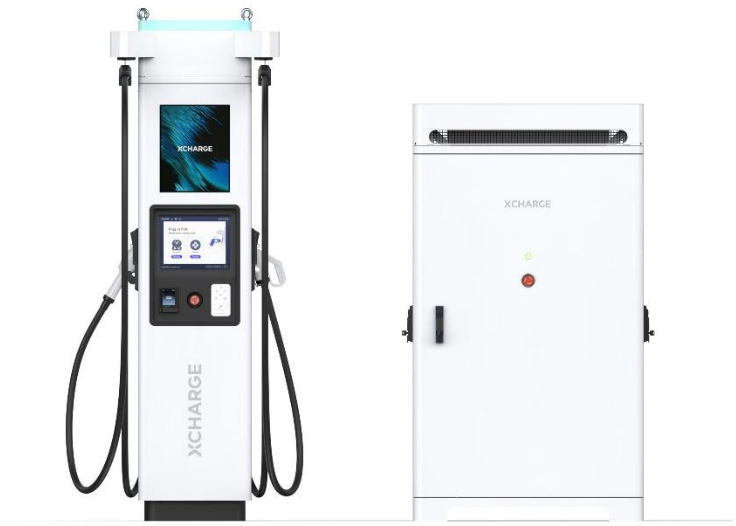
epd-norway
Global Program Operator

ECO PLATFORM EPD VERIFIED

Environmental Product Declaration

In accordance with 14025 and EN15804 +A2

C9LQ HPC Charger



XCHARGE

Owner of the declaration:
Beijing XCHARGE Technology Co., Ltd

Product name:
C9LQ HPC Charger

Declared unit:
1 pcs

Product category /PCR:
PCR EPDItaly017 – Charging Stations

Program holder and publisher:
The Norwegian EPD foundation

Declaration number:
NEPD-5720-5005-EN

Registration number:
NEPD-5720-5005-EN

Issue date: 05.01.2024

Valid to: 05.01.2029

The Norwegian
EPD Foundation

General information

Product:
C9LQ HPC Charger

Program operator:
The Norwegian EPD Foundation
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Declaration number:
NEPD-5720-5005-EN

This declaration is based on Product Category Rules:
PCR EPDItaly017 – Charging Stations

Statements:
The owner of the declaration shall be liable for the underlying information and evidence. EPD Norway shall not be liable with respect to manufacturer, life cycle assessment data and evidences.

Declared unit:
1 pcs C9LQ HPC Charger (1 PowerBOX with 1 satellite

Declared unit with option:
Manufacturing, distribution, installation, use & maintenance and end-of-life stage

Functional unit:
Production of 1 pcs C9LQ HPC Charger and maintained for a period of 20 years

Verification:
Independent verification of the declaration and data, according to ISO14025:2010

internal ☐ external ☑

Sign

Vito D'Incognito
Independent verifier approved by EPD Norway

Owner of the declaration:
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Manufacturer:
Beijing XCHARGE Technology Co., Ltd

Place of production:
Shuangyang Road No.12, Yizhuang, Daxing District, Beijing, P.R. China

Management system:
ISO 9001, ISO 14001, ISO 45001, ISO/IEC 20000-1, ISO/IEC 27001, IATF 16949

