EPD®

TKE

ENVIRONMENTAL PRODUCT DECLARATION

synergy 100

In accordance
with ISO 14025

MOVE BEYOND

Measuring the environmental performance of our products is the foundation for continuous improvement.

CONTENTS

EPD®

Programme operator:
The International EPD® System: more information is available on www.environdec.com, email: info@environdec.com

EPD® International AB
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SE-100 31 Stockholm, Sweden

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UN CPC 4354 – Lifts, skip hoists, escalators and moving walkways

PCR review was conducted by:
The Technical Committee of the International EPD® System
Chair: Filippo Sessa
Contact via email:
info@environdec.com

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Third party verifier:
Rubén Carnerero Acosta
(individual verifier)
"Approved by the International EPD® System"
Contact:
rcarnerero@tk-ingenieria.com

ABOUT THIS EPD®

Introduction
At TK Elevator, we have a strong sense of responsibility towards our customers, employees, society and the environment. Our aim is always to develop solutions that go far beyond the industry standards in all these areas.

Within the context of sustainability, we want to understand the environmental performance of our products. That is why we develop Life Cycle Assessments (LCAs) to identify relevant fields of action and enhance the design process. Our goal is to minimise the environmental impact of our products. To communicate the results of LCAs to the public and ensure transparency regarding the environmental impact of our products, we publish EPDs.

The benefit for our customers are solutions that fulfill the highest demands in terms of efficiency and product responsibility. In addition, they can use EPDs in the context of their green building certifications and introduce elevators into the life cycle assessment of their buildings.

What is an EPD®?
An Environmental Product Declaration (EPD®) provides information about the environmental performance of a product. In the case of this publication, the results refer to TK Elevator's "synergy" series elevators.

Development of this EPD®
Both the EPD® and the underlying LCA study have been developed and third-party-verified in accordance with the product category rules (PCRs) for elevators within the framework of the International EPD® system and its general programme instructions for type III environmental declarations according to ISO 14025.

Furthermore, development and verification also follow ISO 14040/44 and the calculation of the energy demand is carried out in accordance with ISO 25745-2. The charaterisation method used to calculate impact categories on midpoint level is CML2001, as requested by the PCRs.

Data collection
The data used in the present study is a combination of measured, calculated and estimated data. The main data sources are TK Elevator internal data, generic databases such as GaBi and data from Tier 1 suppliers.

Description of functional unit (FU)
According to the PCRs for elevators, the functional unit is defined as “transportation of a load over a distance, expressed in tonne [t] over a kilometre [km] travelled, i.e. tonne-kilometre [tkm].”

Comparability of results
EPD®s within the same product category but from different programme operators may not be comparable.

Key terms

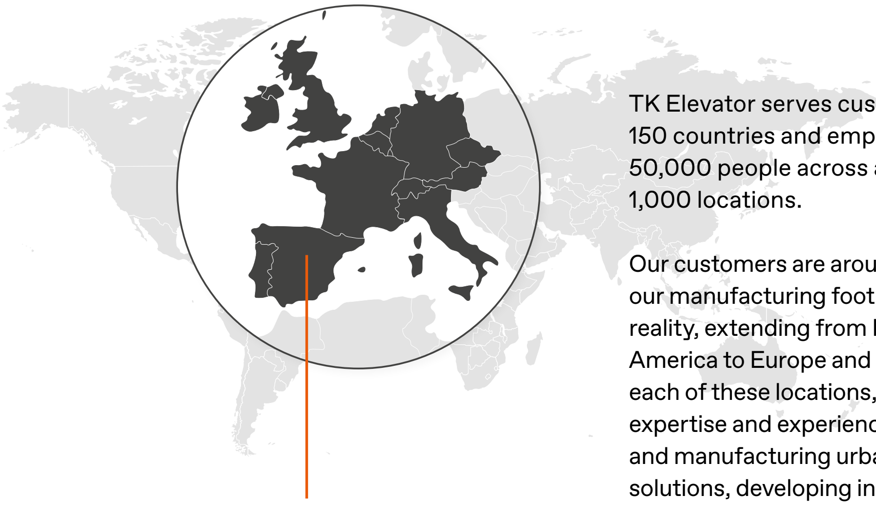
Environmental product declaration according to ISO 14025: Type III environmental declarations provide quantified environmenta data using predetermined parameters.

Life cycle assessment (LCA) according to ISO 14040: “Compilation and evaluation of the inputs, outputs and the potential environmental impact of a product system throughout its life cycle.”

Product category rules (PCR) according to ISO 14025: “A set of specific rules, requirements and guidelines for developing Type III environmental declarations.”

Functional unit (FU) according to ISO 14040: “The quantified performance of a product system for use as a reference unit.”

About us



TK Elevator serves customers in over 150 countries and employs more than 50,000 people across approximately 1,000 locations.

Our customers are around the world, and our manufacturing footprint reflects this reality, extending from North and South America to Europe and the Far East. At each of these locations, we concentrate our expertise and experience on engineering and manufacturing urban mobility solutions, developing innovations and continuously optimising existing products.

As a part of this network, our plant in Móstoles, Spain, produces synergy elevators to the highest quality standards customers expect from TK Elevator.

