

COMMUNITY WIND INSTALLATION: HULL, MASSACHUSETTS



Achievement: In December of 2001 the town of Hull Massachusetts made history by bringing online the first commercial wind turbine along the east coast. The Turbine, known as Hull Wind 1 was installed after the town realized just how much money it could save by generating its own, renewable energy. In the three years since it's commissioning, Hull Wind 1 has generated more than 5.3 million kilowatt-hours of energy for the town with an annual energy production rate of 1,590,000 kilowatt hours.

Community Profile: Hull, a town of approximately 10,500 year round residents, and over 16,000 in the summertime, sits on a peninsula jutting into Boston Harbor only 8 miles from downtown Boston. Hull is governed by a board of selectmen and energy is provided by the town owned Hull Municipal Light Plant (HMLP), which maintains and operates Hull Wind 1.

Project Initiator & Partners: In 1998 a group of concerned citizens led by Malcolm Brown and Andrew Stern formed Citizens for Alternative Renewable Energy (CARE) to look into the possibility of installing a wind turbine in Hull to reduce energy costs after a smaller wind turbine that had saved the town schools tens of thousands of dollars went offline in 1997. Teaming up with The Renewable Energy Research Lab at UMass- Amherst and the Massachusetts Department of Energy Resources, CARE conducted research into the feasibility of a new wind turbine. After receiving positive community feedback at several public meetings held on the subject, the HMLP solicited Requests For Proposals and soon had several offers from wind turbine manufacturers. In April 2001 the town accepted a bid from the Danish corporation Vestas, for its 660 Kilowatt, V47 turbine with a tower height of 164 feet and a rotor diameter of 154 feet . That November the turbine was installed within 100 feet of the site of the previous turbine at a location known as Windmill Point, right next to the local school and athletic fields.

Costs & Financing: Total cost of purchase and installation was only \$753,000 and yearly operations, maintenance, and insurance costs are only about \$30,000, all paid for out of the wind project's proceeds. It is estimated that the town has already saved approximately half a million dollars in energy purchasing costs since installation.

Benefits: All of the energy produced by the turbine is used by the town of Hull, replacing energy that would have to be purchased at the cost of 8 cents per kilowatt hour. Not only does the turbine thus save the town money, but it can actually generate revenue: While the turbine produces energy at a cost of 3.4 cents per kilowatt, HMLP receives 4.8 cents in renewable energy production incentives and renewable energy certificates for every kilowatt hour. In addition to saving the town thousands of dollars every year in energy costs, Hull Wind 1's environmental impacts are minimal.

Challenges: One of the few major challenges faced by the town was that because Hull was the first town in the commonwealth of Massachusetts to install a commercial wind turbine, it had to be decided under which state's statutes the contract would be written - those of California, which already has commercial wind turbines, or those of Massachusetts.

Lessons learned: Perhaps the biggest lesson learned is that a well-sited, modest wind project owned and operated by a municipal utility with all the benefits flowing to the community can move forward quickly with nearly unanimous community support. This is in contrast to larger privately developed projects across New England - for example, the proposed "Cape Wind" project on Cape Cod - which are running in to stubborn opposition that is significantly extending schedules and increasing development costs. Hull, as the investor in its wind project, receives all of the benefits from the turbine both financially and environmentally. It must also be noted that after some minor

problems experienced with the maintenance and upkeep of the previous turbine, which belonged to the school department, the town was still enthusiastic about pursuing a wind energy project - perhaps due to the money saved by the first project - and made specific provisions for its upkeep.

Future priorities: For the future, the town is planning on investing in 5 more wind turbines that would enable the whole town to run on 100% renewable energy. One of these turbines would be land based and would have a maximum output of 1800 kW, nearly three times that of Hull 1. Hull hopes to have this turbine up and running by the end of the summer. The other four turbines would be offshore and could generate a combined total of 12 megawatts of power. Hull hopes to have these in operation by 2008.

Other communities taking on wind: Since the successful implementation of Hull Wind 1, several other Massachusetts towns have expressed interest in using wind power to provide energy to their communities. The town of Arlington, 26 miles northwest of Hull, is conducting site visits and a feasibility study into the possibility of converting some of the town's energy sources to wind energy. Ipswich has already done a wind analysis that has shown the town is capable of supporting turbines. The town is now planning to install a 1.5 megawatt turbine set to begin operating in 2006. Unfortunately, the controversy surrounding the Cape Wind Project in Hyannis has not subsided. The Alliance to Save Nantucket Sound has threatened a lawsuit if the US Army Corps of Engineers grants Cape Wind an operating permit.



Contact information: For more information on Hull Wind 1 visit the hull wind projects website at www.hullwind.org.

Thanks to CA-CP Intern John Reed for developing this case study!

KEY POINTS FOR COMMUNITY WIND

Half million dollars over 3 years cost savings from one wind turbine.

Little or no opposition to a project when the community is both the investor and beneficiary.

Other towns in Massachusetts - especially those with their own municipal utility - are planning on using wind energy as a result of the success of Hull Wind 1.

Demonstrates local government can lead our country toward energy independence.