Organisation no:
911101083397675346

Issue date: 05.01.2024

Valid to: 05.01.2029

Year of study:
2022

Comparability:
EPDs from other programmes may not be comparable

The EPD has been worked out by:
Jiliu WU & Daqi Wang

Approved

Manager of EPD Norway

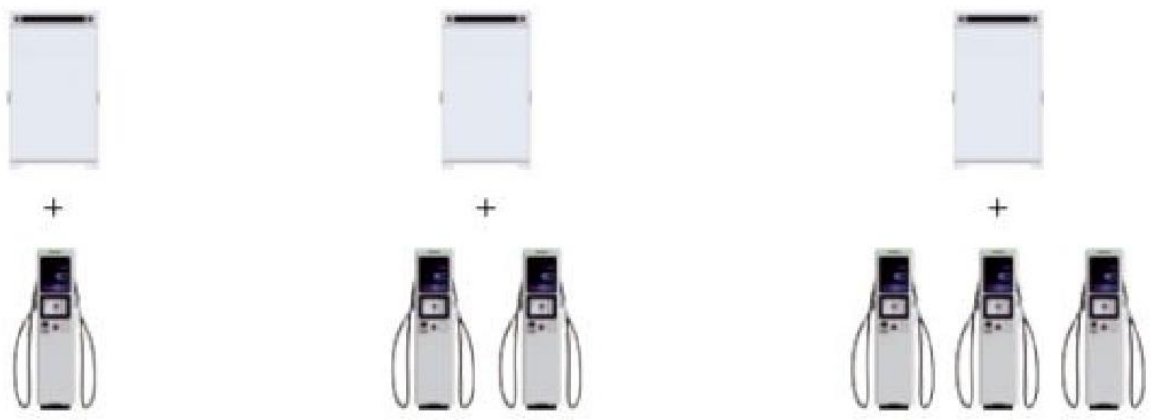
Product

Product description:

This product is a high-power charging station for recharging electric vehicles (EVs) using the fixed cable and plug-connections CCS Combo 2 and/or CHAdeMO. It gives powerful potential, flexible design and top-notch user experience.

Powerful Potential

• 1 PowerBOX + 1-3 satellite options allowing for greater charging flexibility.



• Single connector output (up to 360kW) and available simultaneous charging.

• Additional extra power module/ PowerBox to increase power limit enables investment future-proof.

• Longer cable versions + cable management systems are also available.

• Eichrecht ready

Flexible Design

• Constant-power AC-DC module designed for both 400V and 800V vehicles.

• OTA remote diagnostics & upgrades increase the compatibility while reducing issues (includes OCPP 1.6 and subsequent versions).

• Power module cassettes are adjustable, making it compatible with 180kW and 360kW configuration.

• At 1x0.8x1.8 meters, our PowerBOX accommodates a 360kW convertor unit, switching unit, and cooling unit in single, low-profile casing.

Top-Notch User Experience

• 15-inch full-color HD touch screen with Hi-Res color LED interactive display.

• RFID / Remote control /Credit Card payment interfaces available.

• Convenient operating range of 0.9 to 1.3 meters for all users.

• 19-inch full-color LED interactive system empowers stronger branding functionality.

Table 1 Product information

Parameters	
Weights	about 1190kg (PowerBOX plus 1*Satellite)
Weights of satellite	about 240kg (1*Satellite)
Weights of packaging	about 230kg
Dimensions	PowerBOX 1000*1200*1800mm (w*d*h) 1*Satellite 490*680*2200mm (w*d*h)

Product specification:

All raw material components of 1 pcs C9LQ HPC Charger were divided into several categories, which shows in following table.

Table 2 Raw Materials of C9LQ

Materials	KG	%
Metal	955.84	73.99%
Plastic	124.83	9.66%
Wood	0.01	0.00%
Electronic, passive	122.28	9.47%
Other	88.88	6.88%

All packaging components of 1 pcs C9LQ HPC Charger were divided into several categories as well.

Table 3 Packaging materials of C9LQ

	Materials	KG	%
Packaging of PowerBOX	Metal, steel bar / nameplate	0.06	0.03%
	Plastic, PE protective film	1.00	0.43%
	Plastic, PE package	0.0001	0.00%
	Plastic, PVC label	0.07	0.03%
	Wood, plywood	149.14	63.58%
Packaging of satellite	Metal, steel bar / nameplate	0.06	0.03%
	Plastic, PE protective film	1.02	0.43%
	Plastic, PE package	0.28	0.12%
	Plastic, PVC label	0.01	0.00%
	Wood, instructions	0.37	0.16%
	Wood, plywood	82.56	35.20%

Technical data:

A brief C9LQ HPC Charger technical data is showed in table below.

