

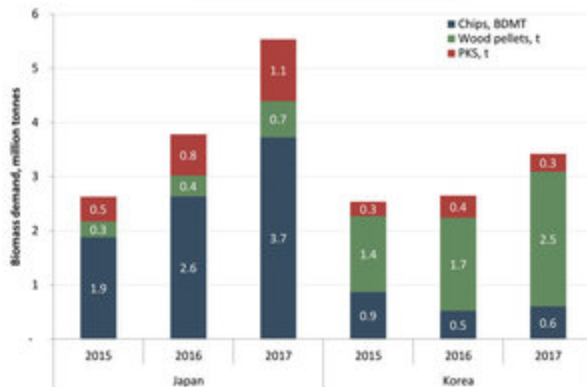
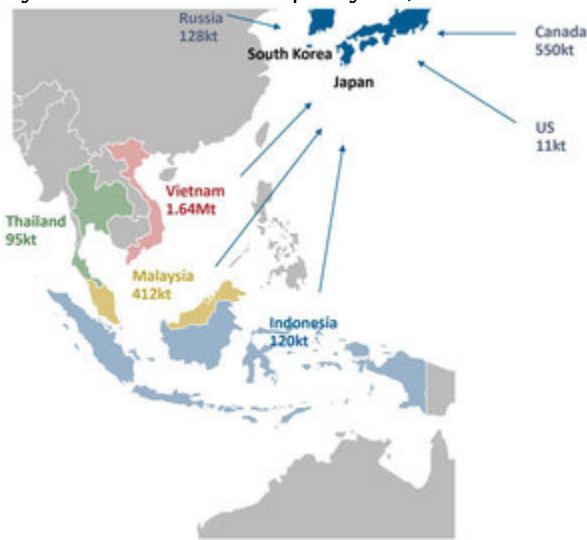
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BIOMASS MAGAZINE

Wood Pellets in the Emerging Asian Biomass Market

There is no doubt that Asia’s demand for biomass is growing rapidly, but a big unknown is how much of a role wood pellets will play in meeting the emerging demand, and where will those pellets come from.

By Racheal Levinson | May 23, 2018



[South Korea and Japan 2017 wood pellet imports.](#)
SOURCE: CUSTOM DATA

There is no doubt that Asia’s demand for biomass is growing rapidly, but a big unknown is how much of a role wood pellets will play in meeting the emerging demand, and where will those pellets come from.

Wood pellet imports into South Korea and Japan have grown exponentially in the past few years. In 2017,

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South Korea imported 2.4 metric tons (MT) of wood pellets, 20 times what was imported in 2012. Japan is currently a smaller market, but its growth has also been impressive. Japan imported over 0.5 MT in 2017, a seven-fold increase from 2012.

South Korea's biomass demand has been supported by its renewable portfolio standard, which requires all energy companies with an installed capacity exceeding 500 MW to obtain an increasing share of their electricity from renewable energy sources. To satisfy their RPS requirements, generators can either produce their own renewable energy, or purchase renewable energy certificates (RECs) from other renewable energy generators. Failure to meet the RPS target results in a fine of 1.5 times the traded price of RECs. A handful of independent power producers (IPPs) have begun producing power from biomass to earn RECs, and sell them to generators obligated under the RPS. The RECs are weighted depending on the technology. For example, producing power in a dedicated wood pellet or woodchip-fired biomass plant would earn 1.5 RECs per megawatt-hour, whereas using palm kernel shells (PKS) would earn 1 REC/MWh. Cofiring of any biomass fuel earns fixed support of 1REC/MWh. However, much uncertainty currently surrounds the Korean subsidy system. The government is considering changing the REC weightings of certain technologies including wood pellets, which could mean their value is significantly reduced. This would almost certainly jeopardize several IPP biomass projects. An announcement on the new values had been expected in April, but was delayed. As of early May, a new date is yet to be set.

In Japan, the market has evolved differently from South Korea, and instead has been supported by a feed-in-tariff (FIT) scheme that provides a 20-year subsidy to firms producing renewable energy. Biomass, specifically under the general wood category, has proved hugely popular. By March 2017, almost 12 GW of biomass projects had been approved under the FIT scheme, far exceeding the quantity envisaged under Japan's Best Energy Mix 2030 scenario of 2.7 to 4 GW.

