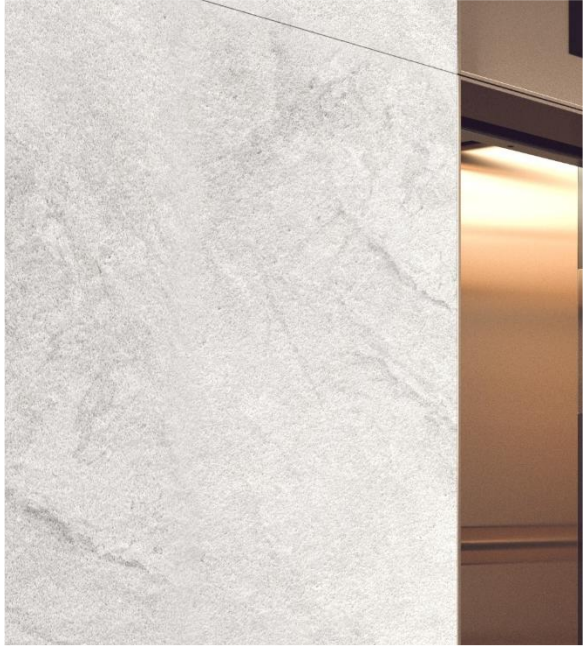






Environmental Product Declaration

in accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021

KONE TranSys™ DX

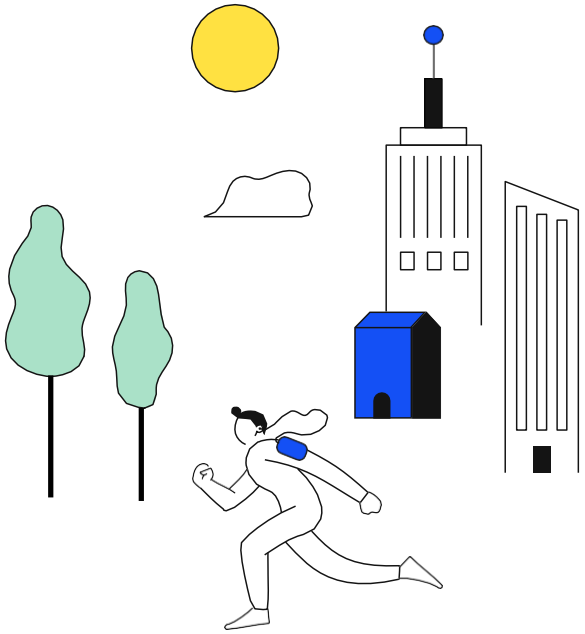
An EPD may be updated or depublished if conditions change. To find the latest version of the EPD and to confirm its validity, see www.environdec.com.

Programme:	The International EPD System www.environdec.com
Programme operator:	EPD International AB
EPD registration number:	EPD-IES-0024806:001
Version date:	2026-08-11
Validity date:	2030-11-03

General program information

Program Information

EPD International AB, Box 210 60, SE-100 31 Stockholm, Sweden,
E-mail: info@environdec.com



Accountabilities for PCR, LCA and independent, third-party verification

Product category rules (PCR)

CEN standard EN 15804 serve as the core Product Category Rules (PCR).

Product category rules (PCR): PCR 2019:14 Construction products, version 2.0.1

C-PCR-008 (to PCR 2019:14) Version 2024-04-30 for Lifts (Elevators). Product classification: UN CPC 4354.

PCR review was conducted by: The Technical Committee of the International EPD System. See www.environdec.com for a list of members. Review chair: Rob Rouwette (chair), Noa Meron (co-chair). The review panel may be contacted via the Secretariat www.environdec.com/contact.

Verification
External and independent ('third-party') verification of the declaration and data, according to ISO 14025:2006, via EPD verification through:

- ● Individual EPD verification without a pre-verified LCA/EPD tool
- ○ Individual EPD verification with a pre-verified LCA/EPD tool
- ○ EPD process certification* without a pre-verified LCA/EPD tool
- ○ EPD process certification* with a pre-verified LCA/EPD tool
- ○ Fully pre-verified EPD tool

LCA practitioner: Deenesh Kumar Harikrishnan

Contact person: Mika.Alvesalo@kone.com

Third-party verifier:
Anni Oviir,
LCA support,
https://www.lcasupport.com

Approved by: The International EPD System

* EPD Process Certification involves an accredited certification body certifying and periodically auditing the EPD process and conducting external and independent verification of EPDs that are regularly published. More information can be found in the General Programme Instructions on www.envrondec.com. International EPD System

Procedure for follow-up of data during EPD validity involves third-party verifier:	○ Yes ● No

Owenership and limitations on use of EPD

The EPD owner has the sole ownership, liability and responsibility for the EPD.

EPDs within the same product category but published in different EPD programmes, may not be comparable. For two EPDs to be comparable, they shall be based on the same PCR (including the same first-digit version number) or be based on fully aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have identical scope in terms of included life-cycle stages (unless the excluded life-cycle stage is demonstrated to be insignificant); apply identical impact assessment methods (including the same version of characterisation factors); and be valid at the time of comparison.

Information about EPD owner

At KONE, our mission is to improve the flow of urban life. As a global elevator and escalator industry, KONE pro- vides elevators, escalators and automatic building doors, as well as solutions for modernization and maintenance to add value to buildings throughout their life cycle. KONE's equipment moves over 1 billion users each day. Through more effective People Flow®, we make people's journeys safe, convenient and reliable in taller, smarter buildings.

We serve more than 450,000 customers across the globe and have more than one million elevators and escalators in our service base. Key customer groups include builders, building owners, facility managers and developers. The majority of these are maintenance customers. Architects, authorities and consul- tants are also key influencers in the decision-making process regarding elevators and escalators.

Driving innovation and improving resource efficiency

At KONE, innovation means putting the customer and the equip- ment user at the center. Innovations can have an important role in addressing climate change. Increasing resource efficiency is among our top priorities with regards to both our solutions and our operations. Our solution design contributes to the circular economy with a long lifetime and modularity as key features of our products, supported by our maintenance and modernization services.

Sustainability field

At KONE, sustainability is embedded in our organizational cul- ture. It is how we treat each other and our stakeholders, how we take the environment into account in all of our actions, and how we foster economic performance now and in the future. Our vision is to deliver the best People Flow experience. Sustainabil- ity is a source of innovation and a competitive advantage for us. KONE is committed to conducting our business in a responsible and sustainable way and we expect the same commitment from our partners.

Environmental management

KONE'S corporate units, manufacturing and R&D units are ISO 14001 and ISO 9001 certified.

Majority of KONE's key suppliers are ISO 14001 certified.

KONE supports sustainable construction practices with efficient operations and guidelines for waste & chemical management and overall environmental excellence.

Our manufacturing unit in Finland have the FSC Chain of Custody certification for elevator car wood materials.

A class energy rating

More than 24 elevator models from KONE are certified with ISO 25745 highest energy efficiency rating of A class, 10 escalators and autowalks with the best A+++ classification.

CDP Climate Performance

In 2025 KONE achieved a CDP Climate score of A or A- for eleven consecutive years, which shows our long-term commitment to environmental work and sustainability.

KONE has been awarded a position on the CDP 2025 Supplier Engagement Assessment Leaderboard in 2025.

Climate pledge

KONE has set science-based targets for significant reductions in its greenhouse gas (GHG) emissions by the year 2030.

KONE commits to a 50% cut in the emissions from its own operations (scope 1 and 2 emissions) by 2030, compared to a 2018 baseline. This target is in line with limiting global warming to 1.5°C.

In addition, KONE targets a 40% reduction in the emissions related to its products' materials and lifetime energy use (scope 3 emissions) over the same target period, relative to orders received.

Address and contact information

Kone Corporation
Keilasatama 3
02150 Espoo
Finland



Product information

Product description

The KONE TranSys™ DX redefines what a lift built for demanding environments can be, with built-in connectivity for improved goods and people flow, and a new and inspiring user experience that delivers on all counts.

The KONE TranSys™ DX is a machine room-less adaptable and durable lift for public transport, retail, industrial premises and hospital buildings. Powered by the compact, energy-efficient KONE EcoDisc® hoisting motor, the KONE TranSys™ DX saves valuable space in buildings by completely removing the need for a machine room.

Product standards

EN 81-20 Safety rules for the construction and installation of lifts Part 20: Passenger and goods passenger lifts. In addition to the EN81-20 standard, the KONE TranSys™ DX also complies with other relevant standards in the EN 81 series related to safety rules for the construction and installation of lifts..

Manufacturing process

The manufacturing process of the selected Transys® DX elevator comprises metal fabrication, machining, and production of electrical and control systems This is followed by preliminary assembly of different modules in the factory, including integration of mechanical components, the cabin, and safety systems, along with testing before delivery.

Table 1. Product specification for KONE TranSys™ DX

Index	Possible values	Representative values chosen for LCA
Type of installation	New generic lift	
Main purpose	Transport of goods and passengers	
Type of lift	Electric	
Type of drive system	Gearless traction	
Commercial name	KONE TranSys™ DX	
Rated speed	0.5 - 1.0 m/s	1 m/s
Rated load	1600 kg - 5000 kg	2500 kg
Number of stops	Max. 12	3
Travel height	Max. 40 m	8.5 m
Number of operating days per year	60-365	365
Applied usage Category (UC according to ISO 25745-2	1-6	3
Designed reference service life	25 years	
Geographic region of intended installation	Europe Electricity mix from France is used to model use stage impacts	
Recommended application	Low-and mid- rise residential, commercial buildings and hospitals	
Optional equipment	-	
Product classification	UN CPC 4354	
Production sites	Finland, Czech Republic, Italy, Austria	



Comparability between EPDs based on this c-PCR-008 (to PCR 2019:14) and EPDs based on PCR 2015:05 is not conceivable and shall be avoided. Any comparability of this kind shall be considered as false and misleading the EPD user. Comparability between EPDs based on this c-PCR-008 (to PCR 2019:14) is only achievable, if the following performance characteristics are equivalent: Functional unit, Reference Service Lifetime, Usage Category, travel height, number of stops, rated load, rated speed and geographic region.