Table 4 Technical data

Parameters	
Charging Parameters	
Connectors	2 (1*Satellite)
Total charging efficiency	max. 95.17%
Power intensity transfer	6kWh/min
Max. charging time	16min (Audi E-Tron, 800V from 0%-100%)
Input voltage	3Phase 400Vac ± 10% (working situation) Single Phase 220Vac ± 10% (standby situation)
Input frequency	50Hz ± 1Hz
Max. rated input current	532A
Max. rated input power	368kW
Max. output power range	360kW continuous (CCS combo2 HPC) 180kW (CCS combo2) 60kW (CHAdeMO)
Max. output voltage	1000Vdc (CCS combo2 HPC) 1000Vdc (CCS combo2) 500Vdc (CHAdeMO)
Max. output current	500A (CCS combo2 HPC) 250A (CCS combo2) 125A (CHAdeMO)
Standby power	82.98W (PowerBOX plus 1*Satellite) 72.90W (1*Satellite)

Market:

Mainly Europe

Reference service life, product:

20 years

Reference service life, building:

N/A

LCA: Calculation rules

Declared unit:

1 pcs C9LQ HPC Charger (1 PowerBOX with 1 satellite)

Data quality:

In this study, all primary activity data mainly refer to year 2022, and the production volume and electricity consumption refer to July 2022- June 2023.

Data about the weight and material compositions of each of the charging station components are provided by suppliers. The questionnaire and primary data sheet are referred in the Annex document. Material losses happened during the components manufacturing is considered. Data about materials quantities and components weight have been checked by verifying the mass balance of the charging station.

Activity data on transportation of components from suppliers to XCHARGE have been calculated based on the distance on e-map, starting from the address of the production site of each supplier.

Therefore, all the activity data mentioned before have to be considered of very good quality with reference to precision, completeness, and consistency, and very representative of the system under study.

XCHARGE does only have specific electricity consumption values from test during the production stages. This data is from allocation for all factory electricity consumption of good quality regarding precision and consistency and completeness.

The data of distribution distance is based on the default scenario of PEFCR Guidance.

In installation stage, diesel used in forklift and crane is calculated by hourly fuel consumption and estimated working time.

The electricity consumption figure during the use stage is from a test report of good quality regarding precision and consistency and completeness.

Ordinary maintenance consists only filter replacement. The filter material is from the BOM provided by suppliers and the distance is based on the default scenario of PEFCR Guidance.

At the end of life stage, percentage of different material treatment method (recovery and disposal) is from chapter 4.2.3.3 of EN 50693. And the distance is also from PEFCR Guidance.

Background data about materials, production processes, transport activities and Eol treatments are retrieved from the ecoinvent v3.9.1 LCI library. The ecoinvent library is the most comprehensive LCI library available, with information about data quality and representativeness.

The electricity mix of the networks providing electricity for the test in manufacturing is modelled with ecoinvent v3.9.1. datasets representing low-voltage electricity in State Grid North China Branch.

With reference to data quality requirements, the datasets of Metal working and Injection moulding (from ecoinvent v3.9.1) used in the study can be classified as “proxy data” in upstream components manufacturing.

Allocation:

The electricity consumption for one charging station related to the activities performed in XCHARGE production site has been estimated by allocation of the total consumption of the production site in one year to the production of all charging stations.

The electricity use for charging station manufacturing is mostly from ageing test, other assembly processes are mainly manual. However, due to the fact that the entire factory only has one electricity meter, testing electricity cannot be calculated separately from assembly department and office-use electricity. Also, different types of charging stations are tested in the same test center, so the energy consumption is difficult to allocate between various products. According to the company it was taken the assumption that energy consumption is the same for any charging station despite the type and the production volume. Therefore, the electricity consumption from July 2022 to June 2023 for the entire factory was divided by the total amount of produced stations obtaining the average electricity consumption for one charging station.

System boundary:

The system boundary is from cradle to grave according to the PCR.

Table 5 Life cycle stages and modules

MANUFACTURING STAGE		DISTRIBUTION STAGE	INSTALLATION STAGE	USE & Maintenance STAGE	END-OF-LIFE STAGE De-installation
UPSTREAM MODULE	CORE MODULE	DOWNSTREAM MODULE			
extraction of raw materials, including waste recycling processes and the production of semi-finished and ancillary products	manufacturing of the product constituents, including all the stages	IN ACCORDANCE WITH EN 50693			
transportation of raw materials to the manufacturing company	product assembly				
	packaging				
	waste recycling processes				

The system boundary is from cradle to grave. Specific life cycle stages are included in three modules:

1) Upstream module, which includes all relevant supply chain processes:

- Raw materials acquisition;
- Components manufacturing;
- Waste disposal;
- Raw materials transportation.

