

2016 Top Markets Report **Renewable Fuels** Sector Snapshot

Biomass Wood Pellets

Substitution of coal with biomass in several EU Member States, South Korea and Japan to meet carbon emission targets is driving demand for biomass pellets. This also has spurred U.S. and European investment in several new pellet mills in the Southeastern United States. Outside of the UK, which is still by far the largest customer of U.S. wood pellets, the strong dollar has had a negative impact on competitiveness in European markets over the past year. Asian markets remain largely untapped by U.S. exporters; however, producers continue to make efforts to lower costs and solve logistical issues.

Biomass power uses organic matter (wood, agricultural waste, etc.) or inorganic matter like municipal solid waste to create electricity or heat. Wood pellets and wood chips are the most commonly used fuel in biomass power plants. Pellets are usually created from forest thinning, scraps and other residues of low economic value in the timber industry. The compression of the wood creates a higher BTU than typical biomass sources.

Overview of Global Export Market Opportunities

Over the next two years, ITA expects biomass pellet consumption in the top 10 U.S. export markets to average 21 billion kg annually. The United Kingdom, which continues to ramp up its use of biomass power, will account for over one-fourth of the total consumption globally and will represent the largest pellet market for the United States.

South Korea will continue being the largest consumer in Asia (Figure 2) and will look to foreign suppliers (mainly Vietnam) for nearly all of its wood pellet needs. Japan's market is growing as well, with a 140 percent increase in year-on-year imports in 2015.¹

Despite the large proportion of biomass wood pellet exports to the UK, ITA identified 11 markets for this report. The countries near the top of the rankings are strong prospects. Those in the middle of the rankings are less predictable and not high volume

Figure 1: Biomass Wood Pellet Exports 2016-17

Size of Import Market vs. U.S. Share

	Rank	Country
Strong Prospects	1	United Kingdom <i>Large market; large share</i>
	2	Belgium <i>Large market; large share</i>
	3	France <i>Small market; large share</i>
	4	Denmark <i>Small market; large share</i>
Less Certain Export Growth	5	Netherlands <i>Small market; large share</i>
	6	Canada <i>Large market; small share</i>
	7	Sweden <i>Large market; small share</i>
Significant Obstacles	8	Japan <i>Large market; small share</i>
	9	Germany <i>Large market; small share</i>
	10	Italy <i>Large market; small share</i>
	11	South Korea <i>Large market; small share</i>

but still expected to be consistent buyers of U.S. wood pellets over the 2016-2017 time frame. For the countries towards the bottom of the rankings (including Korea and Italy, markets that had high

expectations in last year's report), the near term outlook for the U.S. share of imports is unlikely to improve.

Export Opportunities in the Near Term

The results showing mostly European countries as top prospects for U.S. wood pellet exports are in line with expectations. According to Global Trade Information Services, the United States was the leading exporter of wood pellets to the EU in 2015, capturing 59 percent of the EU's import market.ⁱⁱ The top EU markets for U.S. pellet exporters were the UK (91 percent share of EU imports from the United States) and Belgium (14 percent. EU imports have steadily increased in the last three years, with imports of 4.5 million metric tons (MT) in 2012 and imports of 7.3 million MT in 2014. However, the diversity of EU markets for U.S. wood pellets was considerably less in 2015, with significant loss of shares in Denmark, Netherlands and Italy. (See EU County Case Study for detailed analysis.) The increase in exports to the UK was enough to compensate for these decreases.

Figure 2: Global Import Statistics, 2015
Commodity: 440131 (Wood Pellets)

Reporting Country	Quantity Imported (kg)
United Kingdom	6,518,880,000
Denmark	2,076,428,000
Italy	1,640,239,000
South Korea	1,470,684,019
Belgium	988,652,000
Germany	434,672,000
Austria	367,843,000
Sweden	354,942,000
Japan	232,425,000
USA	207,171,527
Slovenia	160,359,000
Netherlands	140,171,000
France	136,793,000
Latvia	129,206,000
Switzerland	85,210,889

Source: Global Trade Atlas

Figure 3a: Top Exporters (kg) of Wood Pellets (Source: Global Trade Atlas)

