

Environmental Product Declaration

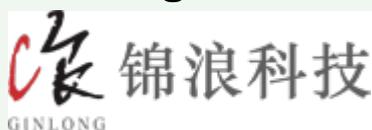


In accordance with ISO 14025:2006 and EN 15804:2012+A2:2019 for:

Solis S6-GC80K, S6-GC100K, S6-GC110K, S6-GC125K Inverters

from

Ginlong Technologies Co., Ltd.



EPD of multiple products, based on a representative product, please refer to "Product information" section.

Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
EPD registration number:	EPD-IES-0022531
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An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com



Programme information

Programme:	The International EPD [®] System
Address:	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
Website:	www.environdec.com
E-mail:	info@environdec.com

Accountabilities for PCR, LCA and independent, third-party verification
Product Category Rules (PCR)
<p>PCR: <i>C-PCR-024 (TO PCR 2019:14) PV COMPONENTS: INVERTORS, BATTERY ENERGY STORAGE SYSTEMS, COMBINER BOXES AND TRACKER SYSTEMS Version 2024-04-30 UN CPC 461, 462, 463, 464 (SUBSETS)</i></p> <p><i>PCR 2019:14 CONSTRUCTION PRODUCTS Version 1.3.4</i></p>
<p>PCR review was conducted by: <i>C-PCR-024</i> <i>Chair of the PCR review: Gorka Benito Alonso, The review panel may be contacted via info@environdec.com.</i></p> <p><i>PCR 2019:14</i> <i>The Technical Committee of the International EPD[®] System. A full list of members available on www.environdec.com. The review panel may be contacted via info@environdec.com</i> <i>Chair of the PCR review: Claudia A. Peña, DDERE Research & Technology</i></p>
Life Cycle Assessment (LCA)
LCA accountability: Hongyu Tian, TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch
Third-party verification
<p>Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:</p> <p><input checked="" type="checkbox"/> EPD verification by individual verifier</p> <p>Third-party verifier: < <i>Marcel Gómez Ferrer – Marcel Gomez Environmental Consulting – Info@marcelgomez.com</i> ></p> <p>Approved by: The International EPD[®] System</p>
<p>Procedure for follow-up of data during EPD validity involves third-party verifier:</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>

The EPD owner has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but registered in different EPD programmes 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 ISO 14025.

Company information

Owner of the EPD: Ginlong Technologies Co., Ltd.

Contact: Pan Ruyi, ruyi.pan@ginlong.com

Description of the organisation:

Ginlong (Stock Code: 300763.SZ) is a global leading enterprise providing research and development, manufacturing, sales and service of inverter and energy storage solutions, which established in 2005 and located in Ningbo, China. Main product is single phase, three phase, and energy storage inverter under the brand Solis.

Ginlong has been accredited by international certification authorities, including ISO9001, ISO14001, ISO45001. As a National Manufacturing Single Champion Demonstration Enterprise, National Technological Innovation Demonstration Enterprise, and National Torch Plan Key High-tech Enterprise, its main products are sold to more than 100 countries and regions. It has successively won the awards of EUPD research top brand PV inverter from 2016 to 2023 in several countries including United Kingdom, Brazil, Netherlands, Colombia, etc.. It has also won the first prizes of Zhejiang province and Ningbo Science and Technology Progress Award.

In the future, Ginlong will keep in close contact with the customers with tailored product for each regional market, actively participate in global competition, and strive to build itself into a trusted world-class company.

Product-related or management system-related certifications:

ISO9001, Registration No. 0350222Q30507R4L
 ISO14001, Registration No. 0350222E20336R2L
 ISO45001, Registration No. 0350222S30297R3L

Name and location of production site:

No. 188 Jinkai Road, Binhai Industrial Park, Xiangshan, Ningbo, Zhejiang, 315712, P.R. China

Product information

Product name: Solis S6-GC80K, S6-GC100K, S6-GC110K, S6-GC125K Inverters, the S6-GC125K is chosen as the representative product since sells volume.

Product identification:

Name	Rated output power (kW)	EU efficiency	RSL (years)
S6-GC80K	80kW	98.30%	25
S6-GC100K	100kW	98.30%	25
S6-GC110K	110kW	98.30%	25
S6-GC125K	125kW	98.30%	25

Product description: An inverter converts current from direct current (DC) to alternating current (AC), it is sometimes referred to as a DC/AC converter. Ginlong offers a wide range

of Solis inverter for residential, commercial, and utility-scale applications.