Content declaration

Product

The table below shows the material summary of the elevator studied, as delivered and installed in a building and handed over to customer. The total mass of the elevator is approximately 8587 kg and is mainly composed of ferrous metals, the majority of which can be recycled after use. Product-specific (pre-consumer and post-consumer) recycled content is unknown. Global average of recycled content in metals is considered in calculations. KONE continues to focus on optimizing material usage including packaging, avoiding the use of hazardous substances and maximizing recycled content and recyclability of our products.

Packaging

The table below shows the content of packaging materials used for packaging the reference elevator and its components as delivered to the site. The total amount of packaging components is approximately 948 kg where plywood is the most common material. A majority of the packaging components can either be reused or recycled at the end of life.

Table 2. Raw materials used in KONE TranSys™ DX

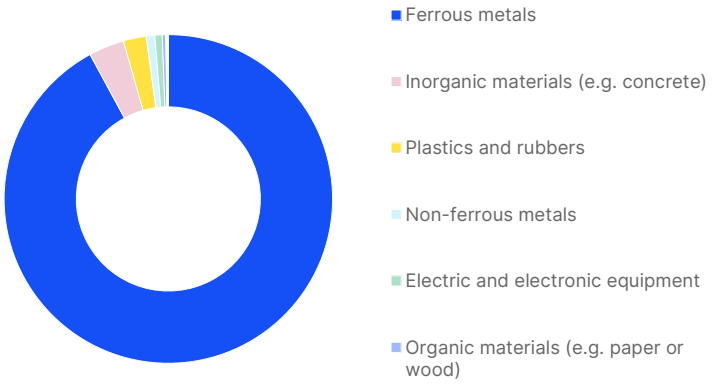
Materials	Weight (kg)	Recycled Content %
Ferrous metals	7908	0
Inorganic materials (e.g. concrete)	299	0
Plastics and rubbers	194	0
Non-ferrous metals	71	0
Electric and electronic equipment	63	0
Organic materials (e.g. paper or wood)	29	0
Lubricants (e.g. oils and greases), paintings, coatings, adhesives and fillers	11	0
Batteries and accumulators	7	0
Other materials	4	0
Total	8587	

Table 3. Packaging materials used in KONE TranSys™ DX

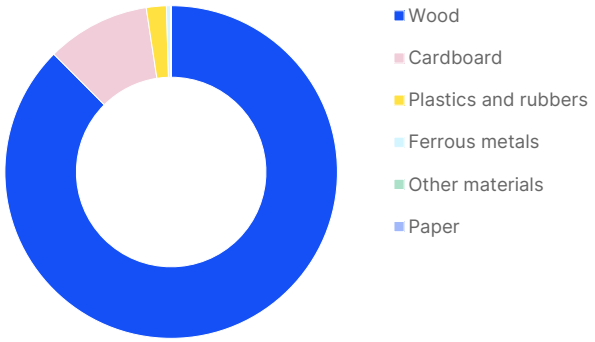
Materials	Weight	Weight %	Biogenic carbon (kg)	Total weight-% of biogenic content in packaging
Wood	830	87.53%	519.64	
Plastics and Rubbers	18	1.95%	0.00	
Ferrous metals	4	0.41%	0.00	
Cardboard	95	10.06%	40.57	59%
Other organic materials (e.g. paper)	0.03	0.0034%	0.01	
Other materials	0.38	0.040%	0	
Total	948	100%	560.22	

Note: 1 kg biogenic carbon in the product/packaging is equivalent to the uptake of 44/12 kg of CO2.

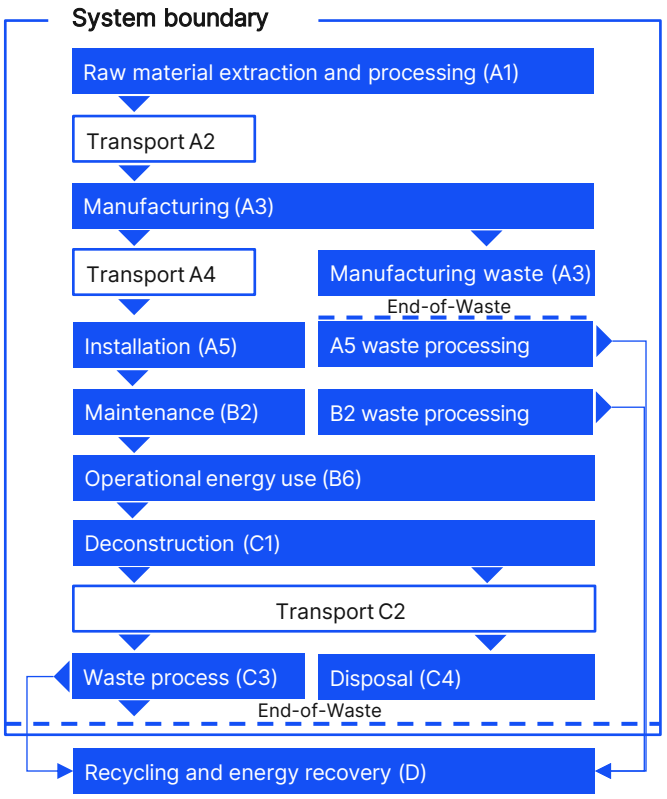
Material summary of KONE TranSys™ DX



Material summary of KONE TranSys™ DX



LCA information



System Boundary

This EPD covers the full life cycle stages from cradle to grave and module D In the product stage (A1-A3) raw material extraction, processing of materials, transportation to the manufacturing site and manufacturing of components are considered. The different components of the product, also known as elevator modules are manufactured at specific sites in different parts of the world.

The construction process stage (A4-A5) includes transportation of the modules from manufacturing sites to a common distribution center and from there to the installation site by truck, installation activities and waste treatment of the packaging components.

In the use stage (B1-B7) only Maintenance (B2) and operational energy use (B6) are included as other stages within the usage phase are irrelevant for the product. Replacement component production, transportation involved, waste treatment and energy usage for products lifetime are included.

The end-of-life stage (C1-C4) includes dismantling, transportation of waste to processing sites, waste processing and disposal. Elevator's appropriate waste disposal is the responsibility of the building owners once installed in the building. The impacts modelled for end of life in this LCA is based on the most appropriate treatment scenarios for the materials.

In addition, module D accounts for benefits and loads beyond the system boundary, arising from recycling and energy recovery through incineration.

LCA information

Allocation, methodological choices and interpretation

Allocation was applied when material, energy, or waste data could not be directly linked to the studied product. A mass allocation approach was used.

The allocation of waste was carried out according to the assumptions defined in Scenario 1 and Scenario 2.

The life cycle inventory was modelled using the Ecoinvent 3.11 datasets with the "Allocation, cut-off, EN15804" system model. Recycled materials entering the system are treated as burden-free, while recyclable outputs are credited in Module D based on substitution.

No additional recycled content was assumed beyond what is included in the datasets. The allocation follows an attributional approach with industry-average data, in line with PCR Section 4.5.3 and 5.2.

Functional unit

Since the purpose of the elevator is to transport people and goods over multi-floor buildings, the functional unit (FU) for the study is defined as the transportation of the load over distance, expressed in tonne [t] over a kilometer [km], i.e., tonne-kilometer [tkm]. The total amount of tkm (also called as Transportation performance (TP)) shall be calculated to obtain the results per FU. The TP for KONE Transys® DX with Usage Category 3 in its lifetime 25 years was calculated to be 779.5 tkm. The term “transportation performance (TP)” used to indicate the total amount of tkm is identical both in meaning and in calculation approach to the term “total number of FU” used in EPDs based on PCR 2015:05

Geographical Scope

The geographical scope of this EPD is based on data representative of Europe. Primary manufacturing, transport data and material information were collected directly from Tier 1 suppliers. This data was then mapped to Ecoinvent Global or Rest-of-World datasets to perform the calculations. However, for region-specific parameters such as electricity, data from the region of the suppliers were used.

Cut-Off Criteria

This study follows the cut-off criteria stated in the PCR and EN 15804 standard and does not exclude any modules or processes which are stated mandatory in the EN 15804 standard and in the PCR. For A1-A3, the amount of material consumption, packaging, transportation and manufacturing data from the supply chain was received. However, material classification was not possible for a fraction of the material used in the product. The missing material data represents less than 1% of the total weight of the elevator and their production is left out from the production analysis.

A4 transportation from supplier and KONE production locations to KONE distribution center in Italy, and from the distribution center to the building location in Paris, France has been calculated. The return trip is not considered.

Energy indicator calculation

The results for the PERM and PENRM indicators were manually calculated in accordance with Annex 3 - option A of the PCR 2019:14 for Construction Products (version 2.0.1)

LCA software and generic data database

The LCA was modelled in Umberto 11.15.1 and the Ecoinvent 3.11 database used for generic data. The EF 3.1 impact assessment method and its related characterization factors were employed at the midpoint level in this study.

Temporal Representativeness

KONE factory data represent the year 2024. The data used in this study were collected from KONE’s tier 1 suppliers and cover the period 2023–2024.

Potential energy usage in distribution center per elevator delivered is negligible and is not included in the analysis. Similarly, the impacts of the auxiliary materials used for the installation and replacement in A5 and B2 (e.g. gloves, adhesive tapes and cleaning agents) are excluded from the analysis since both their usage quantity and impacts are considered negligible.

The share of primary data is calculated based on GWP-GHG results. It is a simplified indicator for data quality that supports the use of more primary data, to increase the representativeness of and comparability between EPDs. Note that the indicator does not capture all relevant aspects of data quality and is not comparable across product categories.
The data category percentages are based on the mass of each material component in the product composition.



