

By Alison Mitchell

Each year, Koppers Inc.'s cogeneration plant in Pennsylvania converts approximately 110,000 tons of used creosote-treated wood products into enough electricity to power more than 700 households. In addition, through its efforts to recycle wood waste, Koppers is reducing the debris that goes into landfills.

Across the country in a similar operation, California-based Wheelabrator Shasta Energy Company, a wholly owned subsidiary of Waste Management, could burn up to 80,000 to 90,000 tons of crossties for fuel each year. The resulting energy is sold to Pacific Gas and Electric utility company to supply power to homes and businesses throughout the region.

These are just two of the cogeneration and biomass plants in the United States that take spent crossties from railroads and recycle them into fuel. As Class 1 railroads across the United States and Canada face the task of replacing millions of crossties through annual maintenance programs, they must decide how to best dispose of these ties.

One option for railroads is to sell their landscape-quality ties; however, millions of ties are not suitable for use as landscape material and are either sent to landfills or sent through another disposal process to a tie grinder and then on to a cogeneration plant for conversion into fuel.

Enter companies such as Koppers and Wheelabrator. The following is a profile of the tie disposal and reuse efforts and services of these two companies.

Wheelabrator Shasta Energy Company

Steve Jolley is the fuel manager at Wheelabrator Shasta, a biomass fuel plant in northern California. When it began operations in 1987, Wheelabrator's fuel was derived from the timber industry and consisted of sawmill waste and chips from forest thinning operations. "As sawmills closed, the company was challenged to find new fuel sources. We now use waste from orchards, nut shelling operations and the urban environment as well," Jolley said.

In September 1990, Wheelabrator conducted test burns using creosote-treated crossties with the approval of Shasta County, where the plant is located. "We found that

Wood-Waste Recyclers Committed To Using Ties As Fuel



Between being picked up off a railroad's right-of-way and being converted into fuel, many ties are ground by machines such as Continental Biomass Industries' Magnum Force grinders, as shown above.

creosote-treated wood could be burned without exceeding any emissions limits established by our operating permit," he said. However, Jolley said that Wheelabrator "sat on" the test results for several years, and in 1996 sought and received approval to burn crossties. "We have been burning scrap ties ever since. We are not burning as many ties as we would like; it's a matter of availability," Jolley said.

Getting the permit to burn creosote-treated ties was expensive due to the required testing. Yet, Jolley said, Wheelabrator had no trouble being permitted. "With the technology we have, we can burn creosote-treated ties cleanly. We don't burn utility poles or wood that is treated with substances other than creosote, though. As long as railroads are using creosote-treated wood and [the ties] are not banned for use as boiler fuel, crossties will be a viable source of fuel into the future," he said.

Koppers Inc.

In 1998, Koppers built a \$9 million cogeneration plant as a strategic alliance with Conrail and Pennsylvania Power and Light to convert crossties to electricity in a safe

and environmentally sensitive manner. According to Gary Ambrose, general manager of commercial railroad products and services, this plant was specifically designed and built for tie disposal and accepts whole ties instead of chipped or ground ones. "This eliminates one person in the disposal chain and saves money for the railroad," he said. "It works well because the fewer times someone touches the crosstie the more costs are reduced."

Ambrose said that Conrail was the first railroad to institute a "cradle-to-grave" approach to treated railway products. Although Conrail is no longer in existence, its attitude toward tie disposal lives on. Canadian Pacific (CP) Railway has adopted a cradle-to-grave approach to crossties and follows a corporate philosophy that 100 percent of its spent ties be recycled to energy, Ambrose said. The majority of the crossties Koppers incinerates are from CP, although other customers, including Amtrak, Norfolk Southern and several major short line railroads within the Northeast and Mid-Atlantic states, regularly bring in ties for incineration.

Koppers has been involved in full-time tie disposal for many years, Ambrose said. The

company previously operated disposal facilities in Florence, S.C., Montgomery, Ala., and Grenada, Miss., in addition to its cogeneration facility in Pennsylvania; however, due to logistical costs and a lack of tie availability, Koppers reduced its number of plants to just one.

The benefit of tie disposal through incineration and recycling to energy, Ambrose said, is that the tie never becomes a legacy and never gets the opportunity to become unsightly in any way. "Koppers takes care of the tie and the ash, indemnifying the railroad, which never has to deal with it again," he said.

Ambrose said he believes economics are what drives the decision to burn ties for fuel both for the railroad and the disposal company. "You must run the numbers. If the cost to recycle ties to energy exceeds the cost of other disposal methods, then the railroads won't incinerate the ties."