The materials and manufacturing processes used in production of S6-GC100K, S6-GC110K and S6-GC125K are the same. S6-GC80K consists of less components compared to other models.

For more information, please refer to the official website of the product ([https://www.solisinverters.com/global/solarinverter28/S6-GC\(80-125\)K_gl.html](https://www.solisinverters.com/global/solarinverter28/S6-GC(80-125)K_gl.html)).

UN CPC code: 462 Electricity distribution and control apparatus, and parts thereof

Geographical scope: Europe

LCA information

Functional unit: The functional unit was defined as 1kWh of AC energy output converted from DC energy generated from the panels, during a reference service life (RSL) of 25 years.

Reference service life: 25 years

Time representativeness: The life cycle inventory (LCI) for LCA modelling is collected

by Ginlong based on its production inventory in a referenced period from July 2023 to June 2024.

Database(s) and LCA software used:
Ecoinvent 3.10 and SimaPro version 9.6.0.1

Conversion factor:

Model	Eproduction(kWh)	FU conversion factor (piece/kWh)
80K	3.06E+06	3.27E-07
100K	3.83E+06	2.62E-07
110K	4.21E+06	2.38E-07
125K	4.78E+06	2.09E-07

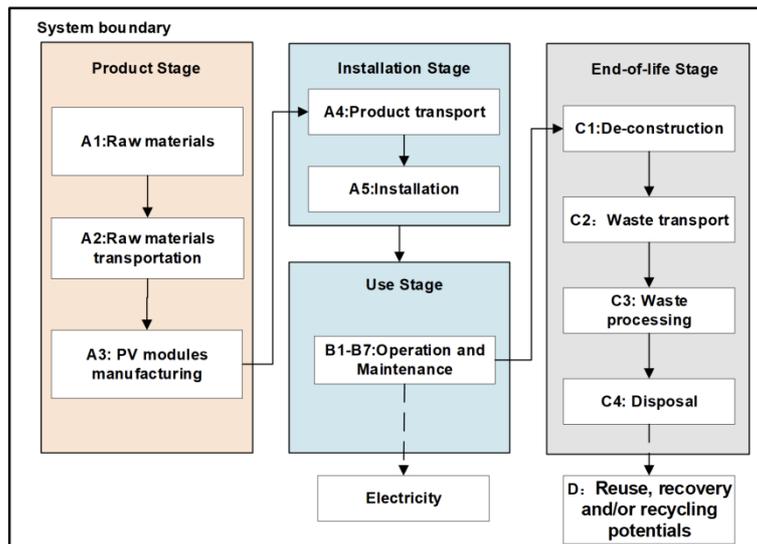
Allocation:

For data sets in this study, raw materials as well as packaging materials of different inverters are based on the BOM from Ginlong, no allocation is used at the stage. As for the manufacturing process, the energy consumption and emission are allocated based on economic value of different inverter, i.e., the electricity consumption and the emissions are calculated based on the the selling price of each inverter and total production value.

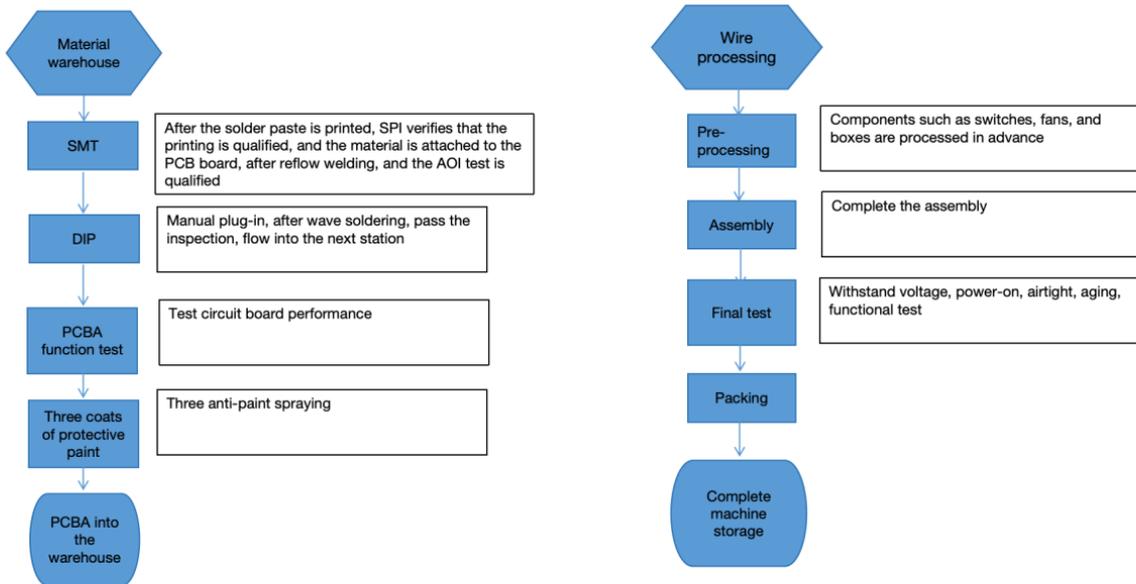
Data quality:

Primary data system (such materials or energy flows that enter the production system) is from Ginlong manufacturing facilities in a reference period from July, 2023 to June, 2024 (annual average). Generic data related to the life cycle impacts of the material or energy flows that enter the production system is sourced from Ecoinvent 3.10 "allocation, cut-off by classification - unit" database.

System diagram:



Manufacturing process diagram:



Description of system boundaries: Cradle to grave and module D (A + B + C + D).

Electricity used in manufacturing process and its climate impact:

Electricity process type	GWP (kg CO ₂ eq/kWh)
Electricity, medium voltage {CN-ECGC} market for electricity, medium voltage Cut-off, U	8.41E-01

Assumption:

Life cycle stages	Items	Assumptions
A1 Raw materials	Material of terminal	Due to the small amount and difficulty of collecting relative data from upstream suppliers, it is assumed that copper and brass share 50% of the product weight respectively.
	Material of several types of sockets	Due to the small amount and difficulty of collecting relative data from upstream suppliers, it is assumed that Copper and PVC, PET share 1/3 of the product weight respectively.
	Material of connector	Due to the small amount and difficulty of collecting relative data from upstream suppliers, it is assumed that brass and nylon share 50% of the product weight respectively.
	Material of anti-thunder module and relay	Anti-thunder: PVC, copper, and resistor share 1/3 of the product weight respectively. Relay: PVC, copper, and Ferrite share 1/3 of the product weight respectively.
	Material of magnetic core	Due to the small amount and difficulty of collecting relative data from upstream suppliers, it is assumed that ferrite, silicone and aluminium share 1/3 of the product weight respectively.
A1-A3	Transportation vehicle type	For the vehicle used for transportation of solid and hazardous wastes, EURO 5 lorry with 16-32 ton capacity is assumed for modelling

A4 Distribution stage	Transportation vehicle type	For the vehicle used for product distribution, EURO 4 lorry with 16-32 ton capacity, and container ship are assumed for land and sea transport. 500km was assumed for the transports from port to warehouse and from warehouse to customer.
A5 Installation stage	Electricity and materials use	No electricity and materials used for installation as it can be done manually
B Use & Maintenance	Replacement	No replacement for the module as the module has RSL>25 years
C1-C4 End-of-life	De-construction	The de-construction of inverter is assumed to be done manually, no electricity and materials use in this stage
	Waste transportation	Waste transportation distance from the de-installation plant to the waste treatment facilities is assumed to be 50 km for simplification purposes. The vehicle used is assumed as EURO 4 lorry with 16-32 ton capacity. A sensitivity analysis is conducted in Section 5
	Waste processing	The Ecoinvent waste processing data "waste electric and electronic equipment, treatment of, shredding" is applied.
	Disposal	The disposal scenario follows PEF EoL default values in Europe and IEC/TR 62635 guidelines

Distribution:

For the distribution stage, this study takes EU as the target market. The transportation information is provided by Ginlong. The products are firstly transported from the manufacturing site, Xiangshan plant, to Ningbo Port, with a 92km distance by lorry. Then, it is transported through container ship from Ningbo Port to Hamburg, Germany or Rotterdam, Netherlands (Hamburg is used here for the calculation because the transportation distance is longer). And, the product will be transported 500km from Hamburg to warehouse, and further 500km from warehouse to customer by lorry. A 16-32 metric ton EURO 4 lorry is selected to be the transportation vehicle for the last two sections of land transportation, in the absence of primary data on the category of lorry. The distribution information is shown in table below.

