



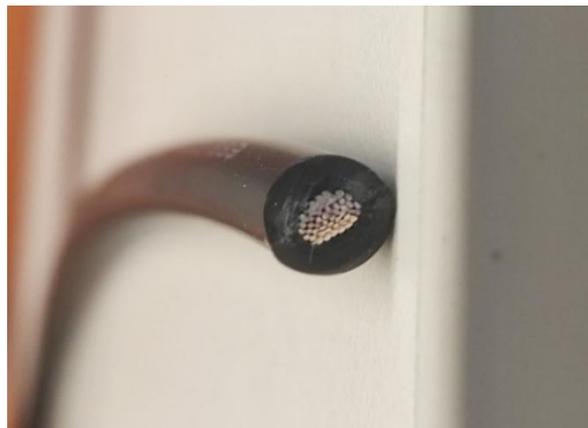
ENVIRONMENTAL PRODUCT DECLARATION

Photovoltaic Cable Production site: Wuxi City, Jiangsu Province, China

Code	H1Z2Z2-K 1.5mm ² (3 0/0.25TS)- Inner Layer Black- Outer Layer Black	H1Z2Z2-K 2.5mm ² (47/0.25T S)-Inner Layer Black- Outer Layer Black	H1Z2Z2- K 4mm ² (5 2/0.30T S)-Inner Layer White- Outer Layer Black	H1Z2Z2- K 4mm ² (4 8/0.30T S)-Inner Layer Black- Outer Layer Black	H1Z2Z2- K 6mm ² (7 8/0.30T S)-Inner Layer White- Outer Layer Black	H1Z2Z2- K 6mm ² (7 2/0.30T S)-Inner Layer Black- Outer Layer Black	H1Z2Z2- K 10mm ² (74/0.40 TS)- Inner Layer Black- Outer Layer Black	H1Z2Z2- K 16mm ² (128/0.4 OTS)- Inner Layer Black- Outer Layer Black	H1Z2Z2- K 25mm ² (196/0.4 OTS)- Inner Layer Black- Outer Layer Black	H1Z2Z2- K 35mm ² (276/0.4 OTS)- Inner Layer Black- Outer Layer Black
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Compliant with ISO 14025 and EN 50693:2019

Program Operator	EPDItaly
Publisher	EPDItaly
Declaration number	EPD001-PV cables
Registration number	EPDITALY0942
Release date	22/05/2025
Expiry date	21/05/2030



www.epditaly.it

GENERAL INFORMATION

EPD Owner	Xinhongye
Company name	WUXI XINHONGYE WIRE&CABLE CO.,LTD.
Registered office	NO.79, TONGYUN SOUTH RD,XISHAN,WUXI,JIANGSU,CHINA
Contacts for information on the EPD	ZHAO YE Technical Manager zhaoye@xhycable.com

Program operator	
EPDItaly	Gaetano De Castillia n° 10 - 20124 Milano, Italy

EPD information

Product names	10 types of PV cables including: H1Z2Z2-K 1.5mm ² (30/0.25TS)-Inner Layer Black- Outer Layer Black H1Z2Z2-K 2.5mm ² (47/0.25TS)-Inner Layer Black- Outer Layer Black H1Z2Z2-K 4mm ² (52/0.30TS)-Inner Layer White- Outer Layer Black H1Z2Z2-K 4mm ² (48/0.30TS)-Inner Layer Black- Outer Layer Black H1Z2Z2-K 6mm ² (78/0.30TS)-Inner Layer White- Outer Layer Black H1Z2Z2-K 6mm ² (72/0.30TS)-Inner Layer Black- Outer Layer Black H1Z2Z2-K 10mm ² (74/0.40TS)-Inner Layer Black- Outer Layer Black H1Z2Z2-K 16mm ² (128/0.40TS)-Inner Layer Black- Outer Layer Black H1Z2Z2-K 25mm ² (196/0.40TS)-Inner Layer Black- Outer Layer Black H1Z2Z2-K 35mm ² (276/0.40TS)-Inner Layer Black- Outer Layer Black
Sites	NO.79 Tongyun Road, Wuxi City, Jiangsu Province, China
Summary description and technical information of products	PV cables are cross-linked, insulated, and sheathed, low-smoke halogen-free, flexible, single-core power cables.
Scope of the product	FU: 1 km of the PV cables during a service life of 10 years at 50% use rate
CPC code	463 family "Insulated wire and cable; optical fibre cables" and sub-subsequent clusters