To justify costs, companies that want to burn ties need to have long-term contracts with the railroads and utility companies, Ambrose said. "It would cost us \$25 million today to replicate our facility in Pennsylvania, and you can't justify the costs of capital without having long-term contracts. There needs to be a correlation between the lengths of the contracts and the magnitude of the initial investment."

According to Ambrose, companies can burn ties for energy recovery as long as they meet certain criteria. Without question, all environmental compliance thresholds must be addressed and the company must be able to realize a return on their cost of capital employed, possibly from the sale of new ties, a guaranteed long-term energy sale, or a tipping fee from the railroads, he said. These collective revenue streams must provide enough future cash flow to allow for maintenance and upgrading of the facility. Yet, this is all contingent on securing a long-term guaranteed fuel source, he said.

There has been a concerted effort by the railroads to get ties picked up and handled in a responsible manner, Ambrose said. Currently the railroads do not have to go beyond what is most economically feasible to dispose of ties. "But if at some point they do have to go beyond what is economical, there would be justification to allocate more money toward the building of new facilities to handle the problem." §

The Keys To Long-Term Viability: Manage, Invest & Tell The Story

Speech By Ken Laughlin, RTA President

Editor's Note: Laughlin delivered the following speech in May at the American Wood-Preservers' Association's (AWPA) annual meeting in Vancouver, British Columbia, Canada.

Contrary to what many of us feel when we have to confront environmental zealots and government regulatory hassles, we in the RTA firmly believe that the future holds great things for the wood preserving industry. True enough, we face many obstacles from activists and legislators. We also face problems of our own making as individual companies among our ranks struggle for profitability and the enormous requirements for significant capital investment.

But ours is an industry whose time has truly arrived. Our products, more than 10 billion board feet a year, are needed by a wide ranging base of industrial and consumer interests. We preserve wood and we do so in environmentally and scientifically sound ways. Our products cannot be recreated in steel mills or concrete factories. Our products extend our valuable renewable native resources. Our industry is not just valuable to our national interests but it is also absolutely critical to our nation's economic well-being.

In recent years, there has been a dramatic resurgence in tie demand that has required RTA to meet ever-growing challenges for both timber resources and the increasing threat of alternative materials. Furthermore, we have had to look at all options for alternative preservatives and explore new ways, through pre- and remedial treatments, to extend the life of the wood cross tie even beyond its 35-year average life span.

And I think it is here, in technology, that our entire wood preserving industry will shine forth and provide the opportunity for long-term sustainable growth. Developing and applying advanced technology will be the cornerstone of our ability to meet the needs of our customers as we journey into the 21st century.

Let me tell you about something I saw the other day that may be illustrative of these points.

In a recent interview, Lee Raymond, chairman and CEO of Exxon Mobil, was asked about the future for the oil industry—how long there will be enough oil and how long the energy industry will be able to provide the resources to sustain meaningful growth in the world economies.

Raymond told an interesting story. First, he said the oil reserves of the world are sufficient to meet the needs of growing eco-



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conomic activity for a very, very long time. He stated that discovery and recovery technology has advanced so far beyond what could even be imagined 30 years ago that the costs of finding and recovering a barrel of oil today are at its lowest in the history of the oil refining business. We are doing things today that no one even thought about 30 years ago.

When asked if this is so, why companies like Exxon feel compelled to drill in Alaska or other sensitive areas, Raymond said that just because the world's reserves are large did not mean that we should sit on our hands in diversifying our sources, especially when the dependence on only a few sources could fundamentally damage the world economies should it become impractical to access them. Saying there are enough resources does not mean that we should stop looking for additional ways to provide new and competitive resources.

Finally, Raymond was asked if he understood why some activists would simply say that these statements were just his way of ensuring that he could sell as much oil as possible for as long as possible.

Raymond said, "First, in our business, we aren't concerned with revenues. Our business is so capital intensive that we must remain focused on margin. Thus, how much we generate in revenue is of lesser importance than most would assume." Raymond said that energy is the single most important element in humankind's ability to sustain long-term meaningful growth. "We sell energy, but we do not sell any more energy than what is required by our customers. Thus, when one succumbs to a thought



RTA Executive Director Jim Gauntt, left, and RTA President Ken Laughlin at the recent AWPA meeting.

process that says all we are interested in is our own profits or our own survival, it ignores the fundamental realities of the world's economies. For humans to exist on this planet, and for us to have economies that work, a large amount of energy will always be required."

The interviewer then asked about alternative energy sources, solar energy, for example.

Raymond continued, "I asked my people the other day to look at an Exxon gas station as a seller, not of just gas and oil, but as a seller of energy. I asked them about how we could incorporate alternative energy sources such as solar power, for example, into our long-term planning. They told me that if we were to cover an area the size of Los Angeles with solar panels, this would generate the same amount of energy on a daily basis that three Exxon stations sell daily. If we increased the coverage of solar panels to an

area the size of the state of New Jersey, that would generate the energy we sell from 100 Exxon stations daily.

