

MARION ALTERNATIVE ENERGY COMMITTEE

SOUTH COAST WIND POWER COLLABORATIVE MEETING

28 Feb 11

1. The meeting convened at 7:00PM. The Agenda is provided as attachment 1.
2. Meeting attendees list is provided as attachment 2.
3. David Pierce of Marion chaired the meeting. He started the meeting recognizing the various city/town/organizational representatives present.
4. Mr. Daniel Webb from Falmouth, MA was the guest speaker providing a presentation addressing the planning and installation of a Vestas 1.65MW wind turbine at the Technology Park in Falmouth and sharing some of the lessons learned:
 - He had a 5-year permitting effort funded by grants and a commercial loan. He provided a list of permits required and noted that you really don't know if you will get to the finish line until you get there
 - Lose economy of scale with one turbine installation. Very difficult to buy one turbine, fortunate to be able to buy one from Massachusetts Clean Energy Center
 - Lots of consultants involved in the process. Specifically mentioned Boreal Renewable Energy for helping him through the process and the Delaney Group for the actual construction
 - The nearest residence is one third of a mile away and there are an additional half dozen within 4/10 of a mile. So far there have been no complaints
 - It was four months from ground breaking to operation. The installation required 26 tons of reinforcing rod and 32 cement trucks in one day to pour the foundation. The crane to do the erection came on 23 trucks.
 - As of 20 Feb 11 the turbine has been in operation 207 days and has produced 3GW of electrical energy operating with a capacity factor of 36.5%. It has offset 2000 tons of Carbon Dioxide, 2280 tons of Sulfur Dioxide, and 1120 tons of Nitrogen Dioxide
 - Vestas has a robust data dashboard that provides real time status of the machine
 - He has a separate power meter. His facility can only use approximately 10% of the power generated, the remainder is sold to the grid.

Questions and answers followed:

- Q - How do you maintain the machine? A – Contract with Vestas for \$70K per year
- Q – What is the weight of the foundation/entire unit? A – Doesn't know, would have to research
- Q – How did you decide to install a turbine? A – In 2004 was investigating installation of small turbine for the business, received recommendation to install Industrial size turbine
- Q – How did you take into account negative externalities (resident problems)? A – Have not done precise economic model of negative or positive externalities. Have letters of support from the nearest residents. You must realize that the negative externalities of coal plants are the removal of mountains in West Virginia and that the

byproducts of the Brayton Point power plant are killing people and contaminating our water and soil.

- Q – How close do you work to the turbine, did you do noise study before construction? A – Office is 500 feet from the base of the turbine. Noise study model predicted that the turbine would be within noise limits. Later study in September 2010 showed it was within noise limits.
- Q – Are you concerned for the potential that net metering may not last? A – There is a risk but enough municipal projects are coming online that it would be difficult to change significantly.
- Q – What was the origin of the design and construction funding? A – The Feasibility Study and the Construction Grant were from Massachusetts CEC, he also had an Federal (USDA) grant, and a Treasury Section 1603 grant for a renewable energy project.
- Q – Why do you believe that Falmouth Town 1 turbine has complaints and you don't? A – Really not sure, only significant difference is that the nearest residence to his turbine is 1/3 of a mile whereas the nearest residence to Wind 1 is 1/4 mile.
- Q – What will you do differently if NSTAR changes how much they will pay? A – He relies on NSTAR rate, probably would not have done the project. But this is similar to net metering, it will be difficult to change. Also expect that the price of fossil fuel will continue increase and so will the price of electricity.
- One couple had no questions but voiced their position with respect to the Wind 1 installation and their perception of the noise situation.

5. Individual presentations followed:

a. Westport

- Their committee has been working for approximately 2 years
- Have a site chosen behind Fire Station
- Have been to two Town Meetings and have overwhelming support
- CEC has funded their Feasibility Study
- Have a consultant researching the height of tower, pushing for 100 meters but may have to be shorter. Wind study supports an 80 meter tower.

Questions and answers;

- Q – How much of the Feasibility Study did CEC fund? A - \$56K from CEC, \$21K paid by the Town
- Q – How many homes within one mile? A- Estimate 6 homes with the closest being 1000 feet
- Q – How much do you expect it to cost and what is break even time? A – Estimate \$5M to install. Portsmouth cleared \$200K after costs in the first year, they expect to also
- Q - How did you take into account negative externalities (resident problems)? A – Not yet. Personally oppose coal plants, study of the Sommerset plant has attributed 100 deaths per year to pollution. Not going to do without electricity. Negative externalities are injecting poison into the ground to force out natural gas or burning trash to generate electricity.

b. Dartmouth

- Propose two 1.6 MW turbines on 220 acres of Town owned land. The land contains wetlands which imposes limits on potential sites
- Nearest residence is 1200 ft
- Have the funding in place, have the site design, have completed flicker and noise analyses. Will redo noise analysis in winter
- STB Engineering will be the Project Manager for the project
- FAA lowered the turbine heights
- Looking for third party involvement to share the risk and benefits
- Investigating new quiet turbines
- They have joint venture to install a 1.4 MW solar photovoltaic installation on 10 acres.

