Alternative Energy Committee
April 29, 2013

Members present: Larry Bean, Chair; Burke Henry, Vice Chair; Carl Frederickson, Glenn Carlson and Tom Banner
Members absent:
Also present: Nick Nelson, Town Board Supervisor, and Pete Clark, Town Administrator
Public present:

1. Call to order.
The Alternative Energy Committee meeting called to order by Chair Larry Bean on Monday, April 29, 2013 at 11:13 a.m. at the Town Hall. A quorum of the committee is present as reflected in the members listed above.

Had pre-meeting site visits with solar contractors at the Materials Recovery Facility (MRF) and residences with John Johanning of the Let It Shine Company. Chris LaForge, Great Northern Solar, was not able to come as he is doing some solar education work in Colorado and will return May 6th. Chris is a wholesaler and serves contractors like John.

2. Review and approval of the following AEC minutes:

A. April 15, 2013

Motion by B. Henry to approve the April 15, 2013 Alternative Energy Committee minutes as presented, second, C. Frederickson. All in favor, all aye, no opposed, motion carried.

3) Update on Wind Energy Communications.

L. Bean received a number of emails from Bob Owen after our last meeting in regards to putting in an offshore wind turbine on shoals of the southeast end of Madeline Island. According to Bob Owen this turbine would be located at the sand spit off of Long Island. L. Bean emailed him back and said he needs to Ashland County, the Bad River Tribe and the National Park Service as this is out of our jurisdiction.

4) Madeline Island Solar Energy development discussion with Solar Professionals: Chris LaForge, Great Northern Solar and John Johanning, Let It Shine Company

John Johanning started training with the Midwest Renewable Energy Association in 2006 which is just east of Stevens Point. He has been in business since 2007 in this area installing systems, doing site assessments and teaching the wind energy course at WITC in Ashland, WI. He has installed 12 – 15 systems in Bayfield and Ashland County with a variety of grid ties. Of late the installations have been off grid systems for cabins. He has a tracking type system on his house and before he put in a hot tub he met and exceeded his total consumption with his 3kw system. He said at the present time tracking systems are not used because panel prices cost a lot less and it is easier to add modules to the array rather than using a complicated tracking system. A $900 module back then now costs under $200. We do not have the resource of AZ but we there is enough resource in the summer. Winters are short on sunlight but if you are on a grid tie system anything you produce over what you consume the grid will store the power for you. The power company buys your energy and basically you buy it back when you need it.
He has a fairly small company. Technology changes fast but the modules or panels are pretty much the same. He brought in a micro converter today to show to the committee. A micro-converter is an inverter that goes right into the panel, takes the DC electricity and turns it into AC electricity right on the panel.

John said he is on the grid with Xcel Energy and they pay him for any excess of power. A few years ago that payback was around $150 - $200 annually. He is on a time of use rate rather than standard. Standard is 11 or 12 cents a kW hour. Time of use during day he will buy or sell at 21cents a kW hour as opposed to 11 or 12 cents. At night he buys or sells, after 8pm at a nickel a kW hour. During the day when he is not using much electricity he generally sells his power at 21-22 cents a kW hour and pays a nickel at night. L. Bean said Wisconsin is among a dozen states that pay you retail. Most pay wholesale.
John said the controversy now is the purchase for same price. L. Bean said there are two sides – one group wants to do away with advantageous buy back and then there is the other way – require all utilities to have a certain percentage of their power from renewable resources.

Question of what would be a typical installation. John said the module he brought in is a 175 watt module which was a big module back in 2007. Manufacturers are now coming out with 300 to 350 watt modules. You would use 250-350 watt modules today and have fewer points of connection; they would be faster to install and manufacturers are geared to crank these out so costs are kept down.
Estimated cost of an installation that includes the panels and hookup? John said in this area he uses a per watt cost. Until he priced out an installation he would say $4.00/watt installed. If you would have a 5000 watt system which is composed of 22 – 250 watt panels the cost would be $20,000 system installed. Some areas of the country installation cost are $3/watt residential scale. Commercial is down to $2/watt utility scale. If several people were interested in an installation you might be able to order the modules in quantity and save some money but he does not think the installation would be in the $3/watt range.
Short discussion of the brands available. Some brands are Sharp or Helios. The difference is in the frame. To be aware of is that solar companies are going in and out of business so if you have a warranty that will guarantee 80% output for 25 years how good will that warranty be if the company goes out of business?
How will the installation hold up in a hailstorm? John said the modules are engineered to take an inch and a half ball of ice, laying flat at 50mph. Generally do not mount them flat so there will be a pitch and that would help.
Where do the inverters go? John said the inverters go inside the house or garage. The panel produces to the inverter. If there is space in the breaker you can just tie the inverter into a breaker in the panel. The inverter would feed the breaker so if you are using a load in house the electricity will go there; if nothing is running the electricity would go back out through the meter and go to the next door neighbor and the power company sells the power to your neighbor.
Johan said he keeps inverters inside; they are made to go outside but he believes in keeping them inside.
L. Bean said for a power plant to deliver electricity to your home it takes 3kws to produce 1kw for you. (1 to produce it at the plant, 1 to transmit it and 1 for you at the house) and that is why utilities like these installations because when my overproduction went to my neighbor's that cut down on that 2kw of the production and transmitting equation. The closer you can get the power to the point of use the better. The same way, if you eliminate a kW you are eliminating 3kw to be produced.
How do you keep the modules clean and clear of snow? John said snow is the biggest issue and he tilts his system 55 degrees. The snow usually will melt off in a day of sunshine but an ice