Table 4. Scope of the life cycle assessment

		Module	Modules declared	
Product stage	Raw materials supply	A1	X	Global
	Transport	A2	X	Global
	Manufacturing	A3	X	Global
Construction process stage	Transport	A4	X	Global
	Construction installation	A5	X	FR
Use stage	Use	B1	ND	
	Maintenance	B2	X	Global
	Repair	B3	ND	
	Replacement	B4	ND	
	Refurbishment	B5	ND	
	Operational energy use	B6	X	FR
	Operational water use	B7	ND	
End of life stage	Deconstruction	C1	X	FR
	Transport	C2	X	Global
	Waste processing	C3	X	Global
	Disposal	C4	X	Global
Resource recovery stage	Reuse-Recovery-Recycling-potential	D	X	Global

This declaration covers “cradle to grave”. All mandatory modules covered in the EPD are marked with “X”. For module B, only B2 and B6 are applicable for elevators usage. For
non-relevant fields, ND is marked in the table (module not related).

Table 5. Assessment summary

Process	Source type	Source	Reference year	Data category	Share of GWP-GHG results for A1-A3	Share of primary data, of GWP-GHG results for A1-A3
Raw unalloyed/low-alloyed steel production (cold/hot rolled, galvanized)	collected data mapped to generic LCI datasets	EPD owner + Ecoinvent v3.11	2024	Secondary data	66.09%	0.00%
Other processes (A1-A3)	collected data mapped to generic LCI datasets	EPD owner + Ecoinvent v3.11	2023-2024	Secondary data	33.01%	5.28%
Generation of electricity used in running of equipment (B6)	collected data mapped to generic LCI datasets	EPD owner + Ecoinvent v3.11	2023-2024	Secondary data		0%
Total share of GWP-GHG results for A1-A3					100.00%	5.28%

End of Life Scenarios

Scenarios

The PCR specifies that if several scenarios are used, the most probable scenario shall be declared in the main results, while alternative scenarios shall be reported in a separate subsection. Following these rules, two representative end-of-life scenarios have been modelled in this study to reflect different waste treatment assumptions and regional variations. The detailed assumptions and results for each scenario are presented below.

Scenario 1 – Most Probable Scenario

In the most probable end-of-life scenario, all metallic components of the product are assumed to be collected and sent for recycling, while plastics and wood-based materials are incinerated with energy recovery. Any remaining materials that cannot be recycled or incinerated are assumed to be disposed of in landfill sites.

In accordance with PCR 2019:14 (Version 2.0.1, Section 4.8.4), the assumption of “100 % recycling” or “100 % incineration” represents the share of the product sent to such treatment processes. However, the actual fraction effectively treated may be lower in practice due to technical limitations or process losses. To reflect realistic end-of-life conditions, material-specific recycling and incineration rates were adopted based on reliable literature and databases.

Please refer to the table below for the effective waste treatment shares for Module C3 and their respective data sources applied in the KONE Transys® DX EPD.

Table 6. Effective waste treatment share for A5, B2, C3 and their sources of KONE Transys™ DX

Material	Main Treatment Route	Share of recovered waste that is recycled or incinerated with energy recovery	Data Source
Ferrous metal steel	Recycling	85%	World Steel Association (2021)
Aluminium	Recycling	75%	International Aluminium Institute (n.d.)
Copper	Recycling	40%	International Copper Association
Plastics	Incineration with energy recovery	50%	Plastics Europe
Wood-based materials	Incineration	100%	CEPS 2024

Table 7. Scenario 1 – Material-specific recycling and energy recovery rates and corresponding net flows entering Module D

Waste for Recycling or Energy Recovery	Share of recovered waste that is recycled or incinerated with energy recovery	Quantity (KG)	Treatment Outside System Boundary (D)
Wood-based material	100%	1044	Incineration with Energy Recovery
Plastic	50%	125	Incineration with Energy Recovery
Steel	85%	7035	Recycling
Aluminium	75%	35	Recycling
Copper	40%	16	Recycling

Scenario 2 – 100 % Landfill Scenario

In the second scenario, it is assumed that all product and packaging materials are disposed of in landfills without any material recovery or energy generation.

As all materials are landfilled, there are no benefits or loads beyond the system boundary (Module D) considered for this scenario.

Environmental performance

The life cycle assessments results for the entire life cycle of the KONE Transys® DX are presented in this section.

The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks. Furthermore, the results of the end-of-life stage (modules C1-C4) should be considered when using the results of the product stage (modules A1-A3).

The global warming potential of modules A1–A3 is mainly caused by material manufacturing, with steel production accounting for about one-third of the impacts.

The elevator of this study is in use in France. The annual energy consumption of 1503 kWh* was calculated with ISO 25745-2 methodology. The impacts for operational energy usage (B6) were calculated using the residual mix for France.

The scenario for France energy use represents an average grid factor of 0.0814 kg CO2 per kWh. The results of life cycle impact assessment are divided by life cycle stage per entire life cycle. The carbon footprint results are reported separately for each life cycle stage in accordance with the PCR. Detailed results for all impact categories can be found in the tables below.

Scenarios

Scenarios support the application of product related data in the corresponding life cycle stage of the building assessment. Scenarios in this EPD are specified in the tables below for respective life cycle stages.

Table 8. Scenario 1 environmental performance results per tkm life cycle of KONE Transys™ DX

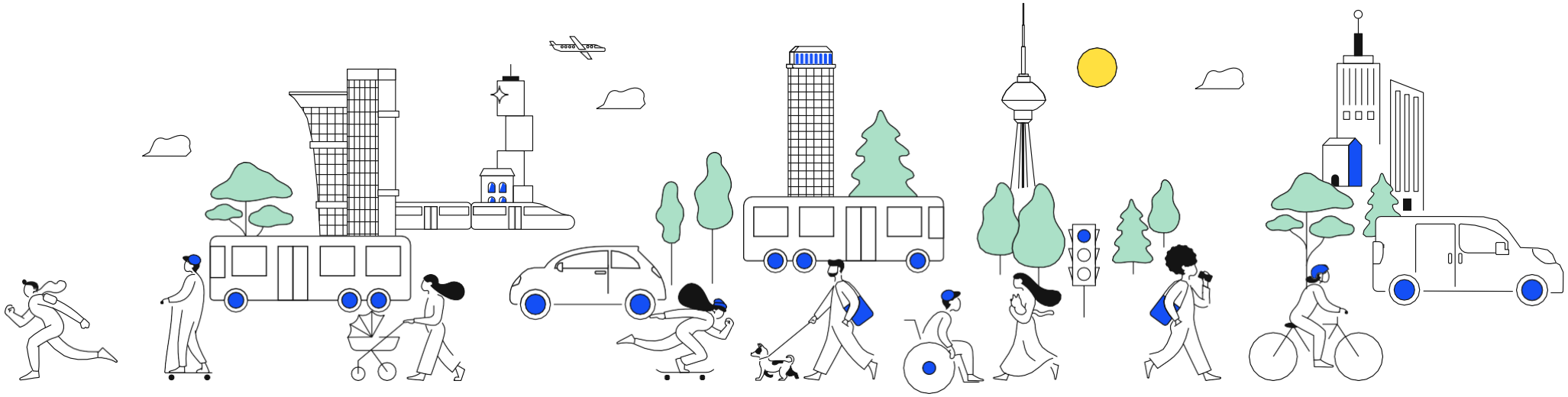
Section	Global Warming Potential total [kg CO2 eq.]	Global Warming Potential fossil total [kg CO2 eq.]	Global Warming Potential biogenic [kg CO2 eq.]	Global Warming Potential luluc [kg CO2 eq.]	Ozone depletion potential [kg CFC11 eq.]	Acidification potential [mol H+ eq.]	Eutrophication aquatic freshwater [kg P eq.]***	Eutrophication aquatic marine [kg N eq.]	Eutrophication terrestrial [mol N eq.]	Formation potential of tropospheric ozone [kg NMVOC eq.]	Abiotic depletion potential - elements [kg Sb eq.]**	Abiotic depletion potential - fossil [MJ]**	Water use [m3 depriv.]**	Global Warming Potential-GHG [kg CO2 eq.]
A1-A3 Raw material extraction to manufacturing	4.08E+01	4.34E+01	-2.61E+00	5.01E-02	6.22E-07	2.90E-01	2.96E-02	5.50E-02	6.88E-01	1.65E-01	2.50E-03	5.15E+02	1.96E+01	4.35E+01
A4 Transport to building site	3.49E+00	3.48E+00	8.29E-04	1.61E-03	4.94E-08	8.89E-03	3.84E-04	2.14E-03	2.32E-02	1.25E-02	1.09E-05	5.01E+01	2.82E-01	3.49E+00
A5 Installation into the building	2.67E+00	3.74E-02	2.64E+00	1.41E-05	4.93E-10	1.69E-04	3.52E-06	6.37E-05	6.94E-04	2.41E-04	1.04E-07	5.43E-01	2.75E-03	3.74E-02
B2 Maintenance	3.47E+00	3.45E+00	1.26E-02	7.18E-03	1.12E-07	2.77E-02	2.93E-03	4.39E-03	4.94E-02	1.52E-02	5.38E-04	4.70E+01	1.56E+00	3.47E+00
B6 Operational energy usage	3.84E+00	3.83E+00	5.10E-03	1.23E-03	1.15E-07	1.26E-02	5.39E-04	4.81E-03	3.24E-02	1.19E-02	3.14E-05	6.75E+02	6.20E+00	3.84E+00
C1 Deconstruction	4.39E-03	4.39E-03	4.37E-07	4.49E-07	6.52E-11	3.92E-05	1.41E-07	1.83E-05	2.00E-04	5.98E-05	1.58E-09	5.72E-02	1.47E-04	4.39E-03
C2 Waste transportation	1.80E-01	1.80E-01	4.04E-05	8.06E-05	2.28E-09	6.14E-04	1.97E-05	1.94E-04	2.11E-03	8.31E-04	6.04E-07	2.49E+00	1.32E-02	1.80E-01
C3 Waste processing	9.91E-02	3.07E-02	6.84E-02	3.48E-06	4.79E-10	2.66E-04	1.16E-06	1.23E-04	1.34E-03	4.02E-04	2.31E-08	6.52E-01	3.48E-03	3.07E-02
C4 Waste disposal	1.26E-03	1.26E-03	1.25E-07	1.29E-07	1.87E-11	1.12E-05	4.05E-08	5.23E-06	5.73E-05	1.71E-05	4.52E-10	1.64E-02	4.22E-05	1.26E-03
D Benefits	-8.05E+00	-8.05E+00	3.72E-03	-2.18E-03	-2.12E-08	-5.74E-02	-5.95E-03	-6.92E-03	-9.27E-02	-2.76E-02	-2.14E-04	-7.86E+01	-9.91E-02	-8.05E+00

* The results of the energy calculation are based on the typical energy consumption of the selected reference KONE TranSys® DX. The results are KONE's best estimates of the annual energy consumption but the real-life values may vary depending on the actual installation.

