forest

Forest
— Industry of the Future

Industrial Partnerships: Advancing Energy and Environmental Goals

Office of Energy Efficiency and Renewable Energy
U.S. Department of Energy

Office of Industrial Technologies

Industry collaboration

Partnerships between the U.S. forest products industry and the U.S. Department of Energy's (DOE) Office of Industrial Technologies (OIT) accelerate technology research, development, and deployment. The forest products industry was the first of nine energy- and waste-intensive industries to participate in the OIT Industries of the Future (IOF) program, beginning in 1994. This industry-government collaboration, called Agenda 2020, is facilitated through the American Forest and Paper Association (AF&PA), whose members represent 90% of the industry. AF&PA established a Chief Technology Officers (CTO) Committee to coordinate IOF activities for the forest products industry. Partnerships with OIT and over 50 companies and universities give participants access to new resources, R&D results, and technologies that reduce energy and environmental costs while improving energy efficiency and productivity—thus enabling forest products companies to stay competitive.

The need to continually optimize has resulted in reduced staffing and fewer dollars for new technologies. The DOE's OIT Industries of the Future and other energy efficiency initiatives help to fill these gaps by supporting industry-specific plans, and providing technical and financial resources that reduce risk and leverage R&D dollars.

—Nathan Carpenter, *Corporate Energy Manager, Boise Cascade*

Successful alliances

Partnering between OIT and the forest products industry has led to many successful research projects, including the following.

Gasification and black liquor demonstration project—DOE and Georgia-Pacific Corporation will co-sponsor and share costs on a 5-year, $64 million demonstration of an advanced "black liquor" gasifier in Big Island, Virginia. The project is designed to jump-start development and commercialization of gasifiers as an alternative to recovery furnaces. The gasification process being demonstrated is called the MTCI PulseEnhanced Steam Reforming Process and is licensed in the United States by StoneChem. This technology is predicted to be more energy efficient than recovery furnaces and releases lower levels of environmental emissions. This project is part of the Biomass and Black Liquor Gasification Initiative, and is a direct result of strong industry consensus on the importance of this technology in the industry's future, with the potential to convert the industry from the third largest

What's working

By concentrating research on the industry's most pressing needs and requiring a private sector stake in the research projects, the IOF process ensures a strategic allocation of resources for technology development. The CTO Committee, including representatives from approximately 12 forest products companies, ensures that R&D efforts are well focused and funded.

- Industry-led task groups, which are coordinated by the CTO committee, meet regularly to select technology areas amenable to pre-competitive, collaborative partnerships, conduct technical merit review of proposals, and evaluate ongoing projects.

- Mentors from the forest products industry volunteer to guide each R&D project, advising researchers on real-world operations and considerations.

- A retired industry executives group is co-funded by OIT and the Institute of Paper Science and Technology to work directly with mills to advise them of the opportunities available for emerging technology implementation

consumer of energy in the manufacturing sector to a producer of energy. As a result of this consensus, Congress added a budget line item to fund this initiative.

METHANE de-NOX® demonstration project—Funded by the Gas Research Institute, the Institute of Gas Technology (now the Gas Technology Institute), and OIT, a METHANE de-NOX® system was installed and tested on a natural gas, co-fired, 300 MMBtu/h wood waste and sludge-fired stoker boiler at Boise Cascade Corporation's 1500-ton-per-day integrated paper mill in International Falls, Minnesota. Compared to baseline co-firing operations, emissions were reduced by more than 40% when a 9.5% natural gas mixture was injected. Emissions were reduced even further, by up to 50%, with a 17% natural gas injection. At the same time, sludge feed was increased from a baseline level of 1.4 tons per hour to 4.2 tons per hour. Stan Wohadlo of the Gas Technology Institute credits much of the project's success to partnering. "We have a very positive relationship with OIT as well as with Boise Cascade, the industrial partner… Without that support, we couldn't have completed our full-scale demonstration project," he said.

and best practices. The efforts of this group have led to a Showcase Demonstration with Abitibi Consolidated, Inc., planned for March 2002.

- Industry participants collaborate in research projects as cost-sharing partners and provide host facilities for technology demonstrations.

Partnering benefits

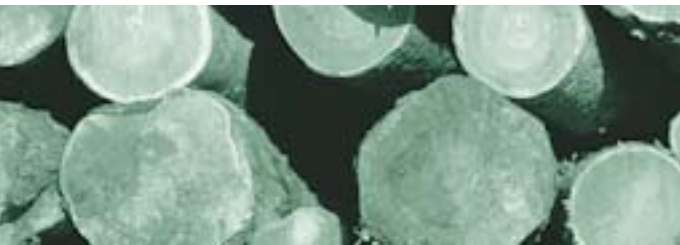
Partnerships among forest products companies, OIT, and AF&PA have many advantages. Because the partners provide expert oversight and focus the direction of research on issues vital to the forest products industry, R&D dollars can be highly leveraged. Partnering also provides an opportunity to network, exchange ideas, and build upon those ideas. This synergy fosters the implementation of new technologies that save energy and money. For example, based on the Boise Cascade results mentioned above, it is estimated that the company will realize annual savings of $400,000 in sludge handling and disposal costs and $270,000 in co-firing fuel costs.

How to participate

To learn more about how you can get involved, log on to the OIT Forest Products Team Web site at: *http://www.oit.doe.gov/forest/*. Here you can get contact information for team members who assist companies in partnering with OIT, AF&PA, universities, and suppliers. From this site you can also view schedules and information on recent forest products solicitations or, find key publications, such as the *Agenda 2020* vision and implementation plan documents.

Take advantage of OIT's BestPractices activities, which offers tools to improve plant energy efficiency, enhance plant environmental performance, and increase plant productivity. Access the BestPractices Web site at: *http://www.oit.doe.gov/bestpractices/*. Learn how your company can participate in a plant-wide assessment. The Web site also offers information on hosting a Showcase Demonstration. Benefits of hosting include gaining access to energy-efficient technologies and OIT technical resources, plus achieving bottom-line energy savings and productivity improvements.

Contact the OIT Clearinghouse to access the entire portfolio of OIT publications and services and for technical advice on industrial systems improvements. Call (800) 862-2086 or visit *www.oit.doe.gov/clearinghouse*.



For more information on the Forest Products Industry of the Future, contact the OIT Clearinghouse at (800) 862-2086 or visit www.oit.doe.gov/forest/

Please send any comments, questions, or suggestions to webmaster.oit@ee.doe.gov

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U.S. Department of Energy
Washington, DC 20585

DOE/GO-102001-1199
February 2001