



## Powerful pellets

### Wood waste: a sustainable eco-friendly energy source

by John Swann

**W**OULD YOU BE surprised to learn that Canada is sitting on an economically viable, renewable source of energy that costs less than oil, propane or natural gas? Wood pellets and “biomass” are *Kyoto Accord* approved, readily available, easily transportable and could replace coal to generate power in homes and businesses nationwide. In fact it is so plentiful that we incinerate it as “waste.”

Typically found on the floors of sawmills, forestry residue is a major source of biomass – living and recently living biological material that can be used as fuel or for industrial production. Yet, this residue (saw dust, shavings, bark) is often incinerated, when it could have been turned into megawatts. So, why does using wood pellets and biomass seem to be a foreign concept to Canadians?

In Europe, for instance, there is already a high demand for pellets. Realizing that solar and wind are unreliable green energy sources, the European Union’s member nations presently produce 4 percent of their electricity from biomass and wish to double this by 2010. In the United Kingdom, pellets are firing massive generators to provide power to millions of people.

The surging global interest in climate change and *Kyoto* is pressuring Canada’s federal, provincial and municipal governments to think and act “green.” The solution is on their doorstep. Biomass benefits the environment – as well as mills, loggers and wood pellet manufacturers.

Burning cleaner than oil or coal, wood pellets can produce heat or power without contributing particulates to the atmosphere.

And this country has the resources – millions of hectares of managed forests. Natural Resources Canada states that, based on nutrient balance experiments, forest residuals can be removed for fuel without adversely affecting the natural ecosystem. In fact, residuals must be removed in some forests to allow replanting of productive tree species. Much of the residue is sent to a landfill or destroyed, rather than being used as fuel. This residue can be processed into wood pellets. Currently, we’re leaving upwards of 50 to 55 percent of what we harvest on the forest floor because it doesn’t make good timber.

Canada is second to none for availability of biomass. Our forest industry first and foremost produces lumber from our wood; it has the highest value and is the top priority. Then we make pulp and paper from the left-over chips, and then with the residue on the floor – if we’re not using it for the [press] board industry – we should effectively utilize it for energy purposes.

But saw mill residue isn’t particularly transportable or user friendly. Wood pellet manufacturers take it through a pelletization process (like a biomass refinery) correcting the moisture, ensuring a consistent heat value, and the density. Afterwards, the pellets are very manageable from a transportation and handling perspective; it handles like grain.

Trees are not cut down to produce pellets. And, because of the high-pressure generated at the extrusion point of the process implemented to form the waste materials into the pellet, no additives or glues are necessary to bind them into the pellet shape.

There is already a large and growing international market for wood pellets and now, coal-powered plants can be converted to utilize wood pellets instead.

Canada is in a good position to harness and deliver this cost-effective energy source to our country and the world. We have an abundance of forestry residue across the whole of Canada – British Columbia especially, because it is the major lumber producer. Already, there are large wood pellet manufacturers in BC as well as Northern Ontario, Quebec and the Maritimes. In Eastern Canada, wood residue is sometimes utilized for alternative purposes, such as panel board production. But, elsewhere this valuable resource is simply discarded.

To date, Canadian wood pellet manufacturing has developed into a quarter billion dollar a year industry, producing 1.4 million tons of pellets annually. The industry exports a majority of what is produced. Seven to eight hundred thousand tons – basically 50 percent of our pellets – are shipped to Europe; while the remainder, with the exception of about 10 percent, goes to the United States, where pellets are used in small pellet stoves for space heating.

Furthermore, demand for wood pellets is so strong in Sweden, Denmark, Finland, Belgium and the Netherlands that most Canadian producers sell their entire annual production before the start of a new year.

And the pellet fuel market continues to grow, beginning to extend into the Far East. In North America, interest is building due to diminishing access to affordable fossil fuels.

Pellets and biomass have earned the environmental seal of approval as they are *carbon neutral*. Essentially, biomass is part of the carbon cycle; it is biological matter that was converted from carbon via photosynthesis. On decay or combustion, the carbon within the wood and wood residue goes back into the atmosphere, completing the cycle – unlike coal, for example, which as a nonrenewable fossil fuel is considered removed from the carbon cycle due to a lengthy period in the ground.

Also, for every ton of wood pellets utilized, we displace the need for fossil fuels and the emissions released by burning them. Pellets are the responsible, greener option.

In Canada biomass and wood pellets are often perceived as being dirty and old-fashioned. This needs to change. There is an old adage, “Waste not, want not.” With the vast supply of biomass in Canada, we should be harnessing it, not wasting it. If it’s not going to be used for anything else, our wood residue could and should be going into pellet production.

Canada has a proven way to reduce our green house gas emissions and stop climate change, but it’s being exported abroad, along with employment opportunities (EU nations are expected to generate 250,000 to 300,000 jobs in the bio fuel market over the next 10 years).

Ultimately, governments wishing to succeed in their *Kyoto* commitments, create Canadian jobs, and reduce their energy spending will find a friend in Canada’s wood pellet industry. We’re harvesting, right in our own backyard and providing an internationally recognized source of green energy through turning biomass into useable fuel. The potential for a “greener” future is enormous. Let’s not waste this opportunity. ♪

John Swann is Executive Director of the Wood Pellet Association of Canada. [www.pellet.org](http://www.pellet.org)