** The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

Table 9. Scenario 1 the use of resources per tkm of KONE Transys™ DX

Section	Use of renewable primary energy resources as energy [MJ]	Use of renewable primary energy resources as raw materials [MJ]	Total use of renewable primary energy [MJ]	Use of non renewable primary energy as energy [MJ]	Use of non renewable primary energy as raw materials [MJ]	Total use of non renewable primary energy [MJ]	Use of second-ary materials [kg]	Use of renew-able secondary fuels [MJ]	Use of non renewable secondary fuels [MJ]	Use of net fresh water [m3]
A1-A3 Raw material extraction to manufacturing	8.99E+01	2.30E+01	1.13E+02	5.07E+02	8.01E+00	5.15E+02	5.25E+00	2.28E-02	0.00E+00	3.36E-01
A4 Transport to building site	7.03E-01	0.00E+00	7.03E-01	5.01E+01	0.00E+00	5.01E+01	2.13E-02	2.73E-04	0.00E+00	7.21E-03
A5 Installation into the building	2.26E+01	-2.26E+01	6.67E-03	1.54E+00	-9.98E-01	5.43E-01	2.22E-04	2.44E-06	0.00E+00	6.86E-05
B2 Maintenance	1.12E+01	0.00E+00	1.12E+01	4.71E+01	0.00E+00	4.71E+01	2.93E-01	7.66E-03	0.00E+00	3.23E-02
B6 Operational energy usage	7.07E+00	0.00E+00	7.07E+00	6.75E+02	0.00E+00	6.75E+02	2.04E-02	7.72E-05	0.00E+00	1.44E-01
C1 Deconstruction	3.59E-04	0.00E+00	3.59E-04	5.72E-02	0.00E+00	5.72E-02	2.37E-05	6.20E-08	0.00E+00	3.66E-06
C2 Waste transportation	3.45E-02	0.00E+00	3.45E-02	2.49E+00	0.00E+00	2.49E+00	1.10E-03	1.41E-05	0.00E+00	3.33E-04
C3 Waste processing	3.82E-01	-3.77E-01	5.23E-03	3.89E+00	-3.24E+00	6.52E-01	1.65E-04	4.43E-07	0.00E+00	8.25E-05
C4 Waste disposal	1.78E-02	-1.77E-02	1.03E-04	3.79E+00	-3.77E+00	1.64E-02	6.78E-06	1.78E-08	0.00E+00	1.05E-06
D Benefits	-1.15E+01	0.00E+00	-1.15E+01	-7.87E+01	0.00E+00	-7.87E+01	3.50E+00	-2.24E-03	0.00E+00	-1.86E-01



End of life - waste

In addition to the waste reported by the manufacturing units during the production process (specific data), the data on the amount of waste disposed reported in table 10,14 below also includes the waste data from the Ecoinvent database for all the life cycle stages. The amount of specific waste generated including the material losses during the production of elevator modules and packaging was collected from the module manufacturing units.

End of life - output flows

The data for the output flows of the process is presented in table 11,15 for the entire life cycle respectively. The parameters in the tables are calculated on the gross amounts leaving the system boundary when they have reached the end-of-waste state. None of the components are reused after the end of the waste state, possible exported energy is not reported in the LCI datasets of Ecoinvent and there is no amount of exported energy from the manufacturing units.

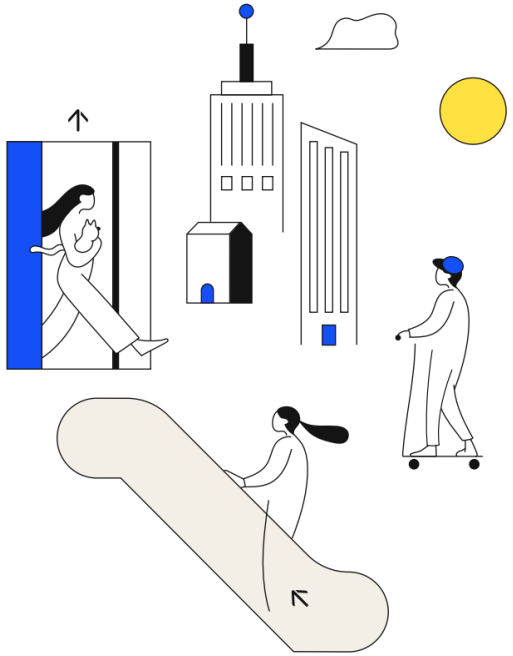


Table 10. Scenario 1 amount of waste disposed per tkm cycle of KONE Transys™ DX

Section	Hazardous waste disposed [kg]	Non hazardous waste disposed [kg]	Radioactive waste disposed [kg]
A1-A3 Raw material extraction to manufacturing	1.46E+01	1.96E+02	8.07E-04
A4 Transport to building site	1.11E-01	2.13E+00	1.03E-05
A5 Installation into the building	1.06E-03	1.99E-02	5.46E-07
B2 Maintenance	7.05E-01	1.33E+01	8.55E-05
B6 Operational energy usage	2.41E-01	3.95E+00	8.86E-03
C1 Deconstruction	6.41E-05	9.34E-04	5.97E-09
C2 Waste transportation	5.69E-03	1.10E-01	4.91E-07
C3 Waste processing	5.23E-04	7.79E-03	3.61E-06
C4 Waste disposal	1.84E-05	2.68E-04	1.71E-09
D Benefits	-3.50E+00	5.60E+01	-3.21E-05

Table 11. Scenario 1 amount of materials leaving the system boundary per tkm cycle of KONE Transys™ DX

Section	Components for re-use [kg]	Materials for recycling [kg]	Materials for energy recovery [kg]	Exported Energy [MJ]
A1-A3 Raw material extraction to manufacturing	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A4 Transport to building site	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A5 Installation into the building	0.00E+00	4.27E-03	1.12E+00	1.68E+01
B2 Maintenance	0.00E+00	4.09E-01	2.17E-01	3.16E+00
B6 Operational energy usage	0.00E+00	0.00E+00	0.00E+00	0.00E+00
C1 Deconstruction	0.00E+00	0.00E+00	0.00E+00	0.00E+00
C2 Waste transportation	0.00E+00	0.00E+00	0.00E+00	0.00E+00
C3 Waste processing	0.00E+00	8.68E+00	1.62E-01	2.57E+00
C4 Waste disposal	0.00E+00	0.00E+00	0.00E+00	0.00E+00
D Benefits	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Scenario 2

Table 12. Scenario 2 environmental performance results per tkm of KONE Transys™ DX

Section	Global Warming Potential total [kg CO2 eq.]	Global Warming Potential fossil total [kg CO2 eq.]	Global Warming Potential biogenic [kg CO2 eq.]	Global Warming Potential luluc [kg CO2 eq.]	Ozone depletion potential [kg CFC11 eq.]	Acidifica-tion poten-tial [mol H+ eq.]	Eutrophica-tion aquatic freshwa-ter [kg P eq.]***	Eutrophica-tion aquatic marine [kg N eq.]	Eutro-phication terrestrial [mol N eq.]	Formation potential of tropospher-ic ozone [kg NMVOC eq.]	Abiotic depletion potential – elements [kg Sb eq.]**	Abiotic depletion potential – fossil [MJ]**	Water use [m3 depriv.]**	Global Warming Potential-GHG [kg CO2 eq.]
A4 Transport to building site	3.49E+00	3.48E+00	8.29E-04	1.61E-03	4.94E-08	8.89E-03	3.84E-04	2.14E-03	2.32E-02	1.25E-02	1.09E-05	5.01E+01	2.82E-01	3.49E+00
A5 Installation into the building	2.66E+00	2.35E-02	2.64E+00	8.77E-06	3.08E-10	1.08E-04	2.18E-06	4.09E-05	4.46E-04	1.54E-04	6.37E-08	3.20E-01	1.53E-03	2.35E-02
B2 Maintenance	3.47E+00	3.45E+00	1.26E-02	7.17E-03	1.12E-07	2.77E-02	2.93E-03	4.38E-03	4.93E-02	1.51E-02	5.38E-04	4.70E+01	1.56E+00	3.47E+00
B6 Operational energy usage	3.84E+00	3.83E+00	5.10E-03	1.23E-03	1.15E-07	1.26E-02	5.39E-04	4.81E-03	3.24E-02	1.19E-02	3.14E-05	6.75E+02	6.20E+00	3.84E+00
C1 Deconstruction	4.39E-03	4.39E-03	4.37E-07	4.49E-07	6.52E-11	3.92E-05	1.41E-07	1.83E-05	2.00E-04	5.98E-05	1.58E-09	5.72E-02	1.47E-04	4.39E-03
C2 Waste transportation	1.78E-01	1.78E-01	4.00E-05	7.99E-05	2.26E-09	6.08E-04	1.95E-05	1.93E-04	2.09E-03	8.24E-04	5.98E-07	2.46E+00	1.31E-02	1.78E-01
C3 Waste processing	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
C4 Waste disposal	7.47E-02	6.38E-03	6.84E-02	6.53E-07	9.47E-11	5.70E-05	2.05E-07	2.66E-05	2.91E-04	8.70E-05	2.30E-09	8.31E-02	2.14E-04	6.38E-03
D Benefits	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Table 13. Scenario 2 the use of resources per tkm of KONE Transys™ DX