Verification Information

Reference PCR and version number	Core PCR EPDItaly007 REV. 3.1 – 2024/11/12 "Electronic and Electrical Products and Systems".
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EPDIItaly Regulations	REGULATIONS OF THE EPDIItaly PROGRAMME Revision 6.0
Independent verification	<p>The PCR review was performed by <i>Ing. Alessandro Marson, Ing. Sebastiano Greco, Dr. Chiara Maran</i> Independent verification of the declaration and of data performed according to ISO 14025:2010.</p> <p><input type="checkbox"/> Internal <input checked="" type="checkbox"/> External</p> <p>Third-party verification/validation performed by: SGS ICS Italia Srl, Via Milan (MI), Via Caldera 21- 20153 Accredited by Accredia 0005VV.</p>
Statement Comparability	Environmental statements published within the same product category, but from different programs, may not be comparable. EPDs of Electrical wires and cables may not be comparable if they do not comply with EN 50693. For further information about comparability, see EN 50693 and ISO 14025.
Statement Responsibility	The EPD Owner releases EPDIItaly from any non compliance with environmental legislation. The holder of the declaration will be responsible for the information and supporting evidence. EPDIItaly accepts no responsibility for the information, data and results provided by the EPD Owner for the life cycle assessment.

FURTHER INFORMATION	
Other reference documents	EN 50693:2019 - Product category rules for life cycle assessments of electronic and electrical products and systems.
Product RSL description	10 years at 50% use rate
LCA study	This EPD study is based on the LCA study described in the LCA report
EPD type	Product specific
EPD scope	Cradle to grave
Year of reported primary data	2023/1~2023/12
LCA software	SimaPro 9.5.0.0
LCI database	Ecoinvent v3.9.1
LCIA methodology	EN 15804 + A2 with EF3.1
Additional disclaimer	The database used is regarded as representative on the basis of a comparative study, which examined the data for a reference product of the EPD Owner

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COMPANY PROFILE

Wuxi Xinhongye Wire&Cable Co., Ltd. was established in 2004. Its products are widely used in photovoltaics, electric vehicles, charging guns, charging piles, energy storage, industrial control equipment, nuclear power and other fields. On June 2, 2023, Xinhongye was successfully listed on the Growth Enterprise Market of the Shenzhen Stock Exchange with the stock code of "301310".

Xinhongye has been rewarded as a national high-tech enterprise and a national specialized and new "little giant" enterprise. The company bears the heavy responsibility of multiple R&D platforms such as Jiangsu New Energy Special Cable Engineering Technology Research Center, Jiangsu Provincial Enterprise Technology Center, Wuxi Science and Technology R&D Institution, possesses the national CNAS certification laboratory and TÜV Rheinland authorized laboratory, ensuring the international first-class level of product development and testing. Xinhongye actively participated in and successfully formulated two national standards and four industry standards. Xinhongye's EV cable products have been successfully applied to major projects such as the Beijing Olympic Games, Shanghai World Expo, and Nanjing Youth Olympic Games. After decades of development, the company has formed a strong product advantage in the field of special cables with long-term project experience accumulation and technical service capabilities, with the help of forward-looking market layout and excellent product quality.

In the future, while enhancing the competitive advantage of existing products, Xinhongye will further enrich high value-added products, continuously improve its profitability, and better meet market demand. Inject a steady stream of impetus into the prosperity and sustainable development of the global new energy industry.



Figure 1 Wuxi Xinhongye Wire&Cable Co., Ltd

GENERAL INFORMATION

This report serves as the background report for the Environmental Product Declaration (EPD) for the PV cables system. PV cables are cross-linked, insulated, and sheathed, low-smoke halogen-free, flexible, single-core power cables. It is especially suitable for the DC current (DC) photovoltaic system side, with a DC voltage of 1.5kV between the nominal wires and between the wires and ground. This cable structure features a central conductor, which is responsible for carrying electrical current and is often made of conductive materials like copper. Surrounding the conductor bundle is the inner layer, which typically serves as insulation to prevent electrical leakage and protect the conductor. Finally, the outer layer encapsulates the inner components, providing mechanical protection, safeguarding against environmental factors such as moisture and abrasion, and enhancing the cable's overall durability. The following code of cables are analyzed in the EPD:

Table 1 key technical information for the PV cables

PV cable models	Conductor Resistance at 20°C Ω/km
H1Z2Z2-K 1.5mm ² (30/0.25TS)-Inner Layer Black- Outer Layer Black	≤13.7
H1Z2Z2-K 2.5mm ² (47/0.25TS)-Inner Layer Black- Outer Layer Black	≤8.21
H1Z2Z2-K 4mm ² (52/0.30TS)-Inner Layer White- Outer Layer Black	≤5.09
H1Z2Z2-K 4mm ² (48/0.30TS)-Inner Layer Black- Outer Layer Black	≤5.09
H1Z2Z2-K 6mm ² (78/0.30TS)-Inner Layer White- Outer Layer Black	≤3.39
H1Z2Z2-K 6mm ² (72/0.30TS)-Inner Layer Black- Outer Layer Black	≤3.39
H1Z2Z2-K 10mm ² (74/0.40TS)-Inner Layer Black- Outer Layer Black	≤1.95
H1Z2Z2-K 16mm ² (128/0.40TS)-Inner Layer Black- Outer Layer Black	≤1.24
H1Z2Z2-K 25mm ² (196/0.40TS)-Inner Layer Black- Outer Layer Black	≤0.795
H1Z2Z2-K 35mm ² (276/0.40TS)-Inner Layer Black- Outer Layer Black	≤0.565