"We have 3,000 Exxon stations nationwide. We sell 8 million barrels a day of oil products. That's 320 million gallons daily. That means that Exxon alone sells 1 billion gallons of oil-related products every three days. And, more importantly to understanding the scope of the world's energy demands, Exxon only represents 10 percent of the world's sales of oil-related products.

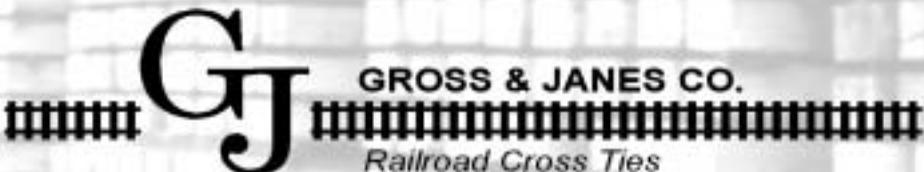
"It isn't that alternative sources shouldn't be utilized, or that they won't one day be incorporated into our business. The fact is that the quantity of energy required by the world is so large that there are not any other sources of sufficient magnitude to meet the world's economic needs."

Now you may be wondering why I am telling you this story. The reason comes from what Raymond said next. "In the energy business, we are technology driven, and because, collectively, we have wisely invested in advanced technology, the energy industry has ensured the world's ability to have meaningful growth for a very long time.

"But, we have done a terrible job in educating the public about the size and importance of our industry. Our products touch the lives of every human being on the planet everyday. And, we need to increase their understanding of the energy requirements of the world's economies and how we as an industry provide them."

Furthermore, Raymond continued, there

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have been times in our past when we have failed to realize that our business is a business built on margin and not simply revenue generation. To develop and apply new technology, you must be profitable. That profitability can only come from the wise management of our business.

And, finally, Raymond said that there have been times in our past when we have not had the focus we have today on diversifying, not just the source of our products but also on diversifying our planning for the future energy needs of the world and our business. Today, however, everyone in management at Exxon knows that diversification is a corporate mantra now and for the future.

Here, then, in these words may be our industry's lessons for the future.

First, although the wood preserving industry is not as large as the oil industry, our products do touch the lives of every American and many around the world everyday. We cannot be shy, busy or fearful about how others will view us. We have remarkable products, and our future viability as an industry is dependant upon our ability and resolve to tell our story.

Second, this industry will not be viable for the long term unless we are able to invest in new technologies while remaining profitable; to ensure the survival of our industry, we must think differently about what we do and how we do it. Our business is also a margin- and a technology-driven business. And, we simply cannot say that there are no new ways to do things—no new opportunities, no new viable preservatives, no new methods to extend the life of our products. It is vital that we recognize that the ability to develop and invest in new technologies is a primary fundamental.

Third, we must bring diversification into our daily thought process. We must diversify our businesses, we must diversify our planning, and we must diversify our cooperation together. The former two are critical to how successful our individual businesses will be. The latter is critical to the health of our industry and forms the foundation for our respective associations.

You have a great association here at AWPA, with solid leadership and a vital mission in bringing new technologies to bear for our future. Continue to do all that you can do to be efficient in allowing new

technologies to blossom through your work in sound research and standards development. Our collective businesses depend on AWPA for this.

RTA is also blessed with good leadership and a focus on the future in the work that we do to produce and extend the life of timber products for the railroad industry. And, we will continue to tell the story of the wood crosstie even as we continue to improve it.

As we remember our past in looking at the historical importance of our wood preserving industry and our respective associations, I encourage each of you to keep these ideas in mind. We have a great industry. We are dedicated to service and to the principles of extending our natural resources by preserving wood. So, as we venture forth into the future, let's manage ourselves wisely, let's invest in new technologies, and together let's all tell the remarkable story of our products and our businesses. §

Ken Laughlin, vice president of sales for Arizona Pacific Wood Preserving, is president of RTA for 2003-2004.

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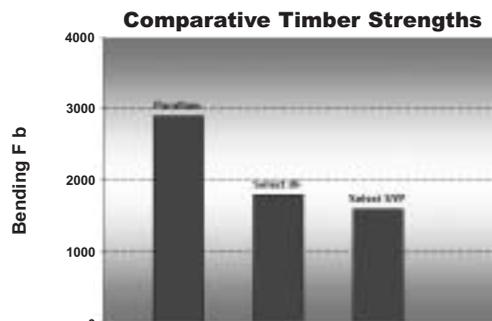
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