Questions and answers

- Q – Where in Dartmouth? A – At the end of Chase Rd
- Q – Will there be a dashboard for Dartmouth High School use? A – Yes
- Q - How many homes within 1300 ft? A – All residences are to the West, not sure how many or exact distances
- Q – How does your cost compare with Cape Wind or Hydro Quebec? A – Don't know, but should point out that Hydro Quebec flooded large area which is a negative externality. All their information is available on line.
- Same couple had no question but voiced their position with respect to their perception of the wind turbine noise and how it affects them.

c. New Bedford water department

- Just completing renovation of water treatment plant in East Freetown. Included replacement of windows with double insulated glass, new boilers, new insulated roof, and photovoltaic panels on the roof.
- Bids are due soon for the installation of photovoltaic panels on a number of schools
- Met tower is down after collecting one year of good data, investigating potential sites for a wind turbine at the waste water plant.

d. UMASS Dartmouth

- Will be installing 600KW turbine this Fall. Turbine from Cape Cod Community College
- Will be 220 ft tall
- Expect to offset 292 tons of Carbon Dioxide, reduce their carbon footprint by 20%
- We need to be taking responsibility for our own energy use and production

Questions and answers

- Q – Where is it physically located? A – Original campus design had reserved area for a focus view, turbine will be located there.
- Q – How close to nearest building? A- Not sure, within fall zone.

e. Fairhaven

- No representative but David Pierce reported that they are moving forward on a project to install solar panels at their landfill.

f. Marion

- Still waiting for final version of Feasibility Study. Don't expect any significant changes from draft version
- Have issued RFP to accomplish noise survey to support the Great Hill site. Have

received proposals, in the process of identifying funding needed

- Basically in holding pattern

Questions and answers

- Q – What is distance to nearest residence? A – Believe that is 1300 ft.

6. Mr. Luke Hinkle from My Generation Energy spoke about the planned photovoltaic installation on Bill Saltonstall's house:

- The installation will be of high efficiency panels to generate 3.6KW
- Estimate will provide Bill with 60% of his energy requirements
- In general, a moderate size panel installation would cost \$20K - \$30K
- Including incentives, expect a payback of 3.5 – 5 years. Without incentives payback would be 23 – 25 years
- Panel warranty outlives payback
- They can do all size installations, have done 3 commercial installations of 100KW – 200KW

Questions and answers

- Q – What is durability of solar vs wind? A – Can't say, not an expert in both
- Q – Does the company help customers to get incentives? A – Yes, realize that the house is net metered
- Q – Do they do commercial buildings? A – Most yes
- Q – What happens to excess energy generated? A – It goes to the grid and you get credit for it or you can assign the credit to another account
- Q – In broad terms, how many square feet of panels to generate 2 MW? A – Believe that a circle with the radius to the tip of the turbine would generate the same amount.
- Q – What about improvements in efficiency in recent years? A – There are some breakthroughs in the lab but they have not made it into production. Remember when a panel is 2% more efficient it means that it has increased 0.02 times its current efficiency rating

7. Massachusetts CEC representative Martha Broad spoke briefly

- CEC does provide grants
- Believe that wind turbines provide promise but recognize that they can't be installed everywhere, wind speed has huge impact
- Expect 7-10 years for payback
- Things they consider are economics, wind speed, site appropriate, public outreach
- What is new (1) wind siting review bill, (2) looking at siting best practices

Questions and answers

- Q – Is CEC a state agency and what is funding source? A – CEC is a quasi public agency, money if from a rate payer fund that was created in 1997
- Q – Just involved in community projects, any effort to have communities participate in off shore projects vice in residential areas? A – State does not actively coordinate with off shore projects

- Q – Are there any communities involved with off shore projects or do the off shore projects just tie into the grid? A – No community tie in, not enough money to influence a large project
- Q – Issue of siting, do you work with DEP with respect to noise problems (DEP has been criticized for not measuring)? What is best siting mean? A- Have to look at science-based impacts. No clear consensus of health impacts. Will provide contact information so you can ask specifics.
- Q – What are Towns doing to reduce oil/gas use, reduce carbon footprint? A – Conservation is the number one thing, do an energy audit.

8. Meeting adjourned at 9:00 PM.

Respectfully
<signed 28 Mar 2011>
Norman Hills
Secretary

Attachment 1

South Coast Wind Power Collaborative

Music Hall

Marion, MA 02738

Monday, February 28, 2011

7:00 p.m. to 9:00 p.m.

Agenda

1. Introductions of those present.
2. Keynote Speaker: **Daniel H. Webb**, Manager of NOTUS Clean Energy, LLC will speak about the 1.65 MW wind turbine operating in the Technology Park in Falmouth (twin to the Town of Falmouth's). He will address the steps taken to prepare for the turbine's construction and the lessons learned now that it is operating.
3. Town by town brief updates on progress made in your search for wind power or alternative energy programs within your town or school since our last meeting on Monday September 23, 2010.

Acushnet	Henry Young
Barrington RI	David Baum
Bourne	Liz Caporelli
Dartmouth	David Hickox
Fairhaven	Jeff Osuch
Falmouth	Megan Amsler
Fall River	Al Oliviera
Marion	Norm Hills
Mass Maritime	Paul O'Keefe
Rehoboth	Judy Wilson
UMASS Dartmouth	(1) David Ferguson Manny Del Lima (2) Susan Jennings
Upper Cape Voke	Kevin Farr
Wareham	Scott Palladine
Westport	Dave Dionne

4. Luke Hinkle, My Generation Energy, residential PV manager will speak about solar panel electrical project on Bill Saltonstall's home in Marion
5. Report from Nils Bolgen (CEC).
6. Adjournment.
7. Our next meeting will be Monday, September 26, 2011 at the Marion Music Hall at 7:00 PM.

South Coast Wind Power Collaborative
Meeting
28 Feb 2011

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Comment [BS1]: Norm – Please add my name and email. Thanks.