

PELLET POWER – GLOBAL TRADE IN WOOD PELLETS

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Wood pellet demand, production, and trade have been increasing rapidly. Annual global imports of wood pellets have grown from virtually zero to over \$1.5 billion during the last decade. Demand is currently concentrated in Europe, but U.S. policies that promote renewable energy can be expected to increase domestic demand in the long term. In the near term, U.S. capacity is rapidly increasing in response to overseas (mostly European) demand.

Wood pellets are making inroads as a renewable energy source.

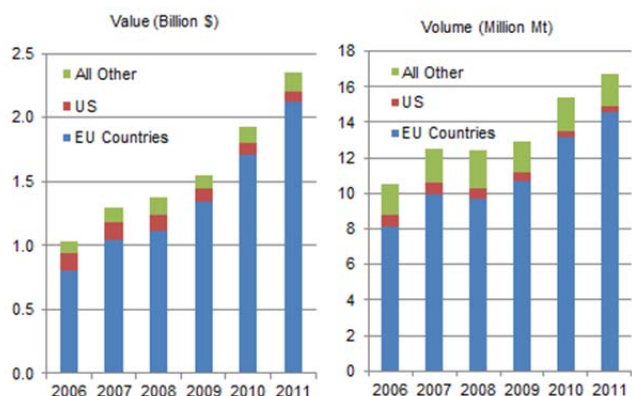
Wood pellets are one of several processed biomass feedstocks that are traded internationally and used for energy. They are cleaner burning, have a higher energy density, and are easier to handle than firewood, chips, or other forms of wood fuel. In the growing market for renewable fuels, wood pellets are used as a supplement or substitute for coal in coal-fed energy systems and as a thermal fuel source for commercial and residential heating. The primary raw material in manufacturing pellets is residue from sawmills, flooring mills, and furniture plants, but some manufacturers are using low-value logging residues, chips, and/or roundwood.

While the majority of wood pellets manufactured in the United States are shipped domestically, new demand in Europe has fueled an increase in U.S. capacity and exports. Along with its greenhouse gas emissions trading system, the European Union (EU) has set a target to source 20 percent of energy consumption from renewable sources by 2020. Demand for wood pellets in Europe is currently about 11 million metric tons (Mt) and, according to some estimates, could reach 24 million Mt by 2020.¹

World trade of wood pellets has been increasing rapidly.

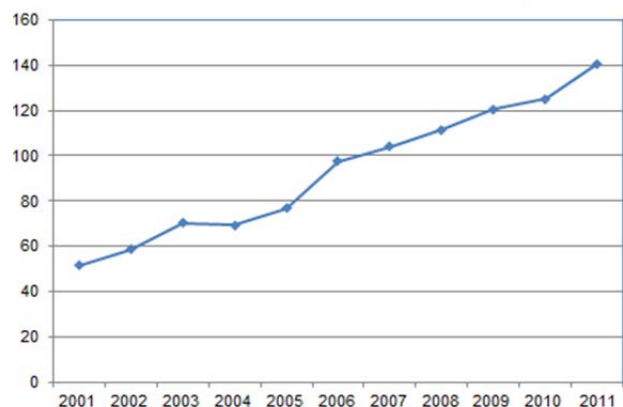
In 2000, trade in wood pellets was almost nonexistent. However, in volume terms, world trade of wood pellets has now grown to surpass that of ethanol and other bio-based fuels.² In 2011, global imports of wood waste and scrap (HS 440130) exceeded \$2.3 billion (figure 1) of which wood pellet imports into European countries accounted for at least \$1.5 billion. Europe is currently the leading market for trade in wood pellets. Higher demand growth has affected prices; unit values of global wood waste and scrap imports, including wood pellets, steadily increased from \$52/Mt in 2001 to \$140/Mt in 2011 (figure 2).

FIGURE 1 Global imports of wood waste and scrap (including pellets) are increasing



Source: Global Trade Information Service (HS 440130).

FIGURE 2 Unit values of wood waste and scrap imports have steadily risen (\$/Mt)



Source: Global Trade Information Service (HS 440130).

¹ Poyry Management Consulting, "Pellet 2020 Outlook," *Timber Processing*, December 2011.

² Using a 0.8 kg per liter conversion for the liquid fuels, the volume of global imports of wood pellets exceeded ethanol (HS 2207) and biodiesel (HS 3826), respectively, during the first quarter of 2012.

