Environmental Product Declaration

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

GEN2™ MACHINE ROOM ELEVATOR
OTIS ELECTRIC ELEVATOR COMPANY

Program:	The International EPD® System - www.environdec.com
Program operator:	EPD International AB
EPD registration number:	S-P-11541
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Revision number:	1.0
Geographical scope:	Global

Remark: The report covers GEN3™ product, GEN3™ product is not sold in China.

EPD®

ECO PLATFORM EPD VERIFIED

OTIS electric

About Otis Electric

Otis Electric was established as a main subsidiary of Otis (NYSE:OTIS) in China on March 12,1997 and is headquartered in Hang Zhou. It provides elevators, escalators together with their service maintenance based on Otis' global technology platform and quality standards, for residential, commercial and urban modernization projects.

Otis Electric is supported by two manufacturing bases in Hangzhou and Chongqing, and has a laboratory accredited by China National Accreditation Service for Conformity Assessment (CNAS). Its 4,000 mechanics collaborate on a dedicated team of 7,000 employees at more than 360 branches and service outlets nationwide to move forward together with passengers and customer.

Otis is headquartered in Connecticut, USA, and has 70,000 employees, including approximately 41,000 maintenance engineers, providing products and maintenance services to more than 200 countries and regions around the world.

GEN2™ MACHINE ROOM ELEVATOR

GEN2™ energy regenerative passenger elevator is a new green, efficient and digital elevator launched by Otis Electric to meet the rapid development of the market. During the development process, the GEN2™ passenger elevator inherited the advantages of traditional belt elevators, and at the same time fully absorbed Otis' valuable experience in production, installation and actual use of elevators and Otis' mature and reliable control technology. With its advanced energy regenerative system design and full application of cutting-edge technologies such as steel belt traction and RBI steel belt safety detection, GEN2™ quickly won the favor of customers due to its excellent quality and superior operating comfort after its launch. GEN2™ is widely used in mid-to-high-end residential buildings, office buildings, hotels and public construction projects with main features: 1) Green and environmentally friendly, focusing on sustainable energy development plans 2) Safe and efficient 3) Smart and comfortable.

GEN3™ MACHINE ROOM ELEVATOR is quite comparable to those of the previous product generation of GEN2™ MACHINE ROOM ELEVATOR. GEN3™ product is not sold in China.

PRODUCT INFORMATION

This Environmental Product Declaration for GEN2™ MACHINE ROOM ELEVATOR is developed according to the ISO 14040/44 & ISO 14025 guidelines and to the calculation rules specified in the new C-PCR for Lifts C-PCR-008 Lifts (to PCR 2019:14), version 2024-03-08", thereby providing full compliance with the CEN standard EN 15804:2012 + A2:2019 (as the core PCR), as well as the PCR 2019:14 Construction products, version 1.3.2. The General Program Instructions of the International EPD System apply for the current EPD development too. We covered the whole life cycle of GEN2™ MACHINE ROOM ELEVATOR, manufactured in Hangzhou and Chongqing manufacturing base, from the preparation of raw materials, its transport to manufacturing site and the manufacturing of the lift's components, through its installation, maintenance and use until each component end-of-life treatment. As specified in the C-PCR, the mandatory information of GEN2™ MACHINE ROOM ELEVATOR is presented in the following table. The figures correspond to a typical configuration, being the representative unit of the complete range of GEN2™ MACHINE ROOM ELEVATOR.

The mandatory environmental impact indicators used and the associated impact methods listed in Annex C of EN 15804+A2 are declared. The characterization methodology referenced in EN15804+A2 is used for the calculation. Please note that no co-product allocation occurs in the product foreground system. Key assumptions are discussed in the LCA Background Report.

INDEX	VALUES	REPRESENTATIVE VALUES CHOSEN IN CASE OF DECLARATION OF RANGES
COMMERCIAL NAME	GEN2™ MACHINE ROOM ELEVATOR	
Segment	Commercial	
Type of installation	New generic lift	
Main purpose	Transport of passengers	
Type of lift	Electric	
Type of drive system	Gearless traction	
Rated load (fixed or range)	630 - 2550kg	1000kg
Rated speed (fixed or range)	1 - 2.5 m/s	1.75m/s
Number of stops (fixed or range)	Up to 50 Stops	19 Stops
Travelled height (fixed or range)	Up to 140m	55m
Number of operating days per year (fixed or range)	360	360
Applied Usage Category (UC) according to ISO 25745-2	UC1 to UC6	UC4
Designed Reference Service Life (RSL)	25 years	
Geographic region or intended installation region	Global	
ADDITIONAL INFORMATION		
Recommended application (main market) Building rise (typical) Building type	Recommended building type in Table A.1, Annex A, ISO25745-2. Mainly dedicated to medium to large scale commercial buildings	

Caption: 1. GEN2™ machine room elevator mandatory information required in the PCR
2. This information cover GEN3™ machine room elevator and GEN3™ machine is not sold in China.

The LCA was conducted for a lift with a lifetime of 25 years, without considering a modernization, installed in a 19 floors building, having a speed of 1.75 m/s and a travelling distance of 55 m. The number of trips per day for a lift with Usage Category 4 is 750, which was obtained from ISO 25745-2. The designed reference service life considered for the LCA study is a typical data. Depending on maintenance and modernization activities, the usage phase of a lift can be up to 25-30 years. 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).

In more detail

PRODUCT STAGE – MODULES A1- A3: RAW MATERIAL SUPPLY & OTIS MANUFACTURING

The impacts for GEN3™ MACHINE ROOMLESS ELEVATOR is driven primarily by materials manufacturing of ferrous and electronic components. In all impact categories, the manufacturing in Otis factories (e.g. Cutting, Drilling, Bending, Punching, etc.) has a minor contribution to the impact categories. This limited impact from the manufacturing part is widely due to the continuous efforts to reduce its environmental footprint over the year through multi-channel initiatives such as: considering reusable and recyclable package for the components, eliminating the painting and welding operations, having a positive impact on greenhouse gas emissions and wastes. As well, energy consumption has been dramatically decreased by the use of LED lights.

CONSTRUCTION PROCESS STAGE: MODULES A4-A5

The importance of the A4 Transport from Manufacturing to building site stage is minor, less than 1% for GWP.

USE STAGE: MODULES B6

The impacts are driven primarily by the electricity consumption during use stage (25 years). There are no known releases of dangerous substances to indoor air, soil, and water during the use stage.

END-OF-LIFE (EOL) STAGE: MODULES C1-C4

The main materials used in the elevator are metals (mainly steel) and inert materials (mainly concrete). Due to this composition, there is a high potential of recyclability at the lift's end-of life. Steel and non-ferrous metals as well as the electronic equipment can all be recycled. For the concrete materials, landfilling is assumed in this EPD as a realistic and conservative approach. Incineration is considered for plastic, wood and paper.

BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARY: MODULE D

Net impacts (loads) and benefits consider the reduced environmental burdens of recycling materials into other product systems. In this process, the benefits of C3 recycled material are analyzed primarily when it is used as a primary feedstock in lieu of other product systems.

ELECTRICITY USED IN THE MANUFACTRUING PROCESS IN A3 AND B6

Electricity used the grid electricity consumption mix in A3 and country electricity consumption mix in B6.

Scenarios	GWP-GHG indicator		
	unit	A3	B6
Hangzhou, China	kg CO_2 eq./kWh	0.8565	0.8565
Singapore, Asia	kg CO_2 eq./kWh	0.8565	0.506
Dubai, Middle East	kg CO_2 eq./kWh	0.8565	1.0601
Mexico, Latin America	kg CO_2 eq./kWh	0.8565	0.6400

PRODUCT FUNCTION UNIT

The results in the EPD are presented for a function unit of the transportation of a load over a distance. The functional unit is necessary to ensure comparability of LCA results. This is particularly critical when different systems are being assessed, to ensure that such comparisons are made on a common basis. LCA results presented in this EPD may not be comparable with results from other LCA studies or EPDs, if they do not comply with EN 15804 or have been calculated for a different functional unit.

Impacts per functional unit The PCR defines the following functional unit for product comparison. The primary purpose of an elevator is to vertically transport goods and passengers. Therefore, for the purpose of this EPD, the functional unit is the result of a load transported over a distance, expressed in tonne - kilometer [tkm]. The Transportation Performance (TP) indicates the total amount of tkm performed by the elevator over the defined service life with an average load, according to ISO 25745-2. For the defined representative unit and a RSL of 25 years, the TP per applied usage category is:

Usage Category	TRANSPORTATION PERFORMANCE (TP)
4	**19 602**

Caption:Estimated energy consumption of the declared GEN2™ elevator according to ISO 25745-2 ,and cover GEN3™ elevator.
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.
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.