storm will take longer. You can use a metal roof rake. John tries to get a 45 degree angle on a roof. Rain washes the modules clean. John likes the modules on a pole or rack.
Borrowing money from a bank to purchase an installation? John said if you are an Xcel Energy customer, you can get capped at $1200. There are State rebates from the Focus on Energy Program. On your utility bill you have a service charge of $8 that goes into the Focus on Energy Program which goes toward winterization, appliances, etc. When you apply for the $1200 State rebate that is a way you can get your service charge back. There is also help from the Renewable Energy program. Question of what the tax credit of 30% with no cap is. L. Bean said that is federal. John said you could put in the biggest installation you want and get 30% back.
So, you put in a $25,000 system and get a $7500 tax credit. This is not a check for $7500.00 but over a period of years you can deduct so much per year up to a total of $7500.00. Or you could pay $0 toward your federal income tax that is taken out of your paycheck. At the end of the year you would have a liability but you would have an income tax credit so that would equal out. This is in place until 2016.
Discussion of pole vs tracking systems. Tracking systems are generally not recommended as they cost more and are not really that effective. Poles are easily adjusted now. Nick Nelson said the change is dramatic if you rotate twice a year.
Any additional costs such as tree trimming and landscaping? John said he just installs the equipment but he could tell you want trees should be cut down.
Question about the site at the MRF (Materials Recovery Facility). John said this is a nice open space to put a solar system on and the site is almost ready to go. There is no venting of gas, very little grading, fairly flat. This would be a ballasted system. Almost ready to go.
Nick Nelson leaves the meeting about noon.

5) Review/approval of site assessment proposal.
Discussion of the draft request for proposal for site assessment.
The Town's needs are approximately 170kw so you would need a 170kw system. For a home you probably would need a 6kw system. Question if solar energy would directly provide power to all the town buildings or would the installation produce enough energy to run the MRF and then the excess would be sold back to the utility company and that money used to pay for the remainder of the Town's utility needs? L. Bean said the solar array would provide electricity into the grid and the 170 KW would offset all of the Town's electrical usage.
Project Contents: #7: "Recommended next steps for the Town" – Town in this case also means residential.
Assessments sites: add 1150 Big Bay Road, 2642 North Shore Road, 669 Middle Road and the Town facilities at the airport. Look at the airport in the event the DNR would have a problem with the MRF site.
Question if there is any federal funding for an installation at the MRF. L. Bean said there is funding available through Rural Development, the EPA, and the Dept of Energy.
Time table: Proposals will be due at Town Hall May 15th. This committee will meet after the 15th with bidder. The assessments would be completed by May 29th. A report will be submitted and accepted by this committee on June 10, 2013. The issue is that this committee has limited funds and might not be able to pay for the whole thing. If the bidder submits a number for the town and another for residences we could split the cost.
Waggie will send the Request for Proposals to a list of assessors L. Bean will find on the Midwest Renewable Energy Association directory. These will be regional assessors.

Motion by T. Banner, second, B. Henry to approve the Request for Proposals Solar Energy Site Assessment document. All in favor, all aye, motion carried.

6) Next steps.
L. Bean will contact people involved in the leasing program.

7) Schedule next meeting and set next agenda.
Agreement to wait until we receive a response in regards to the Request for Proposals to schedule the next meeting. Committee members can look at the proposals at Town Hall and then email their preference to L. Bean.

8) Adjourn.
Motion by B. Henry to adjourn, C. Frederickson, second. All in favor, all aye, motion carried.

Thank you to John.

Meeting adjourned at approximately 12:15 p.
Minutes taken from recorder and respectfully submitted by Kathy Erickson, Clerical Assistant

Minutes approved as presented June 20, 2013