

Wood Demand and Bioenergy: Waiting in Louisiana and the US South

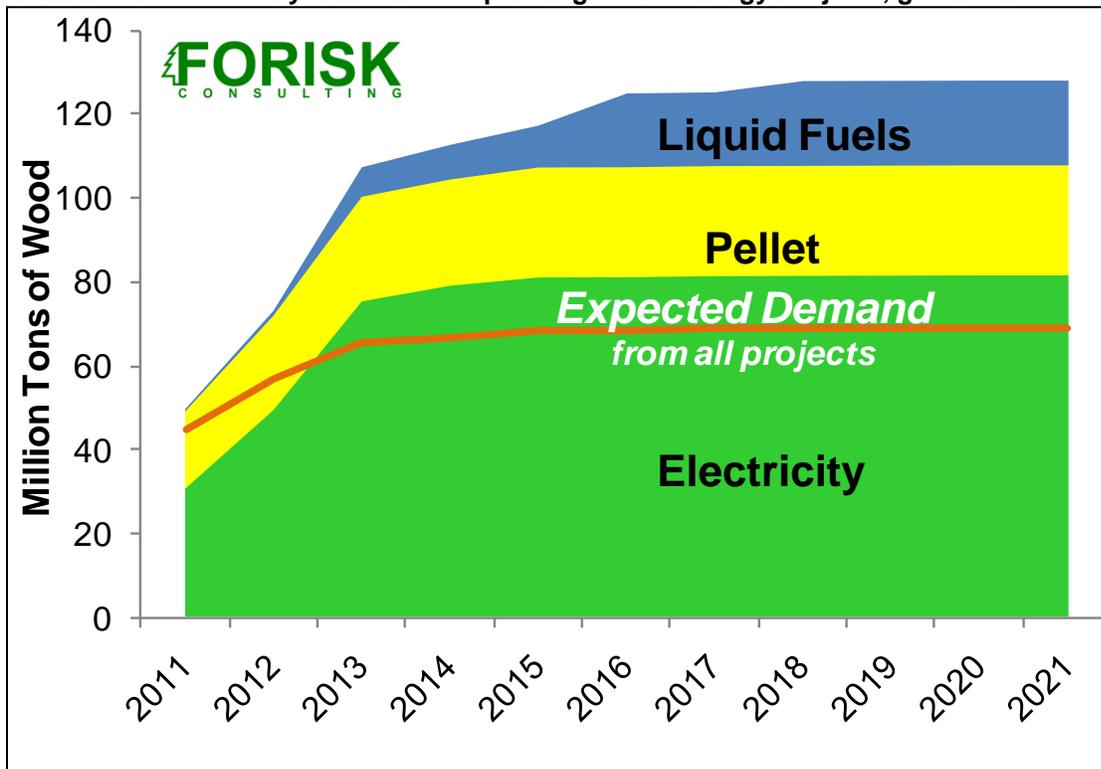
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High oil prices, worry over carbon emissions from fossil fuels, and national security concerns from importing approximately 70% of petroleum supplies raised the profile of the renewable power generation sector in the United States. As a result, interest in further growing renewable energy generation, including through forest biomass, has strengthened. Today, renewable energy accounts for about 7% of total US energy use. Of this, half is biomass, three-quarters of which comes from forests.

According to research produced by the University of Georgia and Forisk for the Wood Supply Research Institute (WSRI), most forest biomass serves as fuel for process heat and/or steam and, often, to generate electricity for the forest products industry. Wood pellet markets have grown with export demand to coal-fired electric plants in the European Union. Also, major electric utilities in the US and several independent electricity producers announced plans to use wood for generating electricity from wood-fired plants, for co-firing with coal, or for converting older coal plants to consume wood raw materials. Announced, operating and under construction wood bioenergy plants in the US would consume over 128.9 million green tons per year by 2021 if successful, while projects representing 68.9 million tons per year pass basic viability screening (Forisk 2011).

Estimated Wood Use by Announced/Operating US Bioenergy Projects, green tons



Source: Wood Bioenergy US

As of April 2011, across three US regions – South, North and West – bioenergy projects in the South comprised the highest potential wood use, with projects representing a consumption of 26.9 million tons of biomass. The US North – which includes the Appalachian States, the Lake States and the Northeast – has the largest number of projects, with as many as 207 announced and operating plants. North and West currently have higher percentages of projects actually operating and consuming wood.

Louisiana Update: Wood Bioenergy

How have Louisiana’s wood bioenergy markets evolved relative to the US South? According to *Wood Bioenergy US*, the state has 5 of the 147 announced or operating wood using bioenergy projects in the South.