Commited to excellence

We are also committed to achieving the highest standards in all our processes and operations with regard to health, safety, environmental protection and the responsible use of energy and resources. For this reason, all our operations are certified in accordance with the following international standards:

- Lift Directive 214/33/EU, Annex VI, Module E: Quality Assurance for Safety Components
- Lift Directive 214/33/EU, Annex XI, Module H1: Full Quality Assurance for Lifts
- DIN EN ISO 9001: Quality Management System
- DIN EN ISO 14001: Environmental Management System
- DIN EN ISO 50001: Energy Management Systems
- ISO 45001: Occupational Health and Safety Management System

THE SYNERGY ELEVATOR SYSTEM

The synergy elevator system

The synergy 100 is the basic, most highly standardised product within the synergy system family. It´s mainly geared for low-rise, low-traffic passenger transportation within the functional residential market segment. It proves that sleek design and a comfortable ride can be affordable.

synergy 100 is built on TK Elevator's quality and expertise, ensuring longer optimum functionality and resulting in increased user satisfaction and less impact on the environment.

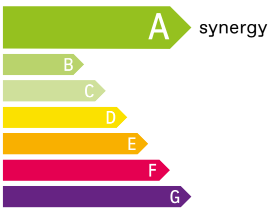
It is the ideal solution for a compact, durable and energy-efficient elevator for a new residential building with basic needs and low traffic flow, with proven effectiveness in the market for over 10 years.

synergy 100 includes standard features to improve energy efficiency performance: gearless machine combined with control system with frequency inverter, LED lighting included in all lighting devices (ceilings, push-buttons, etc.) and stand-by mode (the cabin lighting comes with automatic switch-off).

Additional optional feature: sleep mode (the electronic components are turned off when the elevator is in sleep mode and instantly activated when the elevator is called).

Energy efficiency

With the underlying LCA representative configuration, the synergy 100 elevator achieves class A energy efficiency according to ISO 25745-2. This classification has been established based on measures taken at TKE facilities. The final classification is also influenced by capacity, usage-related parameters and energy-saving features.



Energy efficiency class of the synergy 100 elevator (based on a 630 Kg elevator at 1 m/s with 12 meter travel height and category 1 usage)

The synergy elevator series complies with all relevant international standards and regulations:

- **Lifts Directive 2014/33/EU:** Directive of the European Parliament
- **EN 81:** Safety rules for the construction and installation of lifts
  - Part 20: Passenger and goods/ passenger lifts
  - Part 50: Design rules, calculations, examinations and tests of lift components
- **Type-tested system:** certification by notified body
- **CE marking** in compliance with EU legal requirements to guarantee health, safety and environmental protection
- **ISO 25745 (part 2):** Lifts, energy efficiency

The synergy elevator system

Table 1: Specification of assessed elevator according to the PCRs

synergy		
Index	Representative values for the reference unit	Application range of the elevator model
Type of installation	New installation (specific)	
Commercial name (type)	synergy 100	synergy 100
Main purpose	Passenger transport	Passenger transport
Type of elevator	Electric, without machine room (MRL)	Electric, with & without machine room (MRL / MR)
Type of drive system	Gearless traction drive	Gearless traction drive
Rated load [Q]	630 kg	450 / 630 / 1,000 Kg
Rated speed	1.0 m/s	1.0 m/s
Number of stops	5	Up to 12 (+6 auxiliary)
Travelled height	12.25 m	≤45 m
Number of operating days per year	365	365
Applied usage category (UC) acc. to ISO 25745-2	1	1.2
Designed reference service life (RSL)	25 years with no modernisations considered	
Geographic region of installation	Madrid, Spain (considered grid mix: EU average)	
Functional unit (FU), calculated acc. to PCRs expressed in tons [t] over a kilometer [km] traveled	129.4 tkm	

Representative installation
The reference for the underlying LCA study was an elevator installed in a residential building in Spain. Its configuration corresponds to the typical application range of the synergy series. For energy consumption during operation, the European average grid mix was considered.

Value and relevance of functional unit (FU)
The FU is determined by the physical characteristics of the assessed elevator (e.g. rated load, rated speed, travel height) and parameters that are chosen based on its assumed use (e.g. use category, trips per day, operating days per year). Because the elevator is installed in a residential building with very low usage intensity, use-related parameters in particular are low and consequently created a low FU value.

Content declaration
A detailed composition of the reference elevator in quantitative terms according to the PCRs is set out in Figure 1. This content declaration considers all life cycle phases and cut-off rules according to the PCRs. Almost 70% of the material the elevator is made of belongs to the material category of ferrous metals. This includes the guide rails, cabin and doors.

Inorganic materials, including, for example, the counterweight weights, represent 21% of the total content and represent another significant share. Another important category is Electrical and electronics, which accounts for approximately 2% of the total weight. This includes the controller and the inverter, among other elements. Other material categories include those components for which the material contents cannot be established. The remaining material categories each account for less than 2%, including plastic materials, batteries, lubricating oil and organic materials (mainly wood).