Sales market	Transportation vehicle	Distance (km)	Start location	End location
Europe	Lorry 16-32 metric ton, EURO5	92km	Xiangshan plant	Ningbo
	Container ship	19700km	Ningbo	Hamburg.DE
	Lorry 16-32 metric ton, EURO4	500km	Hamburg.DE	Warehouse
	Lorry 16-32 metric ton, EURO4	500km	Warehouse	Customer

Installation:

In the installation stage, the energy use is negligible since the installation process is mainly done manually. According to the product category rules (PCR), end of life of the packaging materials, scrap and general waste generated are considered in this stage.

Accessories including chromium steel screw, aluminium mounting plate and connector made of copper and PC are used during the manual installation.

The waste generated from the product packaging, mainly consist of plastics and folding boxboard carton. The treatments of the waste are modelled according to the PEF EoL default values in Europe. Transportation distance of the waste is assumed to be 50km. Few material scrap generated is cut off.

Waste	Waste type	Aggregate mass (kg)	Processing		
			Recycling	Landfill	Incineration
Corner protectors	Paper	7.7338	73.00%	17.55%	9.45%
Carton					
Connector covers	PE	1.62676	29.00%	46.15%	24.85%
Plastic bags					

End-of-life:

For end-of-life (EoL) stage, assumptions are made due to a lack of data. De-installation stage of power inverters is assumed to be manually done with no energy use. Transportation distance from the installation site to the waste treatment site is assumed to be 50km. For waste processing, power inverter is shredded and post-processed.

The power inverters disposal and recycling stage involves removing hazardous valuable materials, metal scraps. The most recyclable materials constitute the metal components, printed circuit board (PCBs), and cables. In this study, both PEF EoL default values in Europe and IEC/TR 62635 guidelines are referred to.

Disclaimer:

1. The use of the results of modules A1-A3 without considering the results of module C is discouraging.
2. The scenarios included are currently in use and are representative for one of the most probable alternatives.

Cut-off Criteria:

- All inputs and outputs to a (unit) process are included in the calculation for which data is available. Data gaps are filled by conservative assumptions with average or generic data. Any assumptions for such choices are documented;
- According to PCR, life cycle inventory data shall according to EN 15804 include a minimum of 95% of total inflows (mass and energy) per module. In addition, if less than 100% of the inflows are accounted for, proxy data or extrapolation should be used to achieve 100% completeness. The requirements are fulfilled in this study;
- Infrastructure/capital goods for upstream, core and downstream processes is excluded.
- Long-term emissions are excluded.

Flow name	Process stage	Mass %	Criteria to cut-off
Crystal, discharge tube, glue, etc.	Raw material	0.005	<5%
Devices external to the systems itself required for installation	Installation stage	N/A	Cut-off due to small impact
Any extraordinary maintenance done on the product	Use & Maintenance	N/A	Specified in PCR
Total cut-off mass % estimated			<5%

B6 energy consumption and production calculation:

The electricity consumption during the use stage of the inverters involves two different scenarios. Load consumption takes place when the inverter is operating during daytime hours while the connected solar panels are generating electricity, while non-load or standby consumption takes place when the inverter is connected to the grid but not actively generating electricity due to a lack of sunlight (e.g. at night). In

this study, both load consumption using solar powered electricity and non-load consumption using grid-supplied electricity is modelled.

The following formula shall be used to calculate the load electricity used during the product's service life:

$$E_{use} = P_{AC} \times I_r \times (1 - eff) \times RSL$$

where:

E_{use} (kWh) is the power losses during the operation of power inverter;

P_{AC} (kW) is the output rated AC active power;

I_r (h) is average local annual sunshine in country where the inverter is installed, in this study, Hamburg is taken as the target city, with annual sunshine hours of 1557 h.

eff (%) is average Energy Efficiency measured or form data sheet

RSL is the service life of the product, 25 years;

While non-load electricity consumption can be calculated using the standby power:

$$E_{standby} = P_{standby} \times (8760 - I_r) \times RSL$$

where $E_{standby}$ is the standby electricity consumption of the inverter, $P_{standby}$ (W) is the standby power of the inverter.

The electricity consumption of different inverters during use stage is listed below.