Section	Use of renewable primary energy resources as energy [MJ]	Use of renewable primary energy resources as raw materials [MJ]	Total use of renewable primary energy [MJ]	Use of non renewable primary energy as energy [MJ]	Use of non renewable primary energy as raw materials [MJ]	Total use of non renewable primary energy [MJ]	Use of second-ary materials [kg]	Use of renew-able secondary fuels [MJ]	Use of non renewable secondary fuels [MJ]	Use of net fresh water [m3]
A4 Transport to building site	7.03E-01	0.00E+00	7.03E-01	5.01E+01	0.00E+00	5.01E+01	2.13E-02	2.73E-04	0.00E+00	7.21E-03
A5 Installation into the building	2.26E+01	-2.26E+01	3.95E-03	1.32E+00	-9.98E-01	3.20E-01	1.39E-04	1.52E-06	0.00E+00	3.84E-05
B2 Maintenance	1.12E+01	0.00E+00	1.12E+01	4.70E+01	0.00E+00	4.70E+01	2.93E-01	7.66E-03	0.00E+00	3.22E-02
B6 Operational energy usage	7.07E+00	0.00E+00	7.07E+00	6.75E+02	0.00E+00	6.75E+02	2.04E-02	7.72E-05	0.00E+00	1.44E-01
C1 Deconstruction	3.59E-04	0.00E+00	3.59E-04	5.72E-02	0.00E+00	5.72E-02	2.37E-05	6.20E-08	0.00E+00	3.66E-06
C2 Waste transportation	3.42E-02	0.00E+00	3.42E-02	2.46E+00	0.00E+00	2.46E+00	1.08E-03	1.40E-05	0.00E+00	3.30E-04
C3 Waste processing	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
C4 Waste disposal	3.95E-01	-3.95E-01	5.21E-04	7.10E+00	-7.01E+00	8.31E-02	3.44E-05	9.01E-08	0.00E+00	5.32E-06
D Benefits	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

* The results of the energy calculation are based on the typical energy consumption of the selected reference KONE Monospace® Upgrade. The results are KONE's best estimates of the annual energy consumption but the real-life values may vary depending on the actual installation.

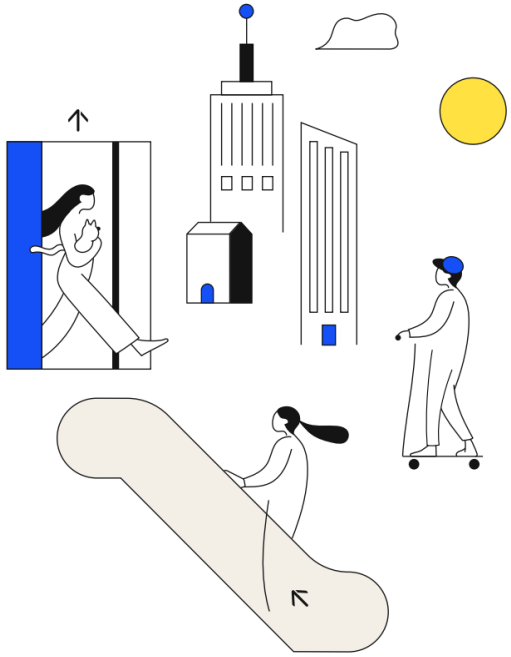
** The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

Table 14. Scenario 2 amount of waste disposed per tkm of KONE Transys™ DX

Section	Hazardous waste disposed [kg]	Non hazardous waste disposed [kg]	Radioactive waste disposed [kg]
A1-A3 Raw material extraction to manufacturing	1.46E+01	1.96E+02	8.07E-04
A4 Transport to building site	1.11E-01	2.13E+00	1.03E-05
A5 Installation into the building	6.56E-04	1.23E-02	5.72E-08
B2 Maintenance	7.05E-01	1.33E+01	8.53E-05
B6 Operational energy usage	2.41E-01	3.95E+00	8.86E-03
C1 Deconstruction	6.41E-05	9.34E-04	5.97E-09
C2 Waste transportation	5.64E-03	1.09E-01	4.87E-07
C3 Waste processing	0.00E+00	0.00E+00	0.00E+00
C4 Waste disposal	9.32E-05	1.36E-03	8.69E-09
D Benefits	0.00E+00	0.00E+00	0.00E+00

Table 15. Scenario 2 amount of materials leaving the system boundary per tkm of KONE Transys™ DX

Section	Components for re-use [kg]	Materials for recycling [kg]	Materials for energy recovery [kg]	Exported Energy [MJ]
A1-A3 Raw material extraction to manufacturing	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A4 Transport to building site	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A5 Installation into the building	0.00E+00	0.00E+00	0.00E+00	0.00E+00
B2 Maintenance	0.00E+00	0.00E+00	0.00E+00	0.00E+00
B6 Operational energy usage	0.00E+00	0.00E+00	0.00E+00	0.00E+00
C1 Deconstruction	0.00E+00	0.00E+00	0.00E+00	0.00E+00
C2 Waste transportation	0.00E+00	0.00E+00	0.00E+00	0.00E+00
C3 Waste processing	0.00E+00	0.00E+00	0.00E+00	0.00E+00
C4 Waste disposal	0.00E+00	0.00E+00	0.00E+00	0.00E+00
D Benefits	0.00E+00	0.00E+00	0.00E+00	0.00E+00



Environmental performance

Table 16. Scenario 1 environmental performance results per entire life cycle of KONE Transys™ DX

Section	Global Warming Potential total [kg CO2 eq.]	Global Warming Potential fossil total [kg CO2 eq.]	Global Warming Potential biogenic [kg CO2 eq.]	Global Warming Potential luluc [kg CO2 eq.]	Ozone depletion potential [kg CFC11 eq.]	Acidifica-tion poten-tial [mol H+ eq.]	Eutrophica-tion aquatic freshwa-ter [kg P eq.]***	Eutrophica-tion aquatic marine [kg N eq.]	Eutro-phication terrestrial [mol N eq.]	Formation potential of tropospher-ic ozone [kg NMVOC eq.]	Abiotic depletion potential - elements [kg Sb eq.]**	Abiotic depletion potential - fossil [MJ]**	Water use [m3 depriv.]**	Global Warming Potential-GHG [kg CO2 eq.]
A1-A3 Raw material extraction to manufacturing	3.18E+04	3.38E+04	-2.04E+03	3.91E+01	4.85E-04	2.26E+02	2.31E+01	4.29E+01	5.36E+02	1.29E+02	1.95E+00	4.02E+05	1.53E+04	3.39E+04
A4 Transport to building site	2.72E+03	2.72E+03	6.46E-01	1.26E+00	3.85E-05	6.93E+00	2.99E-01	1.67E+00	1.80E+01	9.75E+00	8.52E-03	3.91E+04	2.20E+02	2.72E+03
A5 Installation into the building	2.08E+03	2.91E+01	2.05E+03	1.10E-02	3.84E-07	1.32E-01	2.74E-03	4.97E-02	5.41E-01	1.88E-01	8.09E-05	4.23E+02	2.15E+00	2.91E+01
B2 Maintenance	2.71E+03	2.69E+03	9.83E+00	5.59E+00	8.75E-05	2.16E+01	2.28E+00	3.42E+00	3.85E+01	1.18E+01	4.20E-01	3.67E+04	1.22E+03	2.71E+03
B6 Operational energy usage	2.99E+03	2.99E+03	3.98E+00	9.61E-01	8.93E-05	9.83E+00	4.20E-01	3.75E+00	2.52E+01	9.24E+00	2.45E-02	5.26E+05	4.83E+03	2.99E+03
C1 Deconstruction	3.42E+00	3.42E+00	3.41E-04	3.50E-04	5.08E-08	3.06E-02	1.10E-04	1.42E-02	1.56E-01	4.66E-02	1.23E-06	4.46E+01	1.15E-01	3.42E+00
C2 Waste transportation	1.40E+02	1.40E+02	3.15E-02	6.28E-02	1.77E-06	4.78E-01	1.54E-02	1.52E-01	1.65E+00	6.48E-01	4.71E-04	1.94E+03	1.03E+01	1.40E+02
C3 Waste processing	7.72E+01	2.39E+01	5.33E+01	2.71E-03	3.73E-07	2.07E-01	9.00E-04	9.60E-02	1.05E+00	3.13E-01	1.80E-05	5.08E+02	2.71E+00	2.39E+01
C4 Waste disposal	9.81E-01	9.81E-01	9.77E-05	1.00E-04	1.46E-08	8.76E-03	3.15E-05	4.08E-03	4.47E-02	1.34E-02	3.53E-07	1.28E+01	3.29E-02	9.81E-01

Table 17. Scenario 1 the use of resources per entire life cycle of KONE Transys™ DX