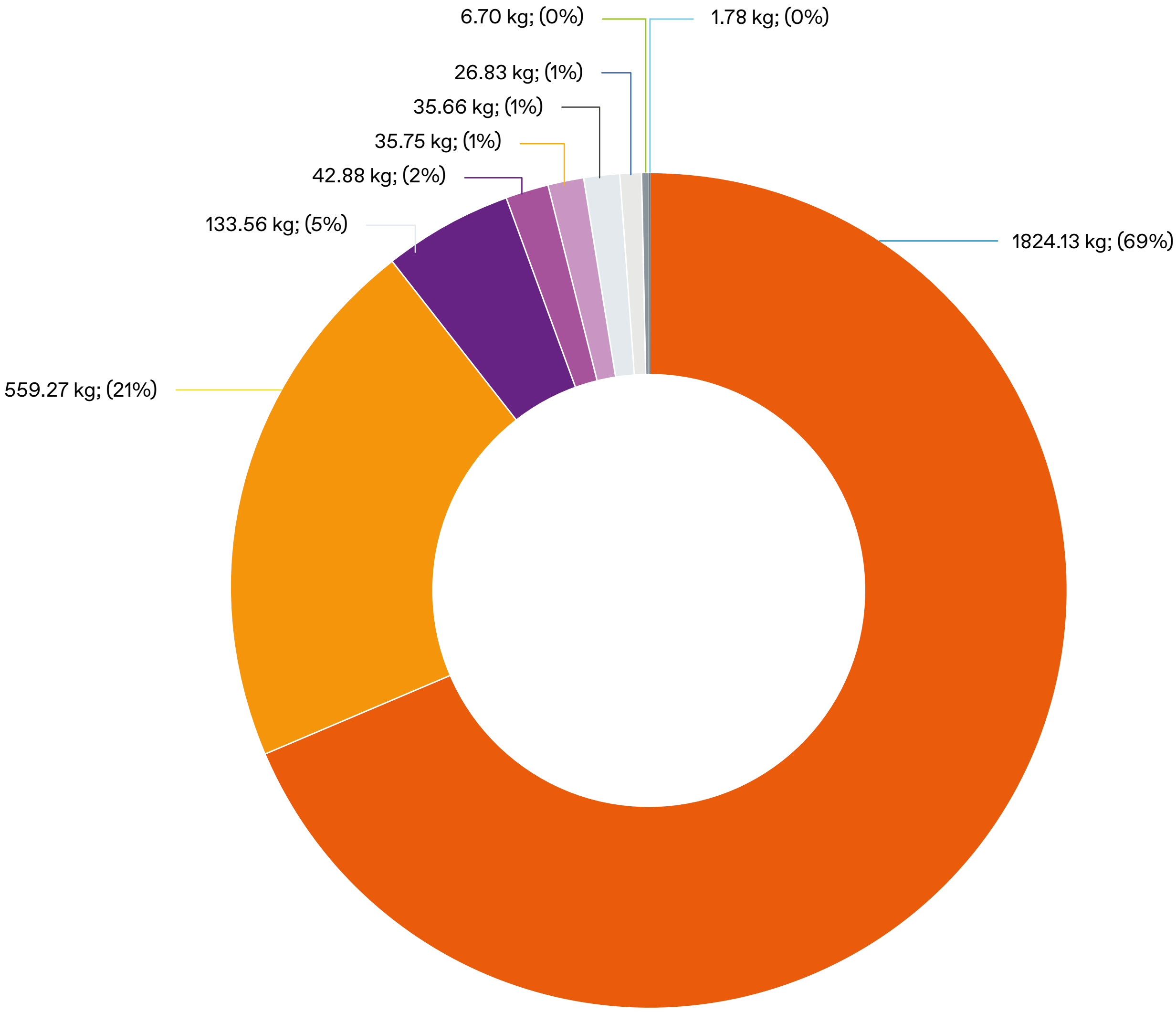


Figure 1: Material balance of assessed elevator (excl. spare parts)

- Ferrous metals (carbon steel, stainless steel, galvanised steel and cast iron)
- Inorganic materials
- Other materials (magnets)
- Electrical & electronics (electrical cables, printed circuit boards and electronic elements)
- Non-ferrous metals (aluminium)
- Plastic & rubber
- Organic materials
- Batteries and accumulators
- Lubricant & paint

Life cycle assessment

According to the product category rules (PCRs), the life cycle is assessed in three stages, each consisting of further information modules. The resulting system boundaries are presented in figure below:

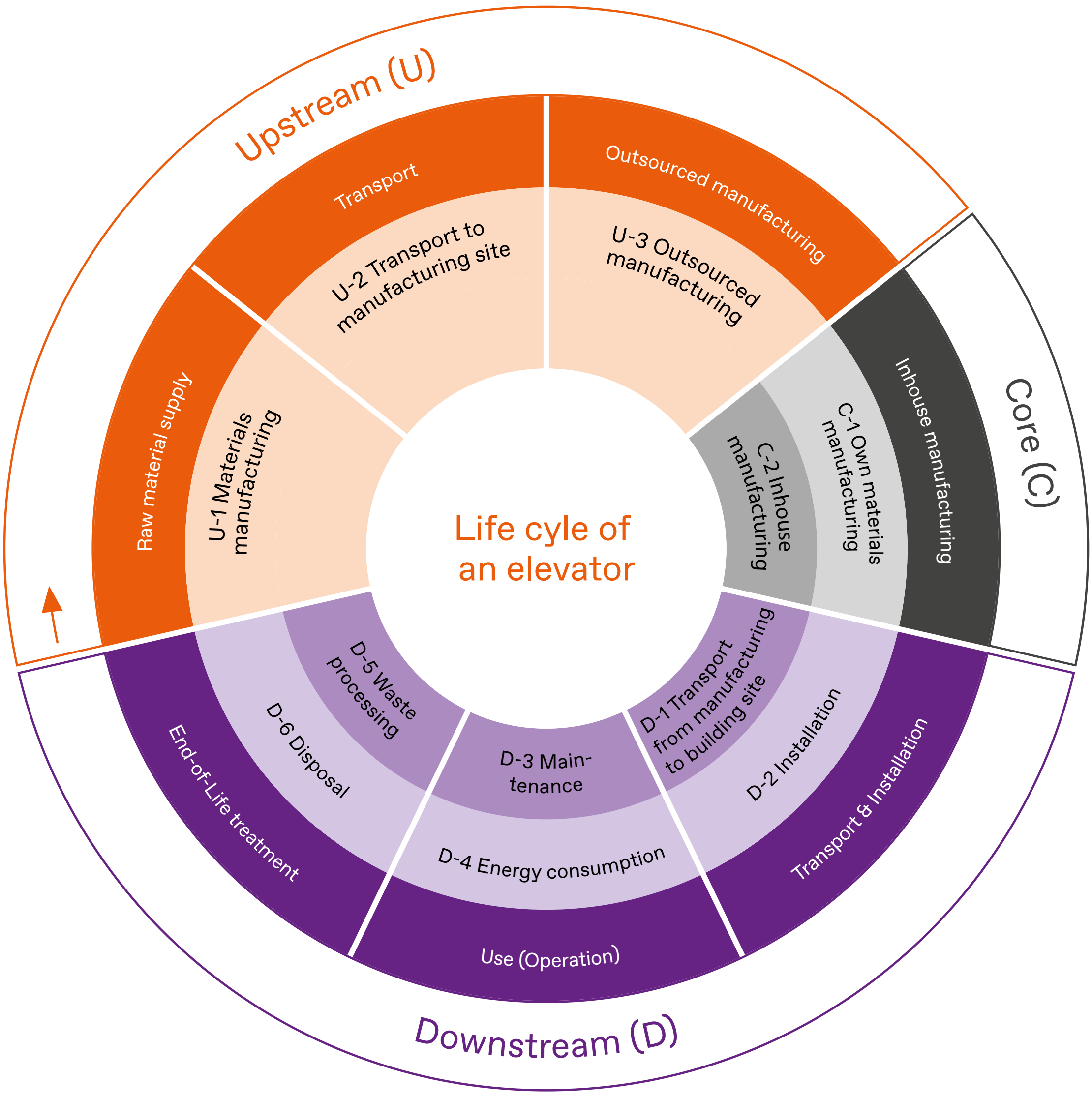


Figure 2: Life cycle stages and respective information modules according to the PCRs

Results of the study

The following section contains the results of the underlying LCA study according to the PCRs. The disclosure of results is structured in three categories: potential environmental impacts, use of resources, waste production and output flows. The tables show results per FU (in grey fields) and in absolute figures for the full reference service life of 25 years (in white fields).

Potential environmental impacts
Results are presented below for six different impact categories. For a detailed description and explanation of each impact category, please read the glossary on page 19 of this brochure. The characterisation method used to calculate the impact categories on a midpoint level is CML 2001.

Table 2: Impact category results by information module

Impact category			GWP	AP	EP	POCP	ADP - Elements	ADP - Fossil fuels
Unit	FU		kg CO_2-eq./tkm	kg SO_2-eq./tkm	kg $(PO_4)^{3}$-eq./tkm	kg C_2H_4-eq./tkm	kg Sb-eq./tkm	MJ_{NCV}/tkm
	Abs.		kg CO_2-eq.	kg SO_2-eq.	kg $(PO_4)^{3}$-eq.	kg C_2H_4-eq.	kg Sb-eq.	MJ_{NCV}
Upstream	U-1 Material manufacturing	FU	4.1E+01	1.65E-01	1.93E-02	1.59E-02	2.54E-03	4.84E+02
		Abs.	5.97E+03	2.13E+01	2.50E+00	2.06E+00	3.29E-01	6.26E+04
	U-2 Material manufact. site	FU	8.43E-01	1.68E-02	1.99E-03	2.94E-04	3.94E-08	1.08E+01
		Abs.	1.09E+02	2.17E+00	2.58E-01	3.80E-02	5.09E-06	1.40E+03
	U-3 Outsourced manufacturing	FU	3.60E+00	5.91E-03	6.57E-04	1.04E-03	7.85E-07	7.26E+01
		Abs.	4.66E+02	7.65E-01	8.50E-02	1.34E-01	1.02E-04	9.40E+03
Core	C-1 Own mat. manufacturing	FU	0.00E+00	0.00E+00	0.00E+00	0,00E+00	0.00E+00	0.00E+00
		Abs.	0.00E+00	0.00E+00	0.00E+00	0,00E+00	0.00E+00	0.00E+00
	C-2 In-house manufacturing	FU	6.69E-01	1.44E-03	1.70E-04	1,39E-04	1.54E-07	8.31E+00
		Abs.	8.66E+01	1.86E-01	2.20E-02	1.80E-02	2.00E-05	1.08E+03
Downstream	D-1 Trans. to building site	FU	-2.62E+00	5.49E-03	1.18E-03	3.94E-04	6.08E-07	1.98E+01
		Abs.	-3.39E+02	7.11E-01	1.53E-01	5.10E-02	7.86E-05	2.57E+03
	D-2 Installation	FU	5.08E+00	1.79E-03	4.87E-04	8.96E-04	2.25E-06	6.08E+00
		Abs.	6.58E+02	2.32E-01	6.30E-02	1.16E-01	2.91E-04	7.87E+02
	D-3 Maintenance	FU	6.32E-01	2.31E-03	2.40E-04	3.48E-04	1.38E-07	3.95E+01
		Abs.	8.18E+01	2.99E-01	3.10E-02	4.50E-02	1.78E-05	5.11E+03
	D-4 Energy consumption	FU	3.82E+01	1.08E-01	1.01E-02	6.85E-03	1.21E-05	4.08E+02
		Abs.	4.94E+03	1.40E+01	1.31E+00	8.87E-01	1.57E-03	5.29E+04
	D-5 Waste processing	FU	4.50E-02	1.08E-04	2.73E-05	-3.55E-05	4.30E-09	6.05E-01
		Abs.	5.83E+00	1.40E-02	3.53E-03	-4.60E-03	5.57E-07	7.83E+01
	D-6 Disposal	FU	4.91E-02	2.78E-04	3.91E-05	1.78E-05	1.55E-08	6.37E-01
		Abs.	6.35E+00	3.60E-02	5.06E-03	2.31E-03	2.01E-06	8.25E+01
Total life cycle		FU	**9.26E+01**	**3.07E-01**	**3.42E-02**	**2.59E-02**	**2.56E-03**	**1.05E+03**
		Abs.	**1.20E+04**	**3.97E+01**	**4.43E+00**	**3.35E+00**	**3.31E-01**	**1.36E+05**

