



Two-stage drying of saw dust Derome Bioenergy, Kinnared, Sweden

This project

Derome decided in 2005 to start pellet production at their saw mill in Kinnared. Since delivery of district heat is not an option, and as a high energy utilisation is a priority, our two-stage drying was selected. The biofuel furnace was supplied by KMW, Sweden and condensation plant by SICAL and Vapotek.

YEAR OF DELIVERY:
2006

TECHNOLOGY:
Two-stage drying with indirect tubular dryers – Bojner system.
High temp dryer: exhaust gases
Low temp dryer: hot water

TREATED MATERIAL:
Various grinded biomass and saw dust

EVAPORATION CAPACITY:

approx. 5 t/h

DRYNESS IN/OUT (w%):

approx. 45 / 90

HEAT SOURCE:

Exhaust gases from furnace mixed to approx 400°C

HEAT RECOVERY:

A condenser produces hot water to low temperature dryer

GAS / DUST CLEANING:

Cyclone, condenser

SCOPE OF DELIVERY:

Material input and discharge, dryers, exhaust gas ducts incl mixing chamber, fan, ventilation system incl cyclones, condensation plant, etc.

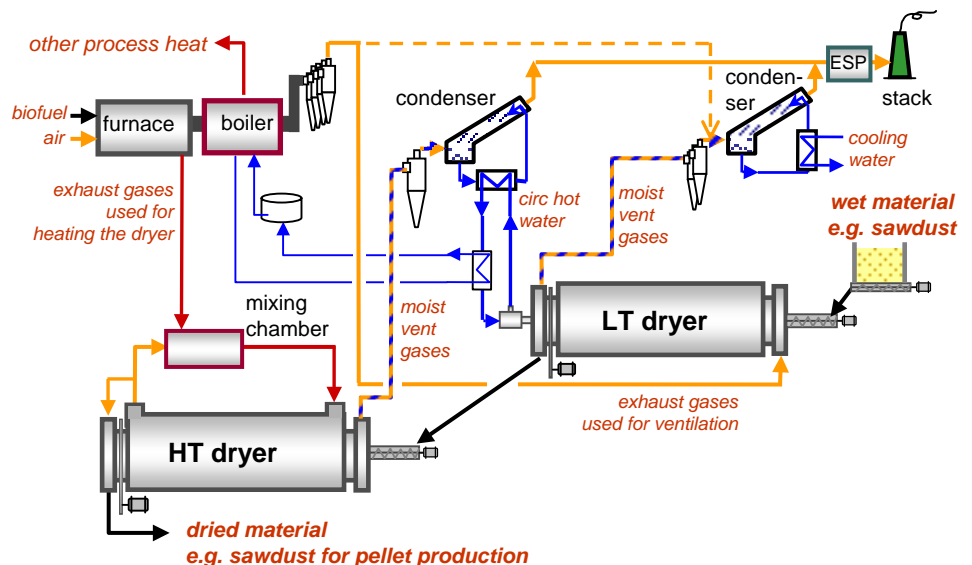
Alternative solutions

We offer custom made systems for drying of all types of solid biofuels – indirect systems in one or two steps being our specialty. Besides exhaust gases, steam, thermal oil, etc can be applied as heat source. We also offer direct drum drying which is a simple robust technology, however with less opportunities for heat recovery and elimination of fire hazards. Please get in touch with us and explain your situation!



Drying takes place in two steps. Final drying is carried out in a high-temperature dryer (HT), here heated with exhaust gases. The HT dryer generates ventilation gases with a high dew point. These gases are condensed, providing hot water to the low-temperature dryer (LT), which is pre-drying the biomass. Up to 2/3 of the evaporation duty is hereby obtained "for free" – the share of heat recovered being even higher! Environmental protection is partly also obtained for free as a second condenser

simultaneously provides gas cleaning. Ventilation is done using virtually inert exhaust gases, thus eliminating fire hazards. Note that also moisture evaporated in the furnace is brought to the condenser, further enhancing heat recovery. Besides heating the LT dryer, the hot water can be utilised for e.g. heating buildings. This system combines excellent energy efficiency, operational robustness, environmental protection and overall economy.



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