Disclaimer: *The views expressed are those of the author and not those of the USITC or any of its Commissioners.*

EU countries imported an estimated 7.6 million Mt of wood pellets in 2011, 58 percent of which represented intra-European trade. The balance of the EU's wood pellet imports—3.2 million Mt, with an estimated value of \$619 million—were from outside of the region in 2011. The principal suppliers of wood pellets to Europe are Canada and the United States, although the Russian Federation is also a significant and growing supplier. Some additional trade in wood pellets flows to Europe from South Africa, New Zealand, and Australia, and from Canada to Japan. However, those volumes are presently very small. China is not currently a significant trader in this market.

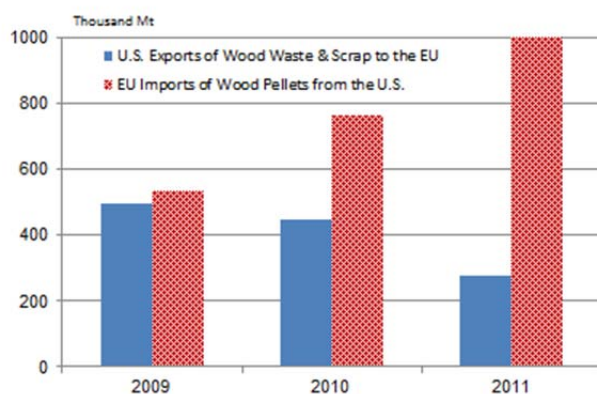
Prior to 2012, wood pellets were not classified uniformly in customs nomenclature. The EU created a separate statistical category in 2009, but U.S. exports were included in a broader classification that included wood pellets along with other types of scrap wood materials. Significantly, U.S. export statistics do not match up well with European import statistics for wood pellets, as shown in figure 3, and are likely understated.³ Because of the growing importance of wood pellet trade, a separate six-digit classification for wood pellets (4401.31) was added by the World Customs Organization (WCO) beginning in 2012. Consequently, trade data discrepancies may lessen as wood pellet trade is tracked more closely.

Demand is expected to rise, but rapidly increasing capacity may affect the price and trade outlook.

U.S. and global wood pellet demand should continue to rise as the role of renewable energy increasingly influences energy markets. Domestically, wood pellets are primarily used in residential home heating stoves, but at least 24 states plus the District of Columbia have policies in place with targets for increasing renewable energy use, a portion of which is likely to be based on wood fuels that may include wood pellets.⁴ For now, utility and industrial demand in Europe is driving wood pellet demand and trade.

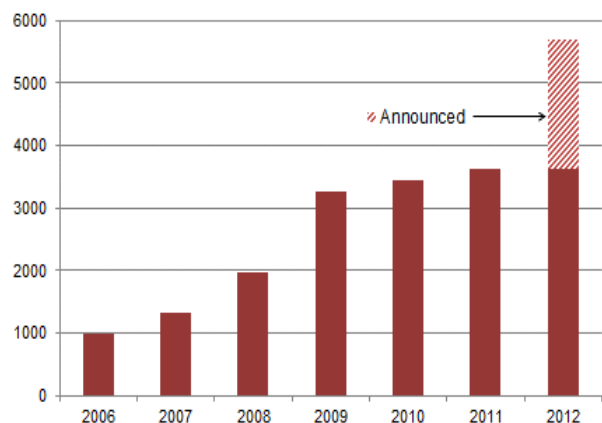
U.S. wood pellet production capacity is increasing rapidly and could rise by over 50 percent in 2012 alone, if all announced projects for new plants and expansions come on line (figure 4). Among factors that will impact U.S. trade in wood pellets are: policies promoting biomass-based energy, raw material costs, available supply of residues from sawmills, the emergence of other world suppliers (e.g., Russia, New Zealand, and Brazil), and changes in the U.S. dollar/euro exchange rate.

FIGURE 3 Discrepancies in U.S. and EU trade data show contrasting trends



Source: Global Trade Information Service (HS 440130 and CN 44013020).

FIGURE 4 U.S. wood pellet capacity is poised to expand significantly (Thousand Mt)



Source: USITC staff estimates and Speller, Henry and Daniel Toth. *North America's Wood Pellet Sector*. USDA Forest Service Research Paper FPL-RP-656. August 2009.

³ Since most wood pellet trade is from North America to Europe, or between European countries, tracking such trade improved in 2009 when the EU established a separate 8-digit CN category for wood pellets (4401.3020). Until 2012, U.S. wood pellet exports were classified in a 6-digit Schedule B category for sawdust and wood waste and scrap. U.S. exports and EU imports show opposite trends.

⁴ U.S. Department of Energy. See: http://apps1.eere.energy.gov/states/maps/renewable_portfolio_states.cfm.

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