Impact category results by life cycle stage per FU

The figures below show the share of the different life cycle stages of each impact category in percentages, resulting in sum of 100%.

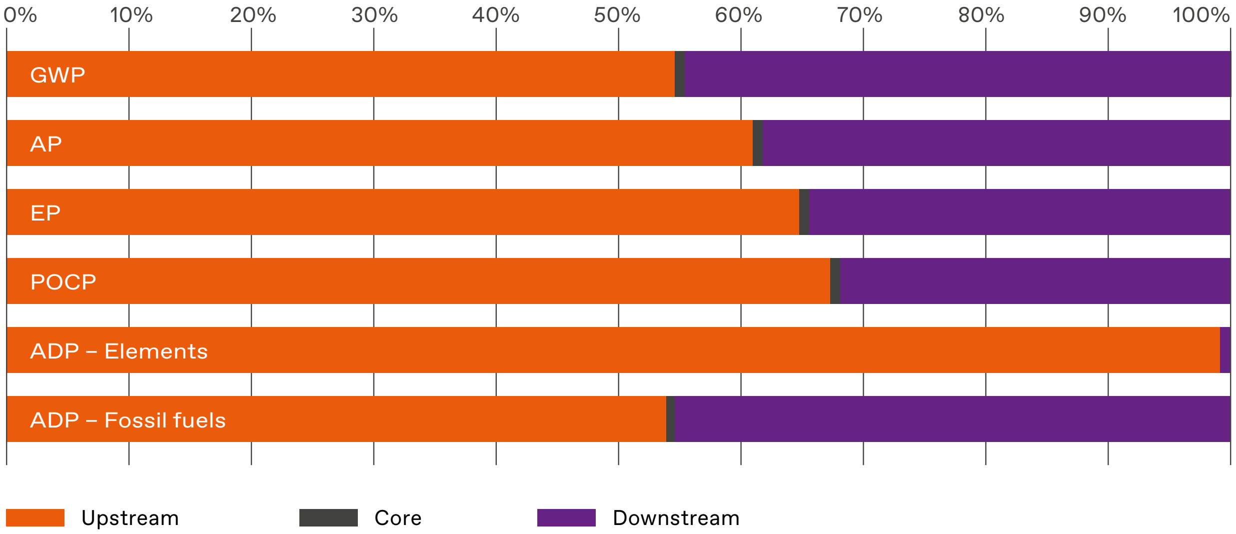


Figure 3: Impact category results by life cycle stage (in %)

In the figure below, the impact results of the two largest contributors [U-1 and D-4] to the overall results are compared with each other and the sum of the rest of the information modules.

