EFFICIENT WOOD HEATING IS GOOD FOR THE ENVIRONMENT

By: John Gulland, Director of the Wood Heat Policy Institute

Firewood is a renewable energy resource like wind, solar and hydroelectric power. To adequately respond to the global warming challenge, we need to start using more renewable and less oil, gas and coal. Heating with wood can be a part of the solution, provided the wood is burned efficiently. Fortunately, that is not hard to do these days.

When oil, gas and coal are burned, the carbon they contain (which was buried millions of years ago) is oxidized to carbon dioxide (CO2), the main greenhouse gas. The use of fossil fuels releases ancient carbon, increasing the atmospheric concentration of CO2.

Wood also releases carbon when burned but its use is almost carbon neutral because trees absorb CO2 as they grown. When trees fall in the forest and decompose they release the same amount of CO2 as if they were burned. In other words, rotting is slow oxidation, whereas combustion in a wood stove is fast oxidation, with heat as the main by-product. When considered over the normal tree life cycle of about fifty years, heating with wood can be considered almost CO2 neutral, except for the energy used to harvest, process and transport the firewood.

When heating our houses with wood, we are simply tapping into the natural carbon cycle in which CO2 flows from the atmosphere to the forest and back. When wood is burned as a substitute for fossil fuels, the result is a net reduction in CO2 emissions. For every cord of wood used for home heating instead of oil, more than a tone of carbon is kept out of the atmosphere. Plenty of households in rural areas and small towns could easily cut their carbon emissions by four tones each winter by substituting firewood for just two tanks of fuel oil.

Trees can be thought of as big batteries because they take energy from the sun and store it in the wood. Burning wood converts the stored energy into heat.

Old style wood stoves could heat a house just fine but they wasted wood and made a lot of smoke. Since 1990 a new generation of wood stoves, furnaces, and heating fireplaces certified by the U.S. Environmental Protection Agency have been available. These advanced technology wood burners generate about ten percent of the smoke of old style ‘airtights’ and burn about one-third less wood to get the same heat.

Done responsibly, heating with wood can be a great way to be kind to the environment. As an added bonus, firewood costs a lot less than the alternatives for people who live outside large urban areas.