Life Cycle Approach of GEN2™ MACHINE ROOM ELEVATOR

We design our elevators with a life-cycle approach and ensure continual improvements by reducing their potential environmental impacts at each life cycle stage.

The study scope is a typical ”cradle to grave” assessment, from the raw material needed to build up the lift up to its end of life where the elevator is removed and disposed.

For compliance with EN 15804,the PCR defines the product life cycle to be covered with the information modules A to D.

The Product stage (A1-A3) includes the raw material extraction and production, transport to the manufacturing site, and manufacturing and assembly of components, considering the demand of energy, auxiliary and operational materials and packaging. The data collection is from 1st Jun 2022 to 31st Dec 2022.

The Construction process stage (A4-A5) includes the transportation to the installation site by mainly truck and the installation, considering the energy demand and auxiliary material.

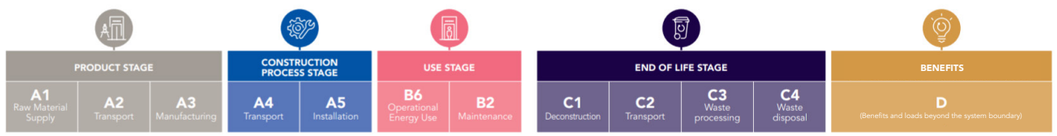
The Use stage (B1-B7) includes the maintenance, considering the transportation of employees to the installation site and auxiliary materials, including preventive maintenance parts production and energy use during operation and standby. All other modules are not relevant and modernization is not part of this stage.

The End-of-life stage (C1-C4) includes the deconstruction, considering the energy demand and auxiliary materials, the transportation by mainly truck to waste processing facilities, the waste processing, considering sorting, and the waste disposal, considering a scenario with recycling, incineration and landfill. Finally, the benefits and loads beyond the system boundaries stage (D) includes the potential for recycling by substitution of primary material and energy recovery.

The following picture summarizes the modules covered in the LCA calculation according to PCR for Construction product. Also according to PCR, this is a cradle-to-grave assessment plus module D (A+B+C+D), wherein the construction and maintenance of capital equipment and indirect activities are excluded from the system boundary. The scenarios included in the study are currently in use and are representative for one of the most probable alternatives.

LIFE CYCLE STAGE	INFORMATION MODULE		COMMENT
A1-A3* Product Stage (Hangzhou, China)	A1	Raw material supply	Included
	A2	Transport of raw materials	Included
	A3	Manufacturing (incl. production and transport of packaging materials)*	Included
A4-A5 Construction Process Stage (Hangzhou, China Singapore, Asia Dubai, Middle East Mexico, Latin America)	A4	Transport to construction site	Included
	A5	Installation (incl. packaging waste treatment)	Included
B1-B7 Use Stage (Hangzhou, China Singapore, Asia Dubai, Middle East Mexico, Latin America)	B1	Use	Excluded
	B2	Maintenance (preventive maintenance)	Included
	B3	Repair	Excluded: It is an intervention that cannot be programmed or foreseen, because it depends on the building application and users´ behavior
	B4	Replacement	Excluded
	B5	Refurbishment	Excluded
	B6	Operational energy use	Included
	B7	Operational water use	Excluded; not applicable
C1-C4 End-of-life Stage (Hangzhou, China Singapore, Asia Dubai, Middle East Mexico, Latin America)	C1	Deconstruction	Included
	C2	Transport to end-of-life	Included
	C3	Waste processing	Included
	C4	Waste disposal	Included
D Benefits and loads beyond the system boundary (Hangzhou, China Singapore, Asia Dubai, Middle East Mexico, Latin America)	D	Reuse, recovery, recycling, potential	Included

Caption: System boundary of GEN2™ MACHINE ROOM ELEVATOR and cover GEN3™ product
* The share of the GWP-GHG indicator results in A1-A3 (A1-A5 for services) is from product-specific LCI data, “>90%”.



The LCA study includes the elevator manufacturing, its transport and installation, use and end of life. We covered the whole life cycle of the elevator, manufactured in China. As main scenario, it is considered that the elevator is installed, used and send to end of life treatment within China. Beside the China scenario, further scenarios for installation, use-phase and EoL were calculated under geographic scenarios provided in this EPD.

GEN2™ MACHINE ROOM ELEVATOR is produced in China (Hangzhou and Chongqing manufacturing factory) with components’ suppliers from China. The elevators are installed in global. Four regions (China, Asia, Middle East and Latin America) are considered for the scenarios. The total mass of the representative elevator is 6 829 kg.

Content Declaration

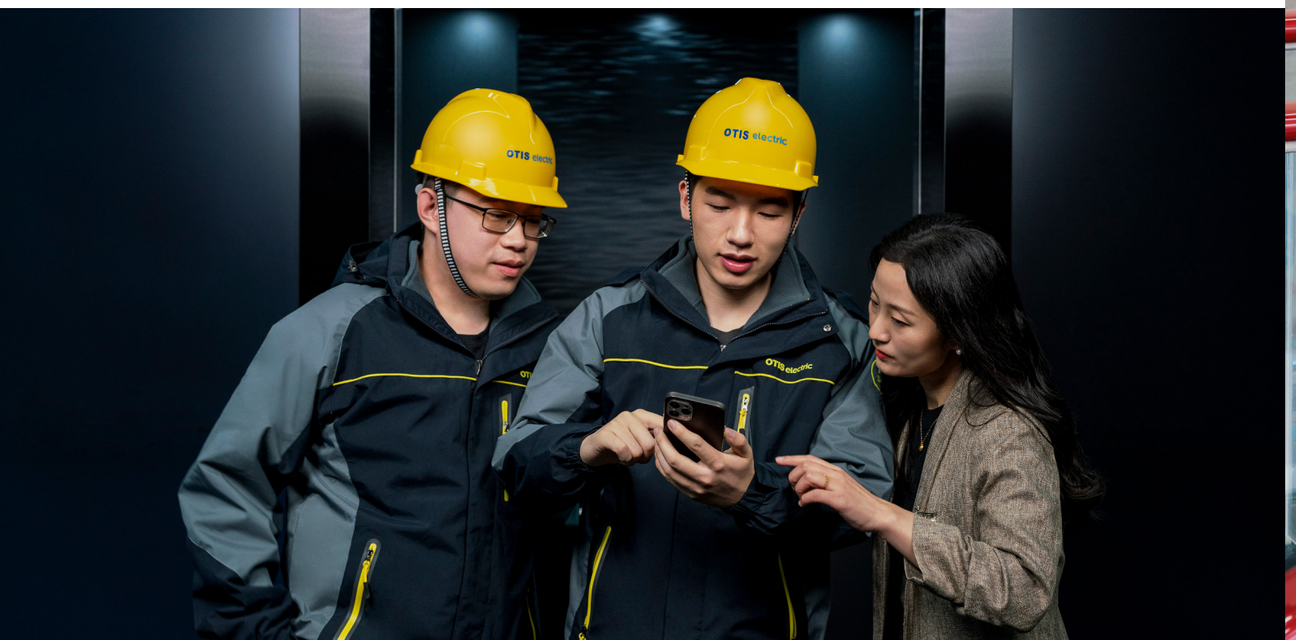
The tables below show a material summary of GEN2™ MACHINE ROOM ELEVATOR studied and its packaging, as delivered and installed in a building. Data are provided by Otis Electric according to the cut-off rules described in the appropriate section

MATERIAL	MASS [KG]	MASS [%]	Post-consumer material, weight-%	Biogenic material, weight-% and kg C/kg
Ferrous metals	5025.46	73.50	N/A	N/A
Non-ferrous metals	194.48	2.84	N/A	N/A
Plastics and rubbers	277.56	4.06	N/A	N/A
Inorganic materials (e.g. concrete)	1272.08	18.60	N/A	N/A
Organic materials (e.g. paper or wood)	6.22	0.09	N/A	0.472
Lubricants (e.g. oils and greases), paintings, coatings, adhesives and fillers	3.67	0.05	N/A	N/A
Electric and electronic equipment	57.86	0.85	N/A	N/A
Batteries and accumulators	0.24	0.00	N/A	N/A
Refrigerants in car air conditioners	0.00	0.00	N/A	N/A
Other materials	0.00	0.00	N/A	N/A

Caption: Material summary of GEN2™ MACHINE ROOM ELEVATOR unit and cover GEN3™ product

MATERIAL	MASS [KG]	MASS [%]	Post-consumer material, weight-%	Biogenic material, weight-% and kg C/kg
Ferrous metals	43.56	2.99	N/A	N/A
Plastics and rubbers	0.50	0.03	N/A	N/A
Inorganic materials (e.g. concrete)	1410.80	96.97	N/A	N/A
Organic materials (e.g. paper or wood)	1454.86	100.00	N/A	0.472

Caption: Material summary of packaging of GEN2™ MACHINE ROOM ELEVATOR unit and cover GEN3™ product



Environmental indicators

The results for the complete service lifetime of the GEN2™ MACHINE ROOM ELEVATOR were calculated according to the C-PCR and presented per functional unit (tkm) and in a separate subsection, a declaration of the environmental performance in absolute figures (i.e. total values) for the complete product over its RSL is included. Assumptions are presented in the verified LCA Background report. The definition of the listed impact categories is given in the Glossary section of this declaration.