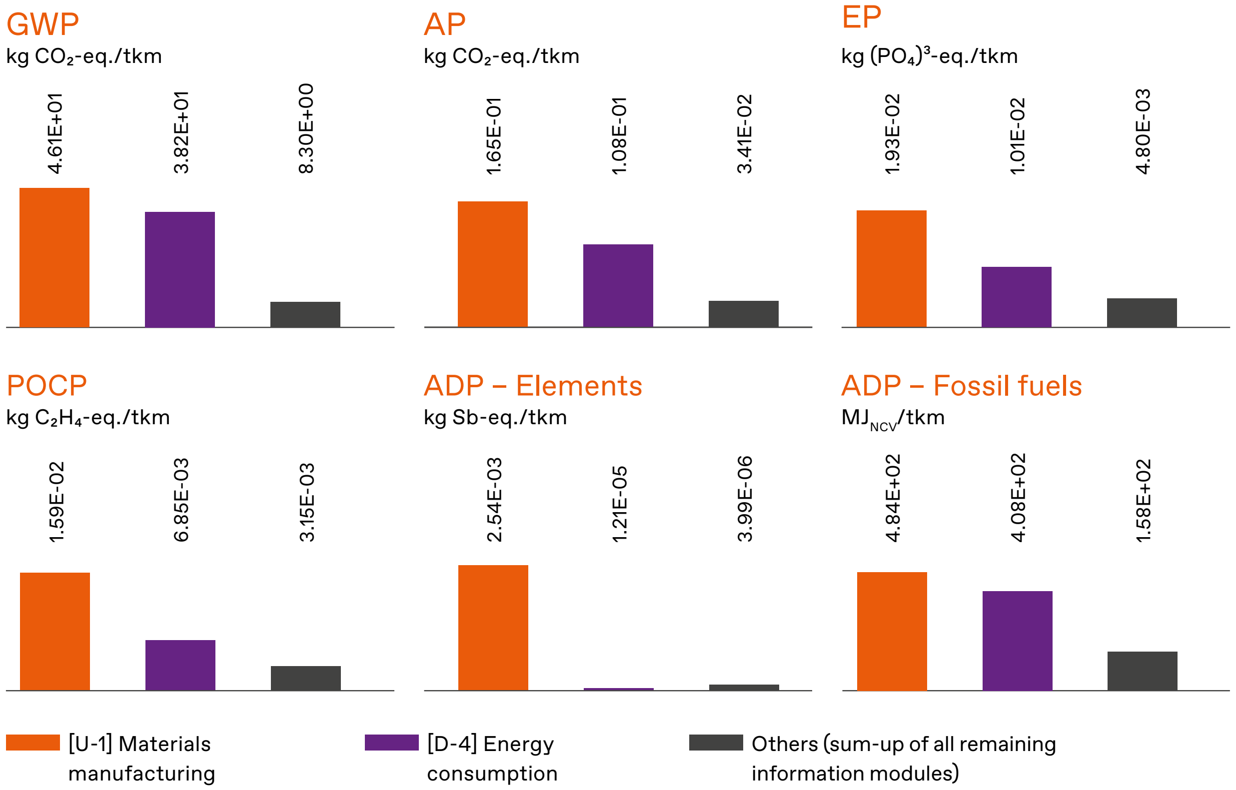


Figure 4: Comparison of impacts of main contributors

Use of resources

At this point the results for the use of resources are presented. These are divided into renewable and non-renewable as well as secondary resources, renewable and non-renewable primary energy, and water.

Table 3: Use of Resources by information module

Environmental indicator[1]			Non-renewable material resources	Renewable material resources	Non-renewable energy resources	Renewable energy resources	Secondary material resources	Total amount of water
Unit	FU		kg/tkm	kg/tkm	MJ_{NCV}/tkm	MJ_{NCV}/tkm	kg/tkm	kg/tkm
	Abs.		kg	kg	MJ_{NCV}	MJ_{NCV}	kg	kg
Upstream	U-1 Materials manufacturing	FU	1.55E+02	5.56E+04	5.07E+02	5.17E+01	4.21E+00	5.54E+01
		Abs.	2.00E+04	7.20E+06	6.56E+04	6.69E+03	5.45E+02	7.17E+03
	U-2 Material manufact. site	FU	4.53E-02	3.61E+01	1.08E+01	2.94E-01	0.00E+00	3.59E-02
		Abs.	5.86E+00	4.67E+03	1.40E+03	3.81E+01	0.00E+00	4.64E+00
	U-3 Outsourced manufacturing	FU	5.43E+00	1.02E+03	7.67E+01	6.96E+00	2.86E-04	9.58E-01
		Abs.	7.02E+02	1.32E+05	9.93E+03	9.00E+02	3.70E-02	1.24E+02
Core	C-1 Own mat. manufacturing	FU	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
		Abs.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	C-2 In-house manufacturing	FU	1.16E+00	3.62E+02	1.12E+01	4.85E+00	0.00E+00	3.49E-01
		Abs.	1.50E+02	4.69E+04	1.45E+03	6.28E+02	0.00E+00	4.51E+01
Downstream	D-1 Trans. to building site	FU	4.01E+00	1.30E+03	2.33E+01	4.94E+01	6.77E-01	1.28E+00
		Abs.	5.19E+02	1.68E+05	3.02E+03	6.39E+03	8.76E+01	1.66E+02
	D-2 Installation	FU	1.44E+00	3.45E+02	7.88E+00	3.03E+00	2.30E-03	3.29E-01
		Abs.	1.86E+02	4.46E+04	1.02E+03	3.92E+02	2.97E-01	4.26E+01
	D-3 Maintenance	FU	3.62E-01	2.66E+02	3.98E+01	1.06E+00	0.00E+00	2.64E-01
		Abs.	4.68E+01	3.44E+04	5.15E+03	1.37E+02	0.00E+00	3.42E+01
	D-4 Energy cons.	FU	1.73E+02	1.70E+05	6.87E+02	2.77E+02	0.00E+00	1.69E+02
		Abs.	2.23E+04	2.20E+07	8.90E+04	3.58E+04	0.00E+00	2.19E+04
	D-5 Waste processing	FU	7.14E-03	4.23E+00	6.17E-01	5.08E-02	0.00E+00	4.17E-03
		Abs.	9.24E-01	5.48E+02	7.99E+01	6.57E+00	0.00E+00	5.40E-01
	D-6 Disposal	FU	4.04E-01	3.49E+01	6.59E-01	7.19E-02	0.00E+00	3.42E-02
		Abs.	5.23E+01	4.52E+03	8.53E+01	9.30E+00	0.00E+00	4.42E+00
Total life cycle		FU	**3.40E+02**	**2.29E+05**	**1.37E+03**	**3.94E+02**	**4.89E+00**	**2.28E+02**
		Abs.	**4.40E+04**	**2.96E+07**	**1.77E+05**	**5.10E+04**	**6.33E+02**	**2.95E+04**

[1] Environmental indicators "Secondary energy resources" and "Recovered energy flow" are not shown because their value = 0.00E+00.

Waste production

In this context the results for the generated waste, divided by hazardous and non-hazardous waste are shown.

