LYME ENERGY COMMITTEE
MINUTES
November 15, 2010

PRESENT: Becky Lovejoy, John Gartner, Ross McIntyre, Carola Lea, Dan O'Hara, Matt Brown, Gary Phetteplace, Mike Morton

GUESTS: Scott Nichols, Mark Bolinger

Meeting called to order by Becky Lovejoy at 7:30 PM

1. Presentation by Mark Bolinger of Lawrence Berkeley Lab, on New Hampshire's Solar Mandate

New Hampshire's must be 0.04% of load in 2010, doubling in 2011 and again in 2012, increasing to a plateau in 2014.

Utilities comply by getting SRECs (Solar Renewable Energy Certificates), equal to 1MWh, in a free market, providing revenue to photovoltaic system owners.

Q: how long to make 1MWh?
Mark: as long as it takes, but many have shelf-lives

Projects can be anywhere in the New England grid. Of the 12 PV projects (or aggregations of PV projects) registered in NH's SREC program, only 2 are located in NH.

Mass. has similar plan, but disqualifies sites subsidized by the utility, so those PV sites come to NH utilities

NH SRECs are cheaper than in other states, because targets are lower and supply comes from other states.

Revenue for a typical home
• 4.5KW system (like Mark's) should generated ~5 SRECs/year
• $150 to $350
• cap is $160/SREC, which would be $800 for Mark
• expenses, like paying a reader, then taxes

Is it worth it? Large sites, like Wagner Forest Management at 27KW, will have an easier time with fixed costs

Requirements:
• install after 1 Jan 2006
• grid-tied (Mark thinks)

• mostly PV, but solar thermal has a conversion factor

Scott: you'd need to measure BTUs for solar thermal

How do you join?
• install "revenue-grade electric meter", ideally when you put in the system
• find an "independent monitor" (IM) to read annually and submit to PUC
• register with PUC
• PUC mails you SRECs, which you can sell to utilities, on your own or aggregated

Problem: only 3 IMs registered in NH:
• NHEC (reads their members only — considering doing others)
    - NHEC charges members $11/month
• an individual in NJ (won't do small systems)
• an individual in Manchester (charges $100 per read plus 50c/mile)

How do you qualify as an IM?
• licensed electrician
• licensed engineer
    - Mark has found one possible person in Lyme
• certified building analyst or certified mechanical professional
    - Bob Walker of SERG qualifies
• energy manager certified by Association of Energy Engineers
• home energy rater certified by Residential Services Energy Network
• IM certified under a similar program in another state
• an electric distribution utility

Downside to selling SRECs
• you can no longer say you're "solar powered" — businesses can't make claims
• makes it easier for utilities to comply, reducing their solar efforts
• transaction costs of selling SRECs is high

Mark is "toying" with aggregating in Lyme
LIsted Lyme PV systems he's found. Wagner is the largest

Ways the committee might help
• resource for prospective PV owners in Lyme
• find local people to talk to
• interview Lyme PV system owners and distill that
• encourage owners to put in a revenue-grade meter
    • not only SRECs, but a more accurate way to keep records
• facilitate IMs in Upper Valley

Ross: The utility used to pay you if your meter runs backwards. Can they deny that if you do SREcs?

Mark: Comes up in some states, and net-metering doesn't care about source or sale.

Dan: Sell to NJ?
Mark: No; it's adifferent market.

Matt: What if the demand too high?
Mark: Utilities just pay a cap into a fund at $160/SREC.

John: Payback time without SRECs?
Mark estimates 14 years for his; that drops 3-4 years with SRECs

2. Presentation by Scott Nichols of BioHeat USA

Bioheat sells wood and wood-pellet boilers .Does a lot of biomass policy work with that

Trade group: Biomass Thermal Energy Council

Two things:
(1) Pie in the sky idea for 250th
(2) General info about biomass and thermal energy markets

Why relevant?
• Thermal energy is 31% of energy use (transport 29%, electricity 40%).
• In the north country, 75% of residential energy is thermal.
• _1.5B gallons oil over 5 years for heating
• total expenditures $4B, 80% leaving the state (20% distribution and service)
    a lot leaves the U.S.

