RENAULT TRUCKS T HIGH

Environmental product information

RENAULT TRUCKS

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Renault Trucks

Renault Trucks is committed to improving sustainable goods mobility and is striving to reduce the effects its products have on the environment. Renault Trucks vehicles are designed to comply with legislation limiting atmospheric pollution and also to continue lowering fuel consumption which results in reducing carbon dioxide emissions.

Together with ever more fuel efficient transport solutions, Renault Trucks offers a full range of vehicles powered by alternatives to diesel fuel to enable operation in any environment: 100% electric; compressed natural gas; biofuels.

Renault Trucks implements an environmental policy based on specific commitments and a stringent management system that covers its dealer network, suppliers and partners. Renault Trucks manufactures its vehicles in ISO 14001 certified production plants. It is geared to limiting its consumption of energy, water and raw materials but also to reducing waste production. Its products are designed to allow maximum reuse of the materials that have gone into their production.

Environmental product information

Environmental product information is drawn from life cycle analyses (LCAs) carried out on our vehicles. These cover all phases in a truck's life, from the production of raw materials right through to final dismantling and recycling. It provides data concerning the environmental impact of each one of these phases. In some cases, the LCA, which is far-reaching and complex, includes approximations. The results reveal the most important environmental parameters in the product life cycle.

THE THEMES

The environmental product information studies the impact of:

- **materials:** extraction and processing of raw materials used to produce the vehicle.
- **production:** manufacturing processes used by the plants, component production at suppliers and on site transport of parts.
- **fuel and gas emissions:** extraction and production of fuel consumed by the vehicle and exhaust gas emissions resulting from its combustion. Homologation trials carried out for each type of engine as well as on-road tests make it possible to ascertain the effects of fuel combustion. Depending on the conditions of use, a truck's actual emissions can differ from the published results.
- **maintenance:** consumables and materials used in preventive maintenance and the production of parts (impact calculated on the basis of average values).
- **end of life management:** dismantling of products, management of waste and recycling the truck's materials.

THE RESULTS

The results shown include:

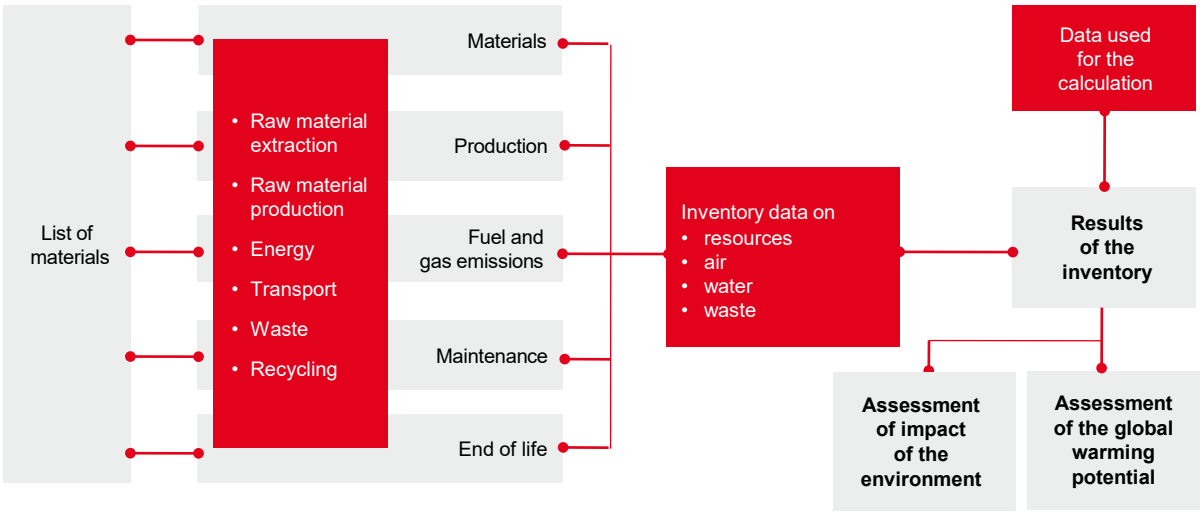
- the vehicle's bill of materials
- the rates of recyclability and recoverability as defined by the IS0 22628 standard
- the inventory results which show the data for the resources used and the emissions produced (pollution and waste).
- the assessment of the impact on the environment, based on the Environmental Priority Strategies (EPS) method.
- the assessment of the potential contribution to global warming.