Main scenario results for this EPD is CHINA SCENARIO (Hangzhou) per functional unit (FU), the other scenarios will be declared in the separate subsection.

CORE ENVIRONMENTAL IMPACT INDICATORS

RESULT PER FU-HANGZHOU											
Indicator	Unit	Tot.A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
GWP-fossil	kg CO_2 eq.	1.24E+00	1.11E-03	1.03E-01	5.38E-01	4.70E+00	3.49E-04	1.01E-02	2.65E-03	3.43E-02	-3.18E-01
GWP-biogenic	kg CO_2 eq.	-1.27E-01	3.25E-07	1.29E-01	2.77E-04	9.41E-04	7.00E-08	3.46E-06	1.94E-06	5.51E-04	-1.21E-05
GWP-luluc	kg CO_2 eq.	1.28E-03	5.87E-07	1.36E-04	2.41E-04	2.70E-03	2.01E-07	6.49E-06	4.33E-06	1.25E-06	-2.19E-04
GWP-total	kg CO_2 eq.	1.12E+00	1.12E-03	2.32E-01	5.39E-01	4.70E+00	3.50E-04	1.02E-02	2.66E-03	3.49E-02	-3.18E-01
ODP	kg CFC 11 eq.	1.97E-08	1.76E-11	2.57E-09	1.25E-08	9.26E-09	6.88E-13	1.53E-10	6.44E-11	5.02E-11	-1.18E-08
AP	mol H^+ eq.	8.87E-03	2.76E-06	6.53E-04	1.50E-03	2.38E-02	1.77E-06	2.55E-05	1.79E-05	1.20E-05	-1.70E-03
EP-freshwater	kg P eq.	5.86E-04	9.12E-08	4.41E-05	6.78E-05	8.10E-04	6.03E-08	9.66E-07	2.96E-07	1.58E-07	-2.40E-04
EP-marine	kg N eq.	1.17E-03	6.73E-07	1.13E-04	2.79E-04	5.14E-03	3.82E-07	5.72E-06	6.75E-06	6.05E-06	-3.35E-04
EP-terrestrial	mol N eq.	1.20E-02	6.91E-06	1.19E-03	2.92E-03	5.45E-02	4.05E-06	5.87E-05	7.21E-05	5.51E-05	-4.19E-03
POCP	kg NMVOC eq.	4.52E-03	3.68E-06	4.82E-04	1.83E-03	1.46E-02	1.09E-06	3.11E-05	2.46E-05	1.54E-05	-1.92E-03
ADP-minerals&metals*	kg Sb eq.	8.01E-05	3.63E-09	3.64E-06	5.23E-06	3.25E-06	2.42E-10	4.28E-08	5.34E-09	2.86E-09	-3.47E-05
ADP-fossil*	MJ	1.57E+01	1.57E-02	1.18E+00	6.90E+00	5.14E+01	3.82E-03	1.39E-01	5.45E-02	1.92E-02	-3.52E+00
WDP*	m^3	1.56E+00	7.00E-05	2.26E-02	4.21E-02	6.02E-01	4.47E-05	6.25E-04	1.84E-03	1.99E-03	-2.44E-01
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										

ADDITIONAL GWP INDICATOR ACCORDING TO PCR FOR CONSTRUCTION PRODUCTS

RESULT PER FU-HANGZHOU											
Indicator	Unit	Tot.A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
GWP-GHG	kg CO_2 eq.	1.25E+00	1.12E-03	1.03E-01	5.39E-01	4.70E+00	3.50E-04	1.02E-02	2.66E-03	3.43E-02	-3.18E-01

RESOURCES USE INDICATORS

RESULT PER FU-HANGZHOU											
Indicator	Unit	Tot.A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
PERE	MJ	8.49E+00	2.03E-04	1.10E+00	1.72E-01	2.81E+00	2.09E-04	2.29E-03	5.01E-03	3.97E-04	-3.72E-01
PERM	MJ	1.00E+00	0.00E+00	-9.98E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-4.27E-03	0.00E+00	0.00E+00
PERT	MJ	9.49E+00	2.03E-04	1.01E-01	1.72E-01	2.81E+00	2.09E-04	2.29E-03	7.48E-04	3.97E-04	-3.72E-01
PENRE	MJ	1.54E+01	1.57E-02	1.18E+00	6.90E+00	5.14E+01	3.82E-03	1.39E-01	3.59E-01	1.92E-02	-3.52E+00
PENRM	MJ	3.05E-01	0.00E+00	-5.48E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-3.04E-01	0.00E+00	0.00E+00
PENRT	MJ	1.57E+01	1.57E-02	1.18E+00	6.90E+00	5.14E+01	3.82E-03	1.39E-01	5.46E-02	1.92E-02	-3.52E+00
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	1.63E-02	2.26E-06	7.22E-04	1.38E-03	1.44E-02	1.07E-06	2.05E-05	4.60E-05	5.99E-05	-6.09E-03
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 AND OUTPUT FLOWS INDICATORS

RESULT PER FU-HANGZHOU											
Indicator	Unit	Tot.A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
Hazardous waste disposed	kg	5.15E-04	3.98E-07	1.20E-03	1.03E-03	1.28E-03	9.53E-08	3.60E-06	9.13E-04	3.02E-04	-9.00E-05
Non-hazardous waste disposed	kg	1.54E-01	7.75E-04	1.98E-02	1.80E-01	3.34E-01	2.48E-05	4.38E-03	2.65E-01	6.57E-02	-1.04E-01
Radioactive waste disposed	kg	1.22E-05	3.21E-09	1.53E-06	2.78E-06	1.18E-04	8.80E-09	3.32E-08	1.29E-08	5.51E-09	-2.94E-06

OUTPUT FLOWS INDICATORS

RESULT PER FU-HANGZHOU											
Indicator	Unit	Tot.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	2.69E-01	0.00E+00	0.00E+00
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 CHINA SCENARIO (Hangzhou) per complete product over its RSL.

RESULT PER PRODUCT-HANGZHOU											
Indicator	Unit	Tot.A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
GWP-fossil	kg CO_2 eq.	2.44E+04	2.18E+01	2.02E+03	1.06E+04	9.21E+04	6.85E+00	1.99E+02	5.20E+01	6.72E+02	-6.23E+03
GWP-biogenic	kg CO_2 eq.	-2.48E+03	6.38E-03	2.52E+03	5.42E+00	1.85E+01	1.37E-03	6.79E-02	3.81E-02	1.08E+01	-2.37E-01
GWP-luluc	kg CO_2 eq.	2.52E+01	1.15E-02	2.67E+00	4.72E+00	5.29E+01	3.94E-03	1.27E-01	8.49E-02	2.46E-02	-4.30E+00
GWP-total	kg CO_2 eq.	2.19E+04	2.19E+01	4.54E+03	1.06E+04	9.21E+04	6.85E+00	1.99E+02	5.21E+01	6.83E+02	-6.23E+03
ODP	kg CFC 11 eq.	3.87E-04	3.45E-07	5.04E-05	2.45E-04	1.81E-04	1.35E-08	3.01E-06	1.26E-06	9.84E-07	-2.31E-04
AP	mol H^+ eq.	1.74E+02	5.41E-02	1.28E+01	2.95E+01	4.67E+02	3.48E-02	5.00E-01	3.50E-01	2.35E-01	-3.34E+01
EP-freshwater	kg P eq.	1.15E+01	1.79E-03	8.65E-01	1.33E+00	1.59E+01	1.18E-03	1.89E-02	5.79E-03	3.09E-03	-4.71E+00
EP-marine	kg N eq.	2.29E+01	1.32E-02	2.22E+00	5.46E+00	1.01E+02	7.49E-03	1.12E-01	1.32E-01	1.19E-01	-6.56E+00
EP-terrestrial	mol N eq.	2.35E+02	1.36E-01	2.34E+01	5.73E+01	1.07E+03	7.94E-02	1.15E+00	1.41E+00	1.08E+00	-8.21E+01
POCP	kg NMVOC eq.	8.86E+01	7.22E-02	9.44E+00	3.59E+01	2.86E+02	2.13E-02	6.09E-01	4.82E-01	3.02E-01	-3.76E+01
ADP-minerals&metals*	kg Sb eq.	1.57E+00	7.11E-05	7.14E-02	1.03E-01	6.37E-02	4.74E-06	8.40E-04	1.05E-04	5.60E-05	-6.81E-01
ADP-fossil*	MJ	3.08E+05	3.08E+02	2.31E+04	1.35E+05	1.01E+06	7.50E+01	2.72E+03	1.07E+03	3.77E+02	-6.90E+04
WDP*	m^3	3.06E+04	1.37E+00	4.44E+02	8.26E+02	1.18E+04	8.77E-01	1.22E+01	3.61E+01	3.90E+01	-4.77E+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										