2) Core module, which includes all the relevant processes managed by the organization proposing the EPD:

- Charging station manual assembly;
- Charging station test;
- Packaging to area for shipment.

3) Downstream module, which includes all the relevant processes that take place outside of the organization proposing the EPD:

- Product transportation/distribution;
- Installation;
- Use & maintenance;
- Disassembly;
- End of life.

Cut-off criteria:

What defined in chapter 4.2.3.3 of PCR EPD Italy 007 applied.

Flows must not be omitted to avoid hiding significant impacts. The EPD Italy Regulations and PCR EPD Italy 007 apply; specifically, the following flows and operations may be cut-off:

- Production, use and disposal of the packaging components and semi-finished intermediates.
- Materials making up the charging station itself whose total mass does not exceed 2% of the total weight of the device.
- Materials and energy flows related to the installation stage.
- Materials and energy flows related to dismantling phase.
- Devices external to the product itself required for installation.
- Additionally, what defined in 4.2.3.3 of EN 50693 applies.

In this study, impacts related to the production, transportation, and installation of capital goods (buildings, infrastructure, machinery, internal transport packaging) and general operations (staff travel, marketing and communication actions) that cannot be directly allocated to products are excluded from the LCA study.

The packaging materials of the components is cut-off in this study.

No component of charging station is cut-off in this study.

The contribution of office activities such as water and nature gas consumption is excluded in this study.

However, the contribution of office activities as electricity is included due to the fact that the entire factory only has one electricity meter.

Diesel used in forklift and crane is considered in installation phase, but other installation accessories and protective equipment such as bolts, screws, safety helmet and insulated gloves have been excluded as they could be reused.

LCA: Scenarios and additional technical information

The following information describe the scenarios in the different modules of the EPD.

Manufacturing stage

Data with regard to which raw materials and quantities per manufactured charging station were collected by XCHARGE. In addition, the company asked their suppliers for data and information on which manufacturing processes are used for each component.

Manufacturing processes are presented for each type of material that is included in the study, which have been used to produce all components, but there are other manufacturing processes that are embedded in the upstream data that has used in the LCA. Figures for material loss were under assumption.

Table 5 Manufacturing processes and materials losses for each type of material

Type of material	Manufacturing process	Loss of material
Metal	Metal working	10%
Plastic	Injection moulding	5%
Wood	N/A	0%
Electronic, passive	N/A	0%
Other	N/A	0%

Manufacturing of the C9LQ takes place at XCHARGE plant area in Beijing, China. Consumed energy during manufacturing, mostly from testing phase, is only electricity because water consumption is not related to product process. The electricity consumption for one charging station related to activities performed in XCHARGE production site has been estimated by allocation of the total consumption of the production site in one year to the production of all charging stations. Electricity comes from local low voltage grid, so relevant emission factor in ecoinvent v3.9.1 was chosen in this study.

Distribution stage

This module includes the impact to the distribution of the product at the installation site. One C9LQ charging station (1 PowerBOX and 1 satellite) with package was transported from XCHARGE to Europe. In this scenario, three transportation phases are considered: plant gate to sea stations, sea transport to export countries, distribution locations to installation sites. Distances in the first two phases are default values in PEFCR Guidance, and the average distance in the third phase is assumed as 300 km is PCR EPD Italy 017. In the absence of any primary data on the fleet of vehicles used, a EURO 4 category vehicle is considered in this study.

Table 6 Transportation Information of Distribute Stage

Type	Type of vehicle	Distance	Description	Source
Lorry	32+ metric ton, euro 4	1000 km	gate to transport stations	ecoinvent 3.9.1
Container Ship	-	18000 km	transport station to export areas	ecoinvent 3.9.1
Lorry	3.5-7.5 metric ton, euro 4	300 km	to installation	ecoinvent 3.9.1

Installation stage

This module includes impacts arising from the installation of the charging station in the operational site. According to the product instruction, 5t forklift is used in installation, diesel with density of 0.85kg/L is assumed to be used in this forklift with a working time of 30 mins and fuel consumption of 5L/h. The accessories listed in the instruction could be reused without any environmental burden. There is little waste and scrap generated during the installation stage, so the only outflow is the end-of-life (Eol) for PowerBOX and satellite packaging. To identify the waste amount, default values for recovery rates were grabbed in BS EN 50693:2019.