CONTENT DECLARATION

Table 2 Content declaration for PV cables

	H1Z2Z2	H1Z2Z2	H1Z2Z2	H1Z2Z2	H1Z2Z2	H1Z2Z2	H1Z2Z2	H1Z2Z2	H1Z2Z2	H1Z2Z2
	-K	-K	-K 4mm	-K 4mm	-K 6mm	-K 6mm	-K	-K	-K	-K
	1.5mm ² (2.5mm ²	2	2	2	2	10mm ²	16mm ²	25mm ²	35mm ²
	30/0.25	(47/0.25	(52/0.30	(48/0.30	(78/0.30	(72/0.30	(74/0.40	(128/0.4	(196/0.4	(276/0.4
Material	TS)-	TS)-	TS)-	TS)-	TS)-	TS)-	TS)-	0TS)-	0TS)-	0TS)-
class	Inner	Inner	Inner	Inner	Inner	Inner	Inner	Inner	Inner	Inner
	Layer	Layer	Layer	Layer	Layer	Layer	Layer	Layer	Layer	Layer
	Black-	Black-	White-	Black-	White-	Black-	Black-	Black-	Black-	Black-
	Outer	Outer	Outer	Outer	Outer	Outer	Outer	Outer	Outer	Outer
	Layer	Layer	Layer	Layer	Layer	Layer	Layer	Layer	Layer	Layer
	Black	Black	Black	Black	Black	Black	Black	Black	Black	Black

Unit		Kg per FU									
Copper	M-121	12.94	20.28	31.91	29.78	47.98	46.2	83.16	143.84	216.13	309.9
XLPE	M-251	22.19	24.64	26.88	27.19	32.05	31.67	36.76	63.18	91.24	108.19
Paint	M-399	9.67E-03									
PE packaging film	M-201	3.82E-03	4.61E-03	4.93E-03	4.83E-03	5.94E-03	5.30E-03	6.03E-03	6.38E-03	7.12E-03	8.09E-03

The cables studied in the context of this EPD and their packaging do not contain any Substance of Very High Concern (SHVC), as defined by ECHA and in the ECHA substance candidate list.

No substances present in the following Regulations: (EU)1907/2006 (REACH) and (EU)1272/2008 are involved

LCA BACKGROUND INFORMATION

FUNCTIONAL UNIT

In this study the functional unit is a 1 km of the PV cables during a service life of 10 years at 50% use rate. the environmental impact from this study is calculated and reported per functional unit.

SYSTEM BOUNDARIES

The following table shows the stages of the product life cycle and the information stages according to EN 50693 for the evaluation of electronic and electrical products and systems.

Table 3: System Boundaries

MANUFACTURING STAGE		DISTRIBUTION STAGE	INSTALLATION STAGE	USE & Maintenance STAGE	END-OF-LIFE STAGE		Benefits and loads beyond the system boundaries
UPSTREAM MODULE	CORE MODULE	DOWNSTREAM MODULE					
extraction of raw materials, including waste recycling processes and the production of semi-finished and ancillary products, as well as their packaging	Manufacturing of the product constituents, including all the stages	DISTRIBUTION	INSTALLATION	USE & Maintenance	De-installation	END-OF-LIFE	

Transportation of raw materials to the manufacturing company	Product assembly						
	packaging						
	waste recycling processes						
X	X	X	X	X	X	X	MND

X = module include in EPD

MND = module not declared

Manufacturing stage: includes extraction of the raw materials necessary to manufacture the components, including end-of-life treatment of the manufacturing waste; industrial transforming, manufacturing, and assembly processes of the various parts, components, and final products; transportation of materials, components, and subassemblies from the supplier's production site to the assembly site(s) and/or packaging site(s); if applicable, production (extraction, treatment, transformation, transportation, etc.) of ancillary materials used in manufacturing but not supplied with the final product.

Distribution stage: includes transportation of the product in its packaging from the manufacturer's site to the distributor and from the distributor to the place of installation and operation; processes, including the required materials and components, e.g. additional packing materials needed for the distribution and transportation of the product; In case of repacking, end-of-life management of generated waste (e.g. material recovery, energy recovery, disposal).

Installation stage: includes processes, including the required materials and components needed for installation; Management of the waste generated at the installation place.

Use stage: includes energy consumption and other flows (emissions, water, etc.) of the product during its use over the reference service life (RSL); production, distribution, installation, and end-of-life of elements required to operate, service, and maintain the reference product over the RSL.

De-installation stage: includes processes needed for de-installation and management of the waste generated at the installation place.

