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Chronology of Wood Heat

Updated March, 2018.

This chronology was drawn from various sources and tends to focus on European dates and then switches to a chronology in the United States. It does not attempt to cover important dates in Russia, Japan and many other countries. If you think we have omitted important milestones, especially in the last 30 years, please send them to us at info@forgreenheat.org.

B.C.

- 1.4 million years ago: First evidence of a hearth the controlled use of fire - in Kenya.
- 500,000 years ago: Oldest known hearths in Europe built.
- 2,000 B.C Kilns with chimneys used in the Middle East.



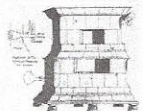
A.D.

- 2,000 years ago: Chimneys used in China.
- 2,000 years ago: Romans use chimneys to carry smoke from hypocausts (central heating systems).
- 220 A.D China produces the first cast-iron stoves.
- 1200: England experiences major wood shortage due to heating demands of a rising population.
- 1,500 - 1610: Price of wood rises 266% in London.
- 1550 - 1850: 300 years of extremely cold winters in Europe, known as the Little Ice Age.
- 1550: All of Europe heated using open fires or simple low-efficiency stoves, with an average heating efficiency of 20 - 30%.
- 1557: First patent issued for a wood conserving stove in Strasbourg.
- 1564: Peter Schmidt, of Alsace, produces a small picture book of wood conserving stoves.
- 1600s: Franz Kessler first uses baffles to force smoke into a slower, more circuitous path within the stove, so that it released its heat before exiting the chimney.
- 1646: The first US foundry making wood stoves starts production in Braintree, MA.



18th Century

- 1728: Cast iron stoves begin to be made in quantity in the US. These first stoves of German design, are called Five-plate or Jamb stoves.
- 1744: Benjamin Franklin develops his own cast iron stove design. His Pennsylvania fireplace surpassed the efficiency of other inventions, and is still a popular heating stove today.
- 1763: Frederick the Great of Prussia stages a competition for a "room stove which would consume the least wood".
- 1772: David Rittenhouse added an 'L' shaped chimney to the Franklin Stove to prevent smoke from venting into the room. His design is what is known as a "Franklin Stove" today.



19th Century

- 1880: Wood provides 2/3 of industrial and residential fuel needs in the U.S.
- 1800: Benjamin Thompson invents the first metal wood-fired cook stove.
- 1830: Troy, NY becomes the center of wood stove manufacturing and at its height in the following decades had nearly 200 factories making stoves, far more than Boston, New York or Albany.
- 1834: Philo Stewart designed a compact cast iron home kitchen stove, which was so popular that 90,000 were purchased by 1864.
- 1835: The first successful central-heating system is introduced in England using hot air.
- 1800s: Coal takes over as main heating source in many urban areas.
- 1850: All of Europe heated with well-designed, high efficiency stoves.



20th Century

- 1906: The National Fire Protection Association first develops standards for clearances between wood stoves and combustible walls, floors and ceilings. /