Table 7 Recovery and Waste Management Scenario in Packaging on each Type of Material per Functional Unit (fu)

Packaging	Material	Weight (kg/fu)	Recovery rate	Waste management scenario
PowerBOX	Metal, steel bar / nameplate	0.06	80%	20% landfill
	Plastic, PE protective film	1.00	0%	All landfill
	Plastic, PE package	0.0001	0%	All landfill
	Plastic, PVC label	0.07	0%	All landfill
	Wood, plywood	149.14	0%	All landfill
Satellite	Metal, steel bar / nameplate	0.06	80%	20% landfill
	Plastic, PE protective film	1.02	0%	All landfill
	Plastic, PE package	0.28	0%	All landfill
	Plastic, PVC label	0.01	0%	All landfill
	Wood, instructions	0.37	0%	All landfill
	Wood, plywood	82.56	0%	All landfill

In this study, we assumed all packaging material would be collected and transported to a disassembly site, then delivered to recycle/disposal sites. For these two transport phases, the distances of 100 km are assumed. The lorry is assumed to be a EURO 4 category vehicle with a load capacity of 32+ tons.

Assuming that the waste in packaging not used for recycling will be landfilled as based on regional factors in ecoinvent.

Use & maintenance

From the third-party test report, standby power consumers of C9LQ is 82.98W, which was used in this study. Thinking about C9LQ charging station will be operated in EU in our scenario, the electricity is assumed to come from the local grid and is based on residual mix emission factor in ecoinvent v3.9.1.

Ordinary scheduled maintenance is included in the system. Based on XCHARGE's recommendation, the air filter (a part of component D0.00120 in BOM) should be replaced once per year. This air filter is composed of aluminium alloy and PET. Every year when a new air filter is replaced, the used one is assumed to be collected and transported to a disassembly place then to recovery/disposal sites. The same values of recovery rates were used here, and transport distances were assumed as 100 km, with a EURO 4 category vehicle with a load capacity of 32+ tons.

Table 8 Waste Treatment Scenarios on Material for Air Filters

Material	Weight (kg/pcs)	Quantity in RSL	Recovery Rate	Scenario
Metal, aluminum frame	2.76	20 pcs	70%	30% landfill
Filter, PET	0.22	20 pcs	0%	All landfill

When modelling, 19 air filters were treated in Use & maintenance stage; the last piece entered the end-of-life stage as a part of the whole machine.

Assuming that the waste in filters not used for recycling will be landfilled as based on regional factors in ecoinvent.

There is no extraordinary scheduled maintenance in this scenario. The maintenance related part is modelled separately in downstream module.

End of Life stage

When finishing the service life, the charging station would be delivered to a disassemble place, then all materials entering the final period of waste treatment: disposal and recycling. In absence of primary data, the default values for material recovery rates were used: all BOM components were divided into 3 main categories by homogeneous material - metal, plastic and other, 11 sub-categories in the table below to match specific material types in BS EN 50693: 2019. Moreover, the reference figures for recovery were grabbed there, except recovery proportion, other parts were assumed to disposal. Table below shows specific information about waste treatment. In addition, there are no recycled parts in used raw material, from XCHARGE engineers.

Recovery rates for charging station material are showed in End-of-Life stage, which is the declared part in this report. Further operations starting from the recycled materials are out of the system boundaries, according to PCR EPD Italy 017. There is no material for re-use and energy recovery in this study under scenario.