End-of-life stage: transporting the waste to the waste treatment plant, treating the waste materials, and disposing the final waste flows.

TEMPORAL AND GEOGRAPHICAL BOUNDARIES

The PV cable suppliers are sourced: China. All primary data collected from Xinhongye are from 2023/01~2023/12, which is a representative production year. Secondary data are also representative for this year, as provided by ecoinvent v3.9.1

The selected ecoinvent processes in the LCA model have a global representativeness, due to the unclear origin of each component. In this way, a conservative approach has been adopted.

EXCLUDED PROCESSES

The following steps/stages are not included in the system boundary due to the reason that the elements below are considered irrelevant or not within the boundary to the LCA study of cable:

- Production and disposal of the infrastructure and capital equipment (buildings, machines, transport media, roads, etc.) and their maintenance during product assembly, installation and maintenance.
- Storage phases and sales of cable products due to small impact.
- Product losses due to abnormal damage such as natural disasters or fire accidents. These losses would mostly be accidental.
- Recycling process of defective products.
- Handling operations at the distribution centre and retail outlet due to small contribution and negligible impact.

DATA QUALITY

In this EPD, both primary and secondary data are used. Site specific foreground data have been provided by Xinhongye. Main data sources are the bill of materials available on the enterprise resource planning. For all processes for which primary are not available, generic data originating from the ecoinvent v3.9.1 database, allocation cut-off by classification, are used. The ecoinvent database is available in the SimaPro 9.5.0.0 software used for the calculations.

ENVIRONMENTAL IMPACT INDICATORS

The information obtained from the inventory analysis is aggregated according to the effects related to the various environmental issues. According to PCR EPDItaly007 and EN 50693 the environmental impact indicators must be determined using the characterization factors and impact assessment methods specified in EN 15804 + A2 Method V1.02 at EF3.1

PCR EPDItaly007 and the EN 50693 standard establish four indicators for climate impact(GWP-GHG): GWP (total) which includes all greenhouse gases; GWP (fossil fuels); GWP(biogenic carbon) which includes the emissions and absorption of biogenic carbon dioxide and biogenic carbon stored in the product; GWP (land use).

ALLOCATION RULES

Allocation refers to partitioning of input or output flows of a process or a product system between the product systems under study and one or more other product systems.

Multi-input processes

For data sets in this study, the allocation of the inputs from coupled processes is generally carried out via the mass. The consumption of raw materials is allocated by mass ratio. The transportation of raw materials is allocated by mass. For PV cables, the total consumption of energy and water during product assembly is equally allocated by dividing the total input (besides raw material, which is decided using BOM of each model) by total production length (in km).

Multi-output processes

Multi-Output allocation is based on a quantitative calculation of the resource consumption and the emissions for example in relation to the distribution of functions, physical properties or economic

aspects. Physical properties, such as mass, net calorific values, etc., shall be preferred, otherwise economic aspects, such as man-hours, operating hours or product assembly cost may be used.

In this study, there is no other by products other than PV cables, within this study, the output such as the environmental emissions of wastewater pollutants, off gas pollutants and etc are allocated similarly as multi-input process.

Allocation for recovery processes

During the end of life stage of PV cables, the polluter pay principle applies. the extra benefit of recycling the waste modules as well as other equipment is cut off from the boundary, following the PCR's recommendation on end of life scenario.

LIMITATIONS AND SIMPLIFICATIONS

The key assumptions of this LCA study are as follows:

- The installation of electrical cables are done by manual labour. Thus, no additional inputs are needed for this stage. Meanwhile, an additional 50km transport distance is needed for the packaging polyethylene film.
- The use stage follows recommendations in the PCR. The RSL of the cable adopts the default values in PSR-0001-ed4-EN-2022 11 16, which is 10 years of service life under 50% use rate.
- During the end of life stage, the transportation of the cables from the operation site to treatment facilities such as dismantling site and disposal facilities such as recycling, landfill or incineration centre is assumed to be 50km for simplification as well
- For the EoL stage, For the waste scenario, the EN50693 Annex G is provided. For the first step, the deinstallation of PV cables system was assuming relying on the manual labour mirroring the installation process. A 50km of road transportation from operation site to waste treatment site was assumed. The subsequent process for the PV cables is separated in Italy through mechanical process. Default values from Table G.4 is applied.
- According to the PCR, for recovery and recycling processes, which take place outside the boundaries of the product system, only impacts related to the transport of the waste to the treatment platform should be taken into account. Waste to energy was not considered in this modelling.

Assumptions about generic data for this study

- Transport model is based on the average regional data
- Energy model are based on average national data, and in case possible, provincial or regional data is used to the best potential
- Raw material uses generic data from database with adaptation of supplier data to the best possible potential

INVENTORY ANALYSIS

The ecoinvent v3.9.1 by cut-off classification system processes are used to model the background system of the processes.

Raw material inputs are modelled with data from ecoinvent representing a global market (GLO) and rest-of-world (ROW) coverage. These datasets are assumed to be representative.