RESULT PER PRODUCT-HANGZHOU											
Indicator	Unit	Tot.A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
GWP-GHG	kg CO_2 eq.	2.44E+04	2.19E+01	2.03E+03	1.06E+04	9.21E+04	6.85E+00	1.99E+02	5.21E+01	6.73E+02	-6.23E+03

RESULT PER PRODUCT-HANGZHOU											
Indicator	Unit	Tot.A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
PERE	MJ	1.66E+05	3.97E+00	2.15E+04	3.37E+03	5.51E+04	4.10E+00	4.48E+01	9.83E+01	7.79E+00	-7.28E+03
PERM	MJ	1.96E+04	0.00E+00	-1.96E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.36E+01	0.00E+00	0.00E+00
PERT	MJ	1.86E+05	3.97E+00	1.97E+03	3.37E+03	5.51E+04	4.10E+00	4.48E+01	1.47E+01	7.79E+00	-7.28E+03
PENRE	MJ	3.02E+05	3.08E+02	2.31E+04	1.35E+05	1.01E+06	7.50E+01	2.72E+03	7.04E+03	3.77E+02	-6.90E+04
PENRM	MJ	5.98E+03	0.00E+00	-1.08E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-5.97E+03	0.00E+00	0.00E+00
PENRT	MJ	3.08E+05	3.08E+02	2.31E+04	1.35E+05	1.01E+06	7.50E+01	2.72E+03	1.07E+03	3.77E+02	-6.90E+04
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	3.19E+02	4.43E-02	1.42E+01	2.70E+01	2.82E+02	2.10E-02	4.01E-01	9.02E-01	1.17E+00	-1.19E+02
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										

RESULT PER PRODUCT-HANGZHOU											
Indicator	Unit	Tot.A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.01E+01	7.81E-03	2.35E+01	2.01E+01	2.51E+01	1.87E-03	7.05E-02	1.79E+01	5.91E+00	-1.76E+00
Non-hazardous waste disposed	kg	3.02E+03	1.52E+01	3.89E+02	3.53E+03	6.55E+03	4.87E-01	8.60E+01	5.19E+03	1.29E+03	-2.05E+03
Radioactive waste disposed	kg	2.40E-01	6.30E-05	2.99E-02	5.46E-02	2.32E+00	1.72E-04	6.51E-04	2.53E-04	1.08E-04	-5.77E-02

RESULT PER PRODUCT-HANGZHOU											
Indicator	Unit	Tot.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	5.27E+03	0.00E+00	0.00E+00
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

In addition to the results for main scenario (Hangzhou), the following additional LCA results are presented in separate subsection below for other scenarios (Dubai, Mexico and Singapore). The difference between other scenarios and main scenario is the results for A4-C4 because the product is also used in those different countries.

ASIA SCENARIO (Singapore)

CORE ENVIRONMENTAL IMPACT INDICATORS UC4 PER TKM

RESULT PER FU-SINGAPORE											
Indicator	Unit	Tot.A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
GWP-fossil	kg CO_2 eq.	1.24E+00	3.70E-02	1.00E-01	5.38E-01	2.76E+00	2.05E-04	1.01E-02	2.65E-03	3.43E-02	-3.18E-01
GWP-biogenic	kg CO_2 eq.	-1.27E-01	9.16E-06	1.29E-01	2.77E-04	2.55E-04	1.89E-08	3.46E-06	1.94E-06	5.51E-04	-1.21E-05
GWP-luluc	kg CO_2 eq.	1.28E-03	2.38E-05	1.32E-04	2.41E-04	1.56E-04	1.16E-08	6.49E-06	4.33E-06	1.25E-06	-2.19E-04
GWP-total	kg CO_2 eq.	1.12E+00	3.70E-02	2.29E-01	5.39E-01	2.76E+00	2.05E-04	1.02E-02	2.66E-03	3.49E-02	-3.18E-01
ODP	kg CFC 11 eq.	1.97E-08	5.72E-10	2.66E-09	1.25E-08	6.92E-08	5.15E-12	1.53E-10	6.44E-11	5.02E-11	-1.18E-08
AP	mol H^+ eq.	8.87E-03	5.69E-04	6.21E-04	1.50E-03	3.18E-03	2.36E-07	2.55E-05	1.79E-05	1.20E-05	-1.70E-03
EP-freshwater	kg P eq.	5.86E-04	2.18E-06	4.30E-05	6.78E-05	7.72E-05	5.74E-09	9.66E-07	2.96E-07	1.58E-07	-2.40E-04
EP-marine	kg N eq.	1.17E-03	1.42E-04	1.07E-04	2.79E-04	8.13E-04	6.04E-08	5.72E-06	6.75E-06	6.05E-06	-3.35E-04
EP-terrestrial	mol N eq.	1.20E-02	1.56E-03	1.12E-03	2.92E-03	8.78E-03	6.53E-07	5.87E-05	7.21E-05	5.51E-05	-4.19E-03
POCP	kg NMVOC eq.	4.52E-03	4.53E-04	4.68E-04	1.83E-03	6.02E-03	4.48E-07	3.11E-05	2.46E-05	1.54E-05	-1.92E-03
ADP-minerals&metals*	kg Sb eq.	8.01E-05	8.03E-08	3.64E-06	5.23E-06	3.05E-06	2.27E-10	4.28E-08	5.34E-09	2.86E-09	-3.47E-05
ADP-fossil*	MJ	1.57E+01	4.89E-01	1.17E+00	6.90E+00	4.30E+01	3.20E-03	1.39E-01	5.45E-02	1.92E-02	-3.52E+00
WDP*	m^3	1.56E+00	1.71E-03	2.19E-02	4.21E-02	9.90E-02	7.36E-06	6.25E-04	1.84E-03	1.99E-03	-2.44E-01
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										

