ENFIELD ENERGY COMMITTEE MEETING MINUTES of 09/23/2008 - Approved -

MISSION STATEMENT: To identify energy savings for the town and energy savings opportunities for the community

CURRENT GOAL: Our goal is a 10% reduction in total energy consumption by the Town by the end of 2009 with incremental decreases thereafter, toward a three year goal of 25 % reduction in total energy consumption by the Town (relative to the 2007 baseline data) by the end of the fiscal year 2011.

DATE/TIME: September 23, 2008

LOCATION: Whitney Hall Conference Room, 23 Main Street, Enfield New Hampshire

I. Call to Order 5:10 PM

Attendance:
Present: Steve Goldsmith, John Burritt (alternate), Wendell Smith, Charles DePuy, Rich Lammert, Carol Lammert and Bo Petersson (alternate, pending swearing in).

Absent: Alisa Bonnette (Administrative Staff)

Phone Conference Participants: Harry Young of Jaffrey, New Hampshire and Daniel Hoviss of Putney Vermont

Visitor: Steve Schneider, Town Manager

II. Approval of 8/26/'08 Minutes

There were a couple of corrections received by e-mail prior to the meeting and the need for two grammatical corrections were indicated. The minutes were approved with these changes.

III. Old Business

Committee membership

Wendell Smith has been sworn in as a voting member of the committee. Bo Petersson will become the alternate to replace Wendell in that position.

Goals and Objectives

Mission statement and current goal are included on the meeting agenda and the minutes. John asked that the committee provide a clear intent with initiatives undertaken by the committee. He has found it helpful to provide a clear understanding in retrospective review of minutes.

Update on meetings/events/activities and informational resources

Wendell reviewed his various activities toward renewable energy. He continues with Thayer School of Engineering to investigate hydrogen power as an energy source.

Wendell participated in a tour of the Smith Pond area to investigate the potential of application of a micro water turbine to generate electricity. There is interest in continuing with the resourcefulness of the Shakers in use of hydro power. Currently there are remnants of an aqueduct in the area though there is was no water flow at the time of the tour. A minimal drop of four feet in water level (a four foot head water) is necessary for a micro turbine application. Smith Pond had been scheduled for demolition in 2009. The landowners with abutting pond property and nearby residents are opposed. Land owners have generously offered to pay for repairs to the dam. Ownership of the dam will be transferred to the town. (Present landowners making repairs do not own the dam itself.) Saving Smith Pond is relevant to the Energy Committee concerns in that it has a potential capacity because of the water flow water and its elevation. The cost of the repairs is in the hundreds of thousands of dollars. In his judgment, upon conferring with the engineers, Wendell believes the repairs would be very complete and appropriate.

Wendell reported that study of the hydro power system, using a Nautilus micro turbine, for potential power generation on Mascoma River at the bridges on Main Street is progressing slowly. Providing power to light the decorative lights on the Main Street bridges is an interest. The cost of one turbine is about $20,000. This is the same type of micro hydro turbine that might be used to generate power from Smith Pond.

Wendell would like to confer with Mr. Taylor, who generates hydro power at the Baltic Mill on Mascoma River, to investigate what, if any, options exist there for any sort of municipal or community project.

Enfield Library Architecture: alternative energy usage

Wendell reported that he and Bo attended a Library Committee meeting including other engineers and architects who shared concepts of construction of the building using renewable energy. Geothermal heating and cooling techniques have been selected by the committee and are under consideration. Charlie expressed interest in extending the use of geothermal heating/cooling system to existing buildings (Whitney Hall and the Police Station) which have shown to have large increases in energy consumption during warm weather. (This is attributable to use of air conditioning while computers generate heat in normal functioning.) Bo explained the mechanism of a heat pump and some of the issues with such a system if built to expand at a later date. He included his thoughts that expanding the library construction to include the potential for retrofitting the existing buildings would be expensive. Well drilling is a definite cost factor. In the U.S. wells are the method used while elsewhere horizontal collaterals are run under the ground surface. Geothermal for the library will cost $85 thousand extra. Wendell and Bo will continue to confer and consider horizontal “wells” in the parking area. The pipes might be of the sized to add geothermal to the other buildings later. Additional renewable energy methods are being considered (hydro power, natural lighting) along with thermostatic control. Leadership in Energy and Environmental Design (LEED) provides current best practices in sustainable building construction. While the building will not be LEED accredited (due to the additional costs associated with that accreditation) LEED concepts are being addressed.

