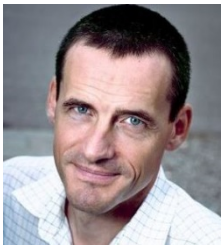
BEST PRACTICES
FACTSHEET

STEAM UP

JUNCKERS



Peter Pinholt
Tecnical Manager, Junckers

Investment
€ 710,000

Savings
€ 254,000
5,500 MWh/year

Other benefits
Supply security
Resource efficiency
CO_2 neutral steam and district heating

www.junckers.dk/.com

Steam and biomass synergy

“Junckers Industrier A/S” is one of the largest manufacturers of solid hardwood floors in Europe employing more than 350 people worldwide and is represented in more than 45 countries. The primary goal of the company is to produce top quality products based on an ongoing dialogue with architects, builders, contractors and owners. Junckers operates within two sectors: Solid Hardwood Flooring and Junckers Woodcare System. Junckers is an energy-intensive industry using substantial volumes of energy for the drying and processing of wood. The energy primarily comprises steam and electricity.

Woodworking companies have typically always had access to cheap fuel in the form of wood waste for the production of hot water and steam. This fact naturally led to poor focus on energy optimization. Today it is different – biomass has become an important resource in the fight against greenhouse gas emissions as biomass is considered to be CO2 neutral. This makes it a saleable by-product and thus energy optimization to an area of high priority for Junckers

Junckers owned and operated their own steam boiler plant until 2001; this was then sold and is now expanded to a steam/district heating plant operated 100% on biomass, which supplies to the main district heating system in Copenhagen.

Co-funded by the Horizon 2020 Programme of the European Union

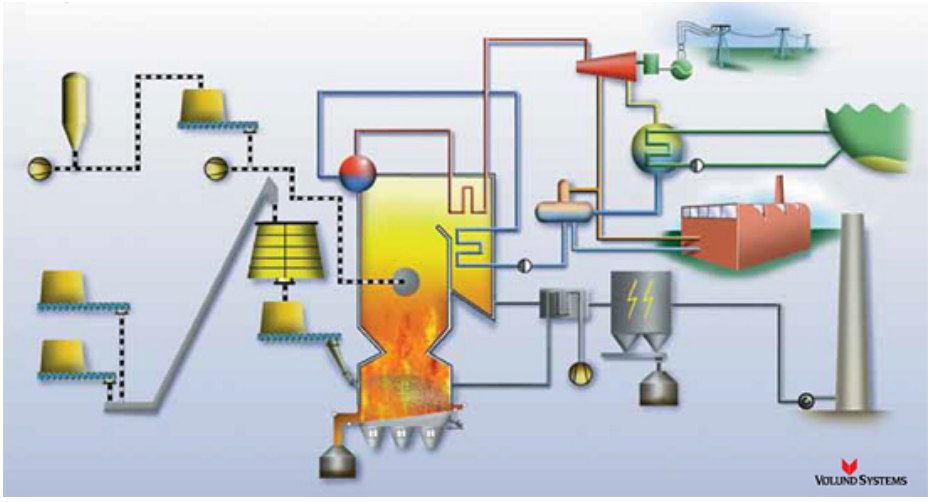
BEST PRACTICES
FACTSHEET

STEAM UP

What happened?

In 2001, Junckers entered into an agreement of divestment of their boiler unit to a utility company. Later, in 2012 it was sold to another utility company with the aim of establishing district heating. The feedstock is primarily waste wood, mainly consisting of sawdust, shavings, slip and wood chips – about 40% of it comes from Junckers.

Junckers is now supplied by steam from the power plant via a 3 bar (mainly heating) and a 13 bar (press drying) system; in the opposite direction is wood waste from the production of Junckers supplied to the power plant. This kind of symbiosis gives a much better utilization of the fuel as the power plant can be operated close to optimal. As Junckers now pays for the steam consumed, the incentive to energy optimize on the production processes is naturally increased, and the energy not used by Junckers can instead be supplied to the district heating system.



3 projects with significant savings at Junckers

The projects that have been most interesting address the reduction of heat consumption or heat recovered from the drying processes.

Reduction of energy consumption in the wood processing workshops

Most of the wood working equipment is connected to a dust extraction system. Make-up air must then be supplied, and this air has to be heated during the wintertime.

Junkers investigated the possibility of supplying unheated outside air directly to the machines, which are operating in acoustic enclosures. This proved to be a good idea, which significantly has reduced the demand for air renewal to the workshops, which saves electricity and steam.

Heat recovery from the drying processes

Junckers operates with 2 types of wood drying processes, chamber drying and press-drying.

Today it is common practice that drying chambers are equipped with heat recovery where the outgoing air exchanges energy with the ingoing air, but there is still much energy left in the outgoing air, which is 100% saturated. Junckers is currently in progress to implement heat recovery at all the drying chambers with the aim of pre-heating the air for ventilation of the wood processing workshops.

In 2016, a similar project will be implemented concerning the press dryers. The wood is arranged in the dryers so it is in direct contact with the presses, which by means of 13 bar steam is heated to about 160° C; in doing so the water is literally boiled out of the wood in 2 hours. The project is about heat recovery on the outgoing steam that will likewise partially supersede a heat demand, which is currently covered by steam.

Co-funded by the Horizon 2020 Programme of the European Union