BENCHMARK VALUES

Life cycle analysis results vary considerably depending on the data used for the calculations, the most important being fuel consumption, mileage, the type of engine and quality of fuel. The results shown here are based on the benchmark values for a R**enault Trucks T High**, a 4x2 tractor designed for long-distance haulage, throughout its entire life cycle. It is important to stress that fuel consumption and its quality, as well as the kilometrage, can vary considerably according to the conditions of use.

Environmental product information

METHOD



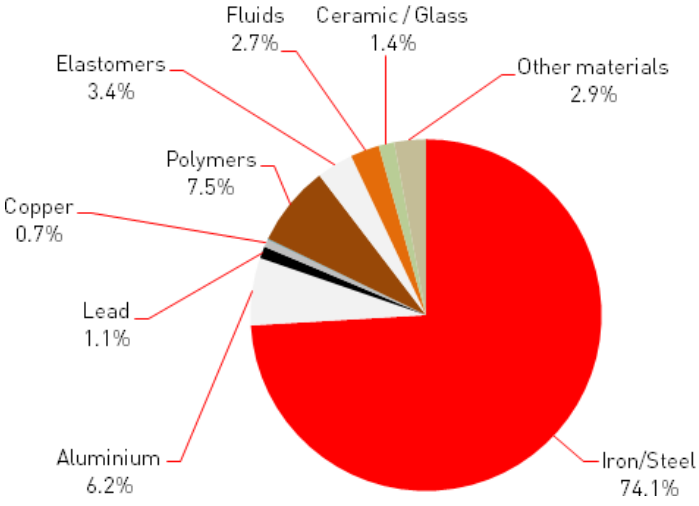
DATA USED FOR THE CALCULATION

Vehicle model	Emission level	Engine type	Vehicle type	Distance (km)	Initial date	Updated date
Renault Trucks T High	Euro VI	13L ; 520 hp	4x2 tractor	1,000,000	2013	2023

BILL OF MATERIALS

Bill of materials used in the vehicle and taken into account for calculating the life cycle analyses.

Materials	kg
Iron/steel	5,482
Aluminum	459
Lead	81
Copper	53
Other metals	6.1
Elastomers	250
Polymers	552
Ceramic/glass	107
Oil/lubricant	87
Cooling liquid	51
Battery fluids	36
Chemical/adhesive products	22
R134a refrigerant	0.65
Other materials	215
TOTAL	**7,402**



Environmental product information

RATE OF RECYCLABILITY AND RECOVERABILITY

The vehicles are designed to ensure that the maximum amount of materials used in their construction can be reused.

Rate of recyclability* 94%
Rate of recoverability* 98%

* Calculations according to the ISO 22628 standard: The rate of recoverability is the percentage of the vehicle's mass potentially able to be reused, recycled or recovered as energy (incineration with energy recovery); it is therefore always higher than the rate of recyclability.