Table 9 Recovery and Waste Management Scenario on each Type of Material per Functional Unit (fu)

Material	Weight (kg/fu)	Recovery rate	Weight to be landfilled (kg/fu)
Metal, aluminium	61.95	70%	18.58

Metal, copper	57.52	60%	23.01
Metal, ferrous	54.90	80%	10.98
Metal, steel	678.97	80%	135.79
Metal, other	4.80	60%	1.92
Plastic, ABS	1.31	20%	1.05
Plastic, PP	0.76	20%	0.61
Plastic, PS	2.54	20%	2.03
Plastic, other	113.98	0%	113.98
Wood	0.01	0%	0.01
Other	213.29	0%	213.29
Total	1190.02	44% (calculated)	521.25

Table 10 Transportation Information of EoL Stage

Type	Type of vehicle	Distance	Description	Source
Lorry	32+ metric ton, euro 4	100 km	installation site to disassemble plant	ecoinvent 3.9.1
Lorry	32+ metric ton, euro 4	100 km	disassemble plant to final platform (recovery or disposal)	ecoinvent 3.9.1

It is assumed that the waste in products not used for recovery will be landfilled as based on regional factors in ecoinvent

LCA: Results

The LCA results are presented below for the declared unit defined on page 2 of the EPD document.

Core environmental impact indicators

Table 11 Core environmental impact indicators

Indicator	Unit	Manufacturing		Distribution	Installation	Use & maintenance	End-of-life
		Upstream	Core	Downstream			
GWP-total	kg CO2 eq.	3.23E+04	2.26E+02	6.46E+02	1.43E+01	6.35E+03	3.39E+02
GWP-fossil	kg CO2 eq.	3.22E+04	2.27E+02	6.46E+02	7.54E+00	6.15E+03	3.38E+02
GWP-biogenic	kg CO2 eq.	-1.29E+01	-1.33E+00	2.10E-01	6.74E+00	1.79E+02	8.81E-01
GWP-LULUC	kg CO2 eq.	5.65E+01	3.49E-02	4.14E-01	3.60E-03	1.58E+01	4.11E-02
ODP	kg CFC11 eq.	1.41E-03	4.32E-07	1.16E-05	2.43E-07	1.74E-04	4.15E-06
AP	mol H^+ eq.	3.28E+02	1.29E+00	9.33E+00	3.68E-02	3.61E+01	2.83E-01

EP-freshwater	kg P eq.	3.77E+01	4.49E-02	4.09E-02	6.32E-04	5.22E+00	1.04E-02
EP-marine	kg N eq.	4.60E+01	2.58E-01	2.51E+00	3.97E-02	5.88E+00	3.46E-01
EP-terrestial	mol N eq.	4.98E+02	2.75E+00	2.76E+01	1.27E-01	5.46E+01	9.83E-01
POCP	kg NMVOC eq.	1.65E+02	7.28E-01	8.02E+00	5.71E-02	1.74E+01	3.36E-01
ADP-M&M	kg Sb eq.	9.20E+00	7.38E-04	1.69E-03	1.65E-05	1.17E-01	2.09E-04
ADP-fossil	MJ	4.07E+05	2.08E+03	8.71E+03	2.02E+02	1.28E+05	7.54E+02
WDP	m³	7.26E+03	2.45E+01	3.21E+01	1.34E+00	1.49E+03	2.52E+02

GWP-total: *Global Warming Potential;* ***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; See "additional requirements" for indicator given as PO4 eq.* ***EP-marine:*** *Eutrophication potential, fraction of nutrients reaching freshwater end compartment;* ***EP-terrestrial:*** *Eutrophication potential, Accumulated Exceedance;* ***POCP****: Formation potential of tropospheric ozone;* ***ADP-M&M****: Abiotic depletion potential for non-fossil resources (minerals and metals);* ***ADP-fossil:*** *Abiotic depletion potential for fossil resources;* ***WDP:*** *Water deprivation potential, deprivation weighted water consumption*

Additional environmental impact indicators

Table 12 Additional environmental impact indicators

Indicator	Unit	Manufacturing		Distribution	Installation	Use & maintenance	End-of-life
		Upstream	Core	Downstream			
PM	Disease incidence	2.23E-03	1.72E-05	3.72E-05	7.18E-07	1.86E-04	4.54E-06
IRP	kBq U235 eq.	3.19E+03	2.59E+00	1.02E+01	1.45E-01	3.34E+03	1.86E+00
ETP-fw	CTUe	7.55E+05	6.67E+02	4.50E+03	1.04E+02	2.32E+04	9.88E+03
HTP-c	CTUh	6.91E-05	5.46E-08	2.99E-07	3.32E-09	3.52E-06	5.39E-08
HTP-nc	CTUh	1.96E-03	2.73E-06	4.84E-06	8.03E-08	1.14E-04	1.63E-06
SQP	Dimensionless	2.36E+05	4.87E+02	3.84E+03	1.25E+02	2.49E+04	6.86E+02