RESULT PER PRODUCT-SINGAPORE											
Indicator	Unit	Tot.A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
GWP-fossil	kg CO_2 eq.	2.44E+04	7.25E+02	1.96E+03	1.06E+04	5.40E+04	4.02E+00	1.99E+02	5.20E+01	6.72E+02	-6.23E+03
GWP-biogenic	kg CO_2 eq.	-2.48E+03	1.79E-01	2.52E+03	5.42E+00	4.99E+00	3.71E-04	6.79E-02	3.81E-02	1.08E+01	-2.37E-01
GWP-luluc	kg CO_2 eq.	2.52E+01	4.66E-01	2.59E+00	4.72E+00	3.07E+00	2.28E-04	1.27E-01	8.49E-02	2.46E-02	-4.30E+00
GWP-total	kg CO_2 eq.	2.19E+04	7.26E+02	4.48E+03	1.06E+04	5.40E+04	4.02E+00	1.99E+02	5.21E+01	6.83E+02	-6.23E+03
ODP	kg CFC 11 eq.	3.87E-04	1.12E-05	5.22E-05	2.45E-04	1.36E-03	1.01E-07	3.01E-06	1.26E-06	9.84E-07	-2.31E-04
AP	mol H^+ eq.	1.74E+02	1.12E+01	1.22E+01	2.95E+01	6.23E+01	4.63E-03	5.00E-01	3.50E-01	2.35E-01	-3.34E+01
EP-freshwater	kg P eq.	1.15E+01	4.27E-02	8.42E-01	1.33E+00	1.51E+00	1.13E-04	1.89E-02	5.79E-03	3.09E-03	-4.71E+00
EP-marine	kg N eq.	2.29E+01	2.78E+00	2.09E+00	5.46E+00	1.59E+01	1.18E-03	1.12E-01	1.32E-01	1.19E-01	-6.56E+00
EP-terrestrial	mol N eq.	2.35E+02	3.06E+01	2.20E+01	5.73E+01	1.72E+02	1.28E-02	1.15E+00	1.41E+00	1.08E+00	-8.21E+01
POCP	kg NMVOC eq.	8.86E+01	8.88E+00	9.18E+00	3.59E+01	1.18E+02	8.77E-03	6.09E-01	4.82E-01	3.02E-01	-3.76E+01
ADP-minerals&metals*	kg Sb eq.	1.57E+00	1.57E-03	7.14E-02	1.03E-01	5.98E-02	4.45E-06	8.40E-04	1.05E-04	5.60E-05	-6.81E-01
ADP-fossil*	MJ	3.08E+05	9.58E+03	2.28E+04	1.35E+05	8.43E+05	6.27E+01	2.72E+03	1.07E+03	3.77E+02	-6.90E+04
WDP*	m^3	3.06E+04	3.34E+01	4.28E+02	8.26E+02	1.94E+03	1.44E-01	1.22E+01	3.61E+01	3.90E+01	-4.77E+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										

ADDITIONAL GWP INDICATOR ACCORDING TO PCR FOR CONSTRUCTION PRODUCTS

RESULT PER FU-SINGAPORE											
Indicator	Unit	Tot.A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
GWP-GHG	kg CO_2 eq.	1.25E+00	3.70E-02	1.00E-01	5.39E-01	2.76E+00	2.05E-04	1.02E-02	2.66E-03	3.43E-02	-3.18E-01

RESULT PER PRODUCT-SINGAPORE											
Indicator	Unit	Tot.A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
GWP-GHG	kg CO_2 eq.	2.44E+04	7.26E+02	1.97E+03	1.06E+04	5.40E+04	4.02E+00	1.99E+02	5.21E+01	6.73E+02	-6.23E+03

RESOURCES USE INDICATORS

RESULT PER FU-SINGAPORE											
Indicator	Unit	Tot.A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
PERE	MJ	8.49E+00	5.06E-03	1.10E+00	1.72E-01	5.72E-01	4.25E-05	2.29E-03	5.01E-03	3.97E-04	-3.72E-01
PERM	MJ	1.00E+00	0.00E+00	-9.98E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-4.27E-03	0.00E+00	0.00E+00
PERT	MJ	9.49E+00	5.06E-03	9.71E-02	1.72E-01	5.72E-01	4.25E-05	2.29E-03	7.48E-04	3.97E-04	-3.72E-01
PENRE	MJ	1.54E+01	4.89E-01	1.17E+00	6.90E+00	4.30E+01	3.20E-03	1.39E-01	3.59E-01	1.92E-02	-3.52E+00
PENRM	MJ	3.05E-01	0.00E+00	-5.48E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-3.04E-01	0.00E+00	0.00E+00
PENRT	MJ	1.57E+01	4.89E-01	1.17E+00	6.90E+00	4.30E+01	3.20E-03	1.39E-01	5.46E-02	1.92E-02	-3.52E+00
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	m³	1.63E-02	5.67E-05	7.07E-04	1.38E-03	4.67E-03	3.48E-07	2.05E-05	4.60E-05	5.99E-05	-6.09E-03
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										

RESULT PER PRODUCT-SINGAPORE											
Indicator	Unit	Tot.A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
PERE	MJ	1.66E+05	9.92E+01	2.15E+04	3.37E+03	1.12E+04	8.33E-01	4.48E+01	9.83E+01	7.79E+00	-7.28E+03
PERM	MJ	1.96E+04	0.00E+00	-1.96E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.36E+01	0.00E+00	0.00E+00
PERT	MJ	1.86E+05	9.92E+01	1.90E+03	3.37E+03	1.12E+04	8.33E-01	4.48E+01	1.47E+01	7.79E+00	-7.28E+03
PENRE	MJ	3.02E+05	9.58E+03	2.29E+04	1.35E+05	8.43E+05	6.27E+01	2.72E+03	7.04E+03	3.77E+02	-6.90E+04
PENRM	MJ	5.98E+03	0.00E+00	-1.08E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-5.97E+03	0.00E+00	0.00E+00
PENRT	MJ	3.08E+05	9.58E+03	2.28E+04	1.35E+05	8.43E+05	6.27E+01	2.72E+03	1.07E+03	3.77E+02	-6.90E+04
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	m³	3.19E+02	1.11E+00	1.39E+01	2.70E+01	9.16E+01	6.81E-03	4.01E-01	9.02E-01	1.17E+00	-1.19E+02
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 AND OUTPUT FLOWS INDICATORS

RESULT PER FU-SINGAPORE											
Indicator	Unit	Tot.A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
Hazardous waste disposed	kg	5.15E-04	9.72E-06	1.20E-03	1.03E-03	2.29E-03	1.70E-07	3.60E-06	9.13E-04	3.02E-04	-9.00E-05
Non-hazardous waste disposed	kg	1.54E-01	1.41E-02	1.94E-02	1.80E-01	6.08E-02	4.52E-06	4.38E-03	2.65E-01	6.57E-02	-1.04E-01
Radioactive waste disposed	kg	1.22E-05	7.97E-08	1.34E-06	2.78E-06	6.03E-07	4.48E-11	3.32E-08	1.29E-08	5.51E-09	-2.94E-06

RESULT PER PRODUCT-SINGAPORE											
Indicator	Unit	Tot.A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.01E+01	1.90E-01	2.35E+01	2.01E+01	4.49E+01	3.34E-03	7.05E-02	1.79E+01	5.91E+00	-1.76E+00
Non-hazardous waste disposed	kg	3.02E+03	2.76E+02	3.80E+02	3.53E+03	1.19E+03	8.87E-02	8.60E+01	5.19E+03	1.29E+03	-2.05E+03
Radioactive waste disposed	kg	2.40E-01	1.56E-03	2.63E-02	5.46E-02	1.18E-02	8.79E-07	6.51E-04	2.53E-04	1.08E-04	-5.77E-02

OUTPUT FLOWS INDICATORS

RESULT PER FU-SINGAPORE											
Indicator	Unit	Tot.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	2.69E-01	0.00E+00	0.00E+00
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

RESULT PER PRODUCT-SINGAPORE											
Indicator	Unit	Tot.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	5.27E+03	0.00E+00	0.00E+00
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

MIDDLE EAST SCENARIO(Dubai)

CORE ENVIRONMENTAL IMPACT INDICATORS UC4 PER TKM

RESULT PER FU-DUBAI											
Indicator	Unit	Tot.A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
GWP-fossil	kg CO_2 eq.	1.24E+00	6.68E-02	1.05E-01	5.38E-01	5.81E+00	4.32E-04	1.01E-02	2.65E-03	3.43E-02	-3.18E-01
GWP-biogenic	kg CO_2 eq.	-1.27E-01	1.52E-05	1.29E-01	2.77E-04	9.30E-04	6.92E-08	3.46E-06	1.94E-06	5.51E-04	-1.21E-05
GWP-luluc	kg CO_2 eq.	1.28E-03	4.64E-05	1.33E-04	2.41E-04	3.71E-04	2.76E-08	6.49E-06	4.33E-06	1.25E-06	-2.19E-04
GWP-total	kg CO_2 eq.	1.12E+00	6.69E-02	2.33E-01	5.39E-01	5.81E+00	4.32E-04	1.02E-02	2.66E-03	3.49E-02	-3.18E-01
ODP	kg CFC 11 eq.	1.97E-08	1.02E-09	2.71E-09	1.25E-08	9.62E-08	7.15E-12	1.53E-10	6.44E-11	5.02E-11	-1.18E-08
AP	mol H^+ eq.	8.87E-03	1.41E-03	6.69E-04	1.50E-03	3.42E-02	2.55E-06	2.55E-05	1.79E-05	1.20E-05	-1.70E-03
EP-freshwater	kg P eq.	5.86E-04	3.25E-06	4.30E-05	6.78E-05	8.78E-05	6.53E-09	9.66E-07	2.96E-07	1.58E-07	-2.40E-04
EP-marine	kg N eq.	1.17E-03	3.53E-04	1.13E-04	2.79E-04	5.25E-03	3.90E-07	5.72E-06	6.75E-06	6.05E-06	-3.35E-04
EP-terrestrial	mol N eq.	1.20E-02	3.89E-03	1.20E-03	2.92E-03	5.61E-02	4.18E-06	5.87E-05	7.21E-05	5.51E-05	-4.19E-03
POCP	kg NMVOC eq.	4.52E-03	1.09E-03	4.91E-04	1.83E-03	2.08E-02	1.55E-06	3.11E-05	2.46E-05	1.54E-05	-1.92E-03
ADP-minerals&metals*	kg Sb eq.	8.01E-05	1.13E-07	3.65E-06	5.23E-06	5.04E-06	3.75E-10	4.28E-08	5.34E-09	2.86E-09	-3.47E-05
ADP-fossil*	MJ	1.57E+01	8.57E-01	1.22E+00	6.90E+00	7.90E+01	5.88E-03	1.39E-01	5.45E-02	1.92E-02	-3.52E+00
WDP*	m^3	1.56E+00	2.58E-03	2.24E-02	4.21E-02	4.38E-01	3.25E-05	6.25E-04	1.84E-03	1.99E-03	-2.44E-01
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										