	2013	2014	2015
USA	2,882,516,750	4,055,732,449	4,668,774,792
Canada	1,640,347,477	1,637,589,402	1,627,783,724
Latvia	1,055,929,000	1,290,447,000	1,620,448,000
Vietnam*	132,397,713	607,379,107	-
Russia	743,639,892	879,028,241	934,863,788
Estonia	623,175,000	640,838,000	883,293,000
Portugal	769,897,000	723,115,000	693,692,000
Germany	720,228,000	682,800,000	689,089,000
Austria	482,799,000	485,372,000	559,125,000
Romania	457,488,000	412,941,000	323,325,000

Figure 3b: Asian Wood Pellet Exporters (kg) (Source: GTA)

	2012	2013	2014	2015
Vietnam*	0	132,397,713	607,379,107	-
Malaysia	0	81,672,135	168,558,621	149,044,664
China	2,727,573	3,293,467	163,209,250	49,580,316
Thailand	631,435	18,158,929	110,826,307	25,428,807

* 2015 trade data not available [as of September 2016]; South Korea reported over 1 billion kg imported

In terms of overall volume, the United States is firmly positioned as the largest exporter of wood pellets in the world. (Figure 3a) However, it is notable that in 2015, other exporters were rapidly gaining market share. This is particularly notable in Southeast Asian countries (Figure 3b), which have been responding to increased demand in South Korea and Japan. Although Vietnam’s 2015 trade data is not included in this table, the wood pellet imports from Vietnam reported by Korea alone in 2015 exceeded 1 billion kg.

Shipments of U.S. wood pellets to the United States’ North American Free Trade Agreement (NAFTA) partners are surprisingly low. However, neither Canada nor Mexico imports wood pellets in large volumes due to low consumption. Canada’s use of wood pellets has yet to catch up with production, which is export-oriented. If Canada expands its use of biomass to replace coal as a fuel source in the near term, then the United States should be able to

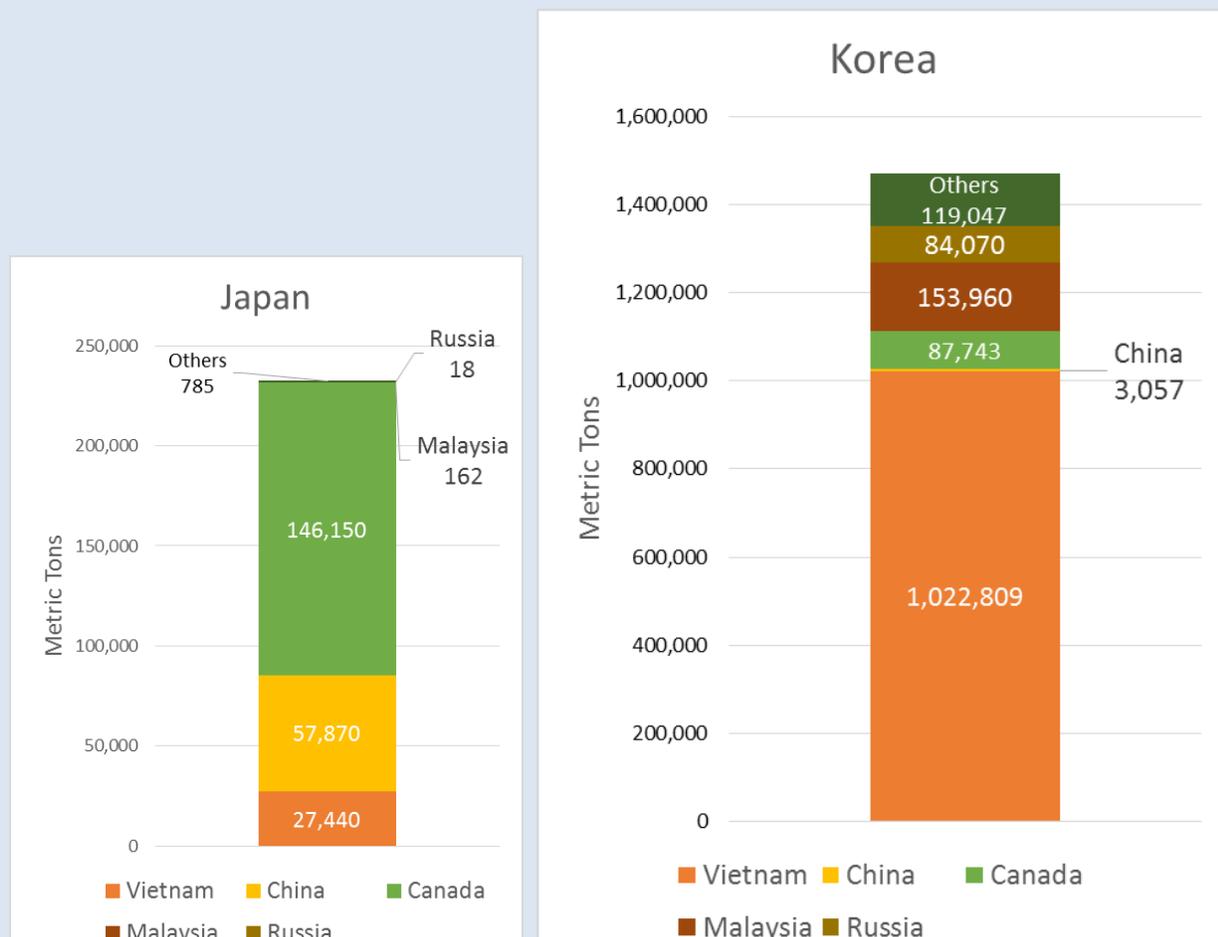
capitalize on its existing trade relationship. The United States would be well positioned to supply pellets to Mexico, but new biomass electricity capacity is not expected to come online in the near term.