INVENTORY RESULTS

	Unit	Materials	Production	Fuel and gas emissions	Maintenance	End of life	Total
Renewable electricity	MWh	3,44	4,76	145	3,03	-1,40	155
Non-renewable electricity	MWh	3,18	5,92	15,4	0,759	-1,60	24
Other renewable energy	MWh	0,099	0,0265	0,377	0,117	-0,0216	1
Other non-renewable energy	MWh	45,7	14,7	506	21,6	-11,6	576
Materials	kg	7377	0	0	3113	-5987	4503
CO	kg	83,7	2,40	186	19,5	-67,4	225
CO_2	kg	18705	4570	906300	4570	-6259	927887
HC/VOC	kg	39,2	11,5	1372	16,4	-16,1	1423
NOx	kg	21,9	6,45	595	23,0	-6,05	641
SO_2	kg	84,4	6,63	545	16,6	-61,1	591
Particulates	kg	9,89	1,10	38,3	2,75	-4,55	47
Use of water (excluding cooling)	kg	143,9	16,7	685	50,7	-52,8	843
Use of water for cooling	kg	17,4	34,6	155	4,20	-9,74	201
Biological oxygen demand	kg	1,73	1,73	13,1	1,14	-0,18	18
Chemical oxygen demand	m3	5,96	0,94	30,7	2,24	-1,80	38
Non-hazardous waste treated	m3	214	843	0	27,3	-202	882
Non-hazardous waste for landfill	kg	473	350	0	49,4	-129	744
Hazardous waste treated	kg	2,59	207	0	0,0418	-2,17	208
Hazardous waste for landfill	kg	84,1	13,3	0	15,0	-59,3	53

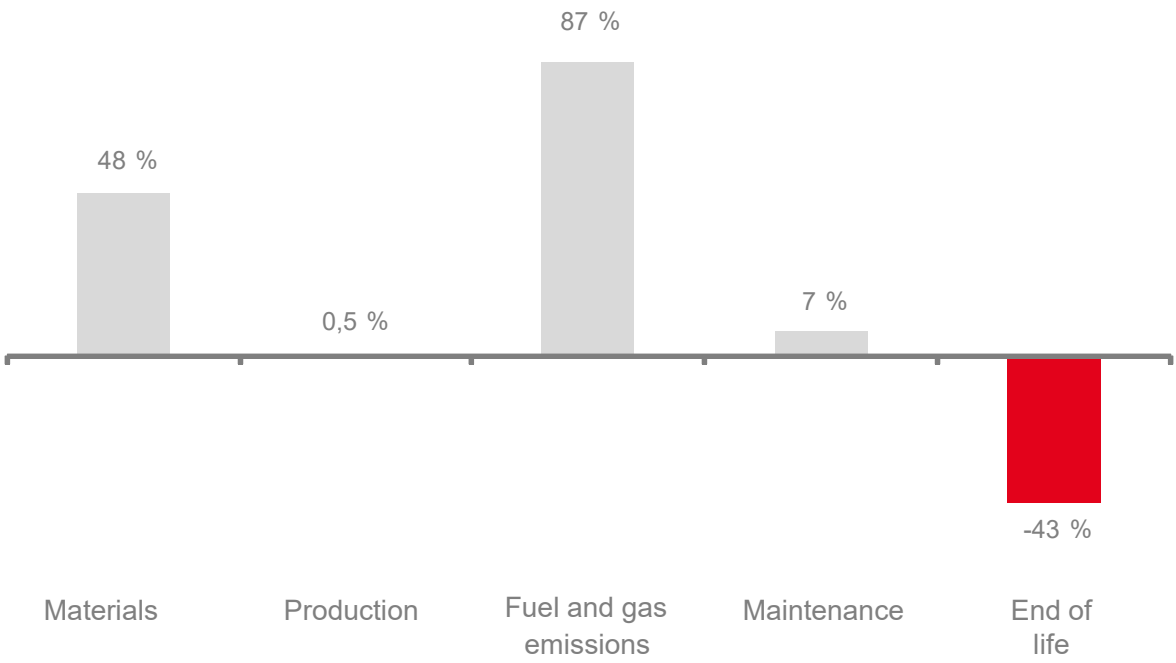
Assesment of the impact on the environment

Assessing a product's environmental impact throughout its lifetime makes it possible to determine which aspects must be studied to improve its overall environmental performance. This assessment may be qualitative but also quantitative by using appropriate methods and tools.

THE EPS SYSTEM

The EPS (Environmental Priority Strategies) tool used by Renault Trucks allows the environmental impact made by every activity or process making up the life cycle to be calculated. It is expressed in ELUs (Environmental Load Units).

