

# GREEN FACTS:

## Proper Heating

M.O.E.R GREEN TEAM



Home Weatherization - Green Equality - Green Jobs  
<http://www.moerfoundation.org>

“Making Our Environment Right”

Heating and cooling accounts for about 56% of the energy use in a typical U.S. home, making it the largest energy expense for most homes. When looking for ways to save energy in your home, be sure to think about not only improving your existing heating and cooling system, but also consider the energy efficiency of the supporting equipment, like thermostats, and the possibility of either adding supplementary sources of heating or cooling or simply replacing your system altogether.

### Furnaces and Boilers

Most U.S. homes are heated with either furnaces or boilers. Furnaces heat air and distribute the heated air throughout the house using ducts; boilers heat water, providing either hot water or steam for heating. A central furnace or boiler's efficiency is the ratio of heat output of the furnace or boiler compared to the total energy consumed by a furnace or boiler. 90% means that 90% of the energy in the fuel becomes heat for the home and the other 10% escapes up the chimney and elsewhere. This doesn't include the heat losses of the duct system or piping, which can be as much as 35% of the energy for output of the furnace when ducts are located in the attic. MOER Green Team only installs high efficiency heating systems with efficiencies from 90–97%.

### Replacing Your Furnace or Boiler

Although older furnace and boiler systems have efficiencies in the range of 56%–70%. Modern conventional heating systems can achieve efficiencies as high as 97%, converting nearly all the fuel to useful heat for your home. Energy efficiency upgrades and a new high–efficiency heating system can often cut your fuel bills and furnace pollution output in half.

If your furnace or boiler is old, worn out, inefficient or significantly oversized, the simplest solution is to replace it with a modern high–efficiency model. Before buying a new furnace or boiler or modifying your existing unit, we will improve the energy efficiency of your home and size of your furnace to your home more energy efficient home. Energy–efficiency improvements will save money on a new furnace because you will need a smaller furnace that will operate most efficiently. A MOER Green Team Energy Consultant will tell you the cost savings that you can expect from a high–efficiency furnace or boiler.

We will offer a sealed combustion furnace or boiler which will bring outside air directly into the burner and exhaust flue gases (combustion products) directly to the outside without the need for a draft hood or damper. Furnaces and boilers that are not sealed–combustion units draw heated air into the unit for combustion and then send that air up the chimney, wasting the energy that was used to heat the air. Sealed–combustion units avoid that problem and also pose no risk of introducing dangerous combustion gases into your house.

High–efficiency sealed–combustion units generally produce an acidic exhaust gas that is not suitable for old, unlined chimneys. In these cases we will either vent through a new duct or line the chimney to accommodate the acidic gas.