RESULT PER PRODUCT-DUBAI											
Indicator	Unit	Tot.A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
GWP-fossil	kg CO_2 eq.	2.44E+04	1.31E+03	2.05E+03	1.06E+04	1.14E+05	8.47E+00	1.99E+02	5.20E+01	6.72E+02	-6.23E+03
GWP-biogenic	kg CO_2 eq.	-2.48E+03	2.98E-01	2.52E+03	5.42E+00	1.82E+01	1.36E-03	6.79E-02	3.81E-02	1.08E+01	-2.37E-01
GWP-luluc	kg CO_2 eq.	2.52E+01	9.09E-01	2.60E+00	4.72E+00	7.27E+00	5.41E-04	1.27E-01	8.49E-02	2.46E-02	-4.30E+00
GWP-total	kg CO_2 eq.	2.19E+04	1.31E+03	4.58E+03	1.06E+04	1.14E+05	8.47E+00	1.99E+02	5.21E+01	6.83E+02	-6.23E+03
ODP	kg CFC 11 eq.	3.87E-04	2.01E-05	5.30E-05	2.45E-04	1.89E-03	1.40E-07	3.01E-06	1.26E-06	9.84E-07	-2.31E-04
AP	mol H^+ eq.	1.74E+02	2.77E+01	1.31E+01	2.95E+01	6.71E+02	4.99E-02	5.00E-01	3.50E-01	2.35E-01	-3.34E+01
EP-freshwater	kg P eq.	1.15E+01	6.37E-02	8.43E-01	1.33E+00	1.72E+00	1.28E-04	1.89E-02	5.79E-03	3.09E-03	-4.71E+00
EP-marine	kg N eq.	2.29E+01	6.92E+00	2.22E+00	5.46E+00	1.03E+02	7.65E-03	1.12E-01	1.32E-01	1.19E-01	-6.56E+00
EP-terrestrial	mol N eq.	2.35E+02	7.63E+01	2.35E+01	5.73E+01	1.10E+03	8.18E-02	1.15E+00	1.41E+00	1.08E+00	-8.21E+01
POCP	kg NMVOC eq.	8.86E+01	2.13E+01	9.63E+00	3.59E+01	4.08E+02	3.03E-02	6.09E-01	4.82E-01	3.02E-01	-3.76E+01
ADP-minerals&metals*	kg Sb eq.	1.57E+00	2.21E-03	7.15E-02	1.03E-01	9.88E-02	7.35E-06	8.40E-04	1.05E-04	5.60E-05	-6.81E-01
ADP-fossil*	MJ	3.08E+05	1.68E+04	2.39E+04	1.35E+05	1.55E+06	1.15E+02	2.72E+03	1.07E+03	3.77E+02	-6.90E+04
WDP*	m^3	3.06E+04	5.06E+01	4.39E+02	8.26E+02	8.58E+03	6.38E-01	1.22E+01	3.61E+01	3.90E+01	-4.77E+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										

ADDITIONAL GWP INDICATOR ACCORDING TO PCR FOR CONSTRUCTION PRODUCTS

RESULT PER FU-DUBAI											
Indicator	Unit	Tot.A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
GWP-GHG	kg CO_2 eq.	1.25E+00	6.69E-02	1.05E-01	5.39E-01	5.81E+00	4.32E-04	1.02E-02	2.66E-03	3.43E-02	-3.18E-01

RESULT PER PRODUCT-DUBAI											
Indicator	Unit	Tot.A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
GWP-GHG	kg CO_2 eq.	2.44E+04	1.31E+03	2.06E+03	1.06E+04	1.14E+05	8.47E+00	1.99E+02	5.21E+01	6.73E+02	-6.23E+03

RESOURCES USE INDICATORS

RESULT PER FU-DUBAI											
Indicator	Unit	Tot.A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
PERE	MJ	8.49E+00	7.80E-03	1.09E+00	1.72E-01	1.72E-01	1.28E-05	2.29E-03	5.01E-03	3.97E-04	-3.72E-01
PERM	MJ	1.00E+00	0.00E+00	-9.98E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-4.27E-03	0.00E+00	0.00E+00
PERT	MJ	9.49E+00	7.80E-03	9.65E-02	1.72E-01	1.72E-01	1.28E-05	2.29E-03	7.48E-04	3.97E-04	-3.72E-01
PENRE	MJ	1.54E+01	8.57E-01	1.22E+00	6.90E+00	7.90E+01	5.88E-03	1.39E-01	3.59E-01	1.92E-02	-3.52E+00
PENRM	MJ	3.05E-01	0.00E+00	-5.48E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-3.04E-01	0.00E+00	0.00E+00
PENRT	MJ	1.57E+01	8.57E-01	1.22E+00	6.90E+00	7.90E+01	5.88E-03	1.39E-01	5.46E-02	1.92E-02	-3.52E+00
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	1.63E-02	8.78E-05	7.15E-04	1.38E-03	9.48E-03	7.05E-07	2.05E-05	4.60E-05	5.99E-05	-6.09E-03
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										

RESULT PER PRODUCT-DUBAI											
Indicator	Unit	Tot.A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
PERE	MJ	1.66E+05	1.53E+02	2.15E+04	3.37E+03	3.37E+03	2.51E-01	4.48E+01	9.83E+01	7.79E+00	-7.28E+03
PERM	MJ	1.96E+04	0.00E+00	-1.96E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.36E+01	0.00E+00	0.00E+00
PERT	MJ	1.86E+05	1.53E+02	1.89E+03	3.37E+03	3.37E+03	2.51E-01	4.48E+01	1.47E+01	7.79E+00	-7.28E+03
PENRE	MJ	3.02E+05	1.68E+04	2.39E+04	1.35E+05	1.55E+06	1.15E+02	2.72E+03	7.04E+03	3.77E+02	-6.90E+04
PENRM	MJ	5.98E+03	0.00E+00	-1.08E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-5.97E+03	0.00E+00	0.00E+00
PENRT	MJ	3.08E+05	1.68E+04	2.39E+04	1.35E+05	1.55E+06	1.15E+02	2.72E+03	1.07E+03	3.77E+02	-6.90E+04
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	m³	3.19E+02	1.72E+00	1.40E+01	2.70E+01	1.86E+02	1.38E-02	4.01E-01	9.02E-01	1.17E+00	-1.19E+02
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 AND OUTPUT FLOWS INDICATORS

RESULT PER FU-DUBAI											
Indicator	Unit	Tot.A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
Hazardous waste disposed	kg	5.15E-04	1.47E-05	1.20E-03	1.03E-03	5.78E-04	4.30E-08	3.60E-06	9.13E-04	3.02E-04	-9.00E-05
Non-hazardous waste disposed	kg	1.54E-01	1.61E-02	1.94E-02	1.80E-01	8.65E-02	6.43E-06	4.38E-03	2.65E-01	6.57E-02	-1.04E-01
Radioactive waste disposed	kg	1.22E-05	1.22E-07	1.35E-06	2.78E-06	2.71E-06	2.01E-10	3.32E-08	1.29E-08	5.51E-09	-2.94E-06