MANUFACTURING STAGE

Xinhongye produces photovoltaic cables through a streamlined process. It begins with material receiving, including inspection, storage, and forklift transfer to workshop. Conductor stranding is performed via stranding machines, followed by semi-finished inspections (thickness gauges, calipers) before extrusion. In Workshop 1, insulation extrusion uses extruders, X-γ gauges, and spark testers, with dimensional checks via projectors and calipers. Bushing extrusion follows identical equipment and inspection protocols. The cables then move to electron accelerator irradiation, tested post-process with electrothermal rulers, projectors, and calipers. Automated coiling machines prepare cables for finished product inspections, verifying specifications with projectors and calipers. After final quality approval, products are transported to the warehouse. Critical quality checks occur at every stage—material intake, stranding, extrusion, irradiation, and coiling—using calibrated tools (gauges, spark testers, projectors) to ensure compliance. The waste and emissions for the cable production process involve the waste cable and waste copper. The waste are valuable materials and will be recycled by Xinhongye itself. Air emissions from NMVOC and particulate matter are also involved. The emissions are calculated based on the third-party monitoring.

DISTRIBUTION

The transport distances and weight from Xinhongye plant to the place of use are shown as below. The PV cable products are sold in Italy and Thailand at a ratio of 0.9/0.1

Table 4: Transportation activity data

From	To	Distance (km)	Transport mode	Generic dataset referred
Wuxi, China	Shanghai port	135	Lorry	Transport, freight, lorry 16-32 metric ton, EURO4 {RoW} transport, freight, lorry 16-32 metric ton, EURO4 Cut-off, U
Shanghai port	Genova, Italy	16065	Ocean ship	Transport, freight, sea, container ship {GLO} market for transport, freight, sea, container ship Cut-off, U
Shanghai port	Thailand	4169	Ocean ship	Transport, freight, sea, container ship {GLO} market for transport, freight, sea, container ship Cut-off, U
Distribution to the final consumer	Genova	500	Lorry	Transport, freight, lorry, unspecified {RER} transport, freight, lorry, all sizes, EURO4 to generic market for transport, freight, lorry, unspecified Cut-off, S
Distribution to the final consumer	Thailand	500	Lorry	Transport, freight, lorry, unspecified {RER} transport, freight, lorry, all sizes, EURO4 to generic market for transport, freight, lorry, unspecified Cut-off, S

INSTALLATION

Regarding to the PCR, installation phase includes 200km transport of the PV cable from the warehouse the manufacturing site, installation activities and waste treatment of the packaging components should be allocated. An 50km transport distance for the packaging film waste is assumed.

Table 5 Product installation

Input/output component	Unit	Value	Generic dataset referred
Installation			
Transportation of PV cable from warehouse to the installation site	Km	200	Transport, freight, lorry 16-32 metric ton, EURO4 {RoW} transport, freight, lorry 16-32 metric ton, EURO4 Cut-off, U
Transportation of waste packaging material	km	50	Transport, freight, lorry 16-32 metric ton, EURO4 {RoW} transport, freight, lorry 16-32 metric ton, EURO4 Cut-off, U

USE

This phase comprises, as sole contribution, the energy dissipated as heat, due to the Joule effect, during the reference service life (RSL) of the cable. As indicated in sub-PCR 016, the formula employed to calculate the energy loss is the following:

$$E = I^2 R_{linear} RSL$$

Where:

- E is the energy dissipated by the cable during its operating time;
- R_{linear} is the linear resistivity of the cable, expressed as $\Omega \cdot \text{km}$;
- I is the electrical current. $I = 1 \text{ A}$ is set as a reference current for comparison of the environmental performances with other EPDs of similar cables using the same PCR employed herein.
- RSL is the Reference Service Life of the cable. For comparison with other similar cables, RSL is set to 10 years at 50% use rate, expressed in seconds in the formula

The electricity profile of Electricity, medium voltage {IT} market for electricity, medium voltage | Cut-off, S and Electricity, medium voltage {TH} market for electricity, medium voltage | Cut-off, S are applied to resemble the specific region.

END OF LIFE

For the waste scenario, the EN50693 Annex G is provided. For the first step, the deinstallation of PV cables system was assuming relying on the manual labour mirroring the installation process. A 50km of road transportation from operation site to waste treatment site was assumed. The subsequent process for the PV cables is separated in Italy through mechanical process. Default values from Table G.4 is applied.

Table 6 Components for installation (per FU)

Disposal scenario	Value
Mechanical separation for the cables	0.18 kWh/kg
Copper recycling/incineration/landfill ratios	60%/0%/40%
PE recycling/incineration/landfill ratios	0%/50%/50%

ENVIRONMENTAL INDICATORS

The following tables show the environmental impact indicators of the life cycle of PV cable per FU, as indicated by PCR EPDItaly007, sub-PCR EPDItaly016 and EN 50693:2019.