Table 4: Waste production by information module

Environmental indicator		Hazardous waste disposed	Non-hazardous waste disposed
Unit	FU	kg/tkm	kg/tkm
	Abs.	kg	kg
Upstream	U-1 Material manufacturing	4.39E-05	3.03E+00
		5.68E-03	3.92E+02
	U-2 Trans. to manufact. site	2.66E-07	4.25E-04
		3.45E-05	5.50E-02
	U-3 Outsourced manufacturing	1.05E-07	6.02E-01
		1.36E-05	7.79E+01
Core	C-1 Own mat. manufacturing	0.00E+00	0.00E+00
		0.00E+00	0.00E+00
	C-2 In-house manufacturing	4.02E-09	4.75E-02
		5.20E-07	6.15E+00
Downstream	D-1 Trans. to building site	2.00E-07	7.60E-03
		2.59E-05	9.83E-01
	D-2 Installation	1.98E-08	1.25E+00
		2.56E-06	1.62E+02
	D-3 Maintenance	7.32E-07	1.65E-03
		9.47E-05	2.14E-01
	D-4 Energy cons.	3.29E-07	5.01E-01
		4.25E-05	6.48E+01
	D-5 Waste processing	3.28E-08	6.30E-05
		4.24E-06	8.15E-03
	D-6 Disposal	1.68E-08	2.80E+00
		2.17E-06	3.63E+02
Total life cycle		**4.56E-05**	**8.24E+00**
		5.90E-03	**1.07E+03**

Analysis of results/conclusion

General observations
The **upstream stage** is the most important contributor to the overall burden of the assessed elevator over its entire life cycle. The contribution shares of this module exceed 50% for all categories, while the value for ADP is even greater than 99%. The **downstream stage** represents the second highest impact area. In contrast, the core stage has almost no impact or relevance in terms of the environmental burden.

Upstream stage [U-1] – Materials manufacturing
This information module dominates the upstream stage and is the main contributor to overall environmental impact. It generates values of nearly 50% or more for most of the assessed impact categories (GWP, AP, EP, POCP, ADP–Elements and ADP–Fossil fuels). The high impact rates are mainly caused by energy-intensive extraction and production processes of raw materials.

The high level of the results is mainly caused by components made out of carbon steel and other Ferrous Metals, which represent close to 70% of the total weight of the assessed elevator.

Nevertheless, in relative terms, components with a high share of electrics & electronics (based on their specific impact per kg) have the highest impact on the results and are therefore of major relevance in the life cycle of the product.

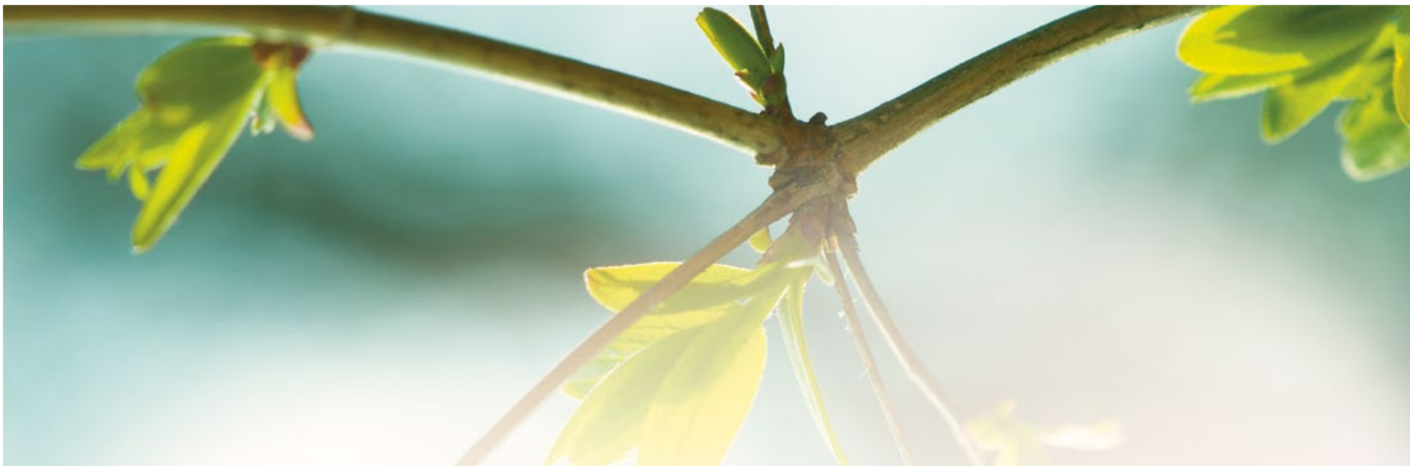
Downstream stage [D-4] – Energy consumption
This information module is the most relevant within the downstream stage. It has a mayor effect on all the impact categories, making the second highest contribution to the overall environmental burden of the assessed elevator. As a result, operation during the use phase thus also significantly influences overall environmental impact due to the consumed energy.

The analysis of alternative-use scenarios, in which the assessed elevator is operated in different locations, showed substantial differences in the overall results for most impact categories (GWP, AP, POCP and ADP-Fossil fuels). These differences can be attributed to the variations between energy sources for different grid mixes. Consequently, the choice of grid mix needs to be carefully considered.

Potential for improvements
The use of ferrous metals, especially carbon steel, has a major effect on the U-1 impacts. With reference to the ferrous metals, components made of organics, plastics and rubbers show lower impacts than of ferrous metals due to a major weight reduction. As a result, using these materials as an alternative – if feasible for their application – may achieve improved results. In addition, in terms of moving parts, the lower weight results in less energy demand and thus optimises D-4 values.