Model	Standby power (kW)	AC-power (kW)	Sunshine (h)	Efficiency	RSL (years)	E_{use} (kWh)	$E_{standby}$ (kWh)	$E_{production}$ (kWh)
80K	0.002	80	1557	98.30%	25	5.29E+04	3.60E+02	3.06E+06
100K	0.002	100	1557	98.30%	25	6.62E+04	3.60E+02	3.83E+06
110K	0.002	110	1557	98.30%	25	7.28E+04	3.60E+02	4.21E+06
125K	0.002	125	1557	98.30%	25	8.27E+04	3.60E+02	4.78E+06

The Solis inverters are designed to be free of maintenance during its service life. And there is no water use during this stage. Therefore, no inputs and outputs take place in the B1 use, B2 maintenance, B3 repair, B4 replacement, B5 refurbishment, and B7 operational water use in this study.

Content declaration

The representative product, S6-GC125K, is presented below.

Product components	Weight, kg	Post-consumer recycled materials, weight -%	Biogenic material, weight-% and kg C/kg
Steel	2.54E+00	0	-
Aluminium	3.43E+01	0	-
Copper	4.72E+00	0	-
Plastics	1.46E+01	0	-
PCBA	4.65E+01	0	-
Others	8.37E-01	0	-
Product total	1.03E+02	0	-
Packaging materials	Weight, kg	Weight -% (versus the product)	Weight biogenic carbon, kg C/kg
Corrugated box	7.73E+00	7.43%	3.68E-01 kg C/kg material
PE	1.63E+00	1.57%	-
Packaging total	9.36E+00	9.00%	2.85E+00 kg C/product

No substance in the product greater than 0.10% by weight is present on the "List of Potentially Hazardous Substances" candidates for authorization under the REACH legislation.

Modules declared, geographical scope, share of specific data and variation in GWP-GHG results between products and sites.

	Product stage			Construction process stage		Use stage							End of life stage				Resource recovery stage	
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential	
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	
Modules declared	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Geography	CN	CN	CN	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	
Share of specific data	36%			-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Variation - products	0%-33.17% ¹			-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Variation - sites	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Note 1: The variation among the products is mainly due to the FU of the EPD. The calculation result of each unit of product is divided by the electricity amount converted through the product during 25 years to get the per FU result. Even though the variation in components of products is less than 1% and the manufacturing process is exactly the same. Different rated output power leads to variation in the result per FU.



Results of the environmental performance indicators

Conversion factor

For the representative product, S6-GC125K. the conversion factor from 1 inverter to FU is 2.09E-07 piece/kWh.

Impact category indicators

The core environmental results of the representative product, S6-GC125K, are presented below. EN 15804+A2:2019/AC:2021 and EF 3.1 method are used. The estimated impact results are only relative statements which do not indicate the end points of the impact categories, exceeding threshold values, safety margins or risks.

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Climate change	kg CO2 eq	9.62E-04	8.54E-06	2.65E-06	0	0	0	0	0	3.40E-05	0	0	1.69E-07	1.03E-06	2.34E-06	-2.87E-04
Climate change - Biogenic	kg CO2 eq	3.71E-06	1.84E-09	2.35E-06	0	0	0	0	0	3.58E-06	0	0	5.58E-11	4.82E-09	1.17E-06	1.36E-06
Climate change - Fossil	kg CO2 eq	9.56E-04	8.54E-06	3.06E-07	0	0	0	0	0	3.04E-05	0	0	1.69E-07	1.03E-06	1.16E-06	-2.88E-04
Climate change - Land use and LU change	kg CO2 eq	1.34E-06	2.30E-10	7.42E-12	0	0	0	0	0	6.36E-08	0	0	4.19E-12	1.37E-09	5.66E-11	-3.81E-07
Ozone depletion	kg CFC11 eq	3.46E-11	1.47E-13	5.43E-16	0	0	0	0	0	2.78E-13	0	0	3.48E-15	5.90E-15	2.25E-15	-1.76E-12
Acidification	mol H+ eq	7.62E-06	1.54E-07	2.06E-10	0	0	0	0	0	5.52E-08	0	0	6.01E-10	4.89E-09	7.98E-10	-4.04E-06
Eutrophication, marine	kg N eq	1.13E-06	4.09E-08	4.03E-10	0	0	0	0	0	1.30E-08	0	0	2.56E-10	8.86E-10	1.46E-09	-4.46E-07
Eutrophication, freshwater	kg P eq	1.00E-07	7.56E-12	1.93E-13	0	0	0	0	0	4.66E-09	0	0	1.43E-13	4.93E-11	1.75E-11	-4.20E-08
Eutrophication, terrestrial	mol N eq	1.17E-05	4.53E-07	8.13E-10	0	0	0	0	0	1.31E-07	0	0	2.80E-09	9.77E-09	3.28E-09	-5.46E-06
Photochemical ozone formation	kg NMVOC eq	4.85E-06	1.26E-07	3.74E-10	0	0	0	0	0	4.20E-08	0	0	9.79E-10	2.90E-09	1.19E-09	-1.54E-06
Resource use, fossils*	MJ	1.22E-02	1.09E-04	3.82E-07	0	0	0	0	0	4.86E-04	0	0	2.25E-06	1.33E-05	1.49E-06	-3.14E-03
Resource use, minerals and metals*	kg Sb eq	1.34E-07	1.92E-13	5.63E-15	0	0	0	0	0	1.91E-12	0	0	5.63E-15	2.75E-14	6.03E-14	-1.20E-07
Water use*	m3 depriv.	2.35E-04	4.62E-08	-6.50E-08	0	0	0	0	0	9.82E-07	0	0	9.57E-10	1.57E-07	-4.50E-07	-7.32E-05

