

# Scene

## Tree power is green power

BY KEVIN MA  
Staff Writer

### Climate, cash, and gas

When a tree falls in a forest, Harold Welling hears opportunity.

Welling works for the consulting firm Kalwa Biogenics and is an advocate for wood-generated heat and electricity. Alberta Agriculture and Food recently asked him to do a study on wood power in rural communities. The study was released last month.

Europe already has whole towns powered and heated by wood-burning plants, Welling says, and Alberta could easily follow suit. He says he sees piles of scrap wood laying by the roadside up north, all of which could be burned for power. "Alberta is overflowing with wood," he says, and overflowing with potential for wood power.

How much power? Alberta could generate about 114 petajoules of heat from logging waste alone, Welling estimates. According to

the City of Edmonton's CO2RF guide on heating, that would be enough energy to heat about 712,500 homes, or more than twice the number of homes in St. Albert and Edmonton combined. "It is a lot of heat!" Welling says.

Albertans used to scoff at his calls for wood power, he says, but three recent changes have started to change their minds. The first is the price of natural gas. "The average greenhouse in 2002 had 12 per cent of its budget for heat," Welling says. "Now it's about 50 per cent or more," and those prices are going nowhere but up. As prices rise, he says, wood power becomes more attractive.

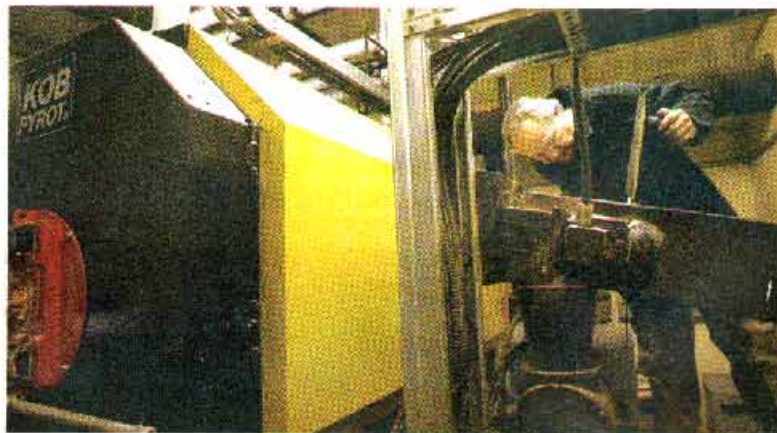
Second is Alberta Agriculture's drive to develop rural communities. Private woodlots are underexploited because of low wood prices, Welling says, encouraging loggers to seek jobs elsewhere. Drop a wood-fuelled power plant nearby and those trees become a cash crop, meaning loggers get jobs making, selling and maintaining stoves in the area.

The third is climate change. Heat and electricity from fossil fuels are significant sources of greenhouse gas emissions, so governments everywhere are now looking for low-emission replacements. Wood is one possibility; the emissions released by burning it would have escaped anyway when it rotted, so it's considered by most to be an emission-free source of energy, one that could displace emissions created by coal-fired power plants.

### Wood power in practice

Myron Jonzon of Madsen's Custom Cabinets knows the power of wood. A \$300,000 boiler fuelled by scrap wood has heated his 32,000-square-foot wood-shop in Edmonton since 2004. As a result, he's cut his greenhouse emissions from waste and heat by about 89 per cent and is saving thousands of dollars.

Jonzon walks through the busy shop, apparently oblivious to the blasts of saws



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**FIRING UP SAVINGS** - Myron Jonzon of Madsen's Custom Cabinets in Edmonton checks the feed chute for the wood boiler that heats his wood shop in Edmonton. The burning wood heats water, which then heats radiators to heat air in the plant.



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**GREEN PRACTICE** - Myron Jonzon holds up one of the wood pellets that fuel the heating system at his business. Since switching to a wood stove system, the company has significantly reduced the amount of waste it throws away as well as its greenhouse gas emissions.

and palm sanders around him. "One of the most volatile things in our business is energy cost," he says. He points out the spray room, a concrete alcove stained brown with paint. This room constantly sucks hot air out of the building for ventilation, he says, and is the building's main user of heat. "It was costing us about \$30 an hour to run the spray booth, and we run it 12 hours a day."

Waste was another big expense. He points to a wheeled bin piled with thin strips of scrap wood. A study he commissioned found that the shop produces about 400,000 kg of wood scraps a year and spends \$14,000 to haul it away.

The company cut both cost by burning the wood waste. The shop now shreds and sucks its scrap wood and sawdust through a network of giant overhead steel tubes to a filtration system outside. At its bottom is a pellet maker that squishes the wood-mix into cylinders the size of a can of tomato paste. The pellets are then sent via auger over to a towering fertilizer bin.

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**NO FUEL SHORTAGE** - Wood scraps at Madsen's Custom Cabinets are chopped up into sawdust and compressed into can-sized wood pellets used to heat the facility. The company now saves \$42,000 per year on its winter heating costs.