Product research

Canada's federal forest products laboratories are managed by Forintek, a new non-profit, private corporation. Their efforts cover all aspects of product development, from the forest to the production of durable, economical finished goods. Among recent projects are a steam process for producing particleboard that requires a shorter processing time and makes thicker panels economical; a weather-resistant fire retardant, Exterior-Fire-X, that inhibits flames in shingles, plywood and lumber and reduces smoke, poisonous gases and heat; a heavy-duty wood preservative that prevents decay of wood buried underground and can be used on such difficult-to-treat species as native spruce; and a ribbed tree shear blade, a single blade for cutting down trees, which causes 30 per cent less fracture damage than a conventional double blade. All four inventions are (or soon will be) produced commercially.

Energy

In recent energy-conscious years, wood has been making a comeback as a home-heating fuel. In Canada, it is also being used to create heat and steam to produce electricity in the pulp and paper industry. Canadian scientists are working on methods of using it as biomass in the synthesis of flammable gas, methanol and industrial chemicals.

Wood to burn

When fireplaces became primarily a source of aesthetic pleasure rather than heat, bark, waste wood and sawdust from Canadian mills were incinerated or used as landfill. Today they are hogged (chopped up), squeezed dry and burned to produce steam that in turn produces electricity.

The pulp and paper industry is one of 14 national sections that agreed to participate in the federal government's voluntary energy conservation program. The target was to reduce the use of purchased fossil fuels and electricity *per* unit of output by 12 per cent between the base year, 1972, and 1980. By the end of 1978 it had already achieved an 11.9 per cent reduction. In Ontario the amount of hog fuel burned increased by 129 per cent from 1976 to 1978, and oil consumption dropped 423 000 barrels (28 per cent) to 1 000 000 barrels. The five MacMillan Bloedel mills in Port Alberni, British Columbia, some of many using waste wood as fuel, supply 65 per cent of their energy needs with 325 000 tons of hog fuel each year.

To encourage mills to burn hog fuel, sawdust or waste wood, the federal Forest Industry Renewable Energy (FIRE) program provides shared-cost financial assistance in the form of taxable payments of up to 20 per cent of approved capital costs. From April 1, 1979 to March 31, 1984, it expects to make $150 000 000 available through the Department of Energy, Mines and Resources.

Biomass conversion

Hog fuel is already a viable energy source. Biomass conversion is still a resource of the future. In terms of the forest, biomass includes branches, tops, crooked boles, foliage and "unmerchantable" species left in the forest, as well as the mill wastes that go into hog fuel. It could also include cultivated short-rotation tree stands cut before they are mature enough for traditional uses.

Canadian forest biomass is being converted to gas and methanol on an experimental basis. Saskatchewan Forest Products, for example, is converting wood to flammable gas in Hudson Bay. And Lamb-Cargate Ltd. of Vancouver, with federal help, is building a pilot system to produce gas from waste wood to fuel a lumber-drying kiln.

Energy from the Forest (ENFOR) is the federal government's program to encourage research on both producing biomass and converting it to energy, prepared fuels or industrial chemicals that will significantly reduce traditional fossil fuel consumption. It is administered by Environment Canada and, like FIRE, runs from April 1, 1979, to March 31, 1984. The program normally provides 100 per cent of the cost of approved research and development work. Patents resulting from the program belong to the Crown.