Section	Use of renewable primary energy resources as energy [MJ]	Use of renewable primary energy resources as raw materials [MJ]	Total use of renewable primary energy [MJ]	Use of non renewable primary energy as energy [MJ]	Use of non renewable primary energy as raw materials [MJ]	Total use of non renewable primary energy [MJ]	Use of second-ary materials [kg]	Use of renew-able secondary fuels [MJ]	Use of non renewable secondary fuels [MJ]	Use of net fresh water [m3]
A1-A3 Raw material extraction to manufacturing	7.01E+04	1.79E+04	8.80E+04	3.96E+05	6.25E+03	4.02E+05	4.09E+03	1.77E+01	0.00E+00	2.62E+02
A4 Transport to building site	5.48E+02	0.00E+00	5.48E+02	3.91E+04	0.00E+00	3.91E+04	1.66E+01	2.13E-01	0.00E+00	5.62E+00
A5 Installation into the building	1.76E+04	-1.76E+04	5.20E+00	1.20E+03	-7.78E+02	4.23E+02	1.73E-01	1.90E-03	0.00E+00	5.35E-02
B2 Maintenance	8.70E+03	0.00E+00	8.70E+03	3.67E+04	0.00E+00	3.67E+04	2.28E+02	5.97E+00	0.00E+00	2.51E+01
B6 Operational energy usage	5.51E+03	0.00E+00	5.51E+03	5.26E+05	0.00E+00	5.26E+05	1.59E+01	6.02E-02	0.00E+00	1.12E+02
C1 Deconstruction	2.80E-01	0.00E+00	2.80E-01	4.46E+01	0.00E+00	4.46E+01	1.84E-02	4.83E-05	0.00E+00	2.85E-03
C2 Waste transportation	2.69E+01	0.00E+00	2.69E+01	1.94E+03	0.00E+00	1.94E+03	8.54E-01	1.10E-02	0.00E+00	2.60E-01
C3 Waste processing	2.98E+02	-2.94E+02	4.08E+00	3.03E+03	-2.53E+03	5.08E+02	1.29E-01	3.45E-04	0.00E+00	6.43E-02
C4 Waste disposal	1.39E+01	-1.38E+01	8.01E-02	2.95E+03	-2.94E+03	1.28E+01	5.28E-03	1.38E-05	0.00E+00	8.18E-04

* The results of the energy calculation are based on the typical energy consumption of the selected reference KONE TranSys® DX. The results are KONE's best estimates of the annual energy consumption but the real-life values may vary depending on the actual installation.

** The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

End of life - waste

In addition to the waste reported by the manufacturing units during the production process (specific data), the data on the amount of waste disposed reported in table 18,22 below also includes the waste data from the Ecoinvent database for all the life cycle stages. The amount of specific waste generated including the material losses during the production of elevator modules and packaging was collected from the module manufacturing units.

End of life - output flows

The data for the output flows of the process is presented in table 19,23 for the entire life cycle respectively. The parameters in the tables are calculated on the gross amounts leaving the system boundary when they have reached the end-of-waste state. None of the components are reused after the end of the waste state, possible exported energy is not reported in the LCI datasets of Ecoinvent and there is no amount of exported energy from the manufacturing units.

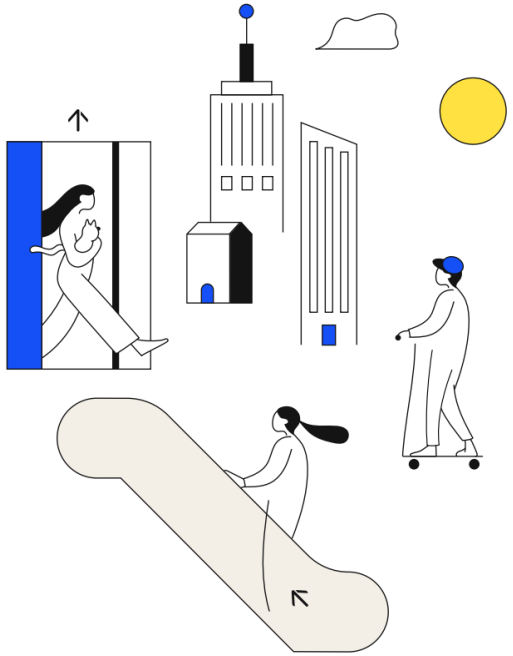


Table 18. Scenario 1 amount of waste disposed per entire life cycle of KONE Transys™ DX

Section	Hazardous waste disposed [kg]	Non hazardous waste disposed [kg]	Radioactive waste disposed [kg]
A1-A3 Raw material extraction to manufacturing	1.14E+04	1.53E+05	6.29E-01
A4 Transport to building site	8.63E+01	1.66E+03	8.05E-03
A5 Installation into the building	8.26E-01	1.55E+01	4.26E-04
B2 Maintenance	5.50E+02	1.04E+04	6.67E-02
B6 Operational energy usage	1.88E+02	3.08E+03	6.90E+00
C1 Deconstruction	5.00E-02	7.28E-01	4.66E-06
C2 Waste transportation	4.43E+00	8.54E+01	3.83E-04
C3 Waste processing	4.08E-01	6.08E+00	2.82E-03
C4 Waste disposal	1.43E-02	2.09E-01	1.33E-06
D Benefits	-2.73E+03	4.36E+04	-2.50E-02

Table 19. Scenario 1 amount of materials leaving the system boundary per entire life cycle of KONE Transys™ DX

Section	Components for re-use [kg]	Materials for recycling [kg]	Materials for energy recovery [kg]	Exported Energy [MJ]
A1-A3 Raw material extraction to manufacturing	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A4 Transport to building site	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A5 Installation into the building	0.00E+00	3.33E+00	8.74E+02	1.31E+04
B2 Maintenance	0.00E+00	3.18E+02	1.69E+02	2.46E+03
B6 Operational energy usage	0.00E+00	0.00E+00	0.00E+00	0.00E+00
C1 Deconstruction	0.00E+00	0.00E+00	0.00E+00	0.00E+00
C2 Waste transportation	0.00E+00	0.00E+00	0.00E+00	0.00E+00
C3 Waste processing	0.00E+00	6.76E+03	1.27E+02	2.00E+03
C4 Waste disposal	0.00E+00	0.00E+00	0.00E+00	0.00E+00
D Benefits	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Scenario 2

Table 20. Scenario 2 environmental performance results per entire life cycle of KONE Transys™ DX

Section	Global Warming Potential total [kg CO2 eq.]	Global Warming Potential fossil total [kg CO2 eq.]	Global Warming Potential biogenic [kg CO2 eq.]	Global Warming Potential luluc [kg CO2 eq.]	Ozone depletion potential [kg CFC11 eq.]	Acidifica-tion poten-tial [mol H+ eq.]	Eutrophica-tion aquatic freshwa-ter [kg P eq.]***	Eutrophica-tion aquatic marine [kg N eq.]	Eutro-phication terrestrial [mol N eq.]	Formation potential of tropospher-ic ozone [kg NMVOC eq.]	Abiotic depletion potential – elements [kg Sb eq.]**	Abiotic depletion potential – fossil [MJ]**	Water use [m3 depriv.]**	Global Warming Potential-GHG [kg CO2 eq.]
A4 Transport to building site	2.72E+03	2.72E+03	6.46E-01	1.26E+00	3.85E-05	6.93E+00	2.99E-01	1.67E+00	1.80E+01	9.75E+00	8.52E-03	3.91E+04	2.20E+02	2.72E+03
A5 Installation into the building	2.07E+03	1.83E+01	2.05E+03	6.84E-03	2.40E-07	8.42E-02	1.70E-03	3.19E-02	3.48E-01	1.20E-01	4.96E-05	2.50E+02	1.19E+00	1.83E+01
B2 Maintenance	2.70E+03	2.69E+03	9.83E+00	5.59E+00	8.75E-05	2.16E+01	2.28E+00	3.41E+00	3.84E+01	1.18E+01	4.20E-01	3.66E+04	1.22E+03	2.70E+03
B6 Operational energy usage	2.99E+03	2.99E+03	3.98E+00	9.61E-01	8.93E-05	9.83E+00	4.20E-01	3.75E+00	2.52E+01	9.24E+00	2.45E-02	5.26E+05	4.83E+03	2.99E+03
C1 Deconstruction	3.42E+00	3.42E+00	3.41E-04	3.50E-04	5.08E-08	3.06E-02	1.10E-04	1.42E-02	1.56E-01	4.66E-02	1.23E-06	4.46E+01	1.15E-01	3.42E+00
C2 Waste transportation	1.39E+02	1.39E+02	3.12E-02	6.23E-02	1.76E-06	4.74E-01	1.52E-02	1.50E-01	1.63E+00	6.42E-01	4.66E-04	1.92E+03	1.02E+01	1.39E+02
C3 Waste processing	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
C4 Waste disposal	5.83E+01	4.98E+00	5.33E+01	5.09E-04	7.38E-08	4.45E-02	1.60E-04	2.07E-02	2.27E-01	6.78E-02	1.79E-06	6.48E+01	1.67E-01	4.98E+00
D Benefits	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Table 21. Scenario 2 the use of resources per entire life cycle of KONE Transys™ DX

Section	Use of renewable primary energy resources as energy [MJ]	Use of renewable primary energy resources as raw materials [MJ]	Total use of renewable primary energy [MJ]	Use of non renewable primary energy as energy [MJ]	Use of non renewable primary energy as raw materials [MJ]	Total use of non renewable primary energy [MJ]	Use of second-ary materials [kg]	Use of renew-able secondary fuels [MJ]	Use of non renewable secondary fuels [MJ]	Use of net fresh water [m3]
A4 Transport to building site	5.48E+02	0.00E+00	5.48E+02	3.91E+04	0.00E+00	3.91E+04	1.66E+01	2.13E-01	0.00E+00	5.62E+00
A5 Installation into the building	1.76E+04	-1.76E+04	3.08E+00	1.03E+03	-7.78E+02	2.50E+02	1.09E-01	1.18E-03	0.00E+00	2.99E-02
B2 Maintenance	8.69E+03	0.00E+00	8.69E+03	3.66E+04	0.00E+00	3.66E+04	2.28E+02	5.97E+00	0.00E+00	2.51E+01
B6 Operational energy usage	5.51E+03	0.00E+00	5.51E+03	5.26E+05	0.00E+00	5.26E+05	1.59E+01	6.02E-02	0.00E+00	1.12E+02
C1 Deconstruction	2.80E-01	0.00E+00	2.80E-01	4.46E+01	0.00E+00	4.46E+01	1.84E-02	4.83E-05	0.00E+00	2.85E-03
C2 Waste transportation	2.67E+01	0.00E+00	2.67E+01	1.92E+03	0.00E+00	1.92E+03	8.46E-01	1.09E-02	0.00E+00	2.58E-01
C3 Waste processing	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
C4 Waste disposal	3.08E+02	-3.08E+02	4.06E-01	5.53E+03	-5.47E+03	6.48E+01	2.68E-02	7.02E-05	0.00E+00	4.15E-03
D Benefits	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

* The results of the energy calculation are based on the typical energy consumption of the selected reference KONE TranSys® DX. The results are KONE's best estimates of the annual energy consumption but the real-life values may vary depending on the actual installation.