Town Energy Audit progress

Charlie reported that he is not anticipating assistance from Nationalgrid regarding electrical efficiency. It was asked if there could be a change to another energy supplier that would use renewable energy sources. Discussion followed on power sources/supplier versus carrier. It was

noted that wind-generated electrical power is being used in Lempster, New Hampshire with three turbines in action. Warner is another location for wind power. A wind feasability study of this areas was suggested.

Charlie has continued discussion with Police Chief Crate regarding the EPA Portfolio Manager data about power usage at the Police Station. Of concern is the need for air conditioning and heat generated by office equipment during summer. The need for the police to have a printer turned on at all times is necessary for generating/duplicating information immediately. Laser printers require much energy to maintain internal heat for bonding ink to paper. It was noted that individuals are trying to improve their own buildings' power conservation rather than this being handled by a central person overseeing power usage for all of the town government buildings. It was noted that Chief Crate is very interested in decreasing the station's energy use. For use in the Police station Energy Committee individuals offered equipment. John Burritt provided, on a loan basis, a Kill A Watt meter (for assessing energy use of various items). Steve Goldsmith provided a Smart Strip (power strip with turn off capabilities for additional machines by a lead machine).

Discussion followed on power sources/supplier versus carrier. The potential for the town purchasing power from a company that has a larger alternative energy portfolio, compared to Nationalgrid, was discussed. Some members of the committee were unsure on the New Hampshire law on the right of a user to select a power supplier. Changing supplier could be costly. If one converted to a sustainable energy source tracking credits could potentially be profitable. Wendell suggested that getting pricing would be helpful.

Knowledge of existing wind power sources in the region was presented. Construction of a commercial wind farm in Lempster, New Hampshire, is in progress. Three of the eight proposed turbines are in place, though they are not yet operational. Cardigan Mountain School installed a wind turbine this summer. It is a Skystream 3.7 model that has a rating of electric power generation of 1.8 kW with a wind speed of 20mph and 2.4 kW peak at 34 mph with winds.

Steve Schneider, Town Manager, was present and mentioned that at a recent meeting the selectboard approved the placement of towers on town owned land, including wind turbines.

Steve Goldsmith mentioned that selling electricity in small scale is not nearly as cost effective as generating the electricity that one uses. The wholesale sell rate for electricity is much less than the retail buy rate, so just selling electricity would take 2 - 4 times as much generation as it would if one were producing 100% of the electricity which one would use. In large scale wind/solar/hydro power generation, there are economies of scale, but for small scale, its much more productive to make what one uses (and sell the surplus) than it would be to just selling what one makes.

Charlie will continue to work with people in various town owned buildings to reduce energy consumption.

Additional items were placed on loan for the town offices. John Burritt offered another Smart Strip and a Kill A Watt meter to the town offices (he gave these to Steve Schneider).

Steve Goldsmith provided a schematic on the sources of our energy available at http://www.nh.gov/oep/programs/nhenergyfacts/documents/electric_power_sector.pdf.

A person living in the area, Colin High, was mentioned by Wendell. Colin is a retired renewable energy professor who currently manages the Shaker Village water system. Colin may be able to contribute to the Energy Committee's endeavors.

Street Lighting

A three way conference call was arranged with Harry Young of Jaffrey, N. H., Daniel Hoviss of Putney, Vermont and the committee members. Both towns of Jaffrey and Putney are in the process of studying/modifying street lighting with potentially discontinuing lights, controlling duration of lighting, and/or modifying present lighting to decrease energy use while increasing illumination.

Daniel, chairman of the Putney Energy Committee, reported that Putney has 45 street lights. They began with a map showing street lights. Information had to be integrated to identify buildings and property owners in proximity. Currently they are contacting property owners to gather their opinions on removing or replacing the current fixtures. They have used astronomic calendar timers (programmed with seasonal light variations according to geographic location) for control of security lights. The cost is about $25.00 per timer. Daniel e-mailed the information to Steve Goldsmith. (E-mail information received 9/24: Available through http://www.1000bulbs.com/In-Wall-Timers.)

