

Henniker Energy Committee
Presentation to Town of Henniker Board of Selectmen
December 20, 2011

Background

The current Town of Henniker Energy Committee was formed in 2008 to promote energy conservation, increase awareness of energy efficiency, and provide input on affordable sources of alternative energy to interested parties including residents, businesses, and municipal affairs. The committee's work has focused on reducing both electricity and heating costs in municipal buildings and energy consumption in general. The two major projects began with a electricity audit of town buildings by performed by Atlantic Energy Solutions, in cooperation with PSNH.

The results of which were used as the basis for renovating several towns building in 2008 with a projected annual savings of ~\$3,400 in electricity consumption. Half of the renovation cost was covered by PSNH rebates. In 2009 the Energy Committee worked with the town to file a grant to receive funds for a broader energy audit of 10 municipal buildings. The audit began 2010 and was completed in 2011 by the Jordan Institute out of Concord, NH to identify energy conservation strategies for reducing energy costs. The completed study was presented to the Energy Committee in September, 2011 and to the Department Heads several weeks later.

Because of timing we have not been able to go through the normal channels including the budget committee. We certainly recognize that you may not be able to include these recommendations at this time, but as I hear from CA-CP and others in the business of energy efficiency, investment that is put off is money that is wasted. We need to have a long-term plan to phase in energy efficiency improvements.

The Jordan Institute Study looked at:

- Building Envelope Upgrades – this includes spray foam, insulation, and the replacement of doors (where needed) to stop losing energy in the form of heat in the winter and cooling in the summer.
- Mechanical Systems – this covers HVAC, (heating, ventilation, and air conditioning); and
- Electrical System Upgrades such as motion sensors in rooms to turn off lights.

Key Findings

We are losing substantial energy to the outdoors.

Our heating systems are:

- Promoting the use of foreign oil, supporting a continued security risk,
- Sending our hard earned dollars for the most part out of the state;
- Out of the USA; and,
- And often to countries that in turn, support terrorism.

- In addition, oil combustion contributes to numerous health issues including asthma and other respiratory illnesses.

There are alternatives:

- While not glamorous, energy efficiency is one of our greatest potential avenues for savings;
- Air sealing and insulation can reduce our energy use now and in many cases, when building envelope improvements are addressed, heating systems can be downsized.
- Use of biomass heat (the conversion of our oil burners to wood pellet systems);
- Wood pellets are produced locally or in the region thus supporting our local economy;
- Wood pellets are part of a renewable resource and new wood pellet boilers are very efficient.

Jordan’s recommendation was to make all the changes as soon as possible because dollars invested now would eliminate our continued contribution of energy that simply flows through the walls of our Town’s buildings. The Jordan Institute analysis included all the Town’s structures; total suggested improvements include both envelope measures (including but not limited to, the addition of weather stripping, insulation, and the replacement of doors,) as well as the change-out of heating systems to utilize wood-pellet boilers. The total cost of these improvements is currently \$491,000. The payback on the total energy efficiency upgrade is 8.7 years.

Based in the reality of the times, the Energy Committee would like to present three scenarios for your consideration.

Scenarios to consider:

Draft Scenario 1 – Envelope Upgrades for Five Town Buildings Plus Mechanical Upgrade for the Highway Department

| Measures Taken | Department | Capital Investment | Annual Energy Cost Savings | Simple Payback |
|---|--------------------|---------------------------|-----------------------------------|-----------------------|
| Complete Energy Efficiency Upgrade | Highway Department | \$ 58,711.00 | \$ 11,244.00 | 5.23 |
| Building Envelope Only | Police Station | \$ 24,043.00 | \$ 4,286.00 | 5.6 |
| Building Envelope Only | Transfer Station | \$ 34,565.00 | \$ 4,960.00 | 7 |
| Building Envelope Only | Fire Station | \$ 25,457.00 | \$ 5,694.00 | 4.5 |

| | | | | |
|------------------------|-----------|---------------|--------------|------|
| Building Envelope Only | Town Hall | \$ 82,553.00 | \$ 8,088.00 | 10.2 |
| | Total | \$ 225,329.00 | \$ 34,272.00 | 6.51 |

As shown in Table 1, implementation of these energy efficiency upgrades to these Town structures would save taxpayers an estimated \$34,272 annually based on 2011 energy costs. The Jordan Institute study showed annual energy costs for these Town of Henniker buildings to be just over \$44,000 per year.

Scenario Two

Draft Scenario 2 Envelope Improvements Only

This scenario would provide for envelope improvements only for five of the Town's buildings.

| | Capital Investment | Annual Energy Cost Savings | Simple Payback |
|--------------------|--------------------|----------------------------|----------------|
| Highway Department | \$18,411.00 | \$5,239.00 | 3.5 |
| Police Station | \$24,043.00 | \$4,286.00 | 5.6 |
| Transfer Station | \$34,565.00 | \$4,960.00 | 7 |
| Fire Station | \$25,457.00 | \$5,694.00 | 4.5 |
| Town Hall | \$82,553.00 | \$8,088.00 | 10.2 |
| Total | \$185,029.00 | \$28,267.00 | 6.16 |

This would provide funding for the envelope improvements only. It does not address the Highway Department's need for a new boiler.

Highway Department Pilot Scenario 3

The Highway Department building is in dire need of a new heating system as well as energy efficiency measures.

| Highway Department | Capital Investment | Annual Energy Cost Savings | Simple Payback |
|-----------------------------|--------------------|----------------------------|----------------|
| Building Envelope Upgrades | \$18,411.00 | \$5,239 | 3.5 |
| Mechanical System (Heating) | \$40,100.00 | \$6,005 | 6.7 |
| Electrical System Upgrade | \$200.00 | \$37 | 5.5 |
| Total | \$58,711.00 | \$11,281 | 5.23 |

This scenario would provide the funding needed for the Highway Department to do the envelope upgrades and the mechanical system upgrades as a pilot program.