

Industrial Machines

Case study S.A. ATELIERS NOËL & FILS



S.A. Ateliers Noël & Fils is a Family business with five employees, located in Fossela-Ville, Belgium. The company was founded in 1920 and manufactures customized machines and different types of handling systems, mainly for agriculture and industry. In recent years, the company has developed machines for the treatment of waste such as extractors, sorting tables, belt conveyors.

Ateliers Noël & Fils took part in a training by the Vienna University of Technology to identify the life cycle phases which are most relevant from an environmental point of view, offer the highest improvement potential and to see how the results from the LCA to go tool can be used to communicate to their customers. In the training the tool was applied to a conveyor belt produced by Ateliers Noël & Fils. The results shown in Figure 1 clearly identify the Use phase and the Manufacturing phase as the dominant areas on which improvement measures should focus.

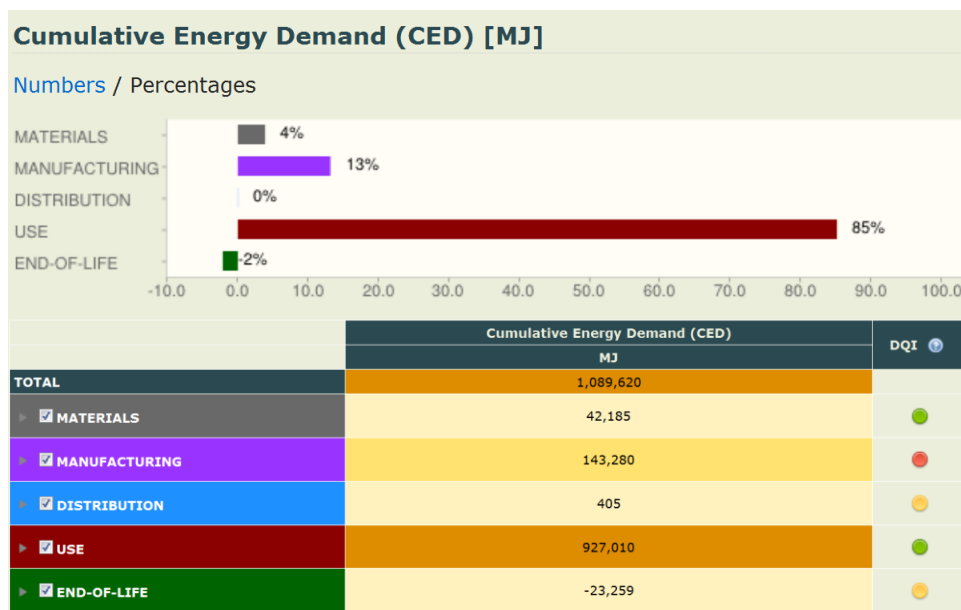


Figure 1 Graph and table of the results for the conveyor belt, showing the relative importance of the different life cycle phases by displaying the respective Cumulative Energy Demand over the lifetime of the product as well as the Data quality of the underlying data.

Looking in more detail at the Manufacturing phase, the result shows that the environmental impact is a result of the energy consumed to manufacture the conveyor belt. As described by the DQI in Figure 1 the reliability and robustness of the data underpinning this analysis needs to be improved before concrete improvement measures can be derived. Any improvements to the manufacturing phase in this respect will result in improvements of the environmental performance of the product as well as reduced costs for the company. A win-win situation.

Manufacturing - CED of the different Manufacturing inputs

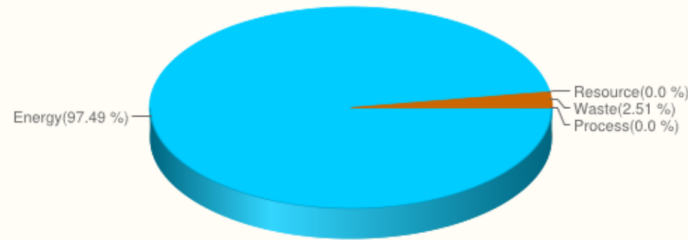


Figure 2 Cumulative Energy Demand in the Manufacturing phase divided up into Energy consumption and Waste from the manufacturing process.

The detailed result for the Use phase, which makes up 85% of the overall Cumulative Energy Demand, shows that the electricity consumption in the 'Processing' state is responsible for the greatest proportion of this impact. Ideas such as the inclusion of a "Standby" mode to reduce energy consumption would not have a large impact. Rather efforts should focus on reducing the energy consumption in the 'Processing' operating state.

Use - Standard: CED over entire lifetime

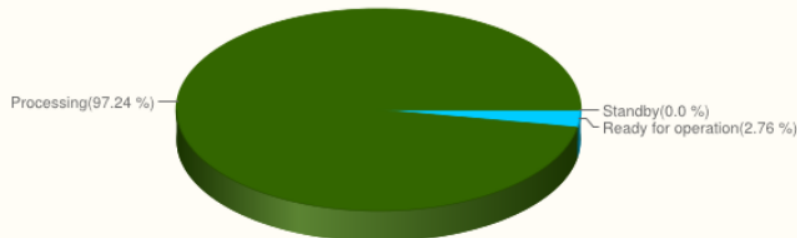


Figure 3 Cumulative Energy Demand in the Use phase for the standard use scenario, divided up into the three different operating states: Processing, Ready for operation and Standby.

Ateliers Noel & Fils plan to use the result to communicate the environmental impacts and improvements in their products to their customers.

"The tool is very easy to use and only requires technical data about the machine investigated. We had no idea of the data we need to assess the environmental impact of our machines. Based on the rough environmental assessment, we determined the important phases on which we have to focus our efforts. This rough assessment takes only ten minutes (...).

During the detailed assessment, we can compare different alternatives such as the choice of materials for the conveyor belt or the power of the motors.

Till now we always oversize some engines to keep in stock just one type of engine as spare parts. This strategy makes maintenance easier and less expensive.

We can evaluate the energy saved by a more accurate engine sizing. To achieve

this, we just need to measure the power consumption when the machine runs without any load.

Our interest in using this tool is to offer our customer a machine that consumes less energy during its life span and quantifies the energy saved.

The online training answered our questions and focused our attention to future developments that represent potential benefits for our customers.” – Yves Culot, Ateliers Noel & Fils

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