

village view

by Andrea Leonard

PART II

The forest products industry is one of the nation's largest. It has an annual payroll of some \$12 billion. About 1.2 million Americans are directly employed in the industry, and millions more of us rely on forest products in one way or another.

The rising price of fossil fuels may benefit all who depend on the forest products industry as well as other new, but rapidly-growing, energy sources such as solar heating, wind power, and methane gas production.

In 1974 a study of forest products was conducted by researchers from that industry together with U. S. Forest Service employees; the study was funded by the National Academy of Science.

To determine the energy-costs to produce wood products for construction, comparisons were made of the energy-costs required to produce competitive building materials such as aluminum, steel, masonry and plastics.

When wood ceases to be a tree, it becomes four different classes of material: soft and hard sawtimber and soft and hard pulpwoods. Softwood sawtimber is the largest stock growing and being harvested nationally. It has a paramount place in the home construction industry.

About 2% of the standing forest is cut down each year; since more than this is added back in fresh growth annually, the total growing stock continues to rise steadily.

Of the 94 million tons of wood cut each year, 82 become commercial logs. The remaining 12 million ton never leave the forest, but remain as slash piles, and wastes from building logging roads, landings, etc.

Once out of the woods and at the mill, the largest subtraction occurs. Only a third of the wood arriving at the mill leaves it as lumber; the other two-thirds is reduced to chips, shavings and sawdust. These by-products have their values and uses, too. Almost all sawdust is consumed to fire kilns that dry the lumber. Chips are mixed with glue for press-board.

Nevertheless, from 94 million tons of cutwood only 25 million tons of planed lumber comes to the market.

The study computed inputs of energy consumed to do the cutting and hauling, sawing and planing. Most of the work is in these processes, not in forestry proper. The labor, fuel and capital input break down to 30% to get the tree down and out of the woods; 50% to mill and process it; 20% to move it to the building site.

There on the site the study looked at costs in energy and manpower to produce and deliver products competitive with wood -- gravel, cinder blocks, asphalt shingles, aluminum siding.

These non-wood alternatives are cheaper to extract from the ground than wood is to extract from the forest, but much more expensive to manufacture. Production processes for non-wood construction materials take more money and more energy to make them ready to use.

Since a ton of aluminum siding can't be compared to a ton of plywood, the study determined how much of each would be needed for a 100-square foot section of residential construction of walls, floors and roofing; figures were also obtained to determine the resources spent to build such a section with a variety of methods.

In constructing roofs, the labor and depreciation capital is about the same for all materials; when the energy is compared, wood rafters beat steel and wood shingles save over asphalt by wide margins.

Wood siding over plywood sheathing on walls is a clear economizer compared to brick veneer or even concrete block.

Walls framed of wood instead of aluminum or steel require half the energy. Good old wood joists, plywood sub-floors, and oak flooring came out well ahead of concrete slab or steel joists, or even plywood subfloor and carpeting.

It's been found, too, that wood has an energy advantage and is at no disadvantage in terms of labor or capital utilization. Since fuel prices can go nowhere but up, the wood industry, less dependent on these fuels, can look forward to even greater competitive advantages from that standpoint.

Can the forest products industry supply all wood that will be needed in the foreseeable future? According to the study, there'll be enough to go around; in fact, the estimated demand by the year 2000 won't make much of a dent in the standing forests -- about a tenth of 1% a year.

This estimate does depend upon forest products people improving some of their wasteful practices; instead of getting only a third of a tree into lumber, improved processing must raise that figure to 40-45%. Based on research and development presently in work, this is a realistic goal.

Precision sawing, computer-controlled blade positions, and better quality cutting edges are already used. More visionary foresters talk of sawing wood with lazer beams to reduce waste to zero.

New equipment is coming on line to use smaller tree diameters; the industry recognizes they must come to the forest more often, do more intensive harvesting than today.

Taxes and interest rates on land, both of which are now higher than ever before, are requiring annual costs that hit an owner hard when he can harvest his crop only once every 30-50 years.

New England's future? Home construction always has and continues to rely heavily on wood. The industry here is not an important employer numerically, except in the State of Maine; however, to the extent wood-processing industries locate in New England, any increases in demand for wood anywhere in the world should benefit local employment prospects.

Presently we export and import wood. Exports go to Japan from western forests, and to Scandinavia from the east coast since these countries face a growing lumber shortage.

And not incidentally, wood for fuel, particularly here in New England, could grow in importance. Forestry generates massive by-products, home fuel oil is rising rapidly in price, and because forestlands in New England are still close to population centers, cordwood and similar wood products may come into popular demand for heating.

It's reassuring to find paper companies participating in the recycling process, investing capital funds to recycle more and better, and showing concern about pollution control.

It's revealing to consider what life might be like if man hadn't yet discovered the many uses to which wood can be put. Imagine, for instance, a world in which nothing was made of wood.

That's not as absurd as you may think. Great civilizations have flourished upon this earth without the use of the wheel. Neither the Incas or the Mayans ever had the wheel.

And it's refreshing to find rising prices of fossil fuels may be a blessing in disguise, may benefit one of New England's major industries, forest products, simply because wood is less expensive to utilize in construction than any competitive material.

It's an ill wind, indeed, that blows no one good.