The town of Jaffrey, population 5000, has 200 lights (comparable to the number of lights and people in Enfield). Concerned citizens started their work in February, 2008. There are six working members of the group. Having committee members who are a lawyer and another with computer expertise were very helpful to the Jaffrey group. The Chief of Police and the Fire Chief have participated in a town tour (traveling together in a bus at night) and have offered their professional views on lighting. Inclusion of citizens who are positive role models in the community has been deemed to be vital to the success of the project. The group has conferred with the Town Manager. In a response to a request for information on process used by Jaffrey to meet with the public's desire to remove or modify existing lighting Harry stressed that THE key factor for success is dependent on the public coming to terms with what lighting does accomplish. Harry presented talking points and enumerated the following steps: 1.) provide information to the public that may counter current thinking that street lighting increases safety and deters crime; 2.) include aspects of global warming; 3.) present data on the reduction of the financial burden for the town; 4.) provide specific information on which lights are needed, which lights are to be removed and which lights are to be modified. The Jaffrey committee will be meeting this week with a presentation of the information collected, then a press release will be made and that will be followed by three conferences to discuss intended changes. A map of the town has been developed to depict current lights with present wattage indicated by color-coded pins. This will be accompanied by a list of recommendations of specific lights to be altered or discontinued. The final results will be presented, as unanimous, to the Selectboard This will be followed by the work order being submitted to the utility company.

Information was forwarded by Harry via e-mail following the meeting. (Permission was received from Harry to attach as Addendum # 1, Jaffrey's Street Lighting Committee - Work Plan and Addendum # 2, Draft of Guiding Principles and Criteria)

The mechanisms, for Jaffrey, in working with the electric supplier, Public Service New Hampshire (PSNH) was noted. The supplier sent two people to meet with the lighting committee. The committee was provided much reading material. The Jaffrey committee has

done three town tours to evaluate lighting in the town. A light meter was used to evaluate the lumination of each fixture. Types of lighting were identified. With each tour more lights to turn off were identified.

Comparisons were made between Jaffrey, Putney and Enfield regarding the annual expenditure for street lighting. Jaffrey was spending about $45,000 for lighting. The relative higher fee for Jaffrey may reflect the use of hige wattage lamps and the PSNH tariff for outdoor street lighting. Costs for removing/modifying fixtures in Jaffrey and Putney were discussed. Each town has a different electrical supplier and differ in the billing process. PSNH will remove the street light when the light is turned off; a fee of $111.00 is charged. There is not a charge for replacement of a bulb. An installation fee for a new fixture and bulb are charged. All lights remaining in Jaffrey will be changed to bulbs with lower wattage which have higher lumens emitted. The power company provided Jaffrey a table on changes in lighting with keeping the same wattage. The financial payback is anticipated to take 7 - 8 years. Emphasis was made on appropriate planning for community backing to avoid the costly activity of turning lights off and then having to turn them on again.

There was mention of the use of Light Emitting Diode (LED) bulbs. These are presently expensive and may have a limiting factor of bulb life when installed in a closed fixture. It is generally agreed that LED lighting is the most efficient way to light a space, but the current cost of the bulbs makes it difficult to consider LED lighting for the town. Over time as LED lighting becomes more common it is expected that the prices will drop. Ann Arbor Michigan has converted to LED lights.

Daniel suggested that it would be interesting to obtain information from power companies across both Vermont and New Hampshire for comparative bases.

Harry will continue to keep the Enfield Energy Committee informed of their progress.
Daniel will continue to confer with Steve Goldsmith, as well. Committee members were grateful to both individuals for participating in the conference call and for sharing their information and expertise. The conference call was completed.

Steve reported that he has conferred with Kurt Gotthardt, concerned Enfield resident, and has forwarded to him the information on general location, pole number and fixture style received from Nationalgrid. Kurt has offered to integrate his data with the above. Steve will forward the information to the committee when it is completed.

Public Visibility/educational opportunities

John Burritt has expressed an interest is building an educational unit to display various types of CFL light bulbs for comparison. Inclusion of one LED bulb was recommended. Committee members shared their ideas on making it the Best Bulb Board. This display could be used at events such as Town Meeting. It may be appropriate to have two displays if they are designed to be interactive (thus time consuming).

Recycling (deferred)

Report to Selectboard (deferred)

No Idling Ordinance

Reference was made to an e-mail clarification from Kathleen Brockett of the DES that the New Hampshire Code of Administrative Rules, Env -A 1101.01 - 1101.10 is a suggested regulation and it is not law. The current link is
http://des.nh.gov/organization/commissioner/legal/rules/documents/env-a1100.pdf
The address for the entire rules page is
http://des.nh.gov/organization/commissioner/legal/rules/index.htm.