The huge scale of this potential growth in biomass demand has, understandably, drawn a lot of attention. Biomass producers and users worldwide are looking keenly to Asia, and wish to understand how the growing market may impact existing global trade flows.

The outlook for Asian biomass demand is far from certain, however, and a wide range of variables could feasibly constrain its growth. Hawkins Wright therefore wanted to establish the true nature of the emerging biomass market. Over several months, we carried out extensive fieldwork, site visits, meetings, quantitative and qualitative analysis. This research has provided us with unique insights that are published in a new, multiclient report, "Strategic Assessment of Asian Pacific Biomass Demand and Supply out to 2030."

An important part of that study was identifying viable sources of available biomass that could meet the needs of this new market. We wanted to determine not just how much biomass will be needed, but where it will come from.

Currently, a lot of the region's biomass demand is from coal-fired power plants cofiring wood pellets. But looking ahead, a growing proportion of the new demand will consist of dedicated biomass plants. Those dedicated plants will utilize circulated fluidized bed boilers, which are much more fuel flexible than



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pulverized coal boilers, and therefore not restricted to using just wood pellets. It could be assumed that generators will therefore source more local, cheaper alternative biomass such as PKS or wood chips, however, we have concluded that wood pellets will continue to play a very important role.

We see great potential for wood pellets to fulfill the growing demand, and we predict a large percentage will come from North American suppliers. One major factor fueling our prediction is that many of the dedicated plants in Japan and South Korea will be developed by IPPs funded by debt. If a project developer intends to finance a power project with debt, lenders will almost certainly want a secure feedstock supply contract to be agreed with a bankable counterparty. Conversely, a project financed by a parent company's balance sheet, or a utility intending to cofire biomass with coal at fairly low rates, may deem a long-term fuel contract unnecessary or too expensive.

From our research, we have identified a number of companies that could be deemed bankable, but none are currently in Southeast Asia. Therefore, Asian buyers looking for bankable supply may need to source wood pellets from North America, where there are creditworthy, large-scale producers with a reliable track record.

That trend is already evident in the high interest that Japan has shown in western Canada. But at the point where all affordable supply in Canada is utilized, the Japanese will start to look elsewhere in North America. The U.S. South is an obvious choice, given its 8 MT of installed, industrial-grade nameplate capacity. Already, U.S. wood pellet producer Enviva has secured contracts with Japanese buyers. However, challenging logistics and high transport costs will be a barrier to producers in the U.S. South wanting to export to Asia, and how well those challenges can be overcome will influence how much supply can be secured.

Meanwhile, some South Korean IPPs planning dedicated biomass power plants could follow a similar train of thought to their Japanese counterparties. However, it is unlikely the five South Korean gencos will change their purchasing habits. They cofire wood pellets at low rates (3 to 5 percent) at a few of their coal-fired stations, and are obligated to purchase via a tender system. This system has favored low-cost supply, with no importance put on security or quality, and has helped establish the SE Asian supply market, specifically Vietnam's dominance in the region. Vietnam accounted for 62 percent of South Korea's imports in 2017, sending over 1.5 MT.

Another factor likely to encourage demand for wood pellets is the high level of competition for biomass supply in SE Asia. From our experience in the pulp and paper industry, it is clear that wood chip supply is under pressure in the region, and although there are abundant resources of PKS, transportation limitations and its current use by palm oil mills will severely limit exports.

There will be a role for SE Asian wood pellet suppliers, too, especially once a more liquid spot market emerges in the region, though that is not to say long-term contracts will not be signed with SE Asian suppliers. In the near-term, however, as the large pipeline of Asian projects work toward securing financing, we predict more contracts will be signed with North American suppliers. Time will show whether suppliers in SE Asia are able to demonstrate sufficient creditworthiness to increase their



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contracted supply volumes.

For a more detailed analysis of the Asian Pacific market, including demand forecasts, in-depth analysis of feedstock resources (including pellets, chips and PKS), biomass supply costs and paying capabilities, contact Hawkins Wright to learn more about our new report.

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