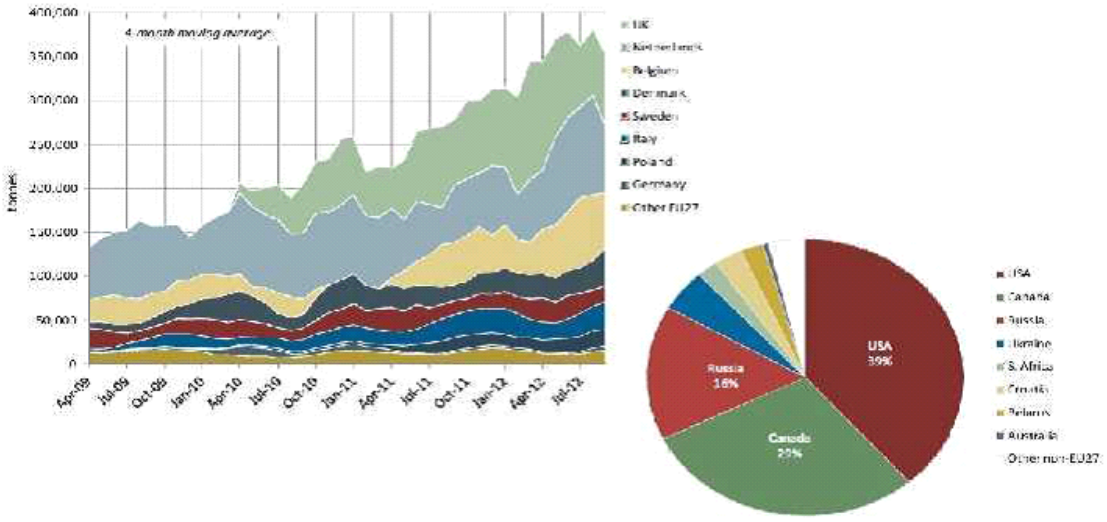
EUROPEAN IMPORTS OF WOOD PELLETS



HAWKINS WRIGHT

Renewable Energy and Greenhouse Gas Emissions

In December 1997 in Kyoto, Japan, the European Union and its Member States agreed on a protocol (the “Kyoto Protocol”) committing them to an 8% reduction in greenhouse gas emissions between 2008 and 2012 as compared with 1990 levels. Data indicate, however, that carbon dioxide emissions are increasing again. New activities, therefore, are necessary to curb this upward trend in order to meet the commitment and to enhance the credibility of the European Union and its Member States in international negotiations.

According to the U.S. Department of Energy, carbon dioxide is the most important greenhouse gas and accounts for 82% of the emissions are a consequence of burning fossil fuels. (Source: U.S. Department of Energy Greenhouse Gases Climate Change and Energy, 2006)

There are four common ways of reducing carbon dioxide emissions:

- Reducing energy consumption through better energy efficiency;
- Reducing the impact of fossil energy sources with high carbon content (e.g., coal and oil) and; developing the use of energy sources with low carbon content (e.g., gas);
- Substituting renewable energy sources for fossil fuels;