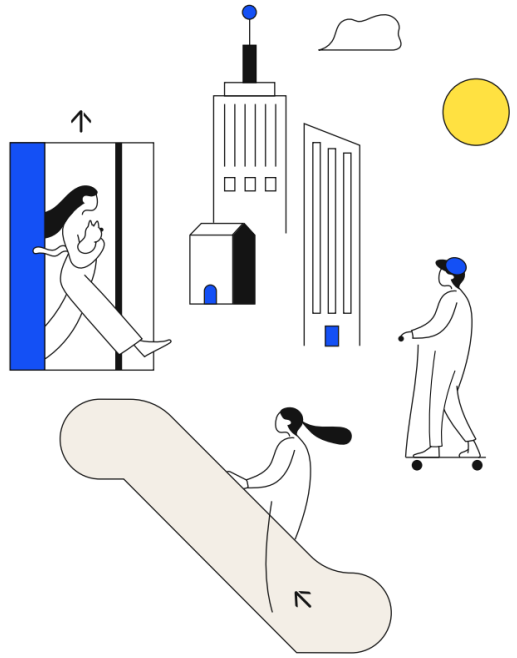
** The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

Table 22. Scenario 2 amount of waste disposed per entire life cycle of KONE Transys™ DX

Section	Hazardous waste disposed [kg]	Non hazardous waste disposed [kg]	Radioactive waste disposed [kg]
A1-A3 Raw material extraction to manufacturing	1.14E+04	1.53E+05	6.29E-01
A4 Transport to building site	8.63E+01	1.66E+03	8.05E-03
A5 Installation into the building	5.12E-01	9.58E+00	4.46E-05
B2 Maintenance	5.50E+02	1.04E+04	6.65E-02
B6 Operational energy usage	1.88E+02	3.08E+03	6.90E+00
C1 Deconstruction	5.00E-02	7.28E-01	4.66E-06
C2 Waste transportation	4.39E+00	8.46E+01	3.79E-04
C3 Waste processing	0.00E+00	0.00E+00	0.00E+00
C4 Waste disposal	7.26E-02	1.06E+00	6.77E-06
D Benefits	0.00E+00	0.00E+00	0.00E+00

Table 23. Scenario 2 amount of materials leaving the system boundary per entire life cycle of KONE Transys™ DX

Section	Components for re-use [kg]	Materials for recycling [kg]	Materials for energy recovery [kg]	Exported Energy [MJ]
A1-A3 Raw material extraction to manufacturing	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A4 Transport to building site	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A5 Installation into the building	0.00E+00	0.00E+00	0.00E+00	0.00E+00
B2 Maintenance	0.00E+00	0.00E+00	0.00E+00	0.00E+00
B6 Operational energy usage	0.00E+00	0.00E+00	0.00E+00	0.00E+00
C1 Deconstruction	0.00E+00	0.00E+00	0.00E+00	0.00E+00
C2 Waste transportation	0.00E+00	0.00E+00	0.00E+00	0.00E+00
C3 Waste processing	0.00E+00	0.00E+00	0.00E+00	0.00E+00
C4 Waste disposal	0.00E+00	0.00E+00	0.00E+00	0.00E+00
D Benefits	0.00E+00	0.00E+00	0.00E+00	0.00E+00



Additional environmental information

Electricity in the manufacturing stage

KONE's suppliers and KONE factory for manufacturing the studied elevator and its components are located in Europe. The impacts of electricity have been calculated using the electricity residual or residual mixes (kg CO2e/kWh). The resulting carbon emission per kWh of electricity consumed is presented in the table below.

Electricity used in the A3 manufacturing processes		
Type of electricity mix	Sub-national and specific electricity mixes as generated or purchased from an electricity supplier, demonstrated by a contractual instrument	
Energy Sources	Wind (Finland)	30.855%
	Residual Mix (Estonia)	17.794%
	National Mix (Austria)	13.038%
	Residual Mix (Czech Republic)	5.068%
	National Mix (Finland)	4.292%
	Residual Mix (Italy)	1.401%
	Solar (Hyvinkaa)	0.616%
	National Mix (Switzerland)	0.560%
	Residual Mix (Germany)	0.067%
	National Mix (China)	0.057%
	Coal (China)	0.001%
	Residual Mix (Poland)	5.970%
	Hydro (Czech Republic)	6.504%
	Biogas (Czech Republic)	4.088%
	Solar (Czech Republic)	4.274%
	Wood (Czech Republic)	3.717%
	Solar (Finland)	0.815%
	Hydro (Italy)	0.883%
GWP-GHG intensity(kg CO2eq./kWh)		0.29

KONE factories in Czech Republic (Ústí and Labem), Finland (Hyvinkää) and Italy (Cadrezzate con Osmate) use 100 % renewable electricity through on-site PV panels and purchasing renewable electricity. The manufacturing data represents the production year of 2021-2024.

Transport to the building site

Scenario information	Unit (declared unit)
Fuel type and consumption of vehicle or vehicle type used for transport e.g., long-distance truck, boat etc.	Lorry, >32 metric ton euro 6 ; 8480.43TKM
Distance	890 km
Capacity utilization (including empty returns)	50%
Bulk density of transported products	N/A
Volume capacity utilization factor (factor: =1 or <1 or ≥1 for compressed or nested packaged products)	Not applicable

Installation into the building

Installing the product into the building consumes electricity, generates waste from packaging materials and requires a negligible quantity of ancillary materials. Packaging materials are assumed to be recycled, incinerated with energy recovery, or landfilled. Energy recovered from incineration is included as exported energy.

Resource	Consumption
Ancillary materials (e.g., disposable gloves)	Negligible - excluded
Water use	0 m^3
Electricity consumption	34.00MJ
Waste generated	**Quantity (kg) (declared unit)**
Cardboard	95.35
Plastics	18.46
Wood and Plywood	829.51
Paper	0.03
Metals	3.92

* Effective waste treatment share for A5 and their sources details can be found on page 9



Additional environmental information

Maintenance

The reference conditions for achieving the declared service life is primarily influenced by maintenance frequency/replacement of components and usage conditions such as frequency of use of the elevator. While corrective replacement activities depend on the building application, users' behavior and installed environment and cannot be foreseen by the manufacturer, the assessment takes into account predictive replacement of the necessary parts.

B2 Maintenance		Unit (expressed per declared unit)
Maintenance process		Maintenance consists primarily of replacing parts and lubricating guide rails
		1: Overspeed governor, Central Control Module, Safety & Motor Control Module, User Interface Module, Communication Module, Buttons, Landing call station, guide shoe, travelling cable
		2: Drive, Buffer, Rope
		3: Car light
		8: Battery
		24: Lubricating oil
Ancillary material for maintenance (Lubricants)		1kg / 8 years
Waste material resulting from maintenance	Ferrous metals	364.2235689
	Batteries and accumulators	52.8
	Plastics and rubbers	34.73589587
	Lubricants (e.g. oils and greases), paintings, coatings, adhesives and fillers	24.428924
	Non-ferrous metals	15.83428273
	Electric and electronic equipment	8.362418491
Net freshwater consumption during maintenance		0
Energy input during maintenance, e.g. vacuum cleaning, energy carrier type, e.g. electricity, and amount, if applicable and relevant		Negligible

End of life

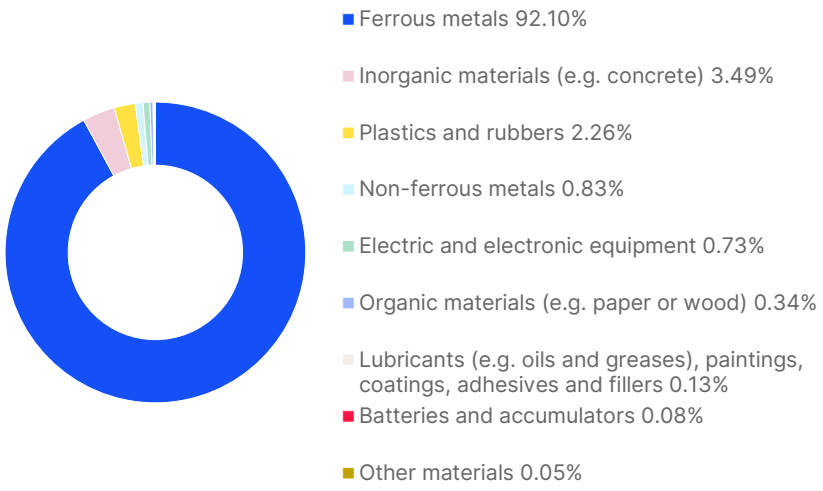
At its end-of-life, the product is dismantled from the building, which is also the location of its installation in France. For C1 dismantling, the Table 4 of PCR document was considered and default values of 1.1kwh/tons was considered and calculations based on this was used for modelling. The KONE Transys is mainly composed of ferrous metals and concrete. A realistic assumption is made that the whole of the elevator and its parts are collected separately during the dismantling process. The waste treatment of the elevator is divided into two scenarios. The following table presents Scenario 1.

