Environmental Product Declaration

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

515NPE ESCALATOR
OTIS ELEVATOR COMPANY

OTIS

Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
EPD registration number:	EPD-IES-0018244
Publication date:	2024-12-13
Valid until:	2029-12-13
	An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com.
Revision number:	0.0
Geographical scope:	Global

Made to move you™

About Otis

Otis gives people freedom to connect and thrive in a taller, faster, smarter world. The global leader in the manufacture, installation and servicing of elevators and escalators, we move 2.3 billion people a day and maintain approximately 2.3 million customer units worldwide – the industry's leading service portfolio. You'll find us in the world's numerous iconic structures, as well as residential and commercial buildings, transportation hubs and everywhere people are on the move.

Headquartered in Connecticut, USA, Otis is 71,000 people strong, including 42,000 field professionals, all committed to meeting the diverse needs of our customers and passengers in more than 200 countries and territories.

To learn more, visit otis.com and follow us on LinkedIn, Instagram, Facebook and Twitter @OtisElevatorCo

Factory information

Our factory has obtained certification of ISO14001 environmental management system, ISO45001 occupational health and safety management system, ISO9001 quality management system and ISO50001 energy management system. Moreover, certification of ISO14064-1 carbon screening and ISO14068-1 carbon neutrality were obtained in June 2024, making our factory the first of its kind to receive carbon neutrality certification in China. To reduce environmental pollution and promote the use of green energy, the factory launched Phase I and Phase II photovoltaic projects in 2021 and 2023 respectively. As of now, 60% of the factory electricity consumption can be provided by the photovoltaic system. We are also strictly regulating recyclable and non-recyclable waste, water and greenhouse gas emissions. Smart water and electricity meters are installed, of which the operations are monitored through a digital energy management system. In addition, we have other energy-saving measures like smart switch lights, etc.

Our factory, also as the first of its kind in China, obtained ZWTL (Zero Waste to Landfill) golden certification in 2023, which is aimed to reduce waste generation through the company's full lifecycle control, thereby reducing environmental pollution and resource waste. This is an important milestone for the factory to achieve ESG goals. In this certification, we are doing projects such as implementing double-sided printing, encouraging the use of public office stationery, composting in the factory and growing vegetables, and the paperless workshop which can save ~750k sheets of paper every year. At the same time, we are also promoting the recycling of packaging materials, such as replacing wooden boxes with iron boxes. Our factory will keep looking for energy-saving improvement opportunities to help achieve ESG goals and continue to create a safer working environment for employees.

Product-related or management system-related certifications:

ISO 9001, ISO 14001, ISO 45001, ISO 50001 certificates

General information

EPD owner

Otis Elevator Manufacturing Co., Ltd.

No.7, Xin Er Road, Haining, Jiaxing City, Zhejiang Province

Jun Ma<Jun.Ma3@otis.com>

Programme information

The International EPD® System

EPD International AB
Box 210 60,SE-100 31 Stockholm,Sweden

www.environdec.com

info@environdec.com

Product Category Rules (PCR)

CEN standard EN 15804 serves as the Core Product Category Rules (PCR)

Product Category Rules (PCR): PCR 2019:14 CONSTRUCTION PRODUCTS VERSION 1.3.4 and C-PCR-025 (TO PCR 2019:14) for ESCALATORS AND MOVING WALKS VERSION: 2024-04-30

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

Life Cycle Assessment (LCA)

LCA accountability: Vivi Sun, TÜV Rheinland (Shanghai) Co., Ltd.

Third-party verification

Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:

■ EPD verification by individual verifier

Third-party verifier: Rui Wang, IVL Swedish Environmental Research Institute

Approved by: The International EPD® System

Procedure for follow-up of data during EPD validity involves third party verifier:

☐ Yes ■ No

[Procedure for follow-up the validity of the EPD is at minimum required once a year with the aim of confirming whether the information in the EPD remains valid or if the EPD needs to be updated during its validity period. The follow-up can be organized entirely by the EPD owner or together with the original verifier via an agreement between the two parties. In both approaches, the EPD owner is responsible for the procedure being carried out. If a change that requires an update is identified, the EPD shall be re-verified by a verifier]

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

EPDs within the same product category but registered in different EPD programmes, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same 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 equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

Product information

Product name:

515NPE ESCALATOR

Product identification:

The escalators are compliant with required Codes and Standards.

Product description:

The world's population is at eight billion and counting. This is impacting the pace of urbanization and increasing the need for high-performance infrastructure to ensure easy, fluid mobility in the heart of our cities. Otis Public Escalators are safe, reliable and sustainable. They are designed to meet the demands of high-traffic areas such as airports, railway stations, subways and busy transport hubs. Environmental, Social and Governance (ESG) is integral to setting our vision in motion and embedded in our long-term strategy. We designed our public escalators that maximally reduce the environmental impact of vertical transportation.

UN CPC code: 4354

Geographical scope:

Module A1-A3 are modelled with China scope. Since the escalators in this study are distributed globally, the module A4-D is modelled on the scope of China, Europe, the United States and Singapore.

Characteristic	Values	Representative Values
Type of installation	Escalator	
Type of configuration	new generic installation without modernization	
Commercial name	515NPE	
Recommended application (main market)	Public	
Geographic region of intended installation	Global	
Optional equipment	/	
Designed Reference Service Life (RSL)	20 years	
Applied Usage Class (UC)	1,2,3,4	3
Nominal speed	0.5 m/s, 0.65m/s	0.5 m/s
Number of operating days per year	365	
Operation mode	Auto start, Slow-speed, Continuous	Auto start
Angle of inclination, α (fixed or range) [degree]	30°, 27.3°	30°
Vertical rise (fixed or range)	up to 15m	
Step width (fixed or range)	1000 mm, 800 mm	1000 mm

Comparability between EPDs based on c-PCR Escalators and moving walks (to PCR 2019:14) is only achievable, if the following performance characteristics apply: functional unit (FU), operation mode and usage class (UC) are identical and the geographic region is equivalent.

LCA information

FUNCTIONAL UNIT:
This report uses the transportation of one passenger over one kilometre as the functional unit. The total amount of pkm delivered by the product during its technical lifespan (called also transportation value, TV for short) shall be calculated, followed by division of the respective inputs and outputs by the TV to obtain the LCA results per FU.