Steve briefly reviewed the committee's work to date. Locations for no idling signage were noted. There are educational materials and signage available from the DES. Charlie spoke to the desire for signage with a simple icon depicting a circled cloud of exhaust from a tail pipe with a line through it. Steve provided committee members with a packet of several area towns' no idling/anti-idling/idle free policies or resolutions. Members were asked to review the content and submit their proposals for a town policy to be circulated among fellow members via e-mail. Steve was encouraged to provide the lead with presenting his thoughts. Following committee review the final proposed draft of the policy would be prepared for presentation to the Selectboard for discussion and potential approval in January, 2009. Members were encouraged to visit the website Idlefreevt.org. John asked that the committee clearly identify the intent of this initiative in the minutes. A suggested statement of intent was offered; it included education of the public on cost savings and reduction in carbon emissions.

Wendell spoke to the committee's previously expressed intent of a no idling policy to be in accord with that of Hanover's idling awareness campaign which is non-punitive in nature.
Initially, development of a no idling policy for Enfield may be targeted toward privately owned vehicles on town property such as parking lots, the transfer station and schools as well as private property where idling might be a concern (banks, ATM's and quick shops with drive-through services). Information on fuel expenditures for municipal vehicles was reviewed. Data was referenced which showed that 216 thousand gallons of fuel was used in with 82% used for vehicular fuels. It may be appropriate for a second phase of the town's no idling initiative address municipal vehicles. Charlie offered that Chief Crate is looking into use of hybrid vehicles. It may be possible to obtain exact data on fuel usage by each municipal vehicle.

IV. New Business

Projects - Compact Fluorescent Light (CFL) bulbs distribution/sales
CFL bulbs can be purchased for $1.00 each. They could be offered to the public at cost. There was discussion that this might be used as a fund raiser for the committee though there are town government constraints on fund raising functions by town committees. (It was noted that the committee could use some funding for incidentals.) Steve has information on where various CFL bulbs could be purchased. It may be helpful to establish a coupon system for the bulbs through local businesses such at the hardware store. Reference was made to the web site, 1000bulbs.com, that has a wide selection of CFL bulbs in every shape, size, color, intensity, temperature and those that are low in mercury.

Steve Schneider mentioned that there will be concern among citizens about the mercury content of CFL bulbs. Steve Goldsmith stated that there are newly designed bulbs that have a lesser mercury content though they are a little more expensive (though not substantially). The Enfield transfer station accepts all fluorescent bulbs for recycling and mercury reclamation. Steve Goldsmith addressed the concerns of citizens regarding mercury content of CFL's. He said that the amount of mercury in a CFL is far less than the mercury which would have been released by

conventional means of production of electricity used by the equivalent incandescent bulb. While there is mercury in a CFL, if properly recycled, none is released . If not properly recycled, LESS is released than would have been released as a result of having used an incandescent bulb in its place.

Committee Name

Steve Goldsmith noted that the committee name may be more attractive if it were abbreviated as EEC.

Website

Steve has set up a pilot Enfield Energy Committee website, energy.enfield.nh.us, for committee members to review. It is limited in scope presently but could be expanded. Committee members were asked to make suggestions.

V. Other

Steve Schneider mentioned that the town of Enfield will have a television program where town meetings, committee meetings, etc. will be made available.

Interest was expressed in placing the Energy Committee on the town Calendar.

VI. Adjournment

The meeting was adjourned at 7:15 PM

Next meeting

October 28, 2008 5:00 PM Whitney Hall Conference Room

Respectfully submitted,

Carol Lammert
September 28, 2008, revised 10/3/'08. 10/27/'08

Addendum # 1:

Jaffrey Street Lighting Committee – Work Plan

1. Goal: to identify and meet street lighting needs in Jaffrey so that only that lighting (measured in brightness and color) that is necessary is provided, and the lighting that is provided consumes the least fossil fuel derived energy of the available alternatives at the lowest possible cost.
2. Develop inventory of existing luminaires:

a. PSNH provided inventory as starting point.
b. Add observer information, including for each luminaire:
i. If it is currently functioning;
ii. If it overlaps with or duplicates other lighting sources;
iii. If it is located at a road junction;

iv. Whether there is a sky lighting effect or trespassing effect;
v. Its spacing and area lit relative to other adjacent street lights;
vi. Assessments of the color of the light;
vii. Whether more or less or no street light (lumens) at this location is recommended;
viii. Special considerations (e.g., notes regarding special Historic District lighting)

3. Develop criteria for judging street lighting needs:

c. Identify necessary functions served by street lights (consider security, traffic safety, special neighborhood or downtown characteristics, rural vs. urban locations, availability of other lighting at particular locations, etc.).

d. Identify standards for necessary lumens per location of needed luminaires (consider a uniform town-wide standard vs. more than one level of lumens depending on characteristics of location; consider all night lighting vs. partial night lighting).

