

Panel Discussion: The good and bad of on-farm wind power

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Initial Research: What is your motivation? Save money? Go Green? Looks cool? Do initial research by studying Mass Technology Collaborative website at www.masstech.org at Small Renewables Initiative section.

My Plan:

- 1) Meet with an installer – many listed on above website
 - a) Evaluate site and wind resources – truewind.com
 - b) Discuss expenses and issues
 - c) Electricity usage history – amount and consistency
 - d) Determine scale of equipment
 - e) Evaluate similar installation(s)
- 2) Contact Utility Company or Municipal Power authority
 - a) Interconnection – net metering
- 3) Building Inspector, Planning Board, Conservation Commission
 - a) What are existing ordinances/bylaws?
 - b) Permitting could take 1 – 2 years
 - c) Classified agricultural equipment?
- 4) Cost Sharing/Grants
 - a) Mass Technology Collaborative
 - b) USDA Rural Development Program
 - c) NRCS Equip Program for farms
 - d) MDAR programs – Gerry Palano (alternative energy specialist)

My difficulties:

- 1) No ordinance or bylaw to guide City of Amesbury in permitting process
- 2) Had to demonstrate, with help of Building Inspector, Planning Board, Mass Dept of Ag Resources and Mass Farm Bureau, that our installations would be classified an accessory agricultural structure and would be permitted by right.
- 3) Neighbor filed an appeal to Building Inspector's decision to permit project. Worked stopped 2 months to wait for hearing.
- 4) Vermont installer not familiar with levels of oversight required in our state.
- 5) Mass Structural Engineer stamped tower footing plans required – redesign added expense
- 6) Had to retain local General Contractor and local Electrician for oversight and work to satisfy license requirements
- 7) Turbine manufacturer 5 months backlog on orders

- 8) Inverter needed parameters reprogramming
- 9) Alternator malfunction

My evaluation:

By the time this presentation is made, three 10kW turbines and one 10kW photovoltaic will be in operation at Cider Hill Farm. My wind resources were estimated to be in the range of an average of 10.5mph giving me a monthly output of 800 kWh a month. This is proving to be true for the windy months of late fall, winter and early spring, but in summer drops down to 200kWh a month. Total annual savings will be less than the projected \$1500.00. If I had to pay the full installation costs of more than \$50,000 per turbine, this would never pay back during its rated life expectancy. The solar panel installation costs even more at \$85,000, but will produce all of its projected output of 12,000kWh a year. At this time, the grants are necessary to achieve a reasonable pay back rate, which should be between 5 to 10 years on our various systems. The greatest value of these installations for me has been the ecstatic approval of our customers, and the number of news articles written. There is nothing like a sunny, windy day.....