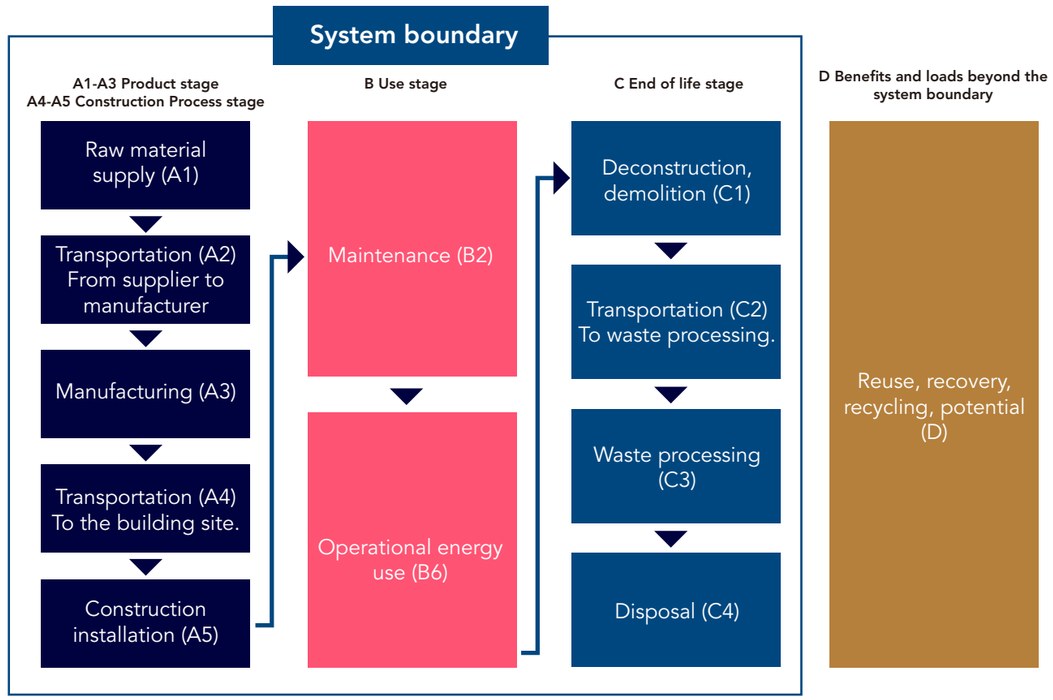
REFERENCE SERVICE LIFE:
20 years

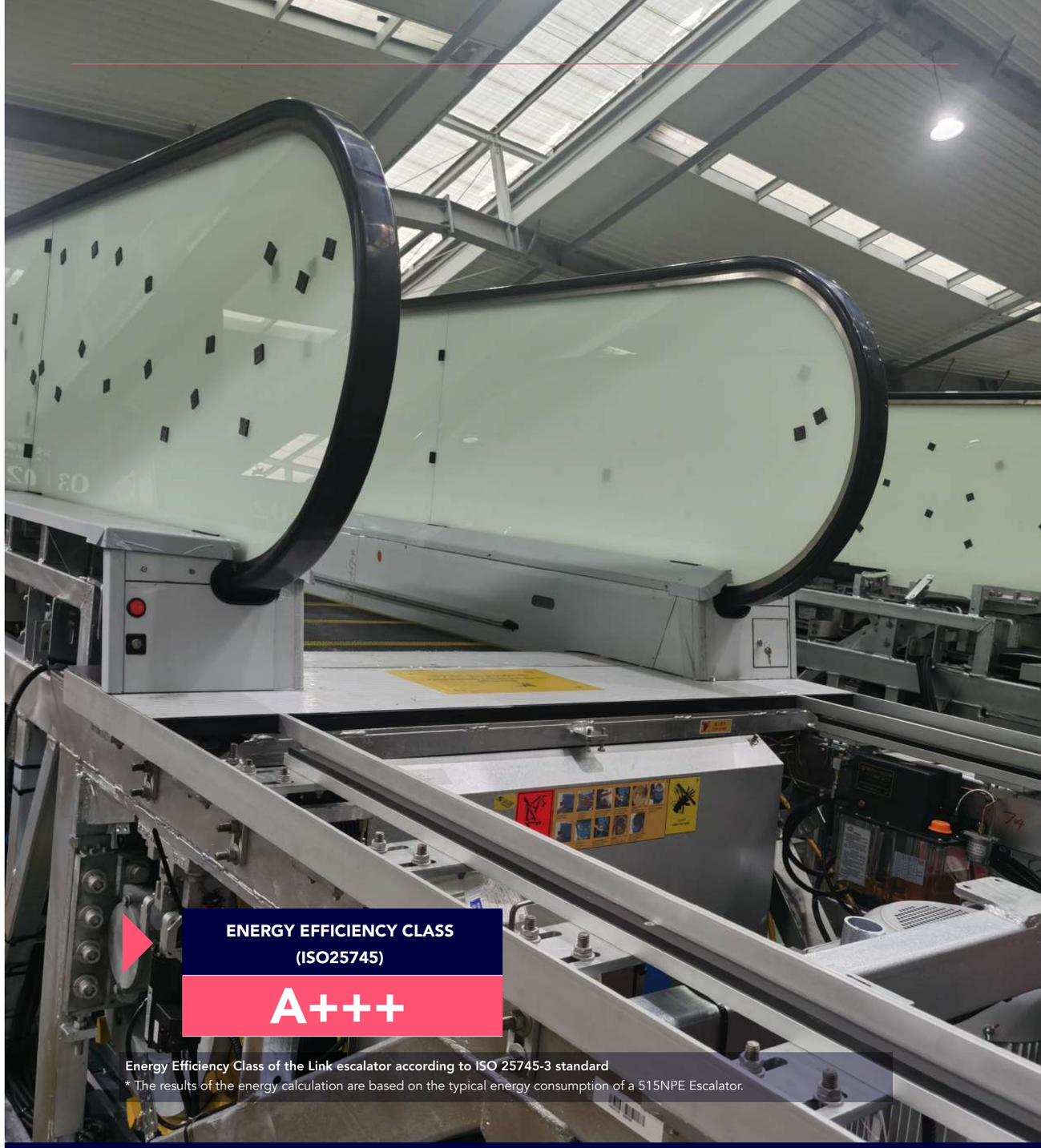
TIME REPRESENTATIVENESS:
The time boundary of 515NPE escalator data is from 2023.01.01 to 2023.12.31.

DATABASE(S) AND LCA SOFTWARE USED:
GABI 10.8.0.14 software, content version 2024.2

DESCRIPTION OF SYSTEM BOUNDARIES:
Cradle to grave and module D (A + B + C + D). Module D is outside of the system boundary and is reported separately and shall not be summed up with the rest of the results.
Since this EPD includes module C, it is recommended that module C be considered when referring to the results of modules A1-A3.

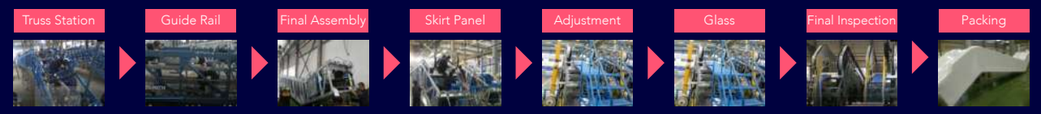
SYSTEM DIAGRAM:





Energy Efficiency Class of the Link escalator according to ISO 25745-3 standard
* The results of the energy calculation are based on the typical energy consumption of a 515NPE Escalator.

MANUFACTURING PROCESSES:



ALLOCATION RULES:

In module A3, the manufacturer calculates the electricity consumption by counting the assembly time of all the products in the factory and allocating the electricity consumption throughout the year accordingly.

CUT-OFF RULES:

The cut-off rules are not applied in this study. All data provided from Otis Elevator Manufacturing Co., Ltd..

ELECTRICITY USAGE:

The data collected for this study were all provided by Otis Elevator Manufacturing Co., Ltd.. In A3 module, part of the electricity from factory solar panel and the rest comes from the grid mix. Further evidence is provided by the manufacturer. The geographical region of intended installation is global, China, Europe, the United States and Singapore are selected as the representative regions in this study. The electricity factor varies from country to country.Information are as follows:

	Reference year	GWP-GHG (kg CO^2 eq./kWh)
CN: Electricity grid mix 1kV-60kV (China electric power yearbook)	2020	0.68
CN: Electricity from photovoltaic Sphera	2020	0.03
RER: Electricity grid mix 1kV-60kV	2020	0.29
US: Electricity grid mix 1kV-60kV	2020	0.44
SG: Electricity grid mix 1kV-60kV	2020	0.49

USE STAGE:

According to ISO 25745-1 & 3 energy efficiency standard for escalators. In the B6 stage, the operational energy use is based on the up direction in auto start mode. The geographical region of intended installation is global, China, Europe, the United States and Singapore are selected as the representative regions in this study. The electricity factor varies from country to country.

RESOURCE RECOVERY STAGE:

It is expected that the recycling quote of escalator is 95%. The quotes are only related to metals and plastics. For mineral materials like mineral wool, concrete or ceramics inert landfilling is assumed, as well as for 5% of metals and plastics that are not recycled. Plastics that are not recycled are introduced to the municipal waste incineration.

DATA COLLECTION:

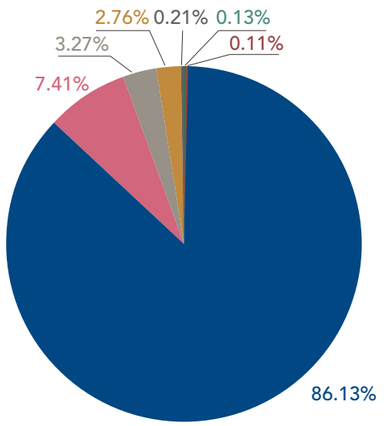
The report boundary of the escalator is set from cradle to grave. The product life cycle stage is from resource extraction to final disposal. Production, maintenance, and disposal of infrastructure (buildings, machinery and capital goods) at the sites where the product is disposed are excluded in this report. The primary data is not available to account for material losses (cuttings, wastage, residues, etc.) mass of materials used in the main components ,so that the input materials accounted for with an increase of 5%.

Modules declared, geographical scope, share of specific data (in GWP-GHG results) and data variation (in GWP-GHG results):

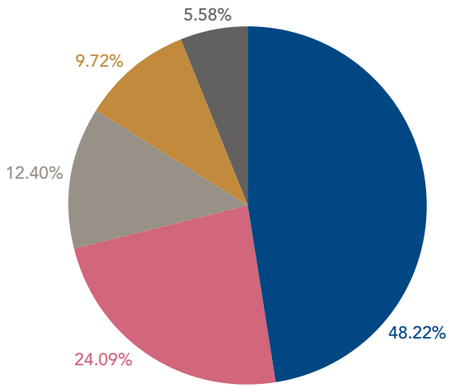
		Module	Modules declared	Geography	Specific data used
Product stage	Raw material supply	**A1**	X	CN	>90%
	Transport	**A2**	X	CN	
	Manufacturing	**A3**	X	CN	
Construction process stage	Transport	**A4**	X	GLO	>90%
	Construction installation	**A5**	X	GLO	>90%
Use stage	Use	**B1**	ND	-	-
	Maintenance	**B2**	X	GLO	-
	Repair	**B3**	ND	-	-
	Replacement	**B4**	ND	-	-
	Refurbishment	**B5**	ND	-	-
	Operational energy use	**B6**	X	GLO	-
	Operational water use	**B7**	ND	-	-
End of life stage	De-construction demolition	**C1**	X	GLO	-
	Transport	**C2**	X	GLO	-
	Waste processing	**C3**	X	GLO	-
	Disposal	**C4**	X	GLO	-
Resource recovery stage	Reuse-Recovery-Recycling-potential	**D**	X	GLO	-

Multiple products or multiple production sites were not involved in this study.

