

# Modern Wood Heat: Local Renewable Energy for Commercial and Institutional Building Owners

## *Benefits to New Hampshire in 2015*

### Economic Benefits

***\$11.8 million saved*** in heating costs

***\$5.8 million direct spending*** on wood pellets and chips

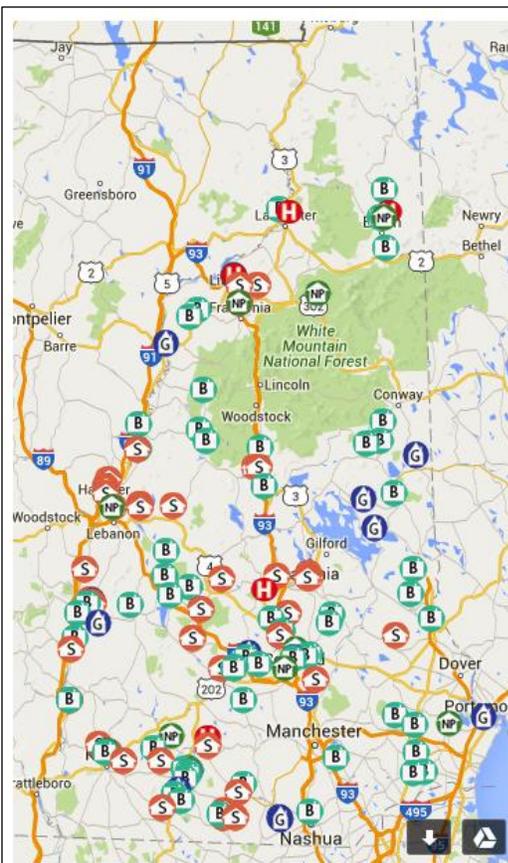
***\$35.9 million in total economic benefit to*** New Hampshire

### Environmental Benefits

***69,091-ton net reduction in carbon dioxide*** emissions

### Proven Reliability

***116 public and private buildings stay warm*** with wood pellet and wood chip heat



See interactive map of installed wood energy systems in New Hampshire at [www.nhwoodenergycouncil.org](http://www.nhwoodenergycouncil.org)

**116 commercial, institutional and small industrial sites were analyzed for this economic impact study.** The map and link above provide detailed information on each site, coded as follows:

B – business

S – school

H – hospital

G – government (state, county, municipal)

**Please flip the page to see the full story!**



## The Full Story

By using sustainably sourced wood chips and wood pellets instead of fossil fuels to heat commercial and institutional buildings, New Hampshire benefits economically and environmentally.



**Proven:** In 2015, more than 116 New Hampshire schools, hospitals, municipal buildings, low income housing facilities, and businesses used modern wood chip and pellet heating instead of imported fossil heating fuels.



**Local:** These facilities consumed an estimated 7,500 tons of pellets and 94,000 tons of wood chips, mostly from New Hampshire forests and wood manufacturing residues.



**Renewable:** Nearly all these facilities burned imported heating oil in the past. By switching to modern wood heating they reduced oil use by the equivalent of 7.7 million gallons.



**Cost Effective:** By switching fuels, these facilities saved about \$11.8 million in heating costs.



**Beneficial:** Money spent on wood chips and pellets pumped \$5.8 million into the local economy.



**Powerful:** Direct spending on wood fuels, combined with retained wealth through heat cost savings and jobs and taxes associated with this sector generated a total of \$35.9 million in economic activity in New Hampshire, using conservative multipliers.



**Carbon Better:** Reducing use of high carbon fossil fuels and using low carbon wood chips and pellets from sustainable sources reduced overall carbon dioxide emissions by over 69,000 tons.

**Analysis by NH Wood Energy Council—All data and calculations available upon request**

### Key Assumptions in Analysis

Moisture Content	Bone dry wood at 0% moisture content = 4.9 MWH per ton energy content; Chips at 40% moisture content = 2.9 MWH/ton; pellets at 4% moisture content = 4.7 MWH/ton; Dry chips at 30% moisture content = 3.4 MWH/ton; solid wood at 20% moisture content = 3.9 MWH/ton.
Efficiency	Chip boiler AFUE = 75%; Dry chip boiler AFUE = 80%; Pellet boiler AFUE = 85%; Cordwood boiler AFUE = 60%; Oil boiler AFUE = 80%
Fuel Cost	Green chips delivered price/ton = \$50/ton except for Concord Steam, \$30/ton; Bulk pellets delivered price/ton = \$240/ton average; Dry Chips delivered price/ton = \$125/ton average
Energy Equivalents	1 MWH = 3,412,000 BTU; 1 Gallon #2 Heating Oil = 138,000 BTU
Savings Calculation	Heat cost savings vs. oil calculated by using 5 year rolling averages for cost of heating oil per NHOEP
Economic Impact Calculation	Total Economic Impact = \$ spent on fuel x 90% (90% stays local) + heat cost savings x multiplier of 2.1 (multiplier per Ontario Ministry of Natural Resources; total formula per Northern Forest Center )
Carbon Calculation	Using sustainably sourced wood fuels reducing net atmospheric carbon emissions by 82% compared to oil (Source: BEREC)