Central Wood Heat

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 m³ 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.]

Storage room
Pellet boiler
Buffer storage
Domestic hot water
Space heating
Features include:

• Automation
• Bulk delivery & storage
• 85% efficient
• No back-up heat needed
• Self-cleaning
• Remote monitoring
• Scale: from small houses to large institutions (and much larger for chips)
Why modern wood heat?

• Keeps heating dollars in the state: Maine exports $624 million/year
• Cuts & stabilizes heating costs
• ~85% efficient
• Helps keep forests as forests
• Improves air quality when replacing older wood heat appliances
• Cuts CO2 by 54% from day one when switching from oil
Life-cycle emissions by fuel type (50 years)

Emission level accounting for distribution loss and associated methane release for natural gas (2%) and propane (0.2%).
Potential impact

- Maine spends over $800 million on fossil fuels for heat each year, exporting $624 million
- All of Maine’s heat demand = 8 million tons green chips
- If 20% of housing units converted to pellets:
  - 400,000+ tons of pellets
  - Like converting ALL houses in 10 largest cities
  - Total capacity of all 5 current pellet mills, plus another 1-2 new mills needed
  - Keep $83 million in-state
Needed for scale:
• Sustainable wood supply
• High quality pellets
• Bulk pellet delivery
• Good design
• Reliable installers
• Consistency!
• Consumer awareness
• Positive public perceptions
Result of 135+ wood pellet boiler installations since 2012 (56 in Maine)

- **$1,594,557**
  - **Savings on Fuel**
  - Amount saved by homeowners who switched to wood pellets.
  - See the Math

- **8,837**
  - **Net Carbon Dioxide Reduction**
  - Tons net carbon dioxide avoided by not burning oil.
  - See the Math

- **$4,811,210**
  - **Total Impact Value to Local Economy**
  - Total impact of dollars continuing to circulate in local economy.
  - See the Math
Moving forward

• State Wood Energy Action Team
• Incentives for wood heating systems, including CHP
• BTU Act – federal tax incentives
• Build comprehensive case & broad support
• Regional marketing

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