

Energy Advisor



Ameren Missouri
101 Madison
Jefferson City, MO 65101

Question? Comments? Story ideas?
Email Terri Engelbrecht at tengelbrecht@ameren.com
PowerForwardMO.com

Special Edition | April 19, 2017

SB 190 and Agriculture: The Missouri Economic Development & Infrastructure Investment Act Could Bolster One of Missouri's Largest Agricultural Industries

Passing the Missouri Economic Development & Infrastructure Investment Act (SB 190) is an important next step in moving forward with an option that could significantly address a serious threat to one of Missouri's largest agricultural commodities—forest products. Not only could this legislation benefit the lumber mills in Missouri, it could also result in more renewable energy production in our state from locally-sourced fuels and a new revenue stream to agricultural communities.

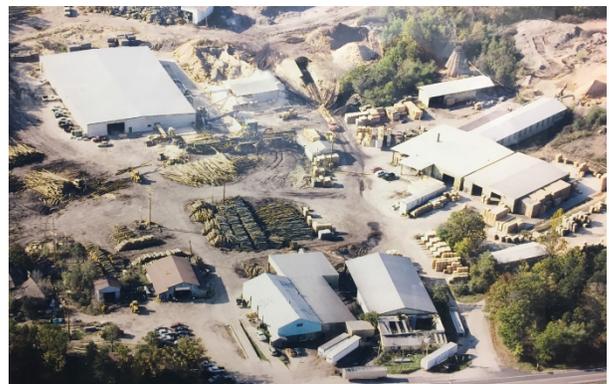
What is Missouri's second largest agricultural industry? The answer might surprise you.

A recent study showed that soybeans are the largest agricultural industry in Missouri based on the economic activity they generate in the state, but wood products from Missouri's forests, primarily oak trees, are Missouri's second largest agricultural industry. Missouri is blessed with 15 million acres of forest, mostly south of I-70 but especially south of I-44. Missouri's lumber mills are a \$9 billion per year industry and employ over 50,000 people with family sustaining jobs.

Missouri's forest products industry is threatened.

To understand the scope of this threat, consider Reed Lumber Co. about 10 miles west of Potosi. The company is owned by Carl Barnes and its primary product is wood shipping pallets, produced from regionally available oak trees. Depending on the quality of the trees, the company also produces some oak lumber. Carl's business supports approximately 140 workers and their families and is one of the largest employers in the area.

Reed Lumber Co. produces 25 semi-truck loads of pallets every week. It takes about 13 semi-truck loads of tree trunks per day to manufacture this many pallets a week. Lumber mills generally do not operate at significant margins between what it costs to produce their product vs. what they are paid. Reed Lumber Co. operates millions of dollars of equipment but its total margin between annual costs vs revenues is well below \$1 million.



Reed Lumber Co. near Potosi



Employees sorting freshly cut oak boards



Carl Barnes with a large saw blade

Processing 13 semi-trailer loads of oak tree trunks a day to manufacture wood products for sale creates a lot of left over bark, sawdust, and wood chips. In fact only about one-third of the original tree trunk comes through the manufacturing process as useable boards. These non-board products really add up over time; in just the last year Reed Lumber Co. created over 7,000 tons of bark, over 17,000 tons of sawdust and over 25,000 tons of wood chips.



Carl Barnes, president (right) and Brock Fisher, general manager standing next to pile of wood chips and sawdust



Wood chips left over from saw milling

What is the threat to our forest products industry?

At Reed Lumber Co. revenues from the pallet manufacturing part of the business just barely cover all the input costs. Much of the company's actual margin has historically come from the sale of bark, sawdust and wood chips. Over the last two years, shrinking demand for these products and increasing transportation costs have reduced the company's revenues by almost one-third.

One of the challenges in Missouri compared to several nearby states, including Arkansas, is the lack of a significant fuel industry demand for wood residuals. This has made it that much more difficult to continue to sell these non-board lumber mill products to generate revenues and avoid the environmental problems created by stockpiling thousands of tons of this material on site.