Content information

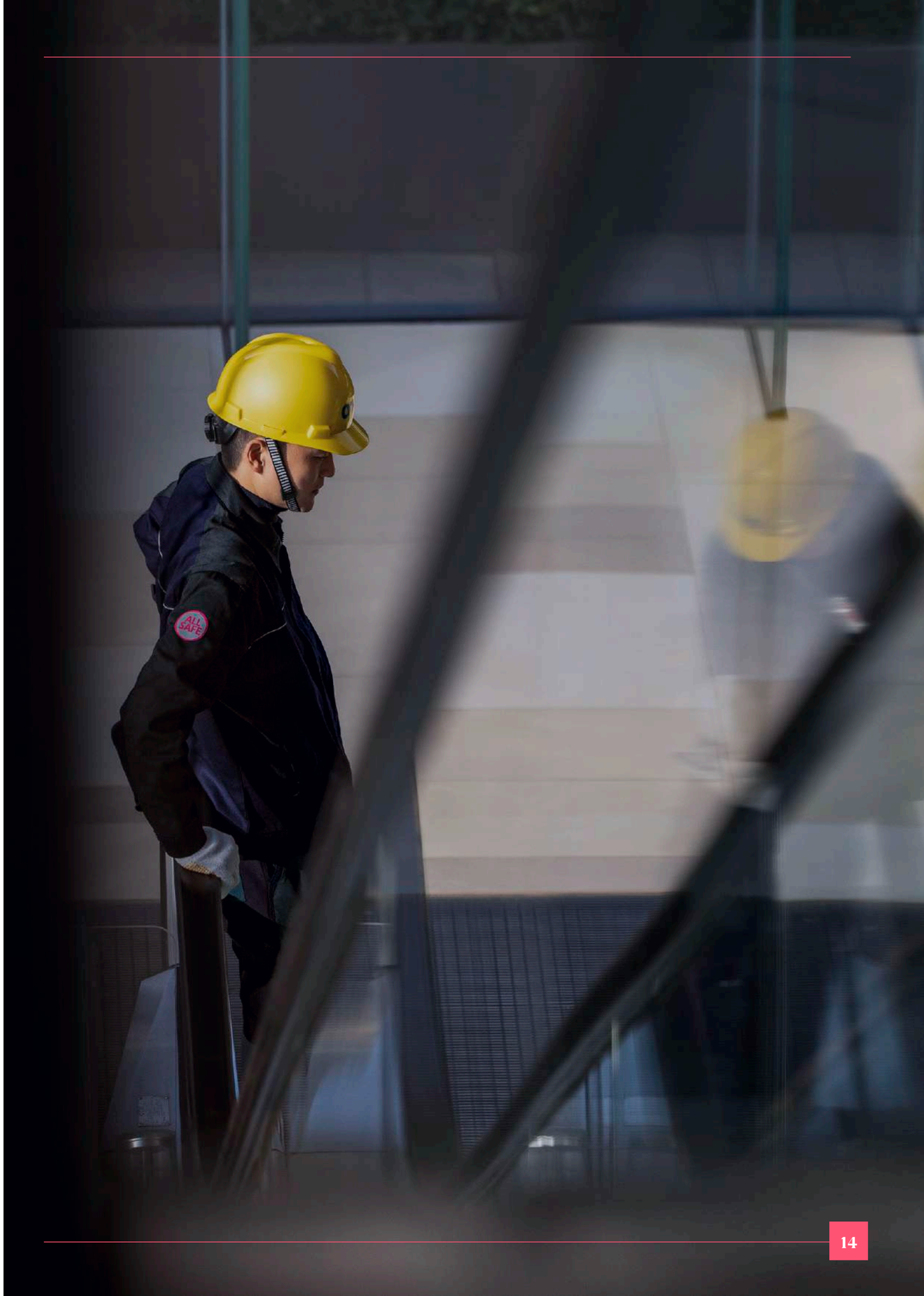


Product components	Weight (kg)	Weight (%)	Biogenic carbon
Ferrous metals (Galvanized steel, stainless steel, cast iron, steel)	8584.72	86.13%	/
Inorganic materials (Glass, glass fibre, alumina, titanium dioxide)	738.54	7.41%	/
Polymers	325.79	3.27%	/
Non-ferrous metals (Aluminium, copper)	274.64	2.76%	/
Electronic component (Capacitance, PCB)	20.45	0.21%	/
Paint and gear oil	12.52	0.13%	/
Paper	10.53	0.11%	0.43 kg C/kg
TOTAL	9967.18	100%	/



Packaging materials	Weight (kg)	Weight (%)	Biogenic carbon
Plywood	70.00	48.22%	0.48 kg C/kg
Polymers	34.97	24.09%	/
Wood	18.00	12.40%	0.45 kg C/kg
Ferrous metals	14.11	9.72%	/
Paper	8.10	5.58%	0.43 kg C/kg
TOTAL	145.17	100%	/

No post-consumer material is used in the product components.
There is less than 5% biogenic content in the product.



Main results of the environmental performance indicators

EN 15804 reference package based on EF 3.1 was used as LCIA method.
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.

Scenario 1 China

MANDATORY IMPACT CATEGORY INDICATORS ACCORDING TO EN 15804

RESULTS PER FUNCTIONAL UNIT (CN)											
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B2**	**B6**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG	kg CO^2 eq.	1.89E-02	1.51E-03	4.63E-05	9.41E-03	1.51E-01	2.39E-06	1.93E-04	1.35E-04	1.04E-05	-8.92E-03
GWP-total	kg CO^2 eq.	1.91E-02	1.57E-03	1.14E-04	9.99E-03	1.51E-01	2.39E-06	2.01E-04	1.35E-04	1.59E-05	-8.91E-03
GWP-fossil	kg CO^2 eq.	1.89E-02	1.51E-03	4.63E-05	9.41E-03	1.51E-01	2.39E-06	1.93E-04	1.35E-04	1.04E-05	-8.92E-03
GWP-biogenic	kg CO^2 eq.	1.30E-04	6.34E-05	6.78E-05	5.78E-04	-8.58E-05	-1.36E-09	8.13E-06	9.28E-10	5.52E-06	1.54E-05
GWP-luluc	kg CO^2 eq.	1.28E-05	7.19E-08	1.67E-08	1.43E-06	1.56E-04	2.47E-09	9.22E-09	6.39E-09	5.95E-08	-6.43E-06
ODP	kg CFC 11 eq.	5.62E-11	9.75E-17	4.01E-18	4.29E-15	8.24E-13	1.30E-17	1.25E-17	2.87E-17	1.99E-17	3.44E-15
AP	mol H^+ eq.	8.07E-05	7.63E-06	8.46E-08	1.63E-05	5.36E-04	8.47E-09	2.18E-07	1.70E-08	7.12E-08	-2.88E-05
EP-freshwater	kg P eq.	6.11E-08	1.91E-10	1.74E-09	1.00E-08	8.10E-08	1.28E-12	2.45E-11	6.97E-12	1.67E-10	-3.73E-09
EP-marine	kg N eq.	1.43E-05	3.79E-06	3.68E-08	4.02E-06	1.16E-04	1.84E-09	8.48E-08	4.68E-09	1.95E-08	-5.19E-06
EP-terrestrial	mol N eq.	1.56E-04	4.17E-05	3.03E-07	5.14E-05	1.27E-03	2.00E-08	9.64E-07	7.84E-08	2.03E-07	-5.66E-05
POCP	kg NMVOC eq.	4.35E-05	7.61E-06	1.05E-07	1.46E-05	3.44E-04	5.45E-09	2.34E-07	1.35E-08	5.86E-08	-1.68E-05
ADP-minerals&metals*	kg Sb eq.	1.05E-06	2.41E-11	5.08E-13	4.56E-09	4.10E-09	6.48E-14	3.09E-12	2.97E-13	6.03E-13	-4.81E-08
ADP-fossil*	MJ	2.17E-01	2.10E-02	5.36E-04	1.43E-01	1.62E+00	2.56E-05	2.69E-03	5.90E-05	1.32E-04	-7.54E-02
WDP*	m^3	2.85E-03	6.65E-06	2.65E-06	4.42E-04	5.80E-02	9.17E-07	8.52E-07	1.28E-05	1.14E-06	-1.43E-03
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&-metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption										