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

Additional impact category indicators

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG	kg CO2 eq	9.58E-04	8.54E-06	3.06E-07	0	0	0	0	0	3.04E-05	0	0	1.69E-07	1.03E-06	1.16E-06	-2.88E-04

Resource use, waste, and output flow indicators

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	1.22E-03	2.89E-07	5.83E-09	0	0	0	0	0	6.67E-02	0	0	7.97E-09	1.55E-06	4.28E-08	-3.12E-04
PERM	MJ	3.04E-05	0.00E+00	0.00E+00	0	0	0	0	0	0.00E+00	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	1.25E-03	2.89E-07	5.83E-09	0	0	0	0	0	6.67E-02	0	0	7.97E-09	1.55E-06	4.28E-08	-3.12E-04
PENRE	MJ	6.80E-03	0.00E+00	0.00E+00	0	0	0	0	0	0.00E+00	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRM	MJ	1.02E-04	0.00E+00	0.00E+00	0	0	0	0	0	0.00E+00	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	MJ	6.92E-03	1.18E-06	3.37E-08	0	0	0	0	0	3.63E-04	0	0	2.25E-08	9.15E-06	2.13E-07	-2.02E-03
SM	kg	0.00E+00	0.00E+00	0.00E+00	0	0	0	0	0	0.00E+00	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	MJ	0.00E+00	0.00E+00	0.00E+00	0	0	0	0	0	0.00E+00	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0	0	0	0	0	0.00E+00	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m3	7.76E-06	2.48E-09	-1.43E-09	0	0	0	0	0	2.09E-07	0	0	5.77E-11	6.18E-09	-8.57E-09	-2.04E-06
HWD	kg	4.85E-07	6.26E-10	2.81E-12	0	0	0	0	0	5.18E-10	0	0	1.49E-11	2.00E-11	1.32E-11	-1.58E-08
NHWD	kg	3.37E-05	2.53E-09	4.43E-07	0	0	0	0	0	7.55E-07	0	0	6.69E-11	5.58E-09	3.56E-06	-3.16E-06
RWD	kg	2.30E-08	7.27E-12	1.18E-13	0	0	0	0	0	2.27E-09	0	0	2.12E-13	3.47E-11	7.01E-13	-3.07E-09
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0	0	0	0	0	0.00E+00	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	9.34E-08	0.00E+00	1.28E-06	0	0	0	0	0	0.00E+00	0	0	0.00E+00	0.00E+00	1.73E-05	0.00E+00
MER	kg	0.00E+00	0.00E+00	0.00E+00	0	0	0	0	0	0.00E+00	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ETE	MJ	1.53E-08	0.00E+00	1.42E-06	0	0	0	0	0	0.00E+00	0	0	0.00E+00	0.00E+00	3.10E-06	0.00E+00
EEE	MJ	1.14E-09	0.00E+00	7.25E-07	0	0	0	0	0	0.00E+00	0	0	0.00E+00	0.00E+00	1.53E-06	0.00E+00

