



Resource-efficient design of refrigeration trucks

Aubineau Constructeur, based in La Petite-Boissière in western France, is a manufacturer of refrigerated and insulated bodies for trucks. Established in 1959, it today has 150 employees and features an export turnover of 20 % of the production. As a leading operator in the European refrigerating market, the company is committed to delivering high quality while achieving environmental sustainability.

“The REMake project gave us a unique opportunity to increase our competitiveness. We can now offer our customers more fuel efficient refrigerating trucks capable of making over 600 liters of fuel saving per year.”

*Hervé Aubineau –
CEO, Aubineau Constructeur*

REMake-Recycling and resource efficiency in manufacturing The REMake project enables manufacturing SMEs to tap into the potential that recycling and resource efficiency can offer in an easy, tailor-made way. With the support of REMake experts, companies can assess their savings potential and can discover in a simple, hands-on manner how material efficiency measures and life-cycle approaches increase their profitability.

OSEO-French innovation agency

In France, REMake vouchers are managed by the innovation agency OSEO. Vouchers are used to hire experts who can then analyse the potential for savings to be made through eco-innovation, as well as risks and opportunities of the proposed projects. Vouchers can be used to fund half the costs, with the SME contributing the other half. They are available up to the value of €5,000.



Resource efficiency audit

With the help of a REMake voucher, Aubineau Constructeur ventured into a re-design of the body of a refrigerated truck. The main objective of reviewing the design of the truck was to optimise the energy loss of the cooling vehicle and reduce fuel consumption while decreasing CO2 emissions. By employing the Maieco eco-design methodology, every stage in the lifecycle of a refrigerated vehicle was assessed in relation to its environmental impact. During this process, the project team identified four key performance indicators for the environmental performance of the trucks: raw materials, refrigeration substances, use and end-of-life of the vehicle.

Suggested solutions

The team performed a functional analysis of the truck body aiming to improve its thermal conductivity and identified the floor as a key feature that needed to be redesigned. Firstly, the technical requirements of a truck floor were listed involving all departments of Aubineau and several prototype floors were developed and tested. Secondly, different possibilities were assessed according to technical gains, environmental aspects and economic savings. Potential solutions aimed at optimizing the mass of the internal part of the floor and its thermal conductivity whereby the vertical plywood parts were partially replaced by insulating foam. Finally, the transport operations were improved by finding a local supplier for the internal parts.

Increasing profit by saving chemicals and water

The potential benefits and cost savings anticipated on the redesigned truck are impressive:

- A decrease in the fuel consumption of the refrigeration unit by 3.6 % due to a performance improvement of 19% to the floor insulation;
- A 16% reduction of material weight (i.e. 150 kg per truck and 235 kg per semi-trailer);
- A fall of 0.5% in fuel consumption by the truck engine due to the weight of the floor being reduced by 16%;
- 50% of the plywood plates previously bought in Finland are now bought in the west of France, close to the factory;
- Production cost savings on each floor of 5%.

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