4. Identify best possible solution using existing and available PSNH rates and equipment (metal halide and/or high pressure sodium; life-expectancy of luminaires; maintenance needs; smart- start; all night lighting only; possible carve-out for Jaffrey Center Historic District (& best options for District if carved out).

e. Identify dollars and KWHs that will be saved town-wide per year, projected for next 25 years or so.

5. Identify best solution if new PSNH rates are negotiated and approved by PUC f. Research costs, availability, durability, experience and compatibility with Jaffrey's lighting needs:

I. Consider lower wattage metal halide & high pressure sodium lamps
ii. Consider LEDs;
iii. Consider CFLs;
iv. Consider partial-night lighting;

g. Identify dollars and KWHs that will be saved town-wide per year, projected for next 25 years or so.

h. Identify actions needed to gain PSNH contract with new rates, etc.

6. Finalize and present recommendations to Town Manager and Selectmen.

Addendum # 2

JAFFREY STREETLIGHT COMMITTEE
DRAFT GUIDING PRINCIPLES AND CRITERIA
JULY 30, 2008

Draft Guiding Principles

Provide Needed Lighting: Impelled by critical public safety and community concerns, the Committee is seeking to ensure that the Town of Jaffrey has an aesthetically appropriate street lighting system sufficient to meet the needs of its residents.

Conserve Energy: Impelled by critical global warming and energy security concerns, the Committee is seeking to reduce, to the maximum extent feasible consistent with the Town's street lighting needs, the energy consumed by particular streetlights and by the Town's entire street lighting system.

Save Money: Impelled by critical Town budget and tax burden concerns, the Committee is seeking to reduce, to the maximum extent possible, the recurring and long-term costs of the Town's street lighting system.

Draft Guiding Criteria

Intersections: In general, there should be streetlights sufficient to signal the location of each intersection of major public roads where there is significant vehicular traffic.

Sidewalks: In general, there should be streetlights sufficient to illuminate sidewalks in densely populated areas where there is significant pedestrian movement.

No Wasted Light: The light provided by each street light should be no more than what is necessary to accomplish its purpose, should not illuminate the night sky, and should not shine into neighboring windows or yards.

Energy Efficient Lighting: The Town's new street lights should be state-of-the-art in terms of the light (lumens) provided per watt of energy consumed and in terms of their long-term durability and maintenance needs.

Consistent Lighting: In general, there should be one consistent type of street light, providing light of the same color (whether yellow-looking as in high pressure sodium lights or white-looking as in metal halide lights), used throughout Town.

Addendum # 3

E-mail response regarding state statute on idling.

In a message dated 9/16/2008 4:06:32 P.M. Eastern Daylight Time,
Kathleen.Brockett@des.nh.gov writes:
1. Hi, Carol-
They are state regulations, not laws. The statute RSA 125-C gives DES the authority to adopt these rules. Hope that helps.
Kathy.
Kathleen M. Brockett
Education/Outreach Supervisor
N.H. Department of Environmental Services, Air Resources Division
29 Hazen Drive, P.O. Box 95
Concord, N.H. 03302-0095
603-271-6284
Fax 603-271-1381
www.des.nh.gov
"New Hampshire - Doing our share for clean air!"
-----Original Message-----
From: RLammert@aol.com [mailto:RLammert@aol.com]
Sent: Tuesday, September 16, 2008 3:05 PM
To: Brockett, Kathy
Subject: need further info re: no idling
Hello Kathleen,
The Enfield Energy Committee had met at the end of August. In the meeting reference was made

to the New Hampshire Code of Administrative Rules, Env -A 1101.01 - 1101.10. It was unclear to committee members if these are laws or regulations. Please clarify this point for me.
Thank you.

Kind regards,
Carol