Massachusetts Manufacturer Shifts to Wind Power

by Rob Howe, president of Sustainnovation Consulting, a division of Meridian Associates

Newburyport, MA - A new landmark in the historic city of Newburyport marks the skyline and it isn't a new building, it's a wind turbine. In fact, it's the first wind turbine in the commonwealth of Massachusetts to power a manufacturing operation: Mark Richey Woodworking.

Mark Richey Woodworking, located in Newburyport, is one of the country`s leading sources of high-end architectural millwork for corporate, institutional, retail, restaurant, hospitality and residential clients. Committed to sustainable practices, Mark Richey Woodworking follows environmentally sensitive manufacturing methods and continuously invests in new technologies, including a clean-burning biomass furnace using wood chip byproduct waste from the company's millwork that nearly eliminates the consumption of fossil fuel for heat.

Hub and rotor erection

Two years ago, Mark Richey Woodworking sought to explore wind technology in order to minimize existing energy costs and environmental impacts. Efforts included a wind resource assessment, structural analysis, review of potential fatal flaws, interconnection to grid analysis, and an environmental and wildlife impact study. In addition, studies were performed on localized effects of turbine blade shadows cast by sunlight, called "flicker," acoustics, a balloon height test and photo simulation of the turbine. Permits were granted by the FAA, Massachusetts Aeronautical Commission and local approval from the city of Newburyport.

A grant in the amount of $474,340 was secured from the Massachusetts Technology Collaborative, and construction of the wind turbine began in September 2008 and was completed in January 2009. "We are pleased to have played a lead role in the Mark Richey Woodworking project, establishing wind power as a viable source of clean energy for the North Shore of Massachusetts," said Don Bowen, principal of Meridian Associates.

Don Bowen and Mark Richey in India.

"Installing our own wind turbine allows us to demonstrate our commitment to the environment and help develop renewable energy businesses in our community," stated Mark Richey, president of Mark Richey Woodworking. "This investment also lowers our [operating] costs, allowing us to stay competitive and support the local economy by continuing to do business in Massachusetts. We employ 90 people and are growing. The commonwealth benefits from the stability of a company that has literally put a stake in the ground and is here to stay."

Wind power uses the force of the wind to drive a turbine that produces electricity. The wind turbine is connected to utility lines feeding excess energy back to the electric grid. Wind power provides a clean source of energy that reduces greenhouse gas emissions generated by traditional energy power plants.

The turbine generates up to 600 Kilowatts of energy, producing 1.5 Gigawatt hours of power annually, generating 75% of the energy output for a 130, 000sf industrial facility. In its first 60 working days, it produced 192 Megawatt hours, enough to power 130 homes for a year. The return on investment is estimated to be eight years.

Asked about his motivation to use clean technology, Mark Richey says, "As a longtime mountain climber, world traveler and explorer, I have seen the effects of global warming on the world firsthand. I'm inspired to try to counter those effects through better conservation and green technology, plus renewable energy. I also see it as an opportunity to reduce costs while being a better steward of the environment."

Richey wind turbine