Modern Wood Heat for New Hampshire
Maura Adams, Northern Forest Center
Residents of Northern Forest states spend over $4 billion on oil for heating every year and use 34% of all U.S. heating oil.

These heating dollars could benefit the Northern Forest instead.
One Solution: Modern Wood Heat

THEN

NOW
Features include:
• Controlled combustion engineering
• Fully automated fuel storage and conveyance
• Fully automated ash handling
• Computer controls and monitoring
• Emission controls to meet stringent standards
Wood pellet heating system
Space heating and domestic hot water supply with pellets

1. Once or twice a year the pellets are delivered by a silo tanker. A loaded storage room of 4.5 m² is enough to keep a single-family house warm for one year.

2. The pellets are carried from the storage room to the boiler by a fully automatic pellet feed.

3. After the burning process all that’s left is ash – with a weight of only 0.5 per cent of the original pellet. The ash can be disposed of with the domestic waste.

4. If the pellet boiler is interconnected with a buffer storage, emissions can be reduced and efficiency increased.

Wood pellets
2-5 cm (0.8-2 in.) in length, diameter 0.6 cm (0.24 in.)

Domestic hot water
Space heating

Storage room
Pallet boiler
Buffer storage
Modern wood heat contributes over $35.9 million to NH’s economy every year!

http://nhwoodenergycouncil.org/
Supply of Wood for Energy: the Forest Resource

NH is 84% forested and growth exceeds harvest by a ratio of 1.4 to 1

VT is 78% forested and growth exceeds harvest by a ratio of 1.7 to 1
Comparing Heating Costs of Different Fuel Types

Source: NH Office of Energy & Planning, 2016 – 3-year rolling average
Pellets: Fuel Cost Price Stability over Time

15 Years of Equalized Prices for Fuel Oil, Propane and Wood Pellets
(The net heat values of Propane & Pellets have been equalized to have the same net heat value as a gallon of fuel oil)

Cost per Gallon

Quarterly Data 2000 through 2015 (Source: NHOEP & New England Wood Pellet)
Burn Efficiencies used: Oil 80%, Pellets 85%, Propane 90%
55% less greenhouse gas than oil from day 1

Model Neighborhood Project:
130+ pellet boilers since 2012

$1,609,664
Savings on Fuel
Amount saved by homeowners who switched to wood pellets.
See the Math

5,603
Net Carbon Dioxide Reduction
Tons net carbon dioxide avoided by not burning oil.
See the Math

$4,130,668
Total Impact Value to Local Economy
Total impact of dollars continuing to circulate in local economy.
See the Math

$3.16 million total economic impact from 43 Berlin pellet boilers alone!
Financial Resources

- **PUC rebates:** 30% to $50k for C&I, 40% to $10k for residential [www.puc.state.nh.us/sustainable%20energy/RenewableEnergyRebates.html](http://www.puc.state.nh.us/sustainable%20energy/RenewableEnergyRebates.html)

- **Thermal Renewable Energy Certificates** (Enterprise Fund will pre-buy to offset capital cost!) [www.t-recsfund.org](http://www.t-recsfund.org)

- **C-PACE:** Pay for energy investments through property tax assessments (commercial only & municipal authority required) [www.cpace-nh.com](http://www.cpace-nh.com)

- **CDFA:** Variety of special energy loans [www.nhcdfa.org/energy/program](http://www.nhcdfa.org/energy/program)

- **NH Wood Energy Council:** Ambassador visits, building evaluations, feasibility studies [www.nhwoodenergycouncil.org](http://www.nhwoodenergycouncil.org)
Welch Apartments, NH

• Mini-district system
• 55 elderly & disabled tenants
• New HUD policy on wood heat made it possible – now considered an acceptable primary heating source
Notre Dame Apartments, NH

• 33 units, 37k square feet
• Abandoned high school – part of total rehab
• 4 pellet boilers
• Got NH Housing Finance Authority to change policy to make economics work (would have required 100% backup system)