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

RESOURCE USE INDICATORS

RESULTS PER FUNCTIONAL UNIT (CN)											
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B2**	**B6**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	4.78E-02	1.01E-04	3.99E-06	3.62E-03	5.55E-01	8.78E-06	1.30E-05	1.57E-05	1.97E-05	-8.97E-03
PERM	MJ	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
PERT	MJ	4.78E-02	1.01E-04	3.99E-06	3.62E-03	5.55E-01	8.78E-06	1.30E-05	1.57E-05	1.97E-05	-8.97E-03
PENRE	MJ	2.17E-01	2.10E-02	5.36E-04	1.43E-01	1.62E+00	2.56E-05	2.69E-03	5.90E-05	1.32E-04	-7.54E-02
PENRM	MJ	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
PENRT	MJ	2.17E-01	2.10E-02	5.36E-04	1.43E-01	1.62E+00	2.56E-05	2.69E-03	5.90E-05	1.32E-04	-7.54E-02
SM	kg	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
RSF	MJ	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
NRSF	MJ	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
FW	m^3	9.62E-05	1.78E-07	5.54E-08	1.23E-05	1.38E-03	2.18E-08	2.28E-08	3.05E-07	3.40E-08	-4.29E-05
Acronyms	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water										

WASTE INDICATORS

RESULTS PER FUNCTIONAL UNIT (CN)											
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B2**	**B6**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	kg	6.74E-09	4.18E-13	1.54E-14	1.65E-08	1.19E-09	1.88E-14	5.36E-14	3.38E-14	2.52E-14	6.73E-12
Non-hazardous waste disposed	kg	1.62E-03	8.48E-07	6.24E-05	4.95E-04	8.18E-04	1.29E-08	1.09E-07	1.23E-05	6.62E-04	-8.89E-04
Radioactive waste disposed	kg	3.10E-06	8.35E-09	-3.90E-09	5.44E-07	4.00E-05	6.32E-10	1.07E-09	1.99E-09	1.12E-09	3.70E-07

OUTPUT FLOW INDICATORS

RESULTS PER FUNCTIONAL UNIT (CN)											
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B2**	**B6**	**C1**	**C2**	**C3**	**C4**	**D**
Components for re-use	kg	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
Material for recycling	kg	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	5.43E-03
Materials for energy recovery	kg	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
Exported energy, electricity	MJ	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
Exported energy, thermal	MJ	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

Other results of the environmental performance indicators

Scenario 2 Europe

MANDATORY IMPACT CATEGORY INDICATORS ACCORDING TO EN 15804

RESULTS PER FUNCTIONAL UNIT (EU)											
Indicator	Unit	A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
GWP-GHG	kg CO^2 eq.	1.89E-02	1.81E-03	4.52E-05	9.44E-03	6.41E-02	1.06E-06	2.04E-04	1.35E-04	1.04E-05	-8.92E-03
GWP-total	kg CO^2 eq.	1.91E-02	1.80E-03	1.13E-04	1.00E-02	6.47E-02	1.07E-06	1.99E-04	1.35E-04	1.59E-05	-8.91E-03
GWP-fossil	kg CO^2 eq.	1.89E-02	1.80E-03	4.52E-05	9.44E-03	6.41E-02	1.06E-06	2.00E-04	1.35E-04	1.04E-05	-8.92E-03
GWP-biogenic	kg CO^2 eq.	1.30E-04	-8.82E-06	6.78E-05	5.70E-04	5.77E-04	8.34E-09	-5.03E-06	9.28E-10	5.52E-06	1.54E-05
GWP-luluc	kg CO^2 eq.	1.28E-05	8.59E-06	2.98E-08	2.34E-06	9.75E-06	1.56E-10	3.29E-06	6.39E-09	5.95E-08	-6.43E-06
ODP	kg CFC 11 eq.	5.62E-11	1.72E-16	3.69E-17	4.29E-15	1.45E-12	2.13E-17	2.88E-17	2.87E-17	1.99E-17	3.44E-15
AP	mol H^+ eq.	8.07E-05	2.55E-05	7.08E-08	1.80E-05	1.24E-04	3.21E-09	2.74E-07	1.70E-08	7.12E-08	-2.88E-05
EP-freshwater	kg P eq.	6.11E-08	2.50E-09	1.77E-09	1.03E-08	2.67E-07	4.49E-12	8.35E-10	6.97E-12	1.67E-10	-3.73E-09
EP-marine	kg N eq.	1.43E-05	1.10E-05	3.26E-08	4.69E-06	3.09E-05	5.30E-10	9.95E-08	4.68E-09	1.95E-08	-5.19E-06
EP-terrestrial	mol N eq.	1.56E-04	1.20E-04	2.58E-07	5.87E-05	3.23E-04	5.59E-09	1.19E-06	7.84E-08	2.03E-07	-5.66E-05
POCP	kg NMVOC eq.	4.35E-05	2.90E-05	9.64E-08	1.66E-05	8.16E-05	1.47E-09	2.71E-07	1.35E-08	5.86E-08	-1.68E-05
ADP-minerals&metals*	kg Sb eq.	1.05E-06	7.19E-11	1.34E-12	4.56E-09	1.20E-08	2.16E-13	1.70E-11	2.97E-13	6.03E-13	-4.81E-08
ADP-fossil*	MJ	2.17E-01	2.19E-02	5.55E-04	1.43E-01	1.34E+00	2.21E-05	2.58E-03	5.90E-05	1.32E-04	-7.54E-02
WDP*	m^3	2.85E-03	1.04E-05	7.02E-07	4.42E-04	1.75E-02	2.05E-07	3.03E-06	1.28E-05	1.14E-06	-1.43E-03
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&-metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption										

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

RESOURCE USE INDICATORS

RESULTS PER FUNCTIONAL UNIT (EU)											
Indicator	Unit	A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
PERE	MJ	4.78E-02	6.53E-04	2.81E-05	3.68E-03	9.71E-01	1.57E-05	2.22E-04	1.57E-05	1.97E-05	-8.97E-03
PERM	MJ	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
PERT	MJ	4.78E-02	6.53E-04	2.81E-05	3.68E-03	9.71E-01	1.57E-05	2.22E-04	1.57E-05	1.97E-05	-8.97E-03
PENRE	MJ	2.17E-01	2.19E-02	5.55E-04	1.43E-01	1.34E+00	2.21E-05	2.58E-03	5.90E-05	1.32E-04	-7.54E-02
PENRM	MJ	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
PENRT	MJ	2.17E-01	2.19E-02	5.55E-04	1.43E-01	1.34E+00	2.21E-05	2.58E-03	5.90E-05	1.32E-04	-7.54E-02
SM	kg	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
RSF	MJ	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
NRSF	MJ	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
FW	m^3	9.62E-05	7.39E-07	2.77E-08	1.23E-05	7.40E-04	7.16E-09	2.47E-07	3.05E-07	3.40E-08	-4.29E-05
Acronyms	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water										

WASTE INDICATORS

RESULTS PER FUNCTIONAL UNIT (EU)											
Indicator	Unit	A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
Hazardous waste disposed	kg	6.74E-09	7.19E-13	5.98E-14	1.65E-08	1.94E-09	3.32E-14	9.87E-14	3.38E-14	2.52E-14	6.73E-12
Non-hazardous waste disposed	kg	1.62E-03	2.50E-06	6.24E-05	4.95E-04	1.11E-03	2.01E-08	4.21E-07	1.23E-05	6.62E-04	-8.89E-04
Radioactive waste disposed	kg	3.10E-06	2.89E-08	5.03E-09	5.46E-07	2.14E-04	3.49E-09	4.69E-09	1.99E-09	1.12E-09	3.70E-07

OUTPUT FLOW INDICATORS

RESULTS PER FUNCTIONAL UNIT (EU)											
Indicator	Unit	A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
Components for re-use	kg	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
Material for recycling	kg	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	5.43E-03
Materials for energy recovery	kg	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
Exported energy, electricity	MJ	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
Exported energy, thermal	MJ	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