Planning for the Long Term

Beyond 2017, demand for wood pellets should continue to grow, particularly in markets where emissions policies encourage the use of co-firing. There is a possibility that the UK market will plateau after 2017. The European Commission stated that it will not adopt an EU-wide policy regarding sustainability certification for wood pellets until 2020.

Some EU member states, such as the Netherlands, have moved ahead with sustainability certification requirements. Despite significant evidence that forest growth in the United States exceeds the

Figure 4: Imported wood pellets by source for Japan and Korea, 2015 (Data Source: Global Trade Atlas)



amount removed, voluntary U.S. private forestry initiatives may not be able to provide the detailed data for EU member states' requirements such as those in the Dutch regulations. The 2016 export data indicated that as of August, U.S. wood pellet exports to the Netherlands had only reached 34,000 kg, compared to 64 million kg total in the previous year and nearly 300 million kg in 2014.

The impact of EU sustainability certification regulations is only one challenge facing this industry. The United States will have to protect its market share in many of its top markets as Russia and its neighbors in the Baltic region increase production and as the strength of the dollar makes U.S. pellets more expensive. In many European countries, Russia was able to expand its market share by providing cheap wood pellets in 2015.ⁱⁱⁱ According to trade data, the unit price for its exports averaged 11 cents/kg, compared to 14 cents the previous year and 17 cents in 2013. By comparison, U.S. wood pellet unit prices to Europe in 2015 ranged from 12 cents (Netherlands) to one dollar (Germany).

With the uncertainty surrounding opportunities in EU markets other than the UK, some U.S. producers are turning their attention to Asia. However, as Figure 4 indicates, Japan is importing mainly from Canada and China, while Korea is relying heavily on Vietnam for its imported supply. Possible reasons for the lack of U.S. market share include logistical costs (most U.S. exporters are in the Southeast), price of feedstock and the exchange rate. In the long term, even if the cost gap can be narrowed, U.S. producers need to increase awareness of the quality and sustainability of its product compared to Asian rivals.

ⁱ *Bloomberg New Energy Finance*. (2016, June 7). *H1 2016 Global Biomass Market Outlook*.

ⁱⁱ Global Trade Information Services. (2015). *Global Trade Atlas*.

ⁱⁱⁱ *Ibid*.