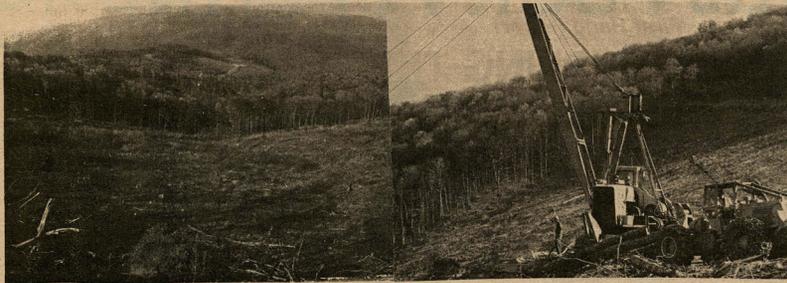


The Wood Waste Alternative:



By Paul O'Connell

Because of the present increase in the price of fossil fuels, many factories, institutions and home owners are seeking cheaper and more efficient ways to meet their energy needs. One of these possible methods is the burning of wood wastes as an energy source.

There was a time when wood was this country's primary source of fuel. But until recently, industrialization and the development of fossil fuels had combined to make wood burning an inconvenient and a comparably inefficient source of energy. However, due to the Arab oil embargo of the early 1970's there was a sharp increase in the use of wood as a fuel source as evident in the upswing in sales of wood stoves and wood burning furnaces. If present trends continue we will see more and more people switching to wood wastes to fuel their homes and businesses.

Clarkson College, in Potsdam, New York, is one institution which is making at least a partial switch from fossil fuels to wood burning. As it is planned now, nine buildings on the downtown campus will be heated from burning wood wastes, starting sometime next fall.

Gerald Gonyea, Assistant to the Vice-President at Clarkson is the man who has been in charge of planning the new system which will cut the school's energy bills and diversify their energy sources. After conducting studies into alternate energy sources for oil, Gonyea and Clarkson decided that burning wood wastes would be the most advantageous method to employ for a number of reasons.

Although changing an oil burning system to a wood burning one is expensive, once it's installed wood is considerably cheaper to burn than oil is. For example, No. 4 oil, one of the oils which Clarkson presently uses, costs about one dollar per gallon. The wood wastes will cost approximately fourteen dollars per ton. In terms of gallons, Gonyea claims that this works out to about twenty-two cents per gallon — almost five times cheaper than using No. 4 oil.

Wood is also a very clean fuel to use. It gives off about one-tenth of the particulates that coal does and is virtually sulfur and ash free. Not only is this healthy for the surrounding environment, but the costly pollution control devices used in coal burning factories become unnecessary, further reducing the plants cost of operation.

For these reasons and other conservative measures, such as improved insulation, Gonyea claims that this system will be efficient enough to pay for itself in only three years. If this turns out to be the case, the project would be considered a great success and similar projects would surely appear at other institutions.

However, even if Clarkson's new system and others like it turn out to be resounding successes, a dramatic increase in the use of wood waste fuels is likely. Although there are many ad-

vantages to using wood wastes as an energy source, there are also many restrictions preventing the widespread use of wood as a large source of fuel.

Although Gonyea's predictions are impressive, it must be understood that the economic feasibility of this system varies from region to region. It is economically sound here in the North Country because wood is in ample supply here in relation to other energy sources. In more metropolitan areas, however, this is not the case. Like everything else, an energy source's availability and accessibility will determine its cost. Therefore, in some

54 percent of all the homes in Vermont and as many as 75 percent of the homes in Maine were equipped to use wood for heating purposes. Needless to say these figures were astronomically higher than the percentage figure for the whole country which was somewhere around 0.5 percent (Tillman, Wood as an Energy Resource, 1978).

But even the increased use of wood in the North Country could be slowed by the fact that there is no large industry to provide the wood wastes necessary for an industrial transformation. As mentioned, there are regional lumber



areas this system is not an economically feasible energy alternative.

Even in some regions where coal is presently used, wood fuel would be financially advantageous, but that doesn't guarantee that a change would occur. According to Gonyea, although some "big" plants would look into a possible change because of the incredibly high cost of pollution controls on coal, most "smaller" plants wouldn't bother because restrictions on them are far fewer, depending on the area. Even though wood fuel may be slightly more cost efficient the installation fee is often costly enough to make it not worth the trouble of going through the transformation. The installation cost for the project at Clarkson is estimated at \$600,000.

These regional barriers have been highlighted by recent studies (1978). At that time the use of wood wastes was concentrated in forest areas such as the northern midwest and northern New England. In fact it was estimated that

yards and paper mills which provide wastes for current wood users and if the use of wood for fuel increases as it is expected to, eventually these supplies will be in great demand. If this does occur, certainly an industry will develop to supply the need, which would further enhance the advantages of changing to wood fuel by increasing its availability. Although this may eventually occur, it is not likely in the near future.

So although burning wood wastes as fuel has many advantages, in the future it is likely to remain only a supplementary fuel supply. However, all evidence does point to an increased contribution from wood in meeting this country's energy needs. According to

David A. Tillman, Energy Correspondent for Halcyon Business Publications, in his extensive study previously mentioned, wood wastes supplied America with 2.1 percent of its total energy consumed in 1976. Projections show that by the year 2000 that figure will have doubled to 4.2 percent. Although this may appear to be a minor contribution, its effect will be much larger in some areas, being a regionally restricted energy source.

In another vein, this apparently small increase is significant in that it further diversifies America's energy resources. Projections show that all supplementary fuels, including nuclear, hydroelectric, geothermal and solar power, will increase from 8.3 percent of total energy consumed in 1976, to an 18.3 percent contribution in the year 2000. This diversity in fuel supply is essential if America is to have a stable economic future. If any lesson is to be learned from the oil embargo and the rising cost of fossil fuels, it's that we must avoid an overdependence on one source of energy.