RESULT PER PRODUCT-DUBAI											
Indicator	Unit	Tot.A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.01E+01	2.89E-01	2.35E+01	2.01E+01	1.13E+01	8.43E-04	7.05E-02	1.79E+01	5.91E+00	-1.76E+00
Non-hazardous waste disposed	kg	3.02E+03	3.15E+02	3.81E+02	3.53E+03	1.69E+03	1.26E-01	8.60E+01	5.19E+03	1.29E+03	-2.05E+03
Radioactive waste disposed	kg	2.40E-01	2.39E-03	2.64E-02	5.46E-02	5.31E-02	3.95E-06	6.51E-04	2.53E-04	1.08E-04	-5.77E-02

OUTPUT FLOWS INDICATORS

RESULT PER FU-DUBAI											
Indicator	Unit	Tot.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	2.69E-01	0.00E+00	0.00E+00
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

RESULT PER PRODUCT-DUBAI											
Indicator	Unit	Tot.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	5.27E+03	0.00E+00	0.00E+00
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

LATIN AMERICA SCENARIO (Mexico City)

CORE ENVIRONMENTAL IMPACT INDICATORS UC4 PER TKM

RESULT PER FU-MEXICO											
Indicator	Unit	Tot.A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
GWP-fossil	kg CO_2 eq.	1.24E+00	1.19E-01	1.01E-01	5.38E-01	3.51E+00	2.61E-04	1.01E-02	2.65E-03	3.43E-02	-3.18E-01
GWP-biogenic	kg CO_2 eq.	-1.27E-01	3.06E-05	1.29E-01	2.77E-04	4.91E-04	3.65E-08	3.46E-06	1.94E-06	5.51E-04	-1.21E-05
GWP-luluc	kg CO_2 eq.	1.28E-03	7.41E-05	1.32E-04	2.41E-04	2.52E-04	1.87E-08	6.49E-06	4.33E-06	1.25E-06	-2.19E-04
GWP-total	kg CO_2 eq.	1.12E+00	1.19E-01	2.30E-01	5.39E-01	3.51E+00	2.61E-04	1.02E-02	2.66E-03	3.49E-02	-3.18E-01
ODP	kg CFC 11 eq.	1.97E-08	1.85E-09	2.66E-09	1.25E-08	6.81E-08	5.07E-12	1.53E-10	6.44E-11	5.02E-11	-1.18E-08
AP	mol H^+ eq.	8.87E-03	1.54E-03	6.40E-04	1.50E-03	1.55E-02	1.16E-06	2.55E-05	1.79E-05	1.20E-05	-1.70E-03
EP-freshwater	kg P eq.	5.86E-04	7.55E-06	4.42E-05	6.78E-05	8.87E-04	6.59E-08	9.66E-07	2.96E-07	1.58E-07	-2.40E-04
EP-marine	kg N eq.	1.17E-03	3.85E-04	1.09E-04	2.79E-04	2.62E-03	1.95E-07	5.72E-06	6.75E-06	6.05E-06	-3.35E-04
EP-terrestrial	mol N eq.	1.20E-02	4.22E-03	1.15E-03	2.92E-03	2.67E-02	1.98E-06	5.87E-05	7.21E-05	5.51E-05	-4.19E-03
POCP	kg NMVOC eq.	4.52E-03	1.26E-03	4.75E-04	1.83E-03	1.05E-02	7.81E-07	3.11E-05	2.46E-05	1.54E-05	-1.92E-03
ADP-minerals&metals*	kg Sb eq.	8.01E-05	2.84E-07	3.64E-06	5.23E-06	3.46E-06	2.57E-10	4.28E-08	5.34E-09	2.86E-09	-3.47E-05
ADP-fossil*	MJ	1.57E+01	1.60E+00	1.18E+00	6.90E+00	5.02E+01	3.73E-03	1.39E-01	5.45E-02	1.92E-02	-3.52E+00
WDP*	m^3	1.56E+00	5.88E-03	2.22E-02	4.21E-02	3.00E-01	2.23E-05	6.25E-04	1.84E-03	1.99E-03	-2.44E-01
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										

RESULT PER PRODUCT-MEXICO											
Indicator	Unit	Tot.A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
GWP-fossil	kg CO_2 eq.	2.44E+04	2.34E+03	1.99E+03	1.06E+04	6.88E+04	5.12E+00	1.99E+02	5.20E+01	6.72E+02	-6.23E+03
GWP-biogenic	kg CO_2 eq.	-2.48E+03	5.99E-01	2.52E+03	5.42E+00	9.63E+00	7.16E-04	6.79E-02	3.81E-02	1.08E+01	-2.37E-01
GWP-luluc	kg CO_2 eq.	2.52E+01	1.45E+00	2.59E+00	4.72E+00	4.94E+00	3.67E-04	1.27E-01	8.49E-02	2.46E-02	-4.30E+00
GWP-total	kg CO_2 eq.	2.19E+04	2.34E+03	4.51E+03	1.06E+04	6.88E+04	5.12E+00	1.99E+02	5.21E+01	6.83E+02	-6.23E+03
ODP	kg CFC 11 eq.	3.87E-04	3.63E-05	5.22E-05	2.45E-04	1.34E-03	9.93E-08	3.01E-06	1.26E-06	9.84E-07	-2.31E-04
AP	mol H^+ eq.	1.74E+02	3.03E+01	1.26E+01	2.95E+01	3.05E+02	2.27E-02	5.00E-01	3.50E-01	2.35E-01	-3.34E+01
EP-freshwater	kg P eq.	1.15E+01	1.48E-01	8.67E-01	1.33E+00	1.74E+01	1.29E-03	1.89E-02	5.79E-03	3.09E-03	-4.71E+00
EP-marine	kg N eq.	2.29E+01	7.54E+00	2.14E+00	5.46E+00	5.13E+01	3.81E-03	1.12E-01	1.32E-01	1.19E-01	-6.56E+00
EP-terrestrial	mol N eq.	2.35E+02	8.27E+01	2.26E+01	5.73E+01	5.23E+02	3.89E-02	1.15E+00	1.41E+00	1.08E+00	-8.21E+01
POCP	kg NMVOC eq.	8.86E+01	2.47E+01	9.32E+00	3.59E+01	2.06E+02	1.53E-02	6.09E-01	4.82E-01	3.02E-01	-3.76E+01
ADP-minerals&metals*	kg Sb eq.	1.57E+00	5.56E-03	7.14E-02	1.03E-01	6.78E-02	5.04E-06	8.40E-04	1.05E-04	5.60E-05	-6.81E-01
ADP-fossil*	MJ	3.08E+05	3.13E+04	2.31E+04	1.35E+05	9.84E+05	7.32E+01	2.72E+03	1.07E+03	3.77E+02	-6.90E+04
WDP*	m^3	3.06E+04	1.15E+02	4.34E+02	8.26E+02	5.88E+03	4.37E-01	1.22E+01	3.61E+01	3.90E+01	-4.77E+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										

ADDITIONAL GWP INDICATOR ACCORDING TO PCR FOR CONSTRUCTION PRODUCTS

RESULT PER FU-MEXICO											
Indicator	Unit	Tot.A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
GWP-GHG	kg CO_2 eq.	1.25E+00	1.19E-01	1.02E-01	5.39E-01	3.51E+00	2.61E-04	1.02E-02	2.66E-03	3.43E-02	-3.18E-01

RESULT PER PRODUCT-MEXICO											
Indicator	Unit	Tot.A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
GWP-GHG	kg CO_2 eq.	2.44E+04	2.34E+03	1.99E+03	1.06E+04	6.88E+04	5.12E+00	1.99E+02	5.21E+01	6.73E+02	-6.23E+03

RESOURCES USE INDICATORS

RESULT PER FU-MEXICO											
Indicator	Unit	Tot.A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
PERE	MJ	8.49E+00	1.73E-02	1.10E+00	1.72E-01	3.49E+00	2.60E-04	2.29E-03	5.01E-03	3.97E-04	-3.72E-01
PERM	MJ	1.00E+00	0.00E+00	-9.98E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-4.27E-03	0.00E+00	0.00E+00
PERT	MJ	9.49E+00	1.73E-02	1.02E-01	1.72E-01	3.49E+00	2.60E-04	2.29E-03	7.48E-04	3.97E-04	-3.72E-01
PENRE	MJ	1.54E+01	1.60E+00	1.18E+00	6.90E+00	5.02E+01	3.73E-03	1.39E-01	3.59E-01	1.92E-02	-3.52E+00
PENRM	MJ	3.05E-01	0.00E+00	-5.48E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-3.04E-01	0.00E+00	0.00E+00
PENRT	MJ	1.57E+01	1.60E+00	1.18E+00	6.90E+00	5.02E+01	3.73E-03	1.39E-01	5.46E-02	1.92E-02	-3.52E+00
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	1.63E-02	1.94E-04	7.11E-04	1.38E-03	6.77E-03	5.03E-07	2.05E-05	4.60E-05	5.99E-05	-6.09E-03
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										

