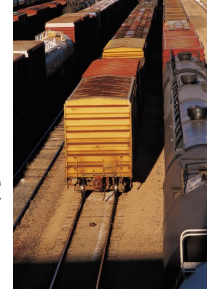




BIGGS APPRAISAL

PROVIDING VALUATION AND TRANSPORTATION SERVICES TO THE RAIL INDUSTRY



Subjects of Value

The Inspection and Appraisal of Rail Equipment

Volume 13, Issue 2

Summer 2018

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www.biggsappraisal.com

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BioMass and the Rail Industry

What the devil is BioMass?

Biomass such as wood chips, particular types of garbage, corn, and even animal fats, can all be converted into energy. For example, burning a biomass releases energy as heat, which then can be stored. Biomass is also used to create biodiesel using vegetable oil and animal fats; whereas, ethanol is produced through the fermentation of corn and sugarcane.

Using biomass as an energy source is a step to reduce the carbon footprint and build a eco-friendlier world.¹

If you have been around the rail industry for any length of time you have seen how many tank car and large covered hopper railcars have been built to handle two of the most popular Biomass products Ethanol and Distillers dry grain soluble

(DDGS). What has been happening under the radar is the expansion of production of wood pellets as a fuel source.

Wood pellets can be made from hardwood, softwood, agricultural crop residue, woody biomass, biomass crops, and paper waste. Currently there are 148 plants that make pellets from these source materials with a rated annual output capacity of 13,284,857 metric tons.²

Production consistency is what makes a quality pellet product. This is especially true for pelleted products for a number of reasons. It is a vital part of [wood pellet](#) manufacturer that produces pellets to properly control the moisture in the pellet manufacturing process. The pellet manufactures have learned from the trials and tribulations of the DDGS rail shippers

to have a consistent moisture control that will allow the wood pellets to easily be loaded and unloaded from covered hoppers without hanging up or clumping.

The U.S. Energy Information Administration recently announced that U.S. manufacturers of densified biomass fuel reported producing 620,000 tons and selling 600,000 tons of fuel products in January.

The data was released as part of the April edition of the EIA's Monthly Densified Biomass Fuel Report, which includes data for January. The EIA collected data from 87 operating manufacturers of densified biomass fuel to complete the report. The report does not include data from facilities with capacities of less than 10,000 tons per year, which report data annually rather than monthly. The 87 manufacturers that submitted monthly data reported having a total annual production capacity of 11.83 million tons.

In January, the respondents purchased 1.18 million tons of raw biomass feedstock, produced 620,000 tons of

densified biomass fuel, and sold 600,000 tons of densified biomass fuel. Production included 136,593 tons of heating pellets and 481,705 tons of utility pellets. Domestic sales of densified biomass fuel reached 235,220 tons and averaged \$154.76 per ton. Export sales reached 357,603 tons and averaged \$169.01 per ton. Inventories of premium/standard wood pellets fell to 212,304 tons in January, down from 282,844 tons in December. Inventories of utility pellets increased from 290,707 tons in December to 356,449 tons in January. Data gathered by the EIA shows total U.S. densified biomass fuel capacity reached 11.87 million tons in January, including 11.76 million tons listed as currently operating or temporarily not in operation. This includes 2.43 million tons of capacity in the East, 8.63 million tons in the South and 797,020 tons in the West. An additional 38,700 tons of capacity is currently listed as planned or under construction.³

(Continued on page 2)

¹<https://www.reference.com/science/biomass-47bfe22413d594a6?aq=what+is+biomass#>

²U.S. Pellet Plants, BioMass Magazine Updated May 17, 2017

³EIA: 600,000 tons of densified biomass fuel sold in January, BioMass Magazine, [Erin Voegele](#), May 09, 2018

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Biggs Appraisal and Subjects of Value are service products of Edward D. Biggs III, LLC D/B/A Biggs Appraisal. An Accredited Senior Appraiser (ASA) member of the American Society of Appraisers with a focus on rail equipment, locomotive, railcar, and maintenance of way equipment valuations. Ed Biggs has spent over 40 years in the railroad industry with a mix of significant experience with railroads and leasing companies, including experience in fleet operations, mechanical, and sales. Biggs has particularly in-depth knowledge of railcar extended life upgrade and rebuilding programs. Biggs Appraisal also researches a wide variety of subjects to support valuations, both for its own interests and those of its clients. Stuart Biggs has been involved with every aspect of Biggs Appraisal's business for over 9 years and is a qualified rail equipment inspector that you can expect to see more of on inspections. Johanna Biggs Mitchell has been working behind the scenes for a couple years in research, appraisals, and inspections. The articles in Subjects of Value are by necessity brief and are designed to spur further conversation. Questions, comments, and feedback are always appreciated. This newsletter is aimed at people interested in the rail industry. If you wish to be either added or removed from our mailing list, please email us at biggsappraisal@yahoo.com. We encourage industry distribution of this newsletter.

BioMass and the Rail Industry

What are utility wood pellets?

Wood pellets, already a staple in Europe's energy sector, are gaining popularity in the United States—especially where significant energy is used for heat—as people realize both the ecological and economical importance of sustainability. Wood pellets offer a completely sustainable alternative to other fuel sources. They burn clean, and, because of health and air quality control considerations, wood pellets are preferable to coal for electricity generation. Produced without additives and part of the natural carbon cycle, wood pellets are net neutral—generating no increased greenhouse gas emissions—if the pellet source material comes from sustainably managed forests or forestry residuals.

1,000,000 homes in the US currently use wood pellet stoves for heating. Convenient and widely available, residential wood pellets are supplied on a small scale and commonly in bagged form. Increasingly, factories, housing complexes, and office buildings, especially in Europe, are using wood pellets to provide heat on a larger scale. Electric utility coal plants in Europe have begun incorporating wood pellets in their production process because of government mandates for pollution and greenhouse gas emissions regulation. This forward-looking use of combined fuel sources for electricity generation is the future of clean, ecologically sound energy creation in the United States.⁴

Looking at Pellet productions potential in the United States and abroad one can see the potential for rail. How to move these products efficiently by rail should be a topic of increased conversation. What I see is entrepreneurs'

figuring out how to take the surplus of Rapid Discharge aluminum utility coal hoppers and converting them with side extensions and a trough hatch roof into specialized high capacity pellet hoppers. These cars would need a special venting system that allows the covered car to dump quickly without sucking the hatch covers into the car. These would be utilized at the same facilities that currently use utility coal or in conjunction with specially designed terminal facilities that can load it into barges or ships for export. On a smaller scale we have already seen existing covered hoppers converted for this growing commodity service. It is not hard to imagine intermodal growth as a back haul for all those containers going home empty. It appears that opportunities abound in this arena with a potential for significant growth both domestically and in the world market. It is worth keeping an eye on.



⁴<http://zilkha.com/what-are-pellets>