Explanation of negative GWP values for [D-1]
As required by the PCRs, the burden of the production of waste generated for the packaging (plastic and wood) was an allocated criterion. The negative GWP for D-1 is a result of the cradle-to-gate process of wood production, where wood absorbs CO_2 during its growth period (negative CO_2 balance). Release of this CO_2 is considered in D-2 when the packaging is disposed of (positive CO_2 balance).

Explanation of negative POCP values for [D-5]
In the case of the Photochemical Ozone Creation Potential (POCP), the value for [D-5] is negative. This negative impact is generated by the use of trucks as a means of transport due to NOX emissions being divided into the two single emissions of NO_2 and NO. NO has a negative effect on POCP since it reduces ground-level ozone formation.



Avoided burden

For the 'end-of-life phase', the cut-off approach was applied according to the PCRs [D-5 & D-6]. As a consequence, materials expected to be recycled or used for energy recovery are not granted a credit. Following this approach with regard to [U-1], no burden is associated with the amount of scrap included in certain primary materials used (e.g. scrap in steel datasets).

The 'avoided burden' approach represents an alternative way of calculating the results for the end-of-life phase [D-5 & D-6]. Accordingly, a credit is awarded for the inherent recycling potential of a product in the end-of-life phase.

In the table below, the potential of this credit to reduce the overall environmental impact of the assessed elevator is estimated, taking into account the positive impact of using recycled rather than virgin material. However, new results for the total life cycle are not presented because a reliable net scrap calculation for the overall life cycle could not be performed.

For the calculation of the end-of-life phase [D-5 & D-6] using the avoided burden approach, the following materials of the assessed elevator are assumed to be recycled, based on Eurostat* datasets from which the most current recycling rates were considered. In this context, please also refer to [D-5 & D-6] in section 3.3.1: electronics, 32% and 88% for carbon steel, stainless steel, plastics and aluminum.

The estimated potential of the avoided burden shows that the chosen approach for the end-of-life phase has an impact on the overall results. Taking into account the avoided burden, the total life cycle impact could be reduced on average by over 29%. The highest reduction (45%) is achieved for photochemical ozone creation potential (POCP) and the lowest (15%), for eutro-phication potential (EP).

Table 5: Estimate of potential of avoided burden – impact category results per FU

Impact category	GWP	AP	EP	POCP	ADP – Elements	ADP – Fossil fuels
Unit	kg CO_2-eq./tkm	kg SO_2-eq./tkm	kg $(PO_4)^3$-eq./tkm	kg C_2H_4-eq./tkm	kg Sb-eq./tkm	MJ_{NCV}/tkm
European (Average) – Cut-Off Approach – Total life cycle per FU	9.26E+01	3.07E-01	3.42E-02	2.59E-02	2.56E-03	1.05E+03
European (Average) – Cut-Off Approach – EoL phase [D-5 & D-6] per FU	1.22E+01	5.00E-02	8.59E-03	-2.29E-03	2.57E-06	1.61E+02
European (Average) – Avoided-Burden Approach – EoL phase [D-5 & D-6] per FU	-1.39E+01	-3.35E-02	3.59E-03	-1.40E-02	-8.93E-04	-9.60E+01
Potential Reduction of Avoided Burden – per FU	**-2.61E+01**	**-8.35E-02**	**-5.00E-03**	**-1.17E-02**	**-8.96E-04**	**-2.57E+02**
Potential Reduction of Avoided Burden – in % of Total life cycle	**-28%**	**-27%**	**-15%**	**-45%**	**-35%**	**-24%**

* Eurostat (2018)

Glossary

Glossary				
Impact category	Abbreviation	Unit	Characterisation method	Description
Global warming potential (100 years)	GWP	kg CO_2-eq.	CML2001 – April 2015	The global warming potential (GWP) is a relative measure of how much heat a greenhouse gets trapped in the atmosphere. It is indicated in kg of CO_2-equivalents for a specified time horizon.
Acidification potential	AP	kg SO_2-eq.	CML2001 – April 2015	The acidification potential describes the acid deposition in plants, soils and surface waters caused by air pollutants being converted into acids. It is expressed in kg of SO_2-equivalents.
Eutrophication potential	EP	kg $(PO_4)^{3}$-eq.	CML2001 – April 2015	Eutrophication is the undesired enrichment of waters with nutrients. It induces the growth of plants and algae, which may result in oxygen depletion. At an excessive level it affects the biological balance of affected waters, e.g. through fish kills. It is measured in kg of C_2H_4-equvilants.
Photochemical ozone creation potential	POCP	kg C_2H_4-eq.	CML2001 – April 2015	Photochemical ozone creation potential (also referred to as photochemical smog) quantifies the creation of ozone at ground-level where it is considered a pollutant, while in the high levels of the atmosphere it protects against ultraviolet (UV) light. Ozone at lower levels is harmful to human health, for example, possibly causing inflamed airways or damaging lungs. It is expressed in kg of SO_2-equivalents.
Abiotic resource depletion potential – Elements & Fossil	ADP – Elements	kg Sb-eq.	CML2001 – April 2015	Abiotic resources are natural resources which are regarded as non-living. Their current rate of depletion by humans is not considered sustainable and is cause for concern due to their scarcity. The depletion of abiotic resources is reflected in two separate impact categories: elements, such as iron ore, indicated in kg of Sb-equivalents; and Fossil fuels, for example, crude oil indicated in MJ_{NCV}.
	ADP – Fossil fuels	MJ_{NCV}	CML2001 – April 2015	

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