RESULT PER PRODUCT-MEXICO											
Indicator	Unit	Tot.A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
PERE	MJ	1.66E+05	3.40E+02	2.16E+04	3.37E+03	6.85E+04	5.09E+00	4.48E+01	9.83E+01	7.79E+00	-7.28E+03
PERM	MJ	1.96E+04	0.00E+00	-1.96E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.36E+01	0.00E+00	0.00E+00
PERT	MJ	1.86E+05	3.40E+02	1.99E+03	3.37E+03	6.85E+04	5.09E+00	4.48E+01	1.47E+01	7.79E+00	-7.28E+03
PENRE	MJ	3.02E+05	3.13E+04	2.31E+04	1.35E+05	9.84E+05	7.32E+01	2.72E+03	7.04E+03	3.77E+02	-6.90E+04
PENRM	MJ	5.98E+03	0.00E+00	-1.08E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-5.97E+03	0.00E+00	0.00E+00
PENRT	MJ	3.08E+05	3.13E+04	2.31E+04	1.35E+05	9.84E+05	7.32E+01	2.72E+03	1.07E+03	3.77E+02	-6.90E+04
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	3.19E+02	3.81E+00	1.39E+01	2.70E+01	1.33E+02	9.86E-03	4.01E-01	9.02E-01	1.17E+00	-1.19E+02
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 AND OUTPUT FLOWS INDICATORS

RESULT PER FU-MEXICO											
Indicator	Unit	Tot.A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
Hazardous waste disposed	kg	5.15E-04	3.35E-05	1.20E-03	1.03E-03	8.34E-04	6.20E-08	3.60E-06	9.13E-04	3.02E-04	-9.00E-05
Non-hazardous waste disposed	kg	1.54E-01	5.26E-02	1.95E-02	1.80E-01	1.02E-01	7.62E-06	4.38E-03	2.65E-01	6.57E-02	-1.04E-01
Radioactive waste disposed	kg	1.22E-05	2.74E-07	1.44E-06	2.78E-06	6.11E-05	4.54E-09	3.32E-08	1.29E-08	5.51E-09	-2.94E-06

RESULT PER PRODUCT-MEXICO											
Indicator	Unit	Tot.A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.01E+01	6.57E-01	2.35E+01	2.01E+01	1.63E+01	1.22E-03	7.05E-02	1.79E+01	5.91E+00	-1.76E+00
Non-hazardous waste disposed	kg	3.02E+03	1.03E+03	3.82E+02	3.53E+03	2.01E+03	1.49E-01	8.60E+01	5.19E+03	1.29E+03	-2.05E+03
Radioactive waste disposed	kg	2.40E-01	5.37E-03	2.82E-02	5.46E-02	1.20E+00	8.90E-05	6.51E-04	2.53E-04	1.08E-04	-5.77E-02

OUTPUT FLOWS INDICATORS

RESULT PER FU-MEXICO											
Indicator	Unit	Tot.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	2.69E-01	0.00E+00	0.00E+00
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

RESULT PER PRODUCT-MEXICO											
Indicator	Unit	Tot.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	5.27E+03	0.00E+00	0.00E+00
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

Program related information & verification

See PCR for detailed requirements.

Programme	The International EPD® System EPD International AB Box 210 60, SE-100 31 Stockholm, Sweden www.environdec.com
EPD registration number	S-P-11541
Published	2024-03-15
Valid until	2029-03-15
Revision number	1.0
Product Category Rules	EN15804 :2012 + A2:2019 as Core PCR; PCR 2019 :14 Construction Products, version 1.3.2; C-PCR-008 Lifts (to PCR 2019:14), version 2024-03-08
Product group classification	Lifts
Reference year for data	2022
Geographical scope	China, Asia, Middle East, Latin America
Product category rules (PCR)	PCR 2019:14 Construction Products, version 1.3.2; C-PCR-008 Lifts (to PCR 2019:14), version 2024-03-08
Product Classification	UN CPC 4354. 2015:05. Version 1.0
PCR review was conducted by	The Technical Committee of the International EPD® System. See www.environdec.com/TC for a list of members.
Review chair	Claudia A. Peña, University of Concepción, Chile. The review panel may be contacted via the Secretariat www.environdec.com/contact
Independent verification of the declaration and data, according to ISO 14025:2006	☐EPD Process Certification (internal) ■EPD Verification (external)
Third party verifier	Rui Wang-IVL Swedish Environmental Research Institute
Accredited by	The International EPD® System Technical Committee, supported by the Secretariat

CONTACT INFORMATION:			
EPD owner	Life Cycle Assessment (LCA)	LCA software and database	Programme operator
			EPD®
Otis Electric Elevator Co.,Ltd No.28, Jiuhuan Road, Shangcheng District, Hangzhou city, Zhejiang China	Zhigang Li,Huang Zhong, TÜV SÜD	Simapro 9.5 and ecoinvent 3.9	**EPD International AB info@environdec.com**

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.

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

ISO Certified Otis Electric factories

Otis Electric sustainable development and environment strategy, leading to more and more energy efficient elevators, incorporates also the production. All our manufacturing plants in China have taken their commitment to continuously improve their environmental performance.

Hangzhou and Chongqing manufacturing factory are already certified the ISO 9001, ISO 14001 and ISO 45001 in the scope of design, development, manufacture, installation and servicing of elevators. We have established and applied an Occupational Health and Safety management, Quality management system and also Environmental Management system. We are continuously and rigorously monitoring both recyclable and non recyclable waste, as well as hazardous waste, water consumption and greenhouse gas emissions. We are constantly reducing all these indicators. By moving progressively from supplied packaging and logistics to in-house, we are currently also dealing with packaging management. We are able to recycle such packaging material and use it again or as a box filling to secure the product. Our factory manages energy consumption and reduce greenhouse gas emissions following our “ Otis Global Standard 193” energy management system. Factory follows the Otis Global environmental, social and governance (ESG) Our major customers and as importantly Governments care about how the elevators are manufactured and are becoming more conscious about the energy performance and the environmental protection.

Additional information

ENERGY EFFICIENCY ISO25745 CLASSIFICATION OF GEN2™ MACHINE ROOM ELEVATOR

our elevators are designed to achieve the best possible energy efficiency classification, according to the international ISO 25745-1 & 2 energy efficiency standard for elevators.

GEN2™ MACHINE ROOM ELEVATOR has received the A class energy rating, a certificate of conformity has been provided by a third party and can be made available upon request. It is available for GEN3™ product.

References

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

c-PCR-008 (TO PCR 2019 :14) Lifts (Elevators)

PCR 2019:14 Construction Products. Version 1.3.2

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

ISO 14025:2006
Sustainability of construction works – Environmental labels and declarations — Type III environmental declarations — Principles and procedures

ISO (2006) ISO 14040
Environmental management – Life cycle assessment – Principles and framework

ISO (2006) ISO 14044
Environmental management – Life cycle assessment – Requirements and guidelines

ISO (2012) ISO 25745-1
Energy performance of lifts, escalators, and moving walks – Part 1: Energy measurement and verification

ISO (2014) ISO 25745-2
Energy performance of lifts, escalators, and moving walks – Part 2: Energy calculation and classification for lifts (lifts)

ISO 9001:2015
Quality management systems – Requirements

ISO 14001:2015
Environmental management systems - Requirements with guidance for use

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 Lift's characteristics). The results are based on the Life Cycle Analysis done in accordance with ISO 14040.

ISO 25745

ISO 25745-2:2015 specifies a method of estimating energy consumption based on measured values, calculation, or simulation on an annual basis for traction, hydraulic and positive drive lifts on a single-unit basis, and an energy classification system for new, existing, and modernized traction, hydraulic, and positive drive lifts on a single-unit basis.

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.

FUNCTIONAL UNIT (FU)

The quantified performance of a product system for use, as a reference unit. For Lifts the FU corresponds to the transportation of 1 tonne of load over a distance of 1 kilometer, expressed in [tkm].

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.

PRODUCT CATEGORY RULES (PCR)

Product Category Rules (PCR) defines 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.

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.

UC

Usage Category: Defines the intensity of the lift usage by categories, based on average number of trips per day according to ISO 25745-2.

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