

# Michigan Wood-based Thermal Energy

## Wood Pellet Bulk Delivery

Bill Cook, Michigan State University Extension, 2017.



**Michigan residents can benefit from converting to wood pellet heating systems, although cheaper fuels may not, yet, be one of those benefits. By establishing a bulk delivery service, wood pellet furnaces and boilers will be as automatic as conventional fossil fuels.**

Heating residences and small businesses with wood pellets is a good choice for environmental and economic reasons. Fully-automatic, highly-efficient modern pellet boilers and furnaces are available that can be exchanged for traditional fossil fuel appliances. However, cost-competitiveness with fossil fuel systems must be evaluated at each site.

A bulk delivery service using a pneumatic or auger truck allows wood pellet systems to be as “hands-free” as fossil fuels. Similar to either propane or fuel oil, the delivery truck comes two or three times per winter. The homeowner simply adjusts the thermostat. A primary advantage of a pneumatic or augering unit is that the homeowner does not need to touch a bag of pellets or deal with fuel issues.



*Pellet delivery truck fills-up at distribution center.*

Michigan currently lacks such a bulk delivery system, although there are vendors that can deliver large quantities of pellets, often in one ton bags, or can fill a multi-ton capacity hopper. However, this is for larger installations or for those that are willing and able to perform a degree of pellet handling.

Modern truck delivery systems exist in New England, where wood-based thermal energy systems are more common. These systems have grown to become a significant part of their regional economy. Michigan and the Lake States have the potential to also capitalize on these renewable technologies as important economic drivers.



*Home delivery. Hook-up, hose, and filling.*

About 200 residences are needed to support a modern pellet delivery truck. This quantity will vary with a number of factors, such as geographic proximity and building size.

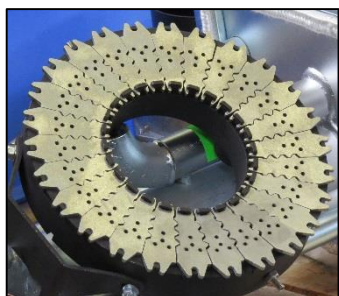
Using wood pellets, or any woody material, to heat (and potentially cool) buildings has a number of environmental and economic advantages. Renewable wood products have important carbon differences from fossil fuels. Wood-based carbon comes

from the air and is part of the current carbon cycle, while fossil fuel carbon was buried in the ground long ago. Fossil fuel carbon is not. Making pellets from low quality trees expands forest management opportunities that can better protect forest health, generate cleaner water, and enhance wildlife habitats.

Economically, wood-based fuels support local businesses, keep more dollars local, and have more stable pricing than fossil fuels. Locally-derived energy helps communities become more sustainable. Advanced wood-based energy systems are automatic, have low noise, have low emissions, have an ample fuel supply, and offer a degree of energy independence.



*Home-styled pellet storage bin and fully automatic pellet boiler.*



*Burning plates inside a pellet boiler.*

For those considering conversion to wood pellet systems, the higher initial capital cost needs to be considered. Pellet systems require a pellet storage room or bin that can be accessed by a delivery truck. Pellets must be kept dry. Insurance carriers should be consulted before installing a wood pellet furnace or boiler. Wood stoves and pellet stoves are space heaters. A pellet furnace supplies heat through forced-air duct work. A pellet boiler heats water that supplies radiator (hydronic) heat distribution. Lastly, installers need to be familiar with these systems. Many companies are not.

Statewide, Michigan has nearly four million housing units, according to 2014 U.S. Census Bureau data. Nearly three-quarters of these housing units are heated using natural gas. Those on the natural gas grid who choose to convert to pellets will do so for environmental reasons, rather than financial reasons.

Alternatively, there are about a half-million housing units that heat with propane, fuel oil, or cordwood. These users will likely find less of a financial disparity and, in some cases, may find wood pellets less expensive. Additionally, there are over 300,000 housing units that heat with electricity, which is far more expensive than pellets. However, converting a housing unit from electricity to a wood pellet heating system will usually require an investment in either duct work or a hydronic system, unlike buildings that are currently heated with propane, fuel oil, or cordwood.

For more information about wood-based thermal energy, visit the Michigan Wood Energy website at [MichiganWoodEnergy.msue.msu.edu](http://MichiganWoodEnergy.msue.msu.edu).