Scenario 3 US

MANDATORY IMPACT CATEGORY INDICATORS ACCORDING TO EN 15804

RESULTS PER FUNCTIONAL UNIT (US)											
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B2**	**B6**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG	kg CO^2 eq.	1.89E-02	1.81E-03	4.53E-05	9.33E-03	9.95E-02	1.57E-06	1.97E-04	1.35E-04	1.04E-05	-8.92E-03
GWP-total	kg CO^2 eq.	1.91E-02	1.82E-03	1.13E-04	9.90E-03	9.95E-02	1.57E-06	1.98E-04	1.35E-04	1.59E-05	-8.91E-03
GWP-fossil	kg CO^2 eq.	1.89E-02	1.81E-03	4.53E-05	9.33E-03	9.95E-02	1.57E-06	1.97E-04	1.35E-04	1.04E-05	-8.92E-03
GWP-biogenic	kg CO^2 eq.	1.30E-04	7.17E-06	6.78E-05	5.72E-04	1.94E-05	3.07E-10	1.52E-06	9.28E-10	5.52E-06	1.54E-05
GWP-luluc	kg CO^2 eq.	1.28E-05	3.92E-07	1.16E-08	1.43E-06	9.30E-06	1.47E-10	1.13E-07	6.39E-09	5.95E-08	-6.43E-06
ODP	kg CFC 11 eq.	5.62E-11	2.29E-16	-3.21E-18	4.31E-15	6.12E-13	9.67E-18	2.99E-17	2.87E-17	1.99E-17	3.44E-15
AP	mol H^+ eq.	8.07E-05	2.56E-05	6.57E-08	1.78E-05	1.35E-04	2.14E-09	2.07E-07	1.70E-08	7.12E-08	-2.88E-05
EP-freshwater	kg P eq.	6.11E-08	2.98E-09	1.75E-09	1.02E-08	6.00E-08	9.49E-13	1.03E-09	6.97E-12	1.67E-10	-3.73E-09
EP-marine	kg N eq.	1.43E-05	1.11E-05	3.24E-08	4.65E-06	3.04E-05	4.81E-10	8.24E-08	4.68E-09	1.95E-08	-5.19E-06
EP-terrestrial	mol N eq.	1.56E-04	1.22E-04	2.56E-07	5.83E-05	3.30E-04	5.22E-09	9.33E-07	7.84E-08	2.03E-07	-5.66E-05
POCP	kg NMVOC eq.	4.35E-05	2.91E-05	8.90E-08	1.65E-05	8.90E-05	1.41E-09	1.97E-07	1.35E-08	5.86E-08	-1.68E-05
ADP-minerals&metals*	kg Sb eq.	1.05E-06	2.13E-10	4.56E-12	4.57E-09	1.03E-08	1.63E-13	2.67E-11	2.97E-13	6.03E-13	-4.81E-08
ADP-fossil*	MJ	2.17E-01	2.25E-02	5.60E-04	1.42E-01	1.69E+00	2.67E-05	2.68E-03	5.90E-05	1.32E-04	-7.54E-02
WDP*	m^3	2.85E-03	3.70E-05	1.08E-06	4.53E-04	2.29E-02	3.62E-07	1.21E-05	1.28E-05	1.14E-06	-1.43E-03
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&-metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption										

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

RESOURCE USE INDICATORS

RESULTS PER FUNCTIONAL UNIT (US)											
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B2**	**B6**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	4.78E-02	4.39E-04	2.64E-06	3.66E-03	4.57E-01	7.23E-06	1.18E-04	1.57E-05	1.97E-05	-8.97E-03
PERM	MJ	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
PERT	MJ	4.78E-02	4.39E-04	2.64E-06	3.66E-03	4.57E-01	7.23E-06	1.18E-04	1.57E-05	1.97E-05	-8.97E-03
PENRE	MJ	2.17E-01	2.25E-02	5.60E-04	1.42E-01	1.69E+00	2.67E-05	2.68E-03	5.90E-05	1.32E-04	-7.54E-02
PENRM	MJ	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
PENRT	MJ	2.17E-01	2.25E-02	5.60E-04	1.42E-01	1.69E+00	2.67E-05	2.68E-03	5.90E-05	1.32E-04	-7.54E-02
SM	kg	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
RSF	MJ	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
NRSF	MJ	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
FW	m^3	9.62E-05	1.22E-06	2.78E-08	1.26E-05	6.98E-04	1.10E-08	3.94E-07	3.05E-07	3.40E-08	-4.29E-05
Acronyms	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water										

WASTE INDICATORS

RESULTS PER FUNCTIONAL UNIT (US)											
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B2**	**B6**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	kg	6.74E-09	2.94E-12	5.42E-14	1.65E-08	9.22E-10	1.46E-14	3.61E-13	3.38E-14	2.52E-14	6.73E-12
Non-hazardous waste disposed	kg	1.62E-03	1.56E-06	6.24E-05	4.93E-04	5.73E-04	9.06E-09	2.67E-07	1.23E-05	6.62E-04	-8.89E-04
Radioactive waste disposed	kg	3.10E-06	6.21E-08	3.58E-09	5.50E-07	1.73E-04	2.73E-09	8.07E-09	1.99E-09	1.12E-09	3.70E-07

OUTPUT FLOW INDICATORS

RESULTS PER FUNCTIONAL UNIT (US)											
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B2**	**B6**	**C1**	**C2**	**C3**	**C4**	**D**
Components for re-use	kg	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
Material for recycling	kg	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	5.43E-03
Materials for energy recovery	kg	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
Exported energy, electricity	MJ	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
Exported energy, thermal	MJ	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

Scenario 4 Singapore

MANDATORY IMPACT CATEGORY INDICATORS ACCORDING TO EN 15804

RESULTS PER FUNCTIONAL UNIT (SG)											
Indicator	Unit	A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
GWP-GHG	kg CO^2 eq.	1.89E-02	8.21E-04	4.64E-05	9.35E-03	1.10E-01	1.75E-06	1.96E-04	1.35E-04	1.04E-05	-8.92E-03
GWP-total	kg CO^2 eq.	1.91E-02	8.45E-04	1.13E-04	9.92E-03	1.10E-01	1.75E-06	2.04E-04	1.35E-04	1.59E-05	-8.91E-03
GWP-fossil	kg CO^2 eq.	1.89E-02	8.21E-04	4.61E-05	9.35E-03	1.10E-01	1.74E-06	1.96E-04	1.35E-04	1.04E-05	-8.92E-03
GWP-biogenic	kg CO^2 eq.	1.30E-04	2.42E-05	6.61E-05	5.74E-04	4.83E-06	7.63E-11	7.94E-06	9.28E-10	5.52E-06	1.54E-05
GWP-luluc	kg CO^2 eq.	1.28E-05	4.95E-07	3.59E-07	1.48E-06	3.21E-05	5.08E-10	1.85E-07	6.39E-09	5.95E-08	-6.43E-06
ODP	kg CFC 11 eq.	5.62E-11	3.85E-17	-2.23E-17	4.28E-15	2.19E-13	3.46E-18	1.02E-17	2.87E-17	1.99E-17	3.44E-15
AP	mol H^+ eq.	8.07E-05	7.32E-06	8.06E-08	1.63E-05	2.57E-04	4.06E-09	2.07E-07	1.70E-08	7.12E-08	-2.88E-05
EP-freshwater	kg P eq.	6.11E-08	1.63E-10	1.86E-09	1.00E-08	1.89E-08	2.99E-13	4.47E-11	6.97E-12	1.67E-10	-3.73E-09
EP-marine	kg N eq.	1.43E-05	3.31E-06	4.55E-08	3.97E-06	1.07E-04	1.70E-09	7.48E-08	4.68E-09	1.95E-08	-5.19E-06
EP-terrestrial	mol N eq.	1.56E-04	3.63E-05	3.23E-07	5.09E-05	1.18E-03	1.86E-08	8.59E-07	7.84E-08	2.03E-07	-5.66E-05
POCP	kg NMVOC eq.	4.35E-05	8.03E-06	1.06E-07	1.47E-05	2.95E-04	4.67E-09	2.20E-07	1.35E-08	5.86E-08	-1.68E-05
ADP-minerals&metals*	kg Sb eq.	1.05E-06	1.75E-11	1.13E-12	4.56E-09	3.36E-09	5.32E-14	4.82E-12	2.97E-13	6.03E-13	-4.81E-08
ADP-fossil*	MJ	2.17E-01	1.09E-02	5.10E-04	1.42E-01	1.66E+00	2.63E-05	2.67E-03	5.90E-05	1.32E-04	-7.54E-02
WDP*	m^3	2.85E-03	1.06E-06	-6.89E-08	4.41E-04	1.64E-03	2.60E-08	2.17E-07	1.28E-05	1.14E-06	-1.43E-03
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&-metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption										

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

RESOURCE USE INDICATORS

RESULTS PER FUNCTIONAL UNIT (SG)											
Indicator	Unit	A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
PERE	MJ	4.78E-02	4.74E-05	2.90E-05	3.61E-03	1.35E-01	2.14E-06	1.46E-05	1.57E-05	1.97E-05	-8.97E-03
PERM	MJ	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
PERT	MJ	4.78E-02	4.74E-05	2.90E-05	3.61E-03	1.35E-01	2.14E-06	1.46E-05	1.57E-05	1.97E-05	-8.97E-03
PENRE	MJ	2.17E-01	1.09E-02	5.10E-04	1.42E-01	1.66E+00	2.63E-05	2.67E-03	5.90E-05	1.32E-04	-7.54E-02
PENRM	MJ	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
PENRT	MJ	2.17E-01	1.09E-02	5.10E-04	1.42E-01	1.66E+00	2.63E-05	2.67E-03	5.90E-05	1.32E-04	-7.54E-02
SM	kg	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
RSF	MJ	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
NRSF	MJ	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
FW	m^3	9.62E-05	7.77E-08	2.38E-08	1.23E-05	2.19E-04	3.46E-09	2.32E-08	3.05E-07	3.40E-08	-4.29E-05
Acronyms	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water										