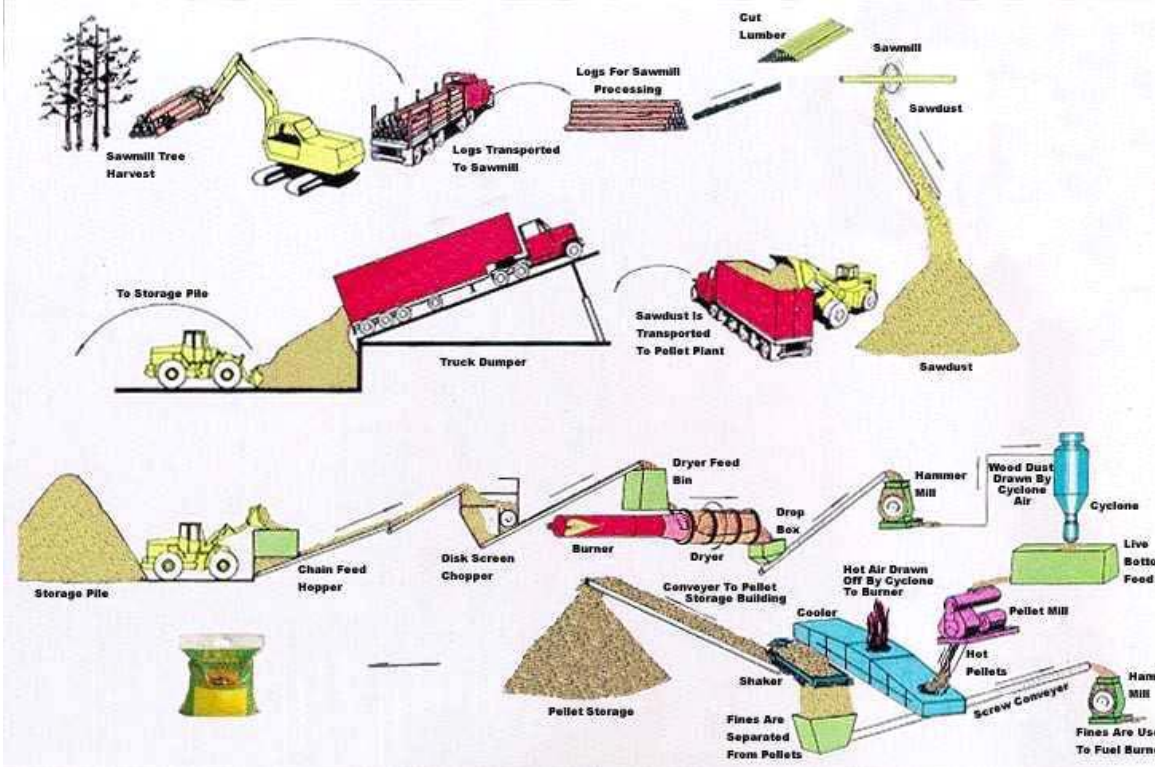
- Emissions treatment such as carbon dioxide scrubbing.

An increased conversion from oil and coal to gas could jeopardize supply security, since gas is increasingly imported into the European Union from non-European countries. The European Union's dependence on energy imports is already 50% and is expected to rise to 70% by 2020 if no action is taken. The main strategies, therefore, are to (i) reduce energy consumption, and (ii) increase use of renewable energy sources.

In Kyoto, the European Union Commission set the ambitious but realistic goal of doubling the share of renewable energy sources from 6% to 12% by 2010. The rapid introduction of renewable energy sources is likely to be the most important single measure to comply with the Kyoto Protocol. Biomass (such as wood pellets) is one of the renewable energy sources with the largest potential for growth. Without a rapid introduction of biomass into the market, the possibility of compliance with the Kyoto Protocol is unlikely. This is the most important driver of the strong growth in wood pellet consumption.

Process

The overall process flow for the production of wood pellets from green sawdust and chips is shown below. A process and operational description of each step follows.



Raw Material Drying

Two single-pass rotary drum dryers, operating in parallel, will process the green material from an in-feed moisture basis of 50% to the 10% final moisture content. Inlet dryer air, at 915F and 149,915 ACFM, will dry the sawdust. Dryer air will discharge at 240F from each dryer, along with the dry material, through twin cyclone separators before discharging to the Dryer I.D. Fan inlet.

Dryer I.D. Fan exhaust will be split and directed, via dampers, to emissions control equipment for treatment prior to atmospheric release. The remaining exhaust stream will be recycled to mix with hot gas from the driers.

Dryers will be designed with integrated safety systems to protect personnel and equipment. Major safety features on each dryer include deluge nozzle assemblies located as follows: dryer inlet duct, cyclone inlet and outlet ducts, dryer exhaust recycle duct, and dryer recycle inlet duct; a dedicated water booster pump; a spark detection and extinguishing system at the cyclone inlets; and abort gates on the dryer I.D. fan exhaust in emergency situations.

Pellet production, Storage, & Shipping

Each dryer will have a dedicated secondary hammer mill, with a third hammer mill installed between the dryers to serve as a spare for either dryer. Dry material from each rotary dryer will be fed by screw conveyors from the cyclone discharge to the respective hammer mill, where the material will be reduced in size (<3 mm in all directions). Each secondary hammer mill will be equipped with air assist for processing the small particle size. Due to the potential for fire and/or explosion due to spark generation in the hammer mills, or from a spark or “hot spot” carried over from the drying system, spark detection, water deluge, material abort dump, and explosion venting will be provided at the discharge of each hammer mill.

Each row of pellet mills will discharge onto a belt conveyor dedicated to that row for transport to one of two pellet coolers located in the Pellet Cooler Building. Cooled pellets will be discharges from each cooler by gravity onto a single troughed belt conveyor. The pellets will then transfer either to storage through a bucket elevator or directly to a truck loading area to be transferred to the port for loading on the ships.