History of Hull's wind project

Leaving aside the long-ago history (historic manuscripts refer to the tip of the Hull peninsula as **"Windmill Point"** as far back as the mid 1820s), -- this project's history is based on the work of townspeople in the early 1980s. The town installed a 40KW turbine on an 80-foot tower adjacent to Hull's High School, now sited on that same historic point of land jutting out into Boston Harbor. The funds came from the Mass. Department of Energy Resources. The windmill's cost was $78,000.

By spring of 1985 the windmill (some prefer the more precise term wind turbine) was producing energy. It produced a respectable total in its lifetime, between then and early March of 1997 when a windstorm damaged it beyond repair. The failure was due to a malfunction of its blade-tip brakes that 70 mph winds (this is a speed no longer threatening to today's windmills) were able to do it critical damage. This specific failure was in part due to the school's staff not being able to keep up with the regular maintenance schedule for the brake mechanisms.

A report in 1996 showed that the machine in its final three years of production, -- when it was no longer performing at its best -- reduced the school's electric bills by over 28%. In dollar terms this was a savings of $21,200 to the town. A DOER report had indicated that over its lifetime the windmill had saved the town nearly $70,000. It was well known in the community that **John MacLeod** of the Light Department had worked beyond the call of duty to enhance the turbine's value to the town, both economically and educationally. He had strong support in this from **Mr. Don Newton**.

By fall of 1997 a group of citizens led by **Malcolm Brown** and a group of teachers at the High School led by **Anne Marcks**, held meetings to plan what is now called "re-powering" the site. This planning was incorporated into the curriculum of Mrs. Marcks's senior physics class, and had good support from both the school and from Hull Municipal Light Plant.

In late 1998 a new group of citizens eager to see the project go forward formed themselves into **C.A.R.E. (Citizen Advocates for Renewable Energy)**, selected officers **Malcolm Brown** and **Andrew Stern**, and petitioned Hull Light to take the project on.

The plan was to work in collaboration with **UMass Amherst's Renewable Energy Research Laboratory**, and its director, **Professor James Manwell**. Prof. Manwell, along with his colleagues consults regularly for the Mass. Department of Energy Resources on wind power and other renewable energy sources.

By fall of 1999 Manwell's team completed an, which included wind-resource assessments, discussions of regulatory issues, noise-level tabulations, and projected economic viability of various hardware options. Special care went into this engineering report, because of its potential to serve as a "template" for other coastal communities in Massachusetts. Various factors were given a 'sensitivity' analysis. This revealed which factors, if not predicted accurately, would have a crucial impact on the entire project.

By the year 2000, newspaper reports had appeared, including in the Boston Globe. The Light department also notified townspeople of a town-wide public meeting scheduled for June 16 2000. Mr. MacLeod, along with members of the Light Board, experts from Mass. Municipal Wholesale Electric Company (MMWEC), the RERL at UMass, the town manager, the town historian, and citizen advocate Malcolm Brown made the presentation. This same panel of town representatives fielded questions from the public. The meeting's response was on the whole strongly positive, one citizen objecting strongly, however. It was announced that the light department would go ahead and put out a Request for Proposals. The preferred site was to be some 75 yards from the site of the previous High School windmill.

By January of 2001 the RFP was sent out to 12 turbine manufacturers. By March of 2001 several bids had arrived. One wind turbine manufacturer from Denmark and another from Germany had meantime sent representatives to Windmill Point for site visits.

In April of 2001 the bid of **Vestas**, a Danish company, was accepted. They had bid their model with rotor-diameter of 47 meters, and a hub-height of 50 meters, **rated power of 660 KW**. Their turnkey bid price was **$698,699,** net of their standard set of supplemental spare parts. Life expectancy of the moving parts in this machine was 20 years. Hull later learned that more than 1,100 of this same model of Vestas turbine were sold in the USA during calendar year, 2001. This was a big increase from their 4 units sold -- their total delivered to the USA in calendar 1997.

Contract negotiations went on for several months. It became clear that here too Hull was doing pioneering work. As in the state-sponsored engineering study, Hull's case was being looked at as a "first" in the Commonwealth, and even on the entire East Coast. So our contract should be a transportable template for other similar projects still in the planning stages, or at still earlier stages of advancement. A number of issues needed to be resolved, such as the schedule of advance payments, warranty and maintenance agreement language, the level of ongoing commitment we could expect from Vestas.

Commissioning date was December 27, 2001. In its first year, the total generated energy -- all delivered to the municipally owned grid, -- was 1,597,367 KWh. The Light Department's sales of this energy (in addition to 'zeroing out' the town's street lighting bill) were in excess of $150,000, net of the incentive payments for "renewable energy certificates". Public support was high, and a survey by the light department returned 95% favorable reactions, the commonest question being "why not more?"

By 2003 planning was underway for "Hull Wind 2" (citizen advocate Brown had been elected to a 3-year term on the Light Board). By 2005 this same advocate had been re-elected. As he said "my platform had just one plank -- more wind power in Hull." By now he had been elected Vice Chairman of the Board, although he had only been a town resident for 7 years as of 2003.

By May of 2006, Hull Wind 2 was commissioned (a Vestas V80, rated at 1.8 Megawatts). In its first year it produced 4,088,000 KWh, and townsfolk showed considerable pride in the results. Six state and national awards had meantime accumulated. One commissioner joked "we have run out of wall-space in our the Light Plant's offices to hang our award plaques -- some will have to be moved to Town Hall." This pair of turbines was now supplying over 10% of the town's entire consumption of electric energy.

A residential-scale windmill was installed at the Weir River Estuary's nature center at town expense and with support from the Light Department, to further publicize Hull's commitment to green energy. A book was web-published in 2006 by Aly Clinton, "Our Neighbor Millie." She is proud of Hull Wind 2, which she nicknamed "Millie." It stands some 400 yards from the home that 8-year old Aly shares with her parents and her younger brother Charlie. Charlie helped with the illustrations. She and Charlie held a book signing and lecture at Hingham Public Library, where the two received awards -- and revenue from book sales. Part of this revenue stream has been directed by the co-authors to the non-profit Weir River Watershed Association.

By early 2007, planning was underway to install a set of 4 turbines offshore, total rated power to be roughly 15 Megawatts -- enough to supply the town's entire need for electrical energy. A vigorous debate over how to finance this is still ongoing as of this writing (September 2007). The national magazine 'Distributed Energy' has a forthcoming article on the project and on this debate. Meantime, in the ten individual election campaigns of Commissioners (each year two terms expire), not a single campaign had omitted the wind power issue. And all 10 campaigns had included ads coming out in favor of more and more various windmills for the town.