*Caption:

PENRE: Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PERE: Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PENRM: Use of non-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; PENRT: 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; FW: Use of net fresh water; HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; ETE = Exported thermal energy

Other environmental performance indicators

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Ecotoxicity, freshwater	CTUe	1.38E-02	4.00E-06	1.25E-05	0	0	0	0	0	8.62E-05	0	0	7.64E-08	2.34E-06	2.40E-04	-9.26E-03
Particulate matter	disease inc.	5.47E-11	3.81E-13	2.35E-15	0	0	0	0	0	1.63E-13	0	0	1.16E-14	4.26E-14	1.03E-14	-2.51E-11
Human toxicity, cancer	CTUh	1.50E-12	1.00E-15	4.39E-17	0	0	0	0	0	5.00E-15	0	0	1.28E-17	3.52E-16	3.16E-16	-1.17E-12
Human toxicity, non-cancer	CTUh	3.72E-11	3.59E-14	2.79E-15	0	0	0	0	0	1.44E-13	0	0	1.12E-15	2.63E-14	2.57E-14	-2.52E-11
Ionising radiation	kBq U-235 eq	3.48E-05	1.15E-08	1.82E-10	0	0	0	0	0	1.82E-06	0	0	3.07E-10	5.40E-08	1.06E-09	-4.90E-06
Land use	Pt	2.22E-03	2.17E-07	2.50E-07	0	0	0	0	0	5.85E-05	0	0	5.04E-09	1.30E-06	2.12E-06	-1.25E-03

Additional environmental information

Results of other declared products in this report are presented as variations of A-C stage results against S6-GC125K result.

Impact category	Unit	S6-GC80K	S6-GC100K	S6-GC110K
Climate change	kg CO2 eq	55.56%	24.97%	13.62%
Climate change - Biogenic	kg CO2 eq	55.38%	24.91%	13.59%
Climate change - Fossil	kg CO2 eq	55.56%	24.98%	13.62%
Climate change - Land use and LU change	kg CO2 eq	55.66%	24.99%	13.63%
Ozone depletion	kg CFC11 eq	56.01%	25.00%	13.63%
Acidification	mol H+ eq	54.44%	24.98%	13.62%
Eutrophication, marine	kg N eq	55.31%	24.94%	13.60%
Eutrophication, freshwater	kg P eq	55.49%	24.96%	13.61%
Eutrophication, terrestrial	mol N eq	55.22%	24.98%	13.62%
Photochemical ozone formation	kg NMVOC eq	55.18%	24.98%	13.62%
Resource use, fossils*	MJ	55.52%	24.98%	13.62%
Resource use, minerals and metals*	kg Sb eq	55.28%	25.00%	13.64%
Water use*	m3 depriv.	55.12%	24.99%	13.63%
GWP-GHG	kg CO2 eq	55.56%	24.98%	13.62%
PERE	MJ	1.12%	0.50%	0.28%
PERM	MJ	1.99%	0.88%	0.48%
PERT	MJ	1.12%	0.51%	0.28%
PENRE	MJ	55.72%	25.08%	13.68%
PENRM	MJ	42.45%	19.49%	10.63%
PENRT	MJ	55.51%	24.97%	13.61%
SM	kg	0.00%	0.00%	0.00%
RSF	MJ	0.00%	0.00%	0.00%
NRSF	MJ	0.00%	0.00%	0.00%
FW	m3	55.29%	24.99%	13.63%
HWD	kg	56.13%	25.00%	13.64%
NHWD	kg	55.85%	24.98%	13.63%
RWD	kg	55.47%	24.97%	13.62%
CRU	kg	0.00%	0.00%	0.00%
MFR	kg	55.36%	24.94%	13.59%
MER	kg	0.00%	0.00%	0.00%
ETE	MJ	55.67%	24.96%	13.61%
EEE	MJ	55.72%	24.99%	13.63%
Ecotoxicity, freshwater	CTUe	55.19%	24.98%	13.62%
Particulate matter	disease inc.	55.39%	24.97%	13.61%
Human toxicity, cancer	CTUh	55.05%	24.99%	13.63%
Human toxicity, non-cancer	CTUh	54.31%	24.99%	13.63%
Ionising radiation	kBq U-235 eq	55.42%	24.97%	13.62%
Land use	Pt	55.03%	24.99%	13.63%

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