



Straight Answers To Some Tough Questions About Wood Heat

QUESTION 1:

Isn't it selfish for a householder to heat with wood to save a bit of money when they are polluting their neighbours' air in doing so?

A person who burns wood badly and inflicts wood smoke on neighbours is indeed being selfish. Each person who heats with wood must take responsibility for their impacts. Unlike the hidden impacts of the other heating options, the primary environmental impact of wood heating is the emissions produced at the point of use. A household's skill at wood heating and their regard for their neighbours can be seen at the top of their chimney, where there should be no visible smoke. That makes everyone who heats with wood instantly and visibly accountable for their actions.

Using advanced technology equipment, seasoned firewood and responsible operation, there is no reason for smoke to be visible at the top of a chimney, except for a few minutes when a fire is kindled.

Over the past thirty years a social consensus has emerged that drinking and driving is not acceptable behaviour. A similar consensus has formed around exposing other people to second-hand tobacco smoke. Maybe it is time we all agreed that exposing neighbours to dense wood smoke is not socially acceptable behaviour. We should feel a twinge of guilt when we see smoke coming from our own chimney.



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QUESTION 2:

If everyone heated with wood, wouldn't the air be polluted and wouldn't the forests be destroyed?

Probably, but it would be foolish to suggest that wood heating is suitable for everyone. For example, firewood is not a good fuel for people unable or unwilling to do the physical work involved. Wood is not the best fuel for people living in large, densely populated urban areas because the air there is already fouled by traffic exhaust, industrial emissions and large residential developments. But people living outside large urban areas in smaller cities, towns and rural areas can benefit from heating with wood. They tend to have larger lots for the storage of a winter's firewood supply and they are closer to the woodlots that provide fuel.

Large parts of Canada have highly productive forests that could sustainably supply fuel for far more homes than are currently heated with wood. The productivity of many forests can be improved by thinning, and this process could yield a large amount of wood fuel. Advanced technology wood heaters can effectively burn tree species that have historically been considered inferior. Poplar, spruce, pine and willow can be used as firewood in modern appliances. Firewood production can provide the incentive for good forest management and its use can reduce greenhouse gas emissions by displacing fossil fuels.

“ . . . current practices of obtaining and using wood energy are the foundation on which an expanded residential wood heating sector should rest . . . such an expansion is compatible with maintaining forest biodiversity and reducing greenhouse gas emissions.” Ole Hendrickson, forest ecologist. See: Residential Wood Heating: the Forest, the Atmosphere and the Public Consciousness <http://www.woodheat.org/environment/forest.htm>



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QUESTION 3:

Shouldn't we be using new sources of energy instead of going back to older, polluting sources?

There are no “new” sources of energy that are likely to prove viable. One of the newest energy sources is nuclear power, which has its own environmental problems and is controversial. Regardless of the energy source we choose for home heating, its use will have environmental impacts. The burning of oil and gas contributes to global warming, and their production is declining in many countries, meaning that their price is likely to go up as demand increases. While oil and gas don't appear to pollute at the point of use, their exploration, production, refining and transportation cause severe environmental damage. Only a relatively small percentage of electricity is from renewables like hydroelectric dams, and even then there are environmental problems due to flooding large areas. Wind turbines will never produce enough electricity to be used widely for home heating.

Firewood, on the other hand, can be produced with slight environmental impact because it needs little processing and most of it is used close to where the trees grew. Wood is the most economical and accessible of all renewable energy resources for many Canadian households and it has value beyond the displacement of fossil fuels and reduction of greenhouse gas emissions. It is practiced on a small scale and the householders that use it gain a better understanding of their impacts on the environment than users of other energy sources. Canadians who heat their homes with wood responsibly should be recognized for their contribution to a reduction in greenhouse gas emissions and a sustainable energy future.

In a modern context, and knowing what we now know about the environmental impacts of all energy use, wood can be thought of as a ‘new’ energy resource, provided it comes from sustainable sources and is burned in advanced combustion appliances.



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QUESTION 4:

Shouldn't we be planting trees to combat global warming instead of cutting them down and burning them?

Yes, forests absorb carbon dioxide (CO₂) as they grow, so by increasing forest cover, more carbon is stored (sequestered) in trees and kept out of the atmosphere. But trees and forests go through stages as they grow and mature. Some trees are damaged by ice and wind storms, some are hit by lightning, others are weakened by insect infestations and all trees reach maturity and die, just like other plants and animals. This constant transformation of forests means that some wood can be taken for energy purposes while the forest remains healthy and continues to absorb CO₂ from the atmosphere. When we displace the use of fossil fuels by heating with sustainably harvested wood, there is an immediate reduction in greenhouse gas emissions.

Sustainable forest management is defined as uneven-aged selective harvesting, thinning of dense stands and removal of poorer quality trees, while leaving seed trees of all present species and ages, and some standing dead trees to provide wildlife habitat.



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QUESTION 5:

Isn't the idea that advanced technology, EPA certified appliances limit pollution to acceptable levels just spin put out by industry lobbyists, supported by gullible bureaucrats?

No, the emission reductions are real.

