



## 2016 Top Markets Report **Renewable Fuels** Country Case Study

### South Korea

Despite what appeared to be promising signs for U.S. wood pellet exporters in 2013-2014, South Korea has dropped to the bottom of the rankings for 2016-2017. Opportunities in South Korea are now dominated by cheaper regional competitors in Vietnam and China, despite their questionable quality and attempts to impose certification requirements. Additionally, exporters must navigate a tendering process where wood pellets are purchased by biomass utilities that are wholly owned subsidiaries of Korea Electric Power Corporation (KEPCO), which is owned by the Government of South Korea. On the other hand, U.S. exports of “fuel ethanol” to South Korea have been steadily rising. This year’s Top Markets Report includes a ranking for the fuel ethanol sector for the first time. However, the lack of a biofuels mandate in South Korea makes continuation of these exports less certain than other markets.

Ethanol Rank

Wood Pellet Rank

5

11

The market for wood pellets as biomass in power plants has expanded immensely over the past three years in South Korea, although it has a forest product self-sufficiency rate of only 6 percent.<sup>i</sup> As a result, imports from a variety of sources have increased at an unprecedented rate. From 2013 to 2014, imports quadrupled from 485 million kg to 1.85 billion kg. In 2015, the United States shipped 3.8 million kg of wood pellets to South Korea, but South Korea’s top suppliers were Vietnam, Canada, Malaysia, Russia, Indonesia and Thailand (Figure 1).

In last year’s *Renewable Fuels Top Markets Report*, South Korea was featured as a growing opportunity for U.S. wood pellet suppliers. Unfortunately, U.S. exports of wood pellets to South Korea peaked in 2014 and dropped sharply in 2015. In the first four months of 2016, no exports to Korea were recorded, and the future looked grim for wood pellets exports

from North America generally. The South Korean market has clearly prioritized obtaining the lowest priced wood pellets possible.<sup>ii</sup> This once-promising market dropped to the bottom of the rankings in this year’s report for that sector.

By contrast, South Korea remained a solid market for U.S. ethanol despite the absence of a blending mandate. This year ITA ranks South Korea for fuel ethanol export potential for the first time. However, it should be noted that demand is less certain than countries with a national biofuels policy and that certain amounts are likely being re-exported into the region rather than blended in South Korea.

#### Market Overview

The increase in South Korean wood pellet use is closely correlated to recent policy changes. Through

the Renewable Portfolio Standard (RPS), in effect since January 2012, the South Korean Government mandates that state-owned and independent power utilities with a capacity over 500 MW generate a certain percentage of their energy production from renewable sources annually or else face penalties.<sup>iii</sup> The RPS quota increases gradually, from 2 percent in 2012 to 10 percent in 2024.<sup>iv</sup>

In the first few years after the introduction of the RPS, many companies have decided to focus on wood pellets for heat and power production since the conversion from coal is relatively easy. However, imports have slowed down, as other renewable energy resources such as solar power or wind power have been deployed to meet the RPS requirements.

U.S. fuel ethanol exports to Korea started to grow strong and steady in 2014 and 2015. However, while Korea’s Renewable Fuel Standard stipulates a 2.5 percent blend for biodiesel, it contains no similar mandate for ethanol. Any decision to include ethanol in its requirements would not be implemented until 2020 at the earliest.

The cause for the increase in trade appears to be related to Korea’s increased demand for industrial ethanol. Distillation infrastructure in Korea is being used to convert imported fuel grade ethanol to a solvent, with some of the imported product re-exported to countries in the region that do implement biofuels policies.<sup>v</sup>

### Challenges and Barriers

The competition for the wood pellet market in South Korea is formidable. Between 2012 and 2015, Vietnam’s share of the wood pellet market rose from 24 percent to nearly 70 percent. The U.S. pellet producers, who are very successful in Europe, have been facing a number of obstacles in South Korea, including offering a competitive price, coordinating logistics from the east coast of the United States, and difficulty navigating the procurement process. Since the power utilities in South Korea are government-owned, wood pellets are subject to a cumbersome and sporadic tendering process.<sup>vi</sup>

Of the five thermal power generating companies, each company’s Invitation to Bid (ITB) can have different quality specification requirements, accordingly to their specific demand and need at

**Figure 1: South Korea Wood Pellets: Import Sources, 2015**

Country	Volume Imported
Vietnam	1,022,808,842
Malaysia	153,959,495
Canada	87,742,511
Russia	84,070,138
Thailand	59,976,653
Indonesia	35,118,213
<b>United States</b>	<b>18,847,033</b>
China	3,056,694
New Zealand	1,215,763
Netherlands	894,701

Source: Global Trade Atlas

that time. If an importer or supplier meets the minimum quality specification for the specific ITB, one of the most important factors, if not the most important factor, taken under consideration is the ‘competitive price’ relative to the calorific value.<sup>vii</sup> Long term off-take agreements are also not sought in the ITBs.

Korean utilities have attempted to impose requirements in February 2015 for Forest Stewardship Council (FSC) chain-of-custody certificates to accompany bids for wood pellet tenders. However, when the FSC certification provided by Vietnamese pellet producers proved to be fraudulent, the Korean Government implemented new requirements. The authentication process required government-issued documentation for all fiber sources in each wood pellet shipment, which was difficult for North American producers. They have since reversed this policy, putting the sourcing verification responsibility on the importer rather than the exporter. As it currently stands, Korea will not impose forest management requirements.

The biggest challenge facing U.S. ethanol exporters interested in Korea is competition with Brazilian ethanol, which is closer to the industrial grade that the market is seeking. Another hurdle may be connecting with the appropriate customers as well as predicting demand in absence of a blending mandate.

## Opportunities for U.S. Companies

Consumption of wood pellets is expected to continue to increase only gradually in South Korea during the next two years. Domestic production is not expected to increase during that same time period. The only factors that would support U.S. exports to Korea would be either the introduction of a certification system that would allow sustainably produced U.S. pellets to prove their quality compared to cheaper Asian pellets or a larger increase in co-firing that would necessitate higher quality pellets for technical reasons.

With regards to ethanol, U.S. exporters are more likely to succeed in Korea in correlation with higher Brazilian sugar prices, which divert sugar cane feedstock away from the ethanol industry and therefore reduce Brazilian ethanol exports. Even with the extra step of distilling the fuel ethanol into a solvent, U.S. ethanol is seen as affordable and reliable. Despite the short term opportunity in such fluctuations, establishing business relationships could potentially be rewarded in the long term if Korea implements a blending policy.

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<sup>i</sup> U.S. Forest Service. (2012). *The Asian Wood Pellet Markets*. Retrieved from [http://www.fs.fed.us/pnw/pubs/pnw\\_gtr861.pdf](http://www.fs.fed.us/pnw/pubs/pnw_gtr861.pdf)

<sup>ii</sup> Portz, T. (2014, October 6). Context is critical in telling the biomass story. *U.S. Industrial Pellet Association*. Retrieved from <http://usipa.tumblr.com/post/100667984994/context-is-critical-in-telling-the-biomass-story> .

<sup>iii</sup> CS Korea, citing Korea Energy Management Corporation (KEMCO) report.

<sup>iv</sup> Ibid.

<sup>v</sup> Pedrick, Josh. (2016, July 31). More US ethanol could lead to Korea in shuffling of supply, demand. *Platts Snapshot*.

<sup>vi</sup> Walker, Seth. *Pellet Market Stories* (RISI presentation, Pellet Fuels Institute conference, July 2015).

<sup>vii</sup> Ibid.