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- o 1906: Sam Daniels begins marketing the first widely used hot air wood furnace in the US.
- o 1927: Heatilator patents the first air-circulating fireplace.
- o 1929: During Great Depression, corn becomes a popular heating fuel, particularly in the Midwest, when corn was nearly worthless.
- o 1940: 22.7% of homes in the US use wood as a primary heat source.
- o 1972: Eva Horton, of Norwegian descent, starts importing Jotul Stoves.
- o 1973: Oil embargo begins, and sales of wood stoves soar. Before the embargo, only 0.9% of homes in the US used wood as a primary heat source.
- o 1973: Pellet stove is invented in Washington State but production doesn't begin until the early 1980s.
- o 1974: Reawakening of wood burning in the US following the oil crisis.
- o 1976: The Wood Energy Institute (WEI) was formed and held its first meeting in Howard Johnson's in Cambridge, MA.
- o 1976: The wood stove insert hit the market.
- o 1978: The Fireplace Institute hires Auburn University to test the performance rating of "woodburning fireplace stoves."
- o 1979: Vermont Castings makes the Inc. 500 list of the fastest-growing private companies, doubling in size each year, and bringing in up to \$29 million a year (in 1979 dollars).
- o 1979: Three Mile Island nuclear accident sends wood stove sales sharply up again.
- o 1980: 55% of all wood removals in the US were consumed for fuel purposes (both industrial and residential) 2
- o 1980: The Wood Heating Alliance, the predecessor of the HPBA, was formed.
- o 1980: Richard Wright published the first issue of "Wood 'n Energy" and in 1989 changes its name to "Hearth & Home."
- o Nearly 2 million stoves and inserts were sold annually in the early 1980s.
- o 1981: 8.2% of homes in the US use wood as a primary heat source. One fourth of all households nationwide burn wood, and one half of rural Americans burn wood, according to a study by the US Forest Service.
- o 1982: Wood stove sales climb to over 1.5 million per year and approximately 450 wood stove manufacturers sprout up around the US.
- o 1983: The first residential pellet stove is introduced on the US market.
- o 1983: Consumer Product Safety Commission requires stove manufacturers to provide a safety-related label.
- o 1983: Studies by Jay Shelton and Paul Tiegs show adapting the catalyst from automobiles successfully reduced pollutants in wood stoves.
- o 1986: Oregon bans the sale of the most polluting stoves, and other states begin to follow suit.
- o 1986: NRDC and New York State threaten to sue the EPA for failing to keep the country's air clear of wood smoke.
- o 1988: EPA Phase I emission standards enforced, requiring stoves to be manufactured to emit less than 8.5 grams per hour. (316 models pass muster)
- o 1990: EPA Phase II emission standards enforced, requiring stoves to be manufactured to emit less than 7.5 grams per hour. (134 models pass muster)
- o 1990s: After the EPA standards, hundreds of wood stove manufacturers close down. Of the approximately 500 manufacturers prior to the EPA regulation, only about 100 remained. 3
- o 1991: The Gulf War causes another oil shock and wood stoves become popular again.
- o The Wood Heat Association (WHA) changes its name to the Hearth Products Association (HPA).
- o 1992: All new stoves sold must meet Phase II standards. From a high of about 450, only about 50 stove manufacturers are left making EPA certified stoves.
- o 1993: Catalytic stoves become very popular during initial period of EPA standard enforcement, but customer dissatisfaction quickly put a damper on that and spurred cleaner designs of non-catalytic stoves.
- o 1993: Pellet Fuels Institute (PFI) established.
- o 1995: Washington State requires all stoves sold in the state emit no more than 4.5 grams per hour.
- o 1998: Masonry Heater Association establishes a rigorous heater-mason certification program in the US.
- o 1999: The Y2K scare spurs another brief rise in wood stove sales.



21st Century

- o 2006: Wood is 6th largest supplier of energy in the US (behind oil, coal, natural gas, nuclear power and hydropower)4
- o 2007: Vermont becomes the first state to regulate polluting outdoor wood boilers (other than Washington state, which effectively banned them altogether).
- o 2009: Obama Administration enacts first substantial national tax credit for residential wood and pellet stoves (30% up to \$1,500).
- o 2009: Oregon is the first state in the US to require removal of an old,



- uncertified woodstove when selling a home.
- o 2009: EPA officials [formally recommend](#) a review of the New Source Performance Standards (NSPS) to reassess whether national emissions standards should be stricter and whether other types of appliances should be regulated, such as fireplaces, outdoor wood boilers, pellet stoves, coal stoves, and high air-to-fuel ratio stoves.
 - o 2010: New Hampshire is first jurisdiction in the US to initiate an [incentive program](#) for the kind of automated, bulk-fed pellet boilers that have been receiving government incentives in many European countries.
 - o 2010: Wood is [fastest growing heating fuel](#) in the US, rising 34% between 2000 and 2010 according to the US Census.
 - o In 2013, the Alliance for Green Heat, together with Popular Mechanics magazine, NYSERDA and other partners, hold the [Next Generation Wood Stove Design Challenge](#) on the National Mall
 - o 2014: On January 3, the EPA publishes proposed new wood heater regulations.
 - o 2015: On May 15, EPA's [new wood heater regulations](#) come into effect for new wood and pellet stoves and hydronic heaters.
 - o 2017: On May 15, EPA's new wood heater regulations come into effect for all new forced-air furnaces.



Sources:

A number of sources contributed to this chronology, including:

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