Wood to Energy Projects in Maine Summary

Together these projects provide a pretty good picture of the application of wood, either chips or pellets, for medium to small sized applications in public buildings in Maine.The projects range from small town halls in Thorndike and Strong to multiple buildings serviced by a larger central heating plant such as Messalonskee in Oakland, Maine.

The return on investments range from 4 to 18 years as constructed. The sites range from a brand new town hall with up-to-date construction and insulation to old school buildings that are converting from steam heat to hot water heating systems. The costs vary from 60 to 80 thousand to more than 4 million dollars to install. Most of the units under 3 million BTU/hour are pellet systems, the larger units are chips.

Pellet fuel is a manufactured product with very close tolerances limiting bark and no-combustibles and with close tolerances on moisture content. All of the Maine pellet projects have bulk delivery either by auger type delivery trucks or by air flow delivery trucks. Contacts for pellets are ranging from 1 to 5 years with prices ranging from $180/ton +/- to $230/ton +/-. Fuel storage systems that can accept whole truckloads of pellets at one time tend to have less expensive fuel delivery costs.

Maine has four currently operating pellet mills that all are operating at less than full capacity and are working hard to secure bulk longer term customers. The quality of product is uniformly high and the four mills actively compete for business.

Chips are cheaper than pellets an a net usable BTU/ton basis, but the fuel is greatly variable. Variations include species of wood, size and shape of chips, amount of bark or stems or leaves/needles, and moisture content. Pricing is ranging from $30 +/- a ton to near $70 +/- a ton. Given the characteristics of fuel delivered, good dry hardwood chips with low bark content at $65/ton can yield more net heat per dollar than $30/ton wet, high bark content soft wood.

The competition for installations in Maine are pretty robust and suppliers for systems can provide lower cost turn-key installations on up and through sophisticated longer term performance contract systems.

There are relatively simple spread sheet models that can be used to calculate expected costs for systems using oil, propane, compressed natural gas, wood pellets and wood chips. The characteristics of all but chips are reasonably uniform, so comparisons there are easy, but the variability of chips makes comparisons more complicated.

Once a few parameters of the demand load are known (such as current annual fuel usage, current type and capacity of the heating system, the state of repair and serviceability of the overall heating system) are known, it is an easy task to compute what savings may be typical for the various heating options that are available. In this way a quick ball-park estimation of probable savings can indicate if it may make sense to do a formal feasibility engineering study. Such studies can cost in the range of 4 to 10 thousand dollars. Some

help is available from the Maine Forest Service, the US Forest Service, USDA Rural Development, and the Maine Office of Energy Security. There are also private consultants and as always, contractors and industry representatives offering an array of options and solutions.

I recommend that interested parties take a look at the Maine Forest Service Web Site – ARRA Wood to Energy Grants Program and look at those projects that were funded. The full applications are all posted on that site and those that have projects that closely resemble your project hold a wealth of information. The feasibility studies, options considered and options selected will give you all the information that is needed to inform a choice as to whether or not to pursue a transition to wood heat.

What is often unknown and undervalued is the impacts to local economies. 80 to 85% of the cost of oil leaves that state, but nearly 100% of the cost of wood stays in the local community. Local forest landowners, local foresters, local harvesters, and local haulers are those who benefit from wood heat as well as the reduced cost to the owner of the heating system. Wood heat dollars circulate many times within a community and can represent as much as 4 or 5 times the actual cost of the fuel flowing through the community.

This is a pretty fast overview, but if you wish to pursue wood heat options, I would be glad to work with you to answer more specific questions about what may be feasible for your needs. It is easy to move to very specific answers once the basics of your needs will be. Here is a brief summary of the Wood to Energy projects in Maine. Together they provide a pretty good picture of the application of wood, either chips or pellets, for medium to small sized applications in public buildings in Maine.
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