The indicators are divided into the contribution of the processes to the different modules (upstream, core and downstream) and stages (manufacturing, distribution, use and end-of-life). Both mandatory and additional environmental impact indicators are presented.

H1Z2Z2-K 1.5MM²(30/0.25TS)-INNER LAYER BLACK- OUTER LAYER BLACK

Table 7: Environmental performance for H1Z2Z2-K 1.5mm²(30/0.25TS)-Inner Layer Black- Outer Layer Black

Mandatory environmental impact indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total
		Upstream module	Core module	Downstream module				
Climate change - Fossil	kg CO2 eq	1.65E+02	9.67E+00	8.77E+00	1.02E+00	2.60E+02	2.91E+01	4.74E+02
Climate change - Biogenic	kg CO2 eq	7.96E-01	-5.82E-02	1.25E-03	8.12E-04	2.00E+01	2.32E-01	2.09E+01
Climate change - Land use and LU change	kg CO2 eq	3.40E-01	1.53E-03	5.83E-03	5.04E-04	1.38E-01	3.09E-03	4.88E-01
Climate change	kg CO2 eq	1.66E+02	9.61E+00	8.77E+00	1.02E+00	2.81E+02	2.93E+01	4.95E+02
Ozone depletion	kg CFC11 eq	2.18E-06	1.32E-08	1.49E-07	2.18E-08	5.78E-06	3.82E-07	8.52E-06
Eutrophication, freshwater	kg P eq	5.24E-01	1.81E-03	4.38E-04	7.50E-05	6.35E-02	1.35E-03	5.92E-01
Eutrophication, marine	kg N eq	4.43E-01	1.13E-02	4.50E-02	1.59E-03	1.65E-01	1.10E-02	6.77E-01
Eutrophication, terrestrial	mol N eq	5.95E+00	1.20E-01	4.95E-01	1.70E-02	1.80E+00	5.91E-02	8.44E+00
Photochemical ozone formation	kg NMVOC eq	1.92E+00	3.11E-02	1.39E-01	6.22E-03	7.53E-01	2.18E-02	2.88E+00
Acidification	mol H+ eq	1.05E+01	4.95E-02	1.73E-01	4.23E-03	9.27E-01	2.30E-02	1.17E+01
Resource use, minerals and metals	kg Sb eq	1.47E-01	3.82E-06	1.60E-05	3.18E-06	4.28E-04	3.73E-05	1.47E-01
Resource use, fossils	MJ	2.51E+03	9.68E+01	1.15E+02	1.48E+01	3.94E+03	6.88E+01	6.75E+03
Water use	m3 depriv.	1.66E+02	1.10E+00	3.66E-01	6.52E-02	1.41E+02	4.89E+00	3.14E+02
Resource Use Indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total
		Upstream module	Core module	Downstream module				
PENRM	MJ	4.72E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.72E+02
PENRE	MJ	2.04E+03	9.68E+01	1.15E+02	1.48E+01	3.76E+03	6.88E+01	6.10E+03
PENRT	MJ	2.51E+03	9.68E+01	1.15E+02	1.48E+01	3.76E+03	6.88E+01	6.57E+03
PERM	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERE	MJ	3.98E+02	5.86E+00	1.20E+00	2.29E-01	1.10E+03	1.44E+01	1.52E+03
PERT	MJ	3.98E+02	5.86E+00	1.20E+00	2.29E-01	1.10E+03	1.44E+01	1.52E+03
FW	m3	3.96E+00	2.65E-02	1.26E-02	2.23E-03	3.76E+00	5.14E-01	8.27E+00
SM	kg	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
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Waste Production Indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total
		Upstream module	Core module	Downstream module				
HWD	kg	2.71E-01	2.99E-03	2.12E-03	3.86E-04	1.98E-01	7.33E-01	1.21E+00
NHWD	kg	6.43E+01	7.13E-01	3.16E+00	9.51E-01	1.96E+01	2.03E+01	1.09E+02
RWD	kg	3.85E-03	1.58E-04	2.16E-05	4.76E-06	6.88E-03	1.10E-04	1.10E-02
Output Flows Indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total
		Upstream module	Core module	Downstream module				
MER	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

MFR	kg	0.00E+00	2.23E-01	0.00E+00	3.82E-03	0.00E+00	7.76E+00	7.99E+00
CRU	kg	0.00E+00						
EEE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.47E+01	3.47E+01
ETE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.20E+01	7.20E+01

Acronyms: 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; PENRT = Total use of non-renewable primary energy resources; PERT = Total use of renewable primary energy resources; FW = Use of net fresh water; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed; MER = Materials for energy recovery; MFR = Materials for recycling; CRU = Components for reuse; ETE= Exported thermal energy; EEE= Exported electricity energy.