Processes	Unit	Quantity per tkm
Collection process specified by type	kg collected separately	11.01
	kg collected with mixed construction waste	0
Recovery system by type	kg for re-use	0
	kg for recycling*	8.68E+00
	kg for energy recovery*	1.62E-01
Disposal by type	kg for final deposition*	2.17E+00
Assumptions: Distance to treatment facilities	For the C2 transport, the default values as per Table 4 of PCR 2019:14 (Version 2.0.1) were considered for the modelling. 80Km was considered for the transport of materials/products not to be incinerated and 130Km was used for the transport of materials/products to be incinerated/recycled. All waste was assumed to be transported with16-32 tonne lorry (Euro 5).	

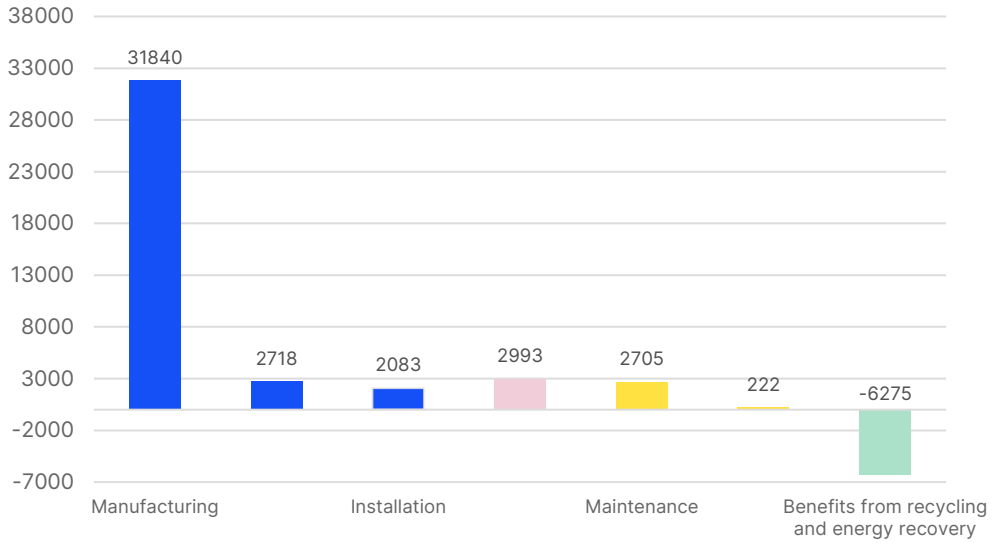
* Values are calculated based on the most common treatment scenarios currently in use for the materials. excluding cut-off materials.

Summary

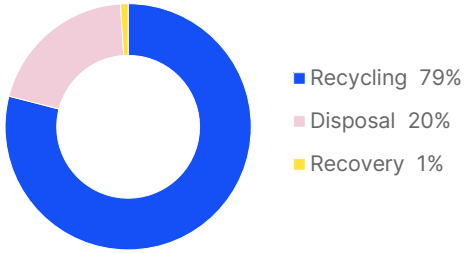
Origin of materials



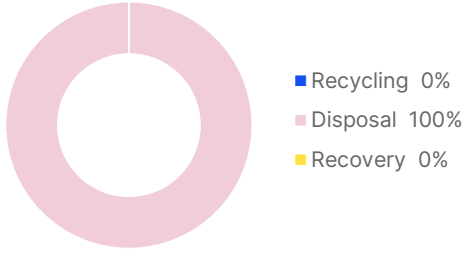
Scenario 1 : Carbon footprint distribution (kg CO2 eq.)



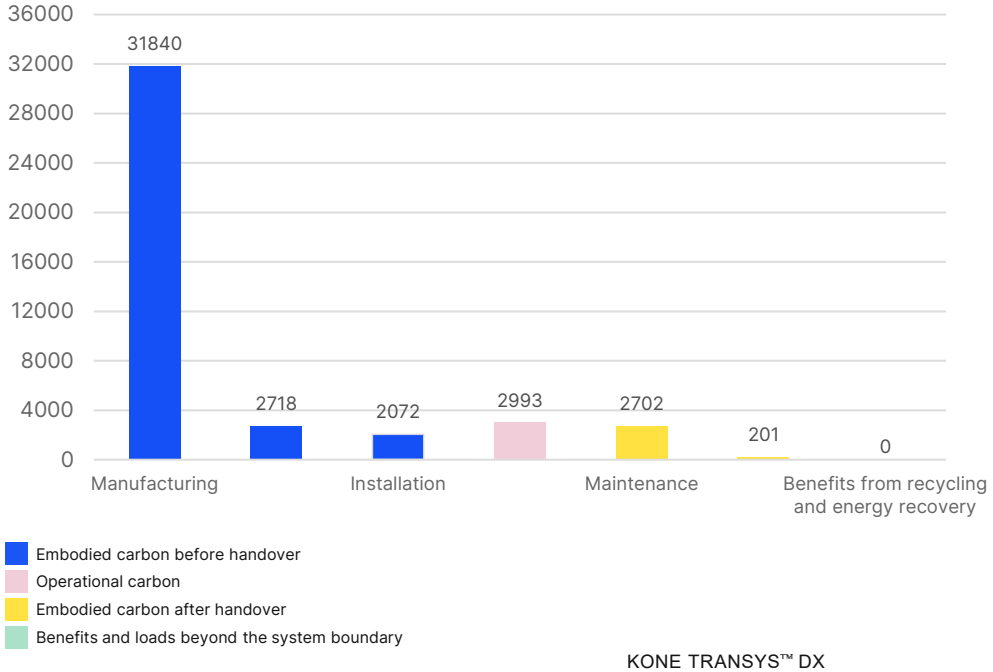
Scenario 1: Materials utilization potential after Elevator usage



Scenario 2: Materials utilization potential after Elevator usage



Scenario 2 : Carbon footprint distribution (kg CO2 eq.)



Abbreviations

ADP, Abiotic depletion potential, expressed in kg Antimony (Sb) equivalent. for non-fossil resources and in MJ for fossil resources. In the CML method the non-fossil resources include e.g. silver, gold, copper, lead, zinc and aluminium.

AP, acidification potential, expressed in kg sulphuric dioxide (SO2) equivalent. The indicator expresses acidification potential which originates from the emissions of sulphur dioxide and oxides of nitrogen. In the atmosphere, these oxides react and form acids which subsequently fall down to the earth in the form of rain or snow, or as dry depositions. Inorganic substances such as sulphates, nitrates, and phosphates change soil acidity. Major acidifying substances are nitrogen oxides (NOx), ammonia (NH3) and sulphate (SO4).

EF, Environmental Footprint. A method consisting of scientific tools and requirements developed by the European Commission to calculate the environmental impact of products and organizations using a Life Cycle Assessment approach.

EPD, environmental product declaration, provides numeric information about product's environmental performance and facilitates comparison between different products with the same function. EPDs for KONE are based on life cycle assessment.

EP, eutrophication potential, expressed in kg phosphate (PO43-) equivalent. Eutrophication describes emissions of substances to water that contribute to oxygen depletion. It means nutrient enrichment of an aquatic environment. Biomass growth in aquatic ecosystems may be limited by various nutrients. Most of the time, aquatic ecosystems are saturated with either nitrogen or phosphorus, and only the limiting factor can cause eutrophication. The CML method takes into account nitrogen and phosphorus related emissions.

GWP, global warming potential, expressed in kg carbon dioxide (CO2) equivalent. The indicator expresses global warming potential and refers to carbon footprint. It considers gaseous substances such as carbon dioxide (CO2), methane (CH4), laughing gas (N2O) over 100 years. These substances have an ability to absorb infrared radiation in the earth's atmosphere. They let sunlight reach the earth's surface and trap some of the infrared radiation emitted back into space causing an increase in the earth's surface temperature.

LCA, life cycle assessment, is a method which quantifies the total environment impact of products or activities over their entire life cycle and life cycle thinking. Life cycle assessment is based on ISO 14040 and ISO 14044 standards and comprises four phases: goal and scope definition, inventory data collection and analysis, environmental impact assessment and interpretation of results. The results of LCA are used in communication and product development purposes, for example.

ODP, Ozone depletion potential, expressed in kg trichlorofluoromethane (CFC-11) equivalent. Ozone-depleting gases cause damage to stratospheric ozone or the "ozone layer". Chlorofluorocarbons (CFCs), halons and hydrochlorofluorocarbon (HCFCs) are known to destroy ozone, which protects life on earth from harmful UV radiation. Damage to the ozone layer reduces its ability to prevent ultraviolet (UV) light entering the earth's atmosphere, increasing the amount of carcinogenic UVB light reaching the earth's surface.

Product Category rules (PCR) define the rules and requirements for EPDs of a certain product category. They are a key part of ISO 14025 as they enable transparency and comparability between EPDs

POCP, photochemical ozone creation potential, expressed in kg ethylene NMVOC equivalent. Photochemical ozone or ground level ozone is formed by the reaction of volatile organic compounds and nitrogen oxides in the presence of heat and sunlight. Ground-level ozone forms readily in the atmosphere, usually during hot summer weather. Photochemical oxidant formation is harmful to both humans and plants. The CML method takes into account certain emissions to air, for example, carbon monoxide (CO), ethyne (C2H2) and formaldehyde (CH2O).

References

Additional technical information

www.kone.com

Contact your local KONE sales organization to learn more about the technical details of the products available in your region.

Additional information

All the impacts specified by EN 15804 have been studied for all the information modules.

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08.11.2026: Minor Editorial updates

03.11.2025: Original version of the EPD

KONE provides innovative and eco-efficient solutions for elevators, escalators, automatic building doors and the systems that integrate them with today's intelligent buildings. We support our customers every step of the way: from design, manufacturing and installation to maintenance and modernization. KONE is a global company specializing in managing the smooth flow of people and goods throughout buildings. This makes us a reliable partner throughout the life cycle of buildings. We are fast, flexible, and we have a well-deserved reputation as
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