WASTE INDICATORS

RESULTS PER FUNCTIONAL UNIT (SG)											
Indicator	Unit	A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
Hazardous waste disposed	kg	6.74E-09	1.59E-13	-3.99E-14	1.65E-08	4.44E-11	7.02E-16	3.45E-14	3.38E-14	2.52E-14	6.73E-12
Non-hazardous waste disposed	kg	1.62E-03	1.12E-06	6.24E-05	4.95E-04	1.15E-03	1.82E-08	2.39E-07	1.23E-05	6.62E-04	-8.89E-04
Radioactive waste disposed	kg	3.10E-06	3.14E-09	-5.46E-09	5.44E-07	4.05E-07	6.41E-12	6.86E-10	1.99E-09	1.12E-09	3.70E-07

OUTPUT FLOW INDICATORS

RESULTS PER FUNCTIONAL UNIT (SG)											
Indicator	Unit	A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
Components for re-use	kg	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
Material for recycling	kg	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	5.43E-03
Materials for energy recovery	kg	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
Exported energy, electricity	MJ	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
Exported energy, thermal	MJ	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

Results for each escalator

To demonstrate the full life cycle potential environmental impact of each escalator, LCIA results for each escalator are shown in table below in this section.

Scenario 1 China

MANDATORY IMPACT CATEGORY INDICATORS ACCORDING TO EN 15804

RESULTS FOR EACH ESCALATOR (CN)											
Indicator	Unit	A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
GWP-GHG	kg CO^2 eq.	3.32E+04	2.65E+03	8.11E+01	1.65E+04	2.65E+05	4.19E+00	3.39E+02	2.36E+02	1.83E+01	-1.56E+04
GWP-total	kg CO^2 eq.	3.34E+04	2.76E+03	2.00E+02	1.75E+04	2.65E+05	4.19E+00	3.53E+02	2.36E+02	2.79E+01	-1.56E+04
GWP-fossil	kg CO^2 eq.	3.32E+04	2.65E+03	8.11E+01	1.65E+04	2.65E+05	4.19E+00	3.38E+02	2.36E+02	1.82E+01	-1.56E+04
GWP-biogenic	kg CO^2 eq.	2.28E+02	1.11E+02	1.19E+02	1.01E+03	-1.50E+02	-2.38E-03	1.42E+01	1.63E-03	9.67E+00	2.70E+01
GWP-luluc	kg CO^2 eq.	2.23E+01	1.26E-01	2.92E-02	2.51E+00	2.74E+02	4.33E-03	1.62E-02	1.12E-02	1.04E-01	-1.13E+01
ODP	kg CFC 11 eq.	9.84E-05	1.71E-10	7.03E-12	7.51E-09	1.44E-06	2.28E-11	2.19E-11	5.02E-11	3.50E-11	6.02E-09
AP	mol H^+ eq.	1.41E+02	1.34E+01	1.48E-01	2.85E+01	9.39E+02	1.48E-02	3.83E-01	2.97E-02	1.25E-01	-5.05E+01
EP-freshwater	kg P eq.	1.07E-01	3.35E-04	3.05E-03	1.76E-02	1.42E-01	2.25E-06	4.29E-05	1.22E-05	2.93E-04	-6.54E-03
EP-marine	kg N eq.	2.50E+01	6.64E+00	6.45E-02	7.04E+00	2.04E+02	3.23E-03	1.49E-01	8.20E-03	3.41E-02	-9.10E+00
EP-terrestrial	mol N eq.	2.73E+02	7.30E+01	5.31E-01	9.00E+01	2.22E+03	3.51E-02	1.69E+00	1.37E-01	3.56E-01	-9.92E+01
POCP	kg NMVOC eq.	7.63E+01	1.33E+01	1.84E-01	2.56E+01	6.03E+02	9.54E-03	4.09E-01	2.37E-02	1.03E-01	-2.94E+01
ADP-minerals&metals*	kg Sb eq.	1.85E+00	4.22E-05	8.89E-07	7.98E-03	7.18E-03	1.14E-07	5.41E-06	5.20E-07	1.06E-06	-8.43E-02
ADP-fossil*	MJ	3.81E+05	3.68E+04	9.38E+02	2.51E+05	2.83E+06	4.48E+01	4.71E+03	1.03E+02	2.30E+02	-1.32E+05
WDP*	m^3	5.00E+03	1.16E+01	4.64E+00	7.74E+02	1.02E+05	1.61E+00	1.49E+00	2.25E+01	2.00E+00	-2.51E+03
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption										

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

RESOURCE USE INDICATORS

RESULTS FOR EACH ESCALATOR (CN)											
Indicator	Unit	A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
PERE	MJ	8.37E+04	1.77E+02	6.98E+00	6.34E+03	9.72E+05	1.54E+01	2.27E+01	2.74E+01	3.45E+01	-1.57E+04
PERM	MJ	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
PERT	MJ	8.37E+04	1.77E+02	6.98E+00	6.34E+03	9.72E+05	1.54E+01	2.27E+01	2.74E+01	3.45E+01	-1.57E+04
PENRE	MJ	3.81E+05	3.68E+04	9.38E+02	2.51E+05	2.83E+06	4.48E+01	4.71E+03	1.03E+02	2.30E+02	-1.32E+05
PENRM	MJ	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
PENRT	MJ	3.81E+05	3.68E+04	9.38E+02	2.51E+05	2.83E+06	4.48E+01	4.71E+03	1.03E+02	2.30E+02	-1.32E+05
SM	kg	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
RSF	MJ	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
NRSF	MJ	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
FW	m^3	1.68E+02	3.12E-01	9.71E-02	2.15E+01	2.42E+03	3.82E-02	4.00E-02	5.35E-01	5.96E-02	-7.52E+01
Acronyms	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water										

WASTE INDICATORS

RESULTS FOR EACH ESCALATOR (CN)											
Indicator	Unit	A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.18E-02	7.32E-07	2.70E-08	2.88E-02	2.08E-03	3.29E-08	9.39E-08	5.92E-08	4.42E-08	1.18E-05
Non-hazardous waste disposed	kg	2.83E+03	1.49E+00	1.09E+02	8.66E+02	1.43E+03	2.27E-02	1.90E-01	2.15E+01	1.16E+03	-1.56E+03
Radioactive waste disposed	kg	5.42E+00	1.46E-02	-6.83E-03	9.54E-01	7.00E+01	1.11E-03	1.88E-03	3.48E-03	1.96E-03	6.48E-01

OUTPUT FLOW INDICATORS

RESULTS FOR EACH ESCALATOR (CN)											
Indicator	Unit	A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
Components for re-use	kg	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
Material for recycling	kg	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	9.51E+03
Materials for energy recovery	kg	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
Exported energy, electricity	MJ	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
Exported energy, thermal	MJ	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