NE and NY consume 86% of US home heating oil (everyone else is natural gas and elec)

Biomass benefits
• increase value of timberland
• fuel dollars are kept in the local economy
• national energy security and rural economic strength
• greenhouse gases reduced
• no/low sulfur and metal
• USDA "Billion Ton Report" — could replace 30% of petroleum consumption
    368M dry tons of sustainable woody biomass in forests (forest service report)
    >1B tons including short-cycle crops and so on

Biomass vs ethanol
• convert biomass to heat with 80% efficiency
• to ethanol is maybe 60%
    • ethanol interest in US may be driven by DOD, trying to avoid non-imported fuels

• poorest communities have the most wood

Pie-in-the-sky idea:
"District Energy", popular in Europe
• Centralized plant produces steam and hot water
• Some power created as a by-product, but most efficient if heat-driven
• BTU meter in the home
• Expense is burying the pipes
• Usually burn chips -- least expensive form of biomass
• Can burn fairly wet biomass — no energy cost to dry it

in Europe, plants owned by a co-op of farmers or landowners
• town may own the grid
• steady demand for wood resource and a steady source of revenue

Scott showed a photo of a plant, about the size of a medium house

Biomass for electricity is a "dumb idea" — graph of various options
• Three big electric plants proposed in Western Mass.
• Were actually not going to be carbon-neutral, because trees wouldn't be replaced

Lyme
• Might put such a facility at Record's farm
• Compact, multi-use village area
• Solves biomass fuel storage problems for many buildings
• Unique backbone of forest-related business; several large, wealthy landowners
• Opportunity to bury other things at the same time: power, update water, hydrant pipes
• Better fire safety in historic buildings
• Ample vision of sustainable energy future and a belief in self-sufficiency

NH Resource Conservation & Development (http://nhrcd.net)
• got Recovery Act money
• hired 2 groups to create an on-line tool for NH communities to assess district heat
• focuses on civic aspect
• town meetings are rejecting this because homework not done
    • hence, "community roadmap"

Woodpile posters
• photo contest with woodpiles
• selling for $10; funds go to heating assistance
• would like help getting the word out

Q: How far from the plant can you put homes?
[Gary?]: Denmark: 4 foot diam pipes, hundreds of miles
Scott: RecordRidge to Church is 2,000 feet

Gary explained “Load density” — how much heating load per unit area
Cemetery is a major break in looking for density

John: cost to retrofit a house?
Scott: Maybe $15,000, including removing existing heating system, adding pumps
Hot-air houses would need a heat exchange

Ross: Politically, problem with people who just got a new boiler that they hoped would last 20 years
    Could you add buildings later,as their boilers died?
Scott thought you need people in at the beginning

Becky: Other towns doing this or looking at this?
Scott:
• Concord heated by biomass district
• Middlebury has one in — college
• Dartmouth has the distribution, but it’s not biomass-driven
• Colbrook, Plymouth, Randolph trying…

NHRC&D has a pamphlet
    Lyme is a “partner” because of the garage

Ross: Lesson from Denmark — once people are invested in it, they care

Scott: Private-public partnership might be the way

Ross: Would be easier from scratch. But a quarter of a percent of 5B dollars…

Matt: “Devil’s advocate” friend Brett asked him: Does a central plant’s efficiency make up for distribution losses?
Gary: Loss varies by density

[Scott?}: Pellets are about 2.5x times the $/BTU of wood chips

Scott: Problem with growth is getting people
Loggers average age 50

Mark: Plants supply Domestic Hot Water and heating — how do they do in summer at DHW only?
Scott: Plants can shut down some boilers, and can reduce a running boiler up to 30%
Ross: some plants use a large storage tank outside.

Matt: Staff for a plant?
Scott: On call

Gary: study in Norwich

Burying pipe is often more expensive than the cost of the pipe

Scott: Wagner is getting into wind development

Matt: committee's homework is
(1) Selling posters
(2) Finding an IM
Gary is a PE
Registering is free

3. Comments on Lyme wind proposal

Comments from Mark:

• Clarify whether one needs a permit for measurement tower?

• Tower height limit is based on height of surrounding trees, which seems restrictive

• How do you check sound level at the property line: Measure or estimate?

• Restricted to only certain types of wind generators
- that's more appropriate when state is subsidizing and wants to make sure you get something suitable
- list of models will need updating

Comments from Gary:

What does "small" mean? 65ft-diam blade for 100KW power plant.

Comments from Ross:

Monitoring function shouldn't require a permit.

Next meeting: Monday, 20 December, 7:30 pm at Town Offices.

Respectfully submitted,

Mike Morton