



The Outlook on Wood Heat: Residential Wood & Pellet Heat Policy and Technology

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John Ackerly
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ALLIANCE
FOR GREEN HEAT
low carbon, renewable and local



Outlook

- Wood & pellet heat are surging
- But, unlike solar, wind and EVs, government incentives and policies are not a big driver.
- Gov'ts – and the environmental community - are often confused about what to do
- US gov't agencies have little policy cohesion and even work at cross purposes



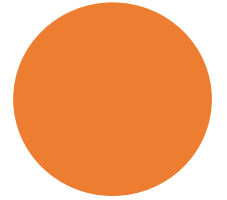
Policy overview

- EPA regulates emissions & certifies stoves and mostly do not support wood heating.
- EPA's role in general is vital but they are understaffed, don't have the expertise and sometimes make poor decisions
- The USDA Forest Service is very supportive and more focused on commercial scale wood heating
- DOE is supporting R&D for next generation stoves. Extremely important and positive role but very underfunded.



Policy - Congress

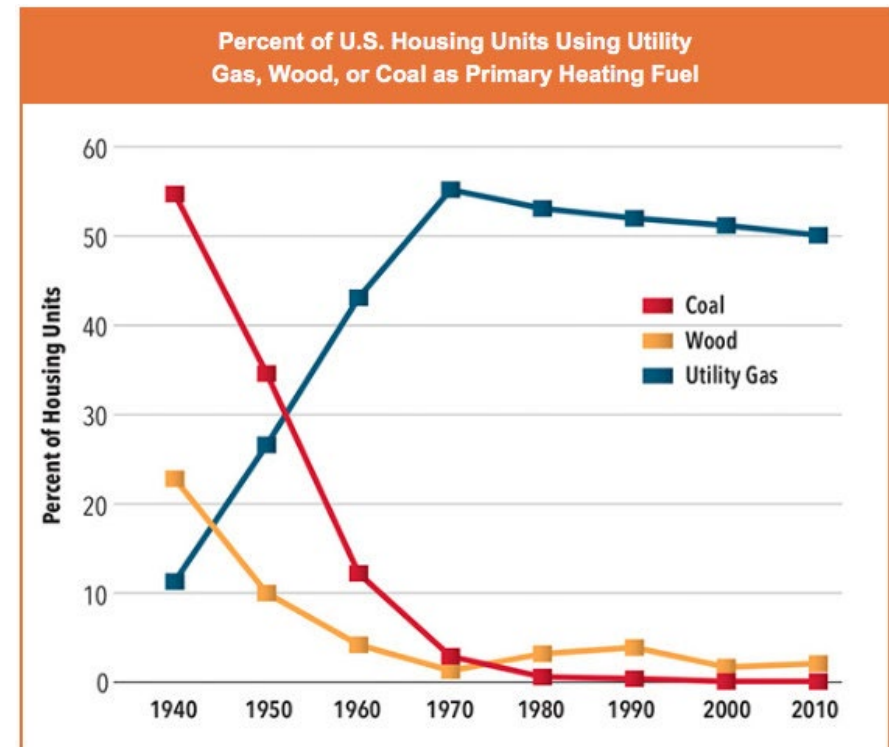
- Thanks to Congress and especially the New England Congressional delegation, wood and pellets have some incentive support.
- 2022: it was 26% with no upper limit
- 2023 – 2032: 30% with \$2,000 cap
- The \$2,000 cap creates winners and losers in our technology
- Heat pump incentives will move to a rebate or point-of-sale system, benefiting low and middle-income families. Unfortunately, wood heat incentives will remain as a tax credit.



Wood heat disappearing?

- Some experts expect wood heat to slowly disappear in favor of more convenient modern technology
- NH is a good example of unsustainable wood heating in 1800s and early 1900s.
- Today, only about 2% of homes heat with wood. Is 5% sustainable, 10%?
- We think 5% of homes is sustainable for wood supply – but not necessarily for the amount of pollution from stoves
- Market forces, not policy, continues to drive wood heat

