Ecoinflow
SawBenchmark

Good practices sheet
Energy savings in sawmills

SUCTION

INVESTMENT LEVEL (FROM 1 TO 3):

- HUMAN INVESTMENT : 👐
- RETURN ON INVESTMENT : ⏳ TO ⏳⏳⏳
- COSTS : €€ TO €€€

BACKGROUND AND ISSUES

When wood is being sawn, it is necessary to use a suction unit or a scraper system to evacuate sawdust, chips and other waste.

The most frequently used method in sawmills is the suction unit, which both filters and deposits related waste in one or more silos.

PRESENTATION OF THE PLAN AND ITS IMPLEMENTATION

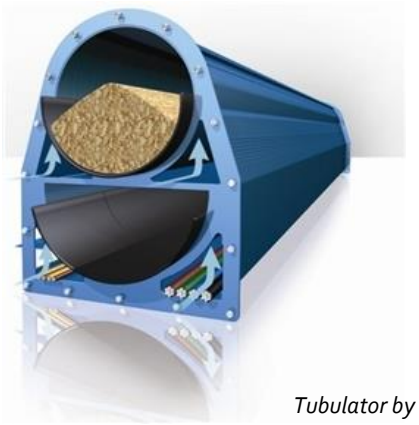
In order to decrease the consumption of electricity caused by suction, sawmills have selected a number of different solutions, the effects of which can be cumulative:

- Automatic or hand-operated closing valves: these valves are engaged in line with the operation (or non-operation) of the interconnected machinery. In this way, the overall output is dependent on the number of machines operating at the same time, rather than on all of the machines connected to the suction network (sawmills no. 9, no. 10 and no. 17);
- Conveyor systems fitted with scrapers: particularly for shavings or bark, but also for fresh sawdust after sawing (sawmill no. 17);
- Variable flow rate cyclones: an electronic variable speed drive is installed on the main motor of the suction unit responsible for extracting wood particles, meaning that the level of extraction can be adjusted in line with the actual needs.

The required investment was estimated in 2004 to be in the region of between 120 and 240 €/kW of electricity[1] (sawmill no. 3);

[1] Source CNIDEP sawmill energy

The Tubulator: consists of carrying sawmill by-products to the inside of a tube via a conveyor belt maintained by a current of air provided by the fans. On account of its higher speed, this system can, according to the manufacturer, transport up to 40% more products (sawmill no. 17).



Tubulator by BRUKS

Transport of sawmill by-products via a Tubulator

POTENTIAL GAIN

- Energy savings as a result of the technology:
  - Electronic closing valves: Not provided
  - Conveyor belt with scrapers: Not provided
  - Electronic variable speed drive: up to 50% of overall savings[2]
  - Tubulator: up to 50% additional capacity[3]
- Other improvements:
  - Reduced noise when the collection is carried out nearest to the extraction;
  - Reduction in the dust and noise associated with a low maintenance cost (Tubulator).

- Points to note:

Tubulator: The system must be operated every 30 minutes in winter to avoid possible clogging. It can therefore only be used when the volumes to be carried are relatively substantial.

- Reproducibility:

Each enterprise can use systems that best suit the quantities to be transported.

If the distance between the point of emission of the particles and the extraction point is multiplied by 2, the energy costs of ventilation are multiplied by 4.

[2] Source: CNIDEP sawmill energy
[3] Source manufacturer Bruks