PM: *Particulate matter emissions;* ***IRP:*** *Ionising radiation, human health;* ***ETP-fw:*** *Ecotoxicity (freshwater);* ***HTP-c:*** *Human toxicity, cancer effects;* ***HTP-nc:*** *Human toxicity, non-cancer effects;* ***SQP:*** *Land use related*

Resource use

Table 14 Resource use

Parameter	Unit	Manufacturing		Distribution	Installation	Use & maintenance	End-of-life
		Upstream	Core	Downstream			
RPEE	MJ	2.45E+03	9.54E+01	5.73E+01	6.22E-01	1.56E+04	1.62E+01
RPEM	MJ	2.54E+04	0.00E+00	0.00E+00	1.10E-01	2.70E+02	0.00E+00
TPE	MJ	2.79E+04	9.54E+01	5.73E+01	7.32E-01	1.58E+04	1.62E+01

NRPE	MJ	5.81E+04	2.08E+03	8.71E+03	9.17E+01	1.17E+05	7.54E+02
NRPM	MJ	3.49E+05	0.00E+00	0.00E+00	1.11E+02	1.05E+04	0.00E+00
TRPE	MJ	4.07E+05	2.08E+03	8.71E+03	2.02E+02	1.28E+05	7.54E+02
SM	KG	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
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
W	M^3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; TPE Total use of renewable primary energy resources; NRPE Non renewable primary energy resources used as energy carrier; NRPM Non renewable primary energy resources used as materials; TRPE Total use of non renewable primary energy resources; SM Use of secondary materials; RSF Use of renewable secondary fuels; NRSF Use of non renewable secondary fuels; W Use of net fresh water

End of life – Waste

Table 15 End of life – Waste

Parameter	Unit	Manufacturing		Distribution	Installation	Use & maintenance	End-of-life
		Upstream	Core	Downstream			
HW	KG	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NHW	KG	1.02E+02	0.00E+00	0.00E+00	2.34E+02	1.99E+01	5.21E+02
RW	KG	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

HW Hazardous waste disposed; NHW Non hazardous waste disposed; RW Radioactive waste disposed

End of life – output flow

Table 16 End of life – output flow

Parameter	Unit	Manufacturing		Distribution	Installation	Use & maintenance	End-of-life
		Upstream	Core	Downstream			
CR	KG	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MR	KG	0.00E+00	0.00E+00	0.00E+00	8.80E-02	3.67E+01	6.69E+02
MER	KG	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EEE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ETE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

CR Components for reuse; MR Materials for recycling; MER Materials for energy recovery; EEE Exported electric energy; ETE Exported thermal energy

Information describing the biogenic carbon content at the factory gate

Table 17 Information describing the biogenic carbon content at the factory gate

Biogenic carbon content	Unit	Value	Unit	Value
Biogenic carbon content in product	kg C	4.86E+00	Kg CO2 eq	1.16E+05
Biogenic carbon content in the accompanying packaging	kg C	1.78E+01	Kg CO2 eq	4.25E+05

Additional requirements

Greenhous gas emission from the use of electricity in the manufacturing phase

LCI data for the generation of electricity used in the manufacturing stage is listed below.

Table 18 Information describing the electricity used in the manufacturing stage

National electricity grid	Unit	Value
Market for electricity, low voltage, State Grid North China Branch (ecoinvent 3.9.1)	kg CO2 eq / kWh	1.222

Bibliography

EPDItaly007 - CORE PCR EN 50693_BASE_rev.2_EN

EPDItaly017 - SUB PCR EN 50693_charging_stations_1

BS EN 50693:2019 Product category rules for life cycle assessments of electronic products and systems

ISO 14044:2006 + A1:2018 + A2:2020 (2020) Environmental management — Life cycle assessment — Requirements and guidelines

ISO 14025:2006 Environmental labels and declarations – Type III environmental declarations – Principles and procedures

EN 15804:2012+A2:2019/AC:2021, Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products.

Ecoinvent Database, Version 3.9.1

SimaPro Software, Version 9.5.0

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