Brief Comparison
The Northborough Wind Turbine Proposal and the Cape Wind Project

August 20, 2010

Introduction

The Northborough Wind Turbine project is a land based, single machine projected in the 900 kilowatt to 1.5 megawatt (MW) range. The size will be determined by a Feasibility Study scheduled for completion in 2011. The objective of the Northborough project is to offset municipal electrical power costs.

In contrast, the Cape Wind Project is a utility grade, commercial, for-profit, wind turbine farm, which consists of: 130 machines (3.6 MW each), generating 454 MW-max output, 170 MW-estimated average generation, off shore (4.8 miles from Mashpee and 15.8 miles from Nantucket island) at Horseshoe shoal in Nantucket sound, covering about 24 square miles.

Discussion

The Northborough project was begun in 2009 to support the Commonwealth's Green Communities program with the primary objective to offset municipal electric energy costs. Among the town services (police, fire, public works, administration/town hall), elementary and middle schools, and Algonquin High School; the Town's annual electrical energy use is approximately 6,101 MWhrs at a cost of $ 850,000 (power generation and power delivery). A Feasibility Study funded by an $85,000 grant from the Commonwealth is underway and will determine the optimum wind turbine size, location, project installed cost, community impacts etc. Further the study will provide a financial analysis including: a return on investment (ROI), payback time frame and potential funding or grant sources. Similar projects have been successfully constructed and installed at Holy Cross high school in Worcester and in the Town of Princeton with other Commonwealth inland communities investigating potential projects and applying for conceptual, feasibility and construction grants. Note: the turbine is NOT intended to serve individual homes or businesses within the Town of Northborough.

The Cape Wind project, as a commercial power generation venture, began its permit process in 2001 and has encountered significant opposition and court challenges. In May 2010 a Purchase Power Agreement (PPA) was signed with National Grid (the electrical distribution or wires company), where starting in 2013, power will be purchased for $0.187 per kWh or roughly a little under twice the cost of existing fossil fuel generation in New England. There is also 3.5% yearly increase over the 15 year contract and the price reflects Renewable Energy Credits, transmission and other related costs. If the Massachusetts Dept of Public Utilities (DPU) approves the project, National Grid estimates a $1.59 monthly increase in the average residential electric bill. The National Grid PPA is also only for 50% of the wind farm output, other parties (NStar, large industrial companies, power brokers) will be required to contract the remaining 50%. While off shore wind farms have been installed in Europe for sometime, this will be a first for the US energy market. Unconfirmed project costs are estimated in the $1 to $2 billion dollar range, primarily due to the ocean and subsea construction conditions. Note: the New York Power Authority is investigating similar projects in Lake Erie and Lake Ontario to comply with a state 30% renewable energy goal by 2015.

Summary

The Cape Wind project may or may not be commercially viable dependent upon fossil fuel price volatility, project delays (permits, legal challenges, construction difficulties), other proposed projects and technologies (hydro), etc. The Massachusetts Department of Public Utilities approval process should determine if the Cape Wind project provides overall value to the rate payers. The Cape Wind project will help National Grid meet its three percent long-term renewable energy contracting requirement of the Green Communities Act.

The Northborough wind turbine is a local municipal, electrical energy costs "off-set" project, which once the feasibility study is completed will be presented to the Town for a vote to approve or reject based upon its merits.

Both projects will provide electric power without the green house and NOx/SOx gases associated with fossil fuels.