Tests of individual advanced technology stoves show that they produce between 60 and 90 per cent less smoke than the old 'airtight'. Most advanced stoves average between two and five grams of smoke per hour of use, whereas the old stoves emit as much as 40 grams per hour. In Libby, Montana, where 1130 old wood stoves were replaced by EPA certified models between 2005 and 2007, the average outdoor air pollution (from all sources) was reduced by 30 per cent and indoor air pollution by 70 per cent compared to previous years. All cities and towns with concerns about winter air pollution can achieve big improvements by promoting the use of only advanced technology wood heaters.



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QUESTION 6:

When all the time and work and maintenance expenses are considered, isn't it just as expensive to heat with wood as with oil, gas and electricity?

Possibly, but it depends where the household is and how much work its members are willing to do. If a household in a large urban area bought their firewood split, seasoned and delivered, they would probably pay at least as much as they would for the equivalent heating with natural gas.

However, a household in a rural area that was prepared to harvest the trees and process the wood themselves could save a lot of money each year.

But heating with wood is about a lot more than home heating and saving money. It is a tangible expression of self-reliance and a rejection of sedentary, push-button convenience. It also provides heating cost stability, and security in case of electrical power failure.



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QUESTION 7:

Greenhouse gases are emitted when wood is burned, so when you cut down a tree and burn it, aren't you contributing to global warming?

True, carbon dioxide (CO₂) is released when wood is burned, but the carbon content of the wood was absorbed from the atmosphere by the trees as they grew. About half the weight of dry wood is carbon from the CO₂ the tree absorbed.

A woodlot receives energy from the sun that powers its growth through a process called photosynthesis. The woodlot 'banks' carbon every year, so its carbon savings increase annually. We can withdraw some of that carbon in the form of firewood to heat our houses, provided we never take as much as the woodlot banks in a year. That is how a well-managed woodlot that may have supplied a household with firewood every year for generations can improve in value over the decades.

On the other hand, when trees fall in the forest and decompose they release the same amount of carbon dioxide as if they were burned. In 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 considered over the roughly 50 to 100 year life cycle of trees, wood energy can be considered almost greenhouse gas neutral.

For every cord of wood used for home heating instead of oil, more than a tonne of carbon is kept out of the atmosphere. Households outside large urban areas could easily cut their carbon emissions by four tonnes each winter by substituting firewood for two 200 gallon tanks of fuel oil.



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QUESTION 8:

Doesn't wood heating cause a lot more house fires than oil, gas or electricity?

No, but it used to. Wood heating systems caused many house fires in the 1970s and early 1980s when tens of thousands of homeowners turned to wood heating in response to the first energy crisis of those years. The problem back then was that there were virtually no safety systems in place to help in the correct installation of wood heating systems. Homeowners tended to think that wood heat safety was just a matter of 'common sense', so they installed stoves themselves without much guidance.

Starting in the early 1980s when it became apparent that there was a serious safety problem with wood heating, government and industry rushed to develop safety standards. These led to much better stoves, fireplaces and furnaces that were accompanied by reliable installation instructions giving safe installation clearances. The industry is now much more sophisticated.

Wood stoves are tested and certified for low smoke emissions as well as safety. Installers and chimney sweeps have become professionally certified by attending courses and passing examinations. The result has been a dramatic reduction in house fires related to wood heating. Today, a correctly installed, operated and maintained wood heating system is no more likely to cause a house fire than an oil, gas or electric heating system.



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QUESTION 9:

Isn't the fact that the Lung Association says wood stoves pollute indoor and outdoor air a convincing argument for restricting wood burning?

It is true that the Lung Association has been critical of wood burning, and some of its regional representatives have made extreme comments* in the media, but the Association itself is remarkably moderate, considering that it is a special interest group dedicated to respiratory health. Their web site says wood burning “can release pollutants into the air we breathe, especially when poor burning techniques and wood burning appliances are used”. The Association promotes the use of EPA certified appliances and other methods to reduce exposure to wood smoke pollution. This is consistent with the position of the Canadian wood heat industry, which since 1990 has promoted legislation to control the emissions from new wood heating appliances, similar to the EPA rules. Yes, the Lung Association advocates for restrictions on wood smoke and so does the wood heating industry.

* Louis Brisson, director of the Quebec Lung Association, called the particulates from wood-burning stoves “a silent killer; it’s killing our children.” The West Island Gazette, November 27, 2008

Mr Brisson’s comment is out of step with the position of the national association. While the damage this kind of comment does cannot be dismissed, it should be seen as coming from a local representative who got carried away in a media interview and who does not speak for the national organization.



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QUESTION 10:

With landfill sites filling up fast, and the costs of disposal rising, does it make sense to reduce household garbage by burning paper and cardboard in a wood stove?

No, burning waste of any kind can produce serious environmental consequences. Paper and cardboard can have toxic inks, plastic coatings and unknown chemical additives. Few if any of these contaminants are destroyed at the temperatures common in wood stoves. The result is an unknown toxic cocktail of smoke from the chimney. Wood stoves are tested and certified for use only with clean, seasoned, uncoated firewood. Small amounts of uncoloured newspaper can be used to light fires because newsprint is usually the least processed form of paper and some newspaper inks are vegetable-based, although others still contain petroleum. The best way to reduce household waste is to reject heavily packaged products and recycle the packaging you do buy.