Voluntary _ Public

Date: 11/5/2013
GAIN Report Number: NL3036

Denmark

Post: The Hague

The Market for Wood Pellets in Denmark

Report Categories:
Wood Products
Biofuels
Climate Change/Global Warming/Food Security

Approved By:
Mary Ellen Smith

Prepared By:
Bob Flach

Report Highlights:
Denmark is the number one importer of wood pellets in the world. Based on official statistics, Danish Government policy and private sector investments, Danish imports are expected to increase from 2 MMT in 2012 to over 3 MMT in 2020.

Denmark is the number one ranking importer of wood pellets in the world.

In Denmark, wood pellets are being used in small boilers in private homes, medium sized district heating plants and in large combined heat and power (CHP) plants. Since 2010, the main driver of growth has been large scale CHP plants that have been replacing coal. Current use is estimated at about 1 MMT. Since 2000, Danish production of wood pellets has been fluctuating between 130,000 and 200,000 MT annually and is to a large extent based on residues from the furniture and wood processing industry. Due to the limited domestic feedstock supply and the rapidly increased use by large CHP plants, Denmark has become the number one wood pellet importer in the world. In 2012, Denmark imported 2 MMT of wood pellets with a value of US$ 350 million. During the first seven months of 2013, imports increased by ten percent.

Danish funding will depend on sustainability of the biomass.

Currently, the Danish sector is mainly importing from the Baltic Region, 960,000 MT in 2012, and Russia, 348,000 MT in 2012. U.S. wood pellet exports to Denmark are only marginal, 38,000 MT in 2012. A key factor to capture the market and benefit from the growth potential is the sustainability of the supply. The Danish Government is currently analyzing the sustainability of different supplies of biomass and will base its further policy and funding on this analysis. The study is planned to be ready by the end of 2013.

The Danish Government supports further consumption growth by CHP plants.

In the Danish National Renewable Energy Action Plan (NREAP) of June 2010, the Government of Denmark estimates that from the baseline consumption in 2006 (0.9 MMT) use of wood for energy generation will increase with about 32 PJ in 2020, equal to a volume of about 1.8 MMT of wood pellets. The Danish government further states that this growth is largely expected to be covered by the use of wood pellets and about 90 percent will need to be imported. However more recent calculations are even more optimistic. The Energy research Centre of the Netherlands (ECN),) has collected all energy-related data of the most recent EU Member State NREAPs in a database (dated 28 November 2011). In the table below a forecast of the supply and demand is made based on this database. Assuming 50 percent of biomass use is supplied by wood pellets, Denmark is forecast to consume 3.2 MMT and import over 3.1 MMT of wood pellets in 2020.

Denmark	**2010 Official**	**2011 Official**	**2012 Official**	**2013 Estimate**	**2014 Forecast**	**2015 Forecast**	**2020 Forecast**
Production (a)	137	138	150	150	150	150	150
Import (b)	1,284	1,969	2,020	2,300	2,870	2,900	3,100
-of which from the U.S. (b)	80	38	43	40	-	-	-
Export (b)	46	55	54	60	80	80	80
Consumption (c)	1,375	2,052	2,116	2,390	2,940	2,970	3,170
-of which private sector (c)	798	1,532	1,516	1,790	2,340	2,370	2,570
-of which household (a)	577	520	600	600	600	600	600

(a) Official figures based on Energy Statistics of the Danish Energy Agency. (b) Official figures and estimate based on Global Trade Atlas, import forecast based on deficit. (c) Official figures and estimate based on deficit, forecast based on Danish NREAP.

New ambitious policy might boost wood pellet consumption even further.

In March 2012, a historic new Energy Agreement was reached in Denmark. The Agreement contains a wide range of ambitious initiatives, bringing Denmark closer to the target of 100 percent renewable energy in the

energy and transport sectors by 2050. The policy targets for 2020, decided by the Danish Parliament in March 2012 are:

-A reduction of 7.6 percent in gross energy consumption in relation to 2010.
-A reduction of 34 percent in greenhouse gas emissions in relation to 1990.
-More than 35 percent renewable energy in final energy consumption.
-Approximately 50 percent of electricity consumption to be supplied by wind power.
-Consumption of biofuels for transport at 10 percent in 2020.
-From coal to biomass in large scale CHP plants.

The Danish Government's vision for the future energy mix in Denmark after 2020:

-Coal phased out from power plants by 2030.
-Use of 100 percent renewable energy in electricity and heating by 2035.
-Use of 100 percent renewable energy in all energy sectors, industry and transport by 2050.

The goal of phasing out coal could support a further increase in the use of wood pellets. However, an increasing share of electricity is planned to be generated by wind. The use of biomass such as wood pellets depends on the Government funding and the price of the pellets versus coal. Large power plants using biomass are now supported by subsidies in the form of feed-in tariffs of Euro 20 per MWh, this is about Euro 96 per MT of wood pellets. Biomass as fuel for heat generation does not receive any funds. In order for the conversion to be economically feasible, producers are awaiting for changes in the regulation.

Danish Energy sector plans to increase use of wood pellets to 2 - 3 MMT in 2015.
Supported by Danish Government funding, the Danish energy company Dong Energy is planning to convert three power plants from fossil fuels to multi-fuel plants, able to combust gas, coal as well as biomass. Two of these plants will be capable to burn 100 percent wood pellets, while one plant is planned to mainly burn wood chips. Dong Energy estimates that their use of biomass will increase from 1.6 MMT in 2012 to 2.7 MMT in 2017, with a total Danish industrial use of wood pellets of 2 - 3 MMT in 2015.

See for more information the EU Biofuels Annual and the Benelux Wood Pellet Report.

Abbreviations

GJ	= Gigajoule = 1,000 MJ = Megajoule
MMT	= Million metric tons = 1,000 MT = Metric ton = 1,000 kg
MWh	= Mega Watt hours = 1,000 KWh = Kilo Watt hours

Caloric value of wood pellets: 1 MT of wood pellets = 17.5 GJ = 4.8 MWh