Scenario 2 Europe

MANDATORY IMPACT CATEGORY INDICATORS ACCORDING TO EN 15804

RESULTS FOR EACH ESCALATOR (EU)											
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B2**	**B6**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG	kg CO^2 eq.	3.32E+04	3.17E+03	7.92E+01	1.65E+04	1.12E+05	1.87E+00	3.57E+02	2.36E+02	1.83E+01	-1.56E+04
GWP-total	kg CO^2 eq.	3.34E+04	3.16E+03	1.98E+02	1.75E+04	1.13E+05	1.88E+00	3.48E+02	2.36E+02	2.79E+01	-1.56E+04
GWP-fossil	kg CO^2 eq.	3.32E+04	3.16E+03	7.91E+01	1.65E+04	1.12E+05	1.87E+00	3.51E+02	2.36E+02	1.82E+01	-1.56E+04
GWP-biogenic	kg CO^2 eq.	2.28E+02	-1.55E+01	1.19E+02	9.99E+02	1.01E+03	1.46E-02	-8.81E+00	1.63E-03	9.67E+00	2.70E+01
GWP-luluc	kg CO^2 eq.	2.23E+01	1.51E+01	5.23E-02	4.11E+00	1.71E+01	2.74E-04	5.76E+00	1.12E-02	1.04E-01	-1.13E+01
ODP	kg CFC 11 eq.	9.84E-05	3.02E-10	6.46E-11	7.52E-09	2.55E-06	3.74E-11	5.05E-11	5.02E-11	3.50E-11	6.02E-09
AP	mol H^+ eq.	1.41E+02	4.47E+01	1.24E-01	3.15E+01	2.16E+02	5.62E-03	4.80E-01	2.97E-02	1.25E-01	-5.05E+01
EP-freshwater	kg P eq.	1.07E-01	4.39E-03	3.11E-03	1.80E-02	4.68E-01	7.86E-06	1.46E-03	1.22E-05	2.93E-04	-6.54E-03
EP-marine	kg N eq.	2.50E+01	1.92E+01	5.72E-02	8.22E+00	5.41E+01	9.29E-04	1.74E-01	8.20E-03	3.41E-02	-9.10E+00
EP-terrestrial	mol N eq.	2.73E+02	2.11E+02	4.52E-01	1.03E+02	5.66E+02	9.80E-03	2.08E+00	1.37E-01	3.56E-01	-9.92E+01
POCP	kg NMVOC eq.	7.63E+01	5.08E+01	1.69E-01	2.91E+01	1.43E+02	2.57E-03	4.75E-01	2.37E-02	1.03E-01	-2.94E+01
ADP-minerals&metals*	kg Sb eq.	1.85E+00	1.26E-04	2.35E-06	7.99E-03	2.10E-02	3.79E-07	2.99E-05	5.20E-07	1.06E-06	-8.43E-02
ADP-fossil*	MJ	3.81E+05	3.84E+04	9.73E+02	2.51E+05	2.35E+06	3.86E+01	4.52E+03	1.03E+02	2.30E+02	-1.32E+05
WDP*	m^3	5.00E+03	1.82E+01	1.23E+00	7.75E+02	3.06E+04	3.59E-01	5.31E+00	2.25E+01	2.00E+00	-2.51E+03
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption										

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

RESOURCE USE INDICATORS

RESULTS FOR EACH ESCALATOR (EU)											
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B2**	**B6**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	8.37E+04	1.14E+03	4.91E+01	6.44E+03	1.70E+06	2.76E+01	3.89E+02	2.74E+01	3.45E+01	-1.57E+04
PERM	MJ	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
PERT	MJ	8.37E+04	1.14E+03	4.91E+01	6.44E+03	1.70E+06	2.76E+01	3.89E+02	2.74E+01	3.45E+01	-1.57E+04
PENRE	MJ	3.81E+05	3.84E+04	9.73E+02	2.51E+05	2.35E+06	3.86E+01	4.52E+03	1.03E+02	2.30E+02	-1.32E+05
PENRM	MJ	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
PENRT	MJ	3.81E+05	3.84E+04	9.73E+02	2.51E+05	2.35E+06	3.86E+01	4.52E+03	1.03E+02	2.30E+02	-1.32E+05
SM	kg	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
RSF	MJ	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
NRSF	MJ	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
FW	m^3	1.68E+02	1.30E+00	4.85E-02	2.16E+01	1.30E+03	1.25E-02	4.33E-01	5.35E-01	5.96E-02	-7.52E+01
Acronyms	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water										

WASTE INDICATORS

RESULTS FOR EACH ESCALATOR (EU)											
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B2**	**B6**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	kg	1.18E-02	1.26E-06	1.05E-07	2.88E-02	3.40E-03	5.82E-08	1.73E-07	5.92E-08	4.42E-08	1.18E-05
Non-hazardous waste disposed	kg	2.83E+03	4.38E+00	1.09E+02	8.67E+02	1.94E+03	3.52E-02	7.37E-01	2.15E+01	1.16E+03	-1.56E+03
Radioactive waste disposed	kg	5.42E+00	5.07E-02	8.81E-03	9.57E-01	3.75E+02	6.11E-03	8.22E-03	3.48E-03	1.96E-03	6.48E-01

OUTPUT FLOW INDICATORS

RESULTS FOR EACH ESCALATOR (EU)											
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B2**	**B6**	**C1**	**C2**	**C3**	**C4**	**D**
Components for re-use	kg	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
Material for recycling	kg	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	9.51E+03
Materials for energy recovery	kg	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
Exported energy, electricity	MJ	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
Exported energy, thermal	MJ	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

Scenario 3 US

MANDATORY IMPACT CATEGORY INDICATORS ACCORDING TO EN 15804

RESULTS FOR EACH ESCALATOR (US)											
Indicator	Unit	A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
GWP-GHG	kg CO^2 eq.	3.32E+04	3.17E+03	7.93E+01	1.63E+04	1.74E+05	2.76E+00	3.45E+02	2.36E+02	1.83E+01	-1.56E+04
GWP-total	kg CO^2 eq.	3.34E+04	3.19E+03	1.98E+02	1.73E+04	1.74E+05	2.76E+00	3.47E+02	2.36E+02	2.79E+01	-1.56E+04
GWP-fossil	kg CO^2 eq.	3.32E+04	3.17E+03	7.93E+01	1.63E+04	1.74E+05	2.76E+00	3.45E+02	2.36E+02	1.82E+01	-1.56E+04
GWP-biogenic	kg CO^2 eq.	2.28E+02	1.26E+01	1.19E+02	1.00E+03	3.40E+01	5.38E-04	2.67E+00	1.63E-03	9.67E+00	2.70E+01
GWP-luluc	kg CO^2 eq.	2.23E+01	6.86E-01	2.03E-02	2.51E+00	1.63E+01	2.58E-04	1.99E-01	1.12E-02	1.04E-01	-1.13E+01
ODP	kg CFC 11 eq.	9.84E-05	4.01E-10	-5.63E-12	7.56E-09	1.07E-06	1.69E-11	5.23E-11	5.02E-11	3.50E-11	6.02E-09
AP	mol H^+ eq.	1.41E+02	4.49E+01	1.15E-01	3.11E+01	2.37E+02	3.74E-03	3.63E-01	2.97E-02	1.25E-01	-5.05E+01
EP-freshwater	kg P eq.	1.07E-01	5.23E-03	3.07E-03	1.79E-02	1.05E-01	1.66E-06	1.80E-03	1.22E-05	2.93E-04	-6.54E-03
EP-marine	kg N eq.	2.50E+01	1.94E+01	5.68E-02	8.14E+00	5.33E+01	8.43E-04	1.44E-01	8.20E-03	3.41E-02	-9.10E+00
EP-terrestrial	mol N eq.	2.73E+02	2.13E+02	4.48E-01	1.02E+02	5.78E+02	9.15E-03	1.63E+00	1.37E-01	3.56E-01	-9.92E+01
POCP	kg NMVOC eq.	7.63E+01	5.10E+01	1.56E-01	2.88E+01	1.56E+02	2.47E-03	3.45E-01	2.37E-02	1.03E-01	-2.94E+01
ADP-minerals&metals*	kg Sb eq.	1.85E+00	3.73E-04	7.99E-06	8.01E-03	1.81E-02	2.86E-07	4.68E-05	5.20E-07	1.06E-06	-8.43E-02
ADP-fossil*	MJ	3.81E+05	3.95E+04	9.81E+02	2.49E+05	2.96E+06	4.67E+01	4.69E+03	1.03E+02	2.30E+02	-1.32E+05
WDP*	m^3	5.00E+03	6.48E+01	1.90E+00	7.94E+02	4.01E+04	6.34E-01	2.12E+01	2.25E+01	2.00E+00	-2.51E+03
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&-metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption										

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

RESOURCE USE INDICATORS

RESULTS FOR EACH ESCALATOR (US)											
Indicator	Unit	A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
PERE	MJ	8.37E+04	7.70E+02	4.63E+00	6.41E+03	8.01E+05	1.27E+01	2.08E+02	2.74E+01	3.45E+01	-1.57E+04
PERM	MJ	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
PERT	MJ	8.37E+04	7.70E+02	4.63E+00	6.41E+03	8.01E+05	1.27E+01	2.08E+02	2.74E+01	3.45E+01	-1.57E+04
PENRE	MJ	3.81E+05	3.95E+04	9.81E+02	2.49E+05	2.96E+06	4.67E+01	4.69E+03	1.03E+02	2.30E+02	-1.32E+05
PENRM	MJ	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
PENRT	MJ	3.81E+05	3.95E+04	9.81E+02	2.49E+05	2.96E+06	4.67E+01	4.69E+03	1.03E+02	2.30E+02	-1.32E+05
SM	kg	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
RSF	MJ	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
NRSF	MJ	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
FW	m^3	1.68E+02	2.14E+00	4.87E-02	2.20E+01	1.22E+03	1.93E-02	6.90E-01	5.35E-01	5.96E-02	-7.52E+01
Acronyms	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water										