Additional environmental impact indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total
		Upstream module	Core module	Downstream module				
Particulate matter	disease inc.	2.38E-05	7.43E-07	4.57E-07	9.08E-08	3.99E-06	1.72E-07	2.92E-05
Ionising radiation	kBq U-235 eq	1.47E+01	6.68E-01	9.11E-02	1.96E-02	2.79E+01	4.28E-01	4.38E+01
Freshwater Ecotoxicity	CTUe	8.57E+03	2.58E+01	5.75E+01	7.33E+00	5.36E+02	8.96E+02	1.01E+04
Human toxicity, cancer	CTUh	1.77E-06	1.87E-09	3.86E-09	4.61E-10	6.56E-08	1.24E-07	1.97E-06
Human toxicity, non-cancer	CTUh	1.55E-04	9.07E-08	5.41E-08	1.05E-08	1.32E-06	8.37E-06	1.64E-04
Land use	Pt	3.36E+03	2.11E+01	4.07E+01	1.13E+01	5.48E+02	3.46E+01	4.01E+03

H1Z2Z2-K 2.5MM²(47/0.25TS)-INNER LAYER BLACK- OUTER LAYER BLACK

Table 8: Environmental performance results for H1Z2Z2-K 2.5mm²(47/0.25TS)-Inner Layer Black- Outer Layer Black

Mandatory environmental impact indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total
		Upstream module	Core module	Downstream module				
Climate change - Fossil	kg CO2 eq	2.38E+02	1.00E+01	1.12E+01	1.31E+00	1.56E+02	3.28E+01	4.49E+02
Climate change - Biogenic	kg CO2 eq	1.25E+00	-6.02E-02	1.59E-03	1.04E-03	1.20E+01	2.90E-01	1.34E+01
Climate change - Land use and LU change	kg CO2 eq	4.86E-01	1.59E-03	7.45E-03	6.44E-04	8.25E-02	3.73E-03	5.82E-01
Climate change	kg CO2 eq	2.39E+02	9.95E+00	1.12E+01	1.31E+00	1.68E+02	3.31E+01	4.63E+02
Ozone depletion	kg CFC11 eq	3.03E-06	1.37E-08	1.91E-07	2.79E-08	3.46E-06	4.36E-07	7.16E-06
Eutrophication, freshwater	kg P eq	8.15E-01	1.87E-03	5.60E-04	9.58E-05	3.81E-02	1.64E-03	8.58E-01
Eutrophication, marine	kg N eq	6.73E-01	1.17E-02	5.75E-02	2.04E-03	9.91E-02	1.26E-02	8.56E-01
Eutrophication, terrestrial	mol N eq	9.10E+00	1.25E-01	6.33E-01	2.18E-02	1.08E+00	7.02E-02	1.10E+01
Photochemical ozone formation	kg NMVO C eq	2.92E+00	3.22E-02	1.78E-01	7.96E-03	4.51E-01	2.60E-02	3.61E+00
Acidification	mol H+ eq	1.63E+01	5.12E-02	2.21E-01	5.40E-03	5.55E-01	2.77E-02	1.72E+01
Resource use, minerals and metals	kg Sb eq	2.30E-01	3.96E-06	2.04E-05	4.06E-06	2.57E-04	4.63E-05	2.30E-01
Resource use, fossils	MJ	3.46E+03	1.00E+02	1.47E+02	1.89E+01	2.36E+03	8.44E+01	6.17E+03
Water use	m3 depriv.	2.57E+02	1.14E+00	4.67E-01	8.33E-02	8.45E+01	5.71E+00	3.49E+02
Resource Use Indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total
		Upstream module	Core module	Downstream module				
PENRM	MJ	5.22E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.22E+02
PENRE	MJ	2.94E+03	1.00E+02	1.47E+02	1.89E+01	2.25E+03	8.44E+01	5.54E+03
PENRT	MJ	3.46E+03	1.00E+02	1.47E+02	1.89E+01	2.25E+03	8.44E+01	6.07E+03
PERM	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERE	MJ	6.12E+02	6.06E+00	1.53E+00	2.93E-01	6.60E+02	1.79E+01	1.30E+03
PERT	MJ	6.12E+02	6.06E+00	1.53E+00	2.93E-01	6.60E+02	1.79E+01	1.30E+03
FW	m3	6.13E+00	2.74E-02	1.61E-02	2.85E-03	2.25E+00	5.78E-01	9.01E+00
SM	kg	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
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Waste Production Indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total
		Upstream module	Core module	Downstream module				
HWD	kg	4.19E-01	3.09E-03	2.71E-03	4.94E-04	1.19E-01	8.14E-01	1.36E+00
NHWD	kg	9.46E+01	7.38E-01	4.04E+00	1.22E+00	1.18E+01	2.50E+01	1.37E+02
RWD	kg	5.83E-03	1.64E-04	2.76E-05	6.08E-06	4.12E-03	1.34E-04	1.03E-02
Output Flows Indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total
		Upstream module	Core module	Downstream module				
MER	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	0.00E+00	2.85E-01	0.00E+00	4.61E-03	0.00E+00	1.22E+01	1.25E+01
CRU	kg	0.00E+00	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	3.86E+01	3.86E+01
ETE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.00E+01	8.00E+01

Acynoms: 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; PENRT = Total use of non-renewable primary energy resources; PERT = Total use of renewable primary energy resources; FW = Use of net fresh water; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed; MER = Materials for energy recovery; MFR = Materials for recycling; CRU = Components for reuse; ETE= Exported thermal energy; EEE= Exported electricity energy.