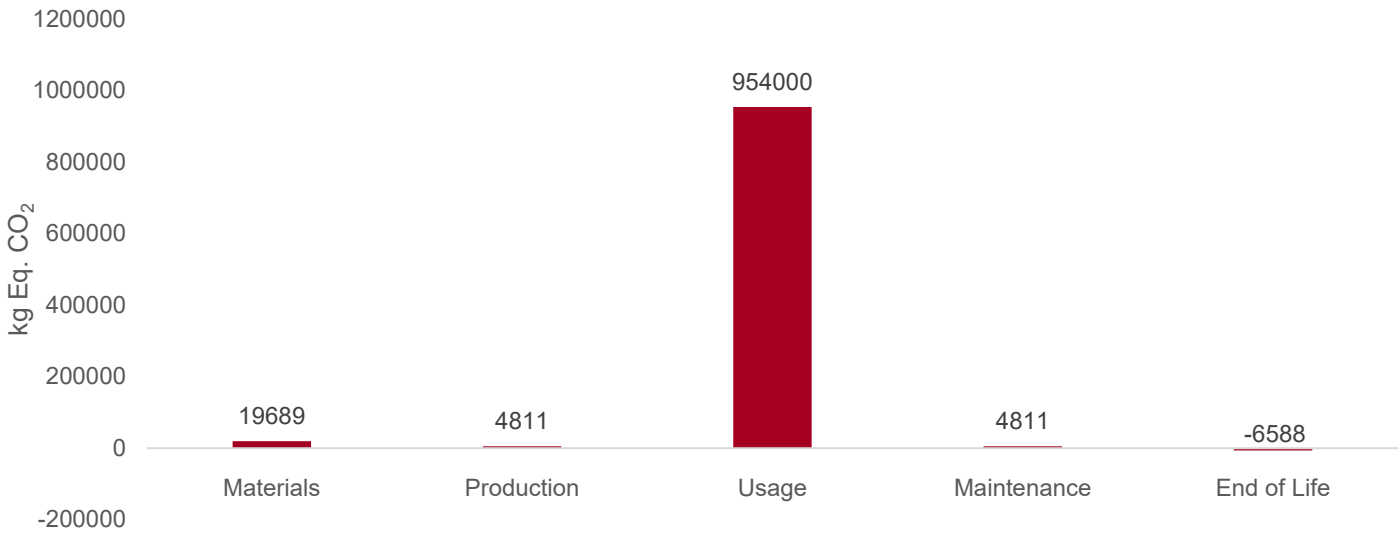
The diagram below illustrates how the environmental impact of a **Renault Trucks T High,** a vehicle used for long-distance haulage, can be broken down by using the EPS method.



The consumption of fuel and the gas emissions resulting from it make up the greater part of the impact. The materials used for manufacturing the vehicle, particularly those introduced to meet the Euro VI standard play a significant role. This is, however, offset by their high level of recycling.

Global warming potential

Life cycle analysis also makes it possible to determine a vehicle's global warming potential throughout its operational life. This potential consists of the various greenhouse gas emissions it produces that affect the climatic system. It is expressed as the equivalent quantity of Carbon Dioxide (kg equiv. CO_2).



Fuel consumption and the resulting gas emissions play a dominant role in affecting global warming. This is why Renault Trucks makes energy efficiency one of its absolute priorities when developing new products.

FUEL CONSUMPTION

Renault Trucks designs its vehicles to consume as little fuel as possible while at the same time developing an associated service offering designed to constantly reduce consumption even further. Optifuel Solutions make it possible to optimise vehicles' configuration and equipment (Optifuel Technology), and instruct drivers in eco-driving (Optifuel Training), measure and analyse trucks' long-term fuel consumption by means of appropriate software (Optifuel Infomax and Optifleet) as well as improve performance throughout their operating lives by means of upgrades (Optifuel Retrofit). Finally, an offer of IT applications for handheld terminals helps drivers make their assignments more efficient.

Find out more about sustainability at Renault Trucks:
Sustainability | Renault Trucks Corporate (renault-trucks.com)

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