WASTE INDICATORS

RESULTS FOR EACH ESCALATOR (US)											
Indicator	Unit	A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.18E-02	5.16E-06	9.50E-08	2.88E-02	1.61E-03	2.55E-08	6.32E-07	5.92E-08	4.42E-08	1.18E-05
Non-hazardous waste disposed	kg	2.83E+03	2.74E+00	1.09E+02	8.63E+02	1.00E+03	1.59E-02	4.68E-01	2.15E+01	1.16E+03	-1.56E+03
Radioactive waste disposed	kg	5.42E+00	1.09E-01	6.27E-03	9.63E-01	3.02E+02	4.78E-03	1.41E-02	3.48E-03	1.96E-03	6.48E-01

OUTPUT FLOW INDICATORS

RESULTS FOR EACH ESCALATOR (US)											
Indicator	Unit	A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
Components for re-use	kg	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
Material for recycling	kg	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	9.51E+03
Materials for energy recovery	kg	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
Exported energy, electricity	MJ	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
Exported energy, thermal	MJ	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

Scenario 4 Singapore

MANDATORY IMPACT CATEGORY INDICATORS ACCORDING TO EN 15804

RESULTS FOR EACH ESCALATOR (SG)											
Indicator	Unit	A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
GWP-GHG	kg CO^2 eq.	3.32E+04	1.44E+03	8.14E+01	1.64E+04	1.93E+05	3.06E+00	3.44E+02	2.36E+02	1.83E+01	-1.56E+04
GWP-total	kg CO^2 eq.	3.34E+04	1.48E+03	1.97E+02	1.74E+04	1.93E+05	3.06E+00	3.58E+02	2.36E+02	2.79E+01	-1.56E+04
GWP-fossil	kg CO^2 eq.	3.32E+04	1.44E+03	8.07E+01	1.64E+04	1.93E+05	3.06E+00	3.43E+02	2.36E+02	1.82E+01	-1.56E+04
GWP-biogenic	kg CO^2 eq.	2.28E+02	4.24E+01	1.16E+02	1.01E+03	8.45E+00	1.34E-04	1.39E+01	1.63E-03	9.67E+00	2.70E+01
GWP-luluc	kg CO^2 eq.	2.23E+01	8.68E-01	6.30E-01	2.59E+00	5.63E+01	8.90E-04	3.24E-01	1.12E-02	1.04E-01	-1.13E+01
ODP	kg CFC 11 eq.	9.84E-05	6.74E-11	-3.90E-11	7.50E-09	3.83E-07	6.06E-12	1.78E-11	5.02E-11	3.50E-11	6.02E-09
AP	mol H^+ eq.	1.41E+02	1.28E+01	1.41E-01	2.85E+01	4.50E+02	7.11E-03	3.62E-01	2.97E-02	1.25E-01	-5.05E+01
EP-freshwater	kg P eq.	1.07E-01	2.85E-04	3.26E-03	1.76E-02	3.31E-02	5.23E-07	7.83E-05	1.22E-05	2.93E-04	-6.54E-03
EP-marine	kg N eq.	2.50E+01	5.79E+00	7.97E-02	6.96E+00	1.88E+02	2.97E-03	1.31E-01	8.20E-03	3.41E-02	-9.10E+00
EP-terrestrial	mol N eq.	2.73E+02	6.36E+01	5.66E-01	8.92E+01	2.07E+03	3.27E-02	1.51E+00	1.37E-01	3.56E-01	-9.92E+01
POCP	kg NMVOC eq.	7.63E+01	1.41E+01	1.86E-01	2.57E+01	5.17E+02	8.18E-03	3.85E-01	2.37E-02	1.03E-01	-2.94E+01
ADP-minerals&metals*	kg Sb eq.	1.85E+00	3.07E-05	1.98E-06	7.98E-03	5.89E-03	9.32E-08	8.44E-06	5.20E-07	1.06E-06	-8.43E-02
ADP-fossil*	MJ	3.81E+05	1.91E+04	8.93E+02	2.49E+05	2.91E+06	4.61E+01	4.69E+03	1.03E+02	2.30E+02	-1.32E+05
WDP*	m^3	5.00E+03	1.85E+00	-1.21E-01	7.73E+02	2.88E+03	4.55E-02	3.80E-01	2.25E+01	2.00E+00	-2.51E+03
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&-metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption										

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

RESOURCE USE INDICATORS

RESULTS FOR EACH ESCALATOR (SG)											
Indicator	Unit	A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
PERE	MJ	8.37E+04	8.31E+01	5.09E+01	6.33E+03	2.37E+05	3.74E+00	2.56E+01	2.74E+01	3.45E+01	-1.57E+04
PERM	MJ	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
PERT	MJ	8.37E+04	8.31E+01	5.09E+01	6.33E+03	2.37E+05	3.74E+00	2.56E+01	2.74E+01	3.45E+01	-1.57E+04
PENRE	MJ	3.81E+05	1.91E+04	8.93E+02	2.49E+05	2.91E+06	4.61E+01	4.69E+03	1.03E+02	2.30E+02	-1.32E+05
PENRM	MJ	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
PENRT	MJ	3.81E+05	1.91E+04	8.93E+02	2.49E+05	2.91E+06	4.61E+01	4.69E+03	1.03E+02	2.30E+02	-1.32E+05
SM	kg	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
RSF	MJ	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
NRSF	MJ	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
FW	m^3	1.68E+02	1.36E-01	4.17E-02	2.15E+01	3.83E+02	6.06E-03	4.06E-02	5.35E-01	5.96E-02	-7.52E+01
Acronyms	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water										

WASTE INDICATORS

RESULTS FOR EACH ESCALATOR (SG)											
Indicator	Unit	A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.18E-02	2.79E-07	-6.99E-08	2.88E-02	7.78E-05	1.23E-09	6.04E-08	5.92E-08	4.42E-08	1.18E-05
Non-hazardous waste disposed	kg	2.83E+03	1.96E+00	1.09E+02	8.66E+02	2.01E+03	3.19E-02	4.18E-01	2.15E+01	1.16E+03	-1.56E+03
Radioactive waste disposed	kg	5.42E+00	5.49E-03	-9.57E-03	9.53E-01	7.10E-01	1.12E-05	1.20E-03	3.48E-03	1.96E-03	6.48E-01

OUTPUT FLOW INDICATORS

RESULTS FOR EACH ESCALATOR (SG)											
Indicator	Unit	A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
Components for re-use	kg	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
Material for recycling	kg	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	9.51E+03
Materials for energy recovery	kg	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
Exported energy, electricity	MJ	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
Exported energy, thermal	MJ	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

References

General Programme Instructions of the International EPD® System. Version 4.0.

ISO 14040:2006
Environmental management – Life cycle assessment - Principles and framework

ISO 14044:2006
Environmental management – Life cycle assessment - Requirements and guidelines

EN 15804:2012+A2:2019
Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products

PCR 2019:14
Construction Products. Version 1.3.4, 2025-06-20

C-PCR-025
(TO PCR 2019:14) for ESCALATORS AND MOVING WALKS

ISO 25745-3:2015
Energy performance of lifts, escalators and moving walks — Part 3: Energy calculation and classification of escalators and moving walks

Glossary

ENVIRONMENTAL PRODUCT DECLARATION (EPD)
An EPD is a type III declaration, complying with ISO14025, which provides results about a product's environmental performance and facilitates comparison between different products with the same function (Functional Unit and escalator characteristics). The results are based on the Life Cycle Analysis done in accordance with ISO 14040.

LIFE CYCLE ASSESSMENT (LCA)
LCA is a method that 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.

LIFE CYCLE IMPACT ASSESSMENT (LCIA)
The phase of life cycle assessment aimed at understanding and evaluating the magnitude and significance of the potential environmental impacts of a product system throughout the life cycle of the product.

GLOBAL WARMING POTENTIAL (GWP)
It is expressed in kg carbon dioxide (CO_2) equivalent. This indicator expresses global warming potential and refers to carbon footprint. It considers gaseous substances such as carbon dioxide (CO_2), methane (CH_4), laughing gas (N_2O) 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.

LIFE CYCLE INVENTORY (LCI)
The phase of life cycle assessment involving the compilation and quantification of inputs and outputs for a product system throughout its life cycle.

FUNCTIONAL UNIT (FU)
The quantified performance of a product system for use, as a reference unit.

PRODUCT CATEGORY RULES (PCR)
The quantified performance of a product system for use, as a reference unit.

Otis gives people freedom to connect and thrive in a taller, faster, smarter world. The global leader in the manufacture, installation and servicing of elevators and escalators, we move 2.3 billion people a day and maintain approximately 2.3 million customer units worldwide – the industry's leading service portfolio. You'll find us in the world's numerous iconic structures, as well as residential and commercial buildings, transportation hubs and everywhere people are on the move.

Headquartered in Connecticut, USA, Otis is 71,000 people strong, including 42,000 field professionals, all committed to meeting the diverse needs of our customers and passengers in more than 200 countries and territories.

To learn more, visit www.otis.com and follow us on LinkedIn, Instagram, Facebook and Twitter @OtisElevatorCo.

OTIS

www.otis.com

EPD®