Announced/Operating Wood Bioenergy Projects in Louisiana

Company	City	Type	Status	Meets Status Criteria?	Capacity	Units of Capacity	Year
Louisiana Generating	Jarreau	Electricity	Feasibility Study	n	240	MW	2013
Louisiana Generating*	New Roads	Electricity	Permitting/Contracts	y	70	MW	2011
Cleco	Boyce	Electricity	Feasibility Study	n	600	MW	2013
Bayou Wood Pellets LLC	West Monroe	Pellet	Operating	y	60,000	tons	2008
Point Bio Energy LLC	Baton Rouge	Pellet	Permitting/Contracts	y	440,924	tons	2012

*Capacity is capacity of biomass generated MW only

One of the projects, Bayou Wood Pellets in West Monroe, has been operating and producing pellets since 2008. The other four projects are in various stages of development and include one pellet mill and three wood-to-electricity projects.

Point Bio Energy LLC has proposed a 440,000 ton wood pellet plant for Baton Rouge to be located at the Port of Greater Baton Rouge. The group plans to start construction this summer and begin operations next year. Point Bio Energy will ship wood pellets to Europe via barge directly from the plant location on the port. The cost of the plant is around \$124 million and the primary feedstock will be roundwood.

All three wood-to-electricity projects are proposed by utilities and include two Louisiana Generating projects and one Cleco project. Louisiana Generating applied for an air permit to co-fire 3% biomass at its Big Cajun II power station. Louisiana Generating has also announced a repowering project for its Big Cajun I power station to replace two gas fueled boilers with one new circulating fluidized bed unit. As part of this repowering, the new boiler could use biomass fuel including bagasse and wood waste. Cleco completed construction on the Madison Unit 3 in 2009 and began commercial operation of the 100% petroleum coke circulating fluidized bed unit in February 2010. The company is considering replacement of some portion of the petroleum coke with woody biomass and announced plans to conduct test burns of woody biomass this spring to determine the optimal percentage of biomass fuel to burn.

In total, these projects represent potential incremental demand of 4.1 million green tons of wood by 2021. However, Forisk analysis indicates 1.6 million tons (39% of the potential demand) appears likely currently.

Liquid Fuels: Transporting Cars with Wood

The US consumes 140 billion gallons of gasoline per year (about 380 million gallons per day). This in part has generated interest and investment in generating transportation fuels from

renewable, domestic sources such as woody biomass. Forisk and the Schiamburg Group just completed a project-by-project, technology-by-technology study. While dozens of pilot plants and demonstration projects have sprouted in the US, cellulosic ethanol and related wood based transportation fuels remain technologically unproven at scale at this time.

Louisiana does not have any public plans for liquid fuels plants to use wood as a feedstock, although BP Biofuels North America is operating a 1.5 million gallon per year cellulosic ethanol demonstration plant in Jennings, LA that uses sugar cane bagasse as the feedstock. BP Biofuels North America acquired the facility from Verenum Corporation as part of an acquisition of Verenum's cellulosic biofuels business in 2010.

Louisiana Update: Wood Demand

While wood bioenergy markets draw the headlines, wood demand from traditional forest industry markets are showing life in the US South and in Louisiana. In the first quarter of 2011, South-wide sawtimber demand rose 2.7% from the fourth quarter of 2010, and 9.8% since the first quarter of 2010 (*Wood Demand Report*, 2011). This represented the highest level of pine sawtimber demand in the US South since Q4 2008, just after the stock market crash.

Of the 1,087 wood-using forest industry mills in the US South that consumed wood in Q1 2011, 63 (5.8%) are located in Louisiana. During the quarter, Louisiana mills increased their consumption of pine grade (sawtimber and chip-n-saw) by 11.1%, but decreased their consumption of pine pulpwood and in-woods chips by 5.5%. Part of this reflects low utilization in the tri-state region of Alabama-Mississippi-Louisiana at OSB/panel mills.

Pine Wood Demand and 2011 Stumpage Forecast for Louisiana

Wood Demand	Mills	63 consumed wood, Q1 2011
	Pine grade	2.7% increase since Q4 2010
	Pine pulpwood	-5.5% since Q4 2010
Stumpage Prices	Pine Sawtimber	0.5% 2011 change, ForiskForecast
	Pine pulpwood	14.0% 2011 change, ForiskForecast

Looking forward, pine sawtimber prices are expected to remain stable, as markets await the return of home construction markets (see figure above). Pulpwood prices are expected to strengthen in Louisiana by 14% this year, in part due to the sustained, low production of residual chips from grade mills.

Conclusion

Wood bioenergy markets and projects face multiple hurdles. While tracking projects, we communicate with project managers, investors and agencies throughout the US. For wood-to-electricity projects, primary concerns over the past 30 months included (1) financing and (2) legislative or regulatory uncertainty. For example, public information from 2010 confirms that at least 23 developing projects representing 1,519 megawatts of potential electrical capacity delayed plans or idled. Other firms also made major planning or strategic changes, but chose to remain anonymous. Reasons for delayed plans or closures include low electricity and natural gas prices, uncertainty regarding legislation from the EPA and difficulties securing financing.

About Forisk: Forisk (www.forisk.com) provides research and educational services to executives and analysts making decisions related to timber REITs, timberlands, and wood-using energy and manufacturing facilities. Forisk specializes in understanding and quantifying local wood and timber markets throughout the United States.