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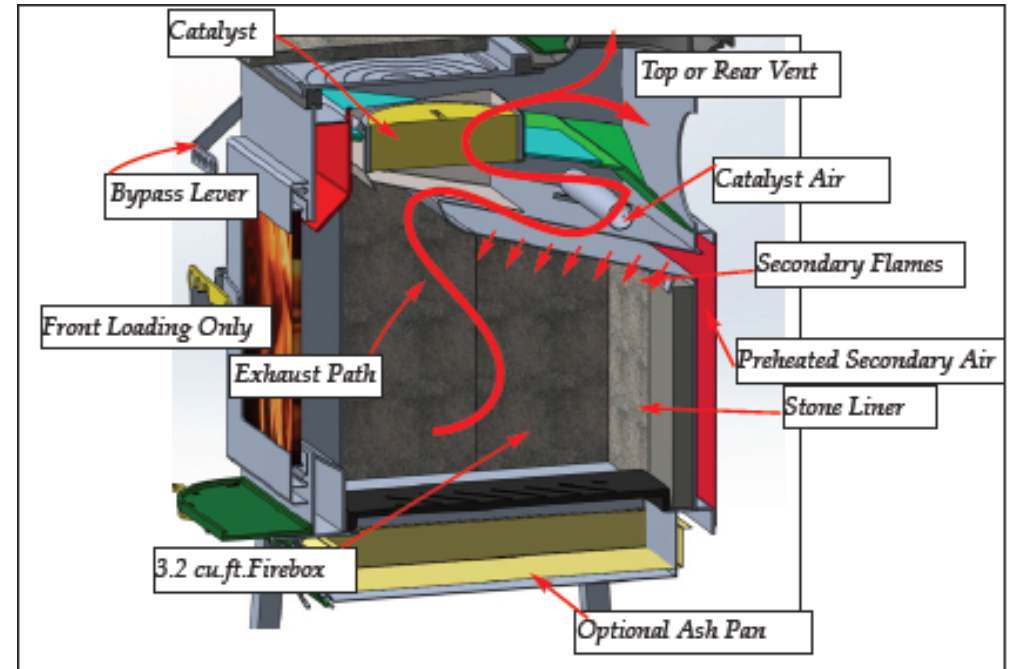
The Push to “Electrify Everything”

- What does this mean for wood heat?
- Cold climate heat pumps are getting better.
- We think wood and pellet heat can complement electrification.
- Benefits:
 - Reduces winter stress on grid
 - Great back-up
 - Saves electricity for everthing can’t be substituted with another renewable.
 - Enables homes with solar PV and batteries to be 100% renewable and local.
 - Wood IS energy storage, like a battery, but even more efficient



Changes in technology

- Non-cat stoves remain dominant
- The IRS 75% efficiency eligibility requirement is moving the market towards more efficient stoves.
- Hybrid stoves are on the rise and very promising. They use both cat and non-cat emission reduction technology.
- Pellet stove technology has not changed much. A good rule of thumb is to buy the higher priced models as they need fewer repairs.
- Some manufacturers define 75% very differently than others, so make sure to check the EPA stove database for reliable efficiencies.



Automated Wood Stoves: potential & barriers

- Automated wood stove adjust the air to fuel ratio to maintain a hotter, cleaner burn. They can override the users manual call more or less heat, if that manual adjustment would cause a dirty burn.
- Automation can add \$200 to \$1,000 to the price tag of a stove but the pollution reduction potential is huge.
- These stoves may not excel in the lab but they are designed to excel in the hands of homeowners.
- Other than price and R&D limitations of many manufacturers, there is little incentive for manufacturers to do things differently than they always have.
- Consumers are also wary of stove automation.
- Cities and towns with excessive wood smoke should consider allowing only pellet stoves and automated wood stoves.



The stove testing debate

- Stoves have always been tested with crib wood – 2x4s, not cordwood.
- Industry developed a cord wood test method but NESCAUM fought it and had it revoked, rather than altered.
- The politics and economics of wood stove emission testing are red hot, with relations between industry and EPA at an all time low.
- Now, the EPA is developing its own cord wood test method based on an Integrated Duty Cycle, which mimics how homeowners actually use their stove.





More Resources

Alliance for Green Heat
www.forgreenheat.org

Modern Wood Heat
<https://feelgoodheat.org>

The Wood Heater Design Challenge
<https://www.bnl.gov/woodheater/>

DOE: Wood and Pellet Heating
<https://www.energy.gov/energysaver/wood-and-pellet-heating>

EPA Burn Wise
<https://www.epa.gov/burnwise>

Chimney Safety Institute of America
<https://www.csia.org>