



*Fluidized-bed gasification converts wood waste to inflammable gas.*

sawdust produced in the cutting and processing of lumber.

Canada's huge lumber industry now provides most of the fuel it needs to power its mills from its own wastes.

British Columbia Forest Products Ltd.'s turbine generator at Mackenzie, B.C., produces 20 megawatts of electricity from waste wood, and the MacMillan Bloedel mills at Port Alberni, B.C., use waste wood to produce 65 per cent of their energy needs.

Last December the Ontario Energy Corporation and Canertech Inc., both Crown corporations, signed an agreement with Omnifuel Gasification Systems Ltd., which, it is hoped, will speed the broader application of the company's technology. An excellent example of this technology's sophisticated use of waste is described below.

### Sawdust

The world's largest biomass fluidized-bed gasification system is in operation at the Levesque Plywood mill at Hearst, Ontario.

It uses gasified wood waste from the plywood mill instead of natural gas to supply all the plant's energy needs, and the money saved by the switch-over will pay for the system's installation, it is estimated, in two years.

Here's how it works:

Wood waste is fed into an airtight, oxygenless tank at the bottom of which is a bubbling bed of high temperature sand. The heat decomposes the wood rapidly, resulting in a combustible gas. The gas moves through 200 feet of pipe to fuel heaters at four different locations in the veneer and particle board plants.

The system at Levesque was the first commercial gasifier produced by Omnifuel. It was started up in March, 1981 and monitored during the summer. It is now in full operational use.

It can handle fuel with a moisture content of up to 40 per cent (the average is about 27 per cent) and can produce 80 million BTUs an hour. The trial run showed it converting 98 to 99 per cent of the wood's carbon content to gas, and it has a thermal efficiency of 84.3 per cent.

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## Time and Tide in Fundy Bay

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The tides in the Bay of Fundy are the highest in the world—the range between high and low water can be 53 feet.

They are also remarkably regular; there are two of almost identical magnitude, every 24 hours and 50 minutes.

Their harnessing has been discussed for decades, but when oil, gas and coal were cheap it was not practical.

Now the time has come to take the plunge into the chill waters. Nova Scotia's Tidal Power Corporation is building a generating station at a narrow point on the Annapolis River in the Bay's Cumberland Basin. The cost is \$46 million, of which the federal government is putting up \$26 million. It is being constructed by Dominion Bridge-Sulzer Inc. of Montreal.

The station will make use of a radically new