The Missouri Forest Products Association (MFPA) is well aware of this challenge and is working proactively to turn this threat into an economic development opportunity for the state. Recently MFPA's efforts resulted in winning a grant to thoroughly study this issue and assess approaches to deal with it. In the application for this grant the threat to our forest products industry was stated as follows:

“A backlog of waste wood is threatening the forestry products industry of Missouri. Disposing of the waste creates potential environmental, transportation, economic and disposal site consequences.”



And

“Members of the Missouri Forest Products Association are very concerned about the stability of future markets for sawmill residuals. As paper production utilizing hardwood chips diminishes in the United States, the industry must explore economically feasible solutions to residual utilization. The industry knows that the ability to stay in business is dependent on feasible markets for their residuals. The future of Missouri’s forest products industry is in the balance.”

How the Missouri Economic Development & Infrastructure Investment Act (SB 190) Could be Helpful in Dealing With This Threat

In addition to supporting efforts to replace Missouri’s outdated electric grid infrastructure faster and accelerating the pace of grid modernization to benefit customers, this legislation also includes provisions to move forward with efforts to utilize agricultural residuals to make a fuel suitable to burn in existing power plants. Sawdust and wood chips are relatively expensive to transport long distances and some types are not immediately suitable for use in an existing power plant. But Ameren has been assessing technology options that take raw biomass feedstock (like saw dust, crop residues, etc.), and makes a denser bio-based product that is less expensive to transport and can be used to supplement other fuels. Enginuity’s BioCoal™ technology is a Missouri-developed process and this company is also working with MFPA to find solutions for the Missouri wood industry. At this point Enginuity’s technology is operating at a demonstration level but has not yet been built at a commercially deployable scale. Passage of SB 190 would help with the timing of commercial scale equipment testing.

Initial lab testing results of Enginuity’s BioCoal™ material, pictured below, yielded favorable results and Ameren Missouri has entered into memoranda of understanding with several groups to work together to support this opportunity for Missouri.

SB 190 takes the next steps to support a full-scale test burn of this type of fuel, power plant modifications to support handling of this fuel and the ability to enter into long term contracts for this fuel if commercial scale equipment testing and larger scale power plant fuel testing yields favorable results and the pricing is acceptable. All of these efforts by electric utilities would be regulated by the Missouri Public Service Commission.

Acceptable feedstock to manufacture this fuel is not limited to wood. Several other agricultural industries could benefit by the use of corn stover, rice and cotton residuals, animal manures, rejected grains (due to mold or other fungus), miscanthus, and switchgrass. Other feedstocks could include waste wood pallets and utility line tree trimmings.

The currently anticipated costs of this Missouri biomass-derived fuel appears to compare reasonably well with some renewable energy resources and would have the advantage of being reliable since it is a fuel input for a plant available 24 hours a day vs. being dependent on the availability of the sun or wind.



BioCoal™ made from Missouri agricultural residuals (courtesy Enginuity)

Passing the Missouri Economic Development & Infrastructure Investment Act is an important next step in moving forward with an option that could significantly address this threat to Missouri's second largest agricultural industry. Not only could this legislation benefit the lumber mills in Missouri, it could also result in more renewable energy production in our state from locally-sourced fuels and a new revenue stream to agricultural communities.

In addition to the possible benefits to electric utilities and their customers of more locally-sourced renewable energy, the production of this fuel offers several other economic benefits. Based on an outside study sponsored by Enginuity, the collection, transportation, and fuel manufacturing to support a 5% co-usage of this material at Ameren Missouri's Sioux power plant would generate 129 new jobs, almost \$7 million in increased labor income, and \$49 million in greater economic output in Missouri.

POWER *forward*»

Energy Advisor | Keeping Missouri's most valuable customers informed on important energy issues



Have any questions or feedback? Hit "Reply" and let's talk. Or, visit POWERforwardMO.com for more.