been designing and developing wind turbines and offering support services for energy generation needs around the world. With millions of fleet-wide run hours, Northern Power wind turbines provide customers with clean, cost effective renewable energy. Our quiet, low profile turbines with multiple tower height options are a smart investment for microgrids everywhere. We offer the most reliable small wind turbines with hundreds of units successfully operating around the world.

**Microgrid applications:**

- Island Communities and Resorts
- Remote Villages
- Commercial/Industrial
- Military
- Campuses

**Case Study - APPLICATION: MICROGRID**

NPS 100-21’s at Ramea, Newfoundland Canada
Northern Power turbines have been used in microgrids from remote villages in Alaska, to the isolated island of Ramea, NL Canada and luxury resorts in the Bahamas. Northern Power has fielded more than 45 turbines into many types of isolated microgrids. These machines have produced more than 21,500 MWh of clean green energy, saving customers thousands of gallons of expensive diesel fuel.

Northern Power Systems provides design, development, system integration, and support services for microgrids along with licensing of designs, technology and intellectual property. Northern Power’s commitment to service, along with the inherent advantage of our high reliability and low maintenance Permanent Magnet Direct Drive (PMDD) technology, delivers an unprecedented value to microgrid customers that simply cannot be matched by manufacturers of other turbines.

“We initially purchased Northern Power’s NPS 100 because of the high reliability and low sound profile, both a result of the permanent magnet direct drive generator design. After the NPS 100s survived Hurricane Irene, we purchased a third turbine because it was clear that the NPS 100 lived up to the high standards that were advertised.”
- Mike McGuire, Site Manager, Over Yonder Cay

Northern Power Turbines: The Best Choice

THE RIGHT SIZE  Northern Power turbines are appropriately sized for microgrids. Sleek and graceful, our turbine’s low height profile and attractive nacelle fits nicely into communities and resorts.

QUIET  Our gearless design, advanced blades, and lower rpm and tip speed all contribute to lower noise levels.

SMOOTH POWER  Northern Power turbines provide steady voltage and no inrush current. In the real world this means your lights won’t dim, your sensitive electronics won’t be at risk, and other power sources on the grid are not stressed.

ROBUST  The Hurricane Resistant™ Northern Power 100 has a flawless track record of surviving extreme winds, from the bitter colds of Alaska to the hurricanes of the Caribbean. Reinforced blades, gearless design and ZERO incidents across its fleet make Northern Power turbines the most reliable small wind turbines available today.

STABLE ENERGY SUPPLY  Northern Power’s ability to control reactive power independently of wind speed means reliably meeting energy demands.

USE MORE WIND ENERGY  Power set-point control allows Northern Power turbines to contribute the greatest amount of wind energy in all operating conditions. For example, in a wind-diesel hybrid system, this means consuming less diesel fuel and less generator maintenance.

ULTRA LOW O&M COSTS  Northern Power’s PMDD Permanent Magnet Direct Drive technology has a lower cost of ownership than conventional gearbox-based designs.

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