Additional environmental impact indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total
		Upstream module	Core module	Downstream module				
Particulate matter	diseases inc.	3.58E-05	7.69E-07	5.84E-07	1.16E-07	2.39E-06	2.06E-07	3.99E-05
Ionising radiation	kBq U-235 eq	2.22E+01	6.92E-01	1.17E-01	2.51E-02	1.67E+01	5.23E-01	4.03E+01
Freshwater Ecotoxicity	CTUe	1.33E+04	2.67E+01	7.35E+01	9.37E+00	3.21E+02	1.00E+03	1.48E+04
Human toxicity, cancer	CTUh	2.75E-06	1.94E-09	4.93E-09	5.89E-10	3.93E-08	1.92E-07	2.99E-06
Human toxicity, non-cancer	CTUh	2.42E-04	9.39E-08	6.92E-08	1.34E-08	7.90E-07	1.31E-05	2.56E-04
Land use	Pt	5.21E+03	2.19E+01	5.20E+01	1.44E+01	3.28E+02	4.30E+01	5.67E+03

H1Z2Z2-K 4MM²(52/0.30TS)-INNER LAYER WHITE- OUTER LAYER BLACK

Table 9: Environmental performance results for H1Z2Z2-K 4mm²(52/0.30TS)-Inner Layer White- Outer Layer Black

Mandatory environmental impact indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total
		Upstream module	Core module	Downstream module				
Climate change - Fossil	kg CO2 eq	3.51E+02	1.03E+01	1.47E+01	1.71E+00	9.68E+01	3.66E+01	5.11E+02
Climate change - Biogenic	kg CO2 eq	1.97E+00	-6.21E-02	2.09E-03	1.36E-03	7.41E+00	3.70E-01	9.70E+00
Climate change - Land use and LU change	kg CO2 eq	7.11E-01	1.63E-03	9.75E-03	8.43E-04	5.11E-02	4.57E-03	7.79E-01
Climate change	kg CO2 eq	3.53E+02	1.03E+01	1.47E+01	1.71E+00	1.04E+02	3.70E+01	5.21E+02
Ozone depletion	kg CFC11 eq	4.33E-06	1.41E-08	2.50E-07	3.65E-08	2.15E-06	4.96E-07	7.27E-06
Eutrophication, freshwater	kg P eq	1.28E+00	1.93E-03	7.32E-04	1.25E-04	2.36E-02	2.02E-03	1.30E+00
Eutrophication, marine	kg N eq	1.04E+00	1.21E-02	7.52E-02	2.67E-03	6.14E-02	1.45E-02	1.20E+00
Eutrophication, terrestrial	mol N eq	1.41E+01	1.28E-01	8.29E-01	2.85E-02	6.68E-01	8.41E-02	1.58E+01
Photochemical ozone formation	kg NMVOC eq	4.49E+00	3.32E-02	2.33E-01	1.04E-02	2.80E-01	3.14E-02	5.07E+00
Acidification	mol H+ eq	2.55E+01	5.28E-02	2.89E-01	7.07E-03	3.44E-01	3.39E-02	2.62E+01
Resource use, minerals and metals	kg Sb eq	3.61E-01	4.08E-06	2.67E-05	5.31E-06	1.59E-04	5.84E-05	3.62E-01
Resource use, fossils	MJ	4.91E+03	1.03E+02	1.92E+02	2.47E+01	1.47E+03	1.05E+02	6.80E+03
Water use	m3 depriv.	4.00E+02	1.17E+00	6.12E-01	1.09E-01	5.24E+01	6.68E+00	4.61E+02
Resource Use Indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total
		Upstream module	Core module	Downstream module				
PENRM	MJ	5.69E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.69E+02
PENRE	MJ	4.34E+03	1.03E+02	1.92E+02	2.47E+01	1.40E+03	1.05E+02	6.16E+03

PENRT	MJ	4.91E+03	1.03E+02	1.92E+02	2.47E+01	1.40E+03	1.05E+02	6.73E+03
PERM	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERE	MJ	9.48E+02	6.25E+00	2.01E+00	3.84E-01	4.09E+02	2.28E+01	1.39E+03
PERT	MJ	9.48E+02	6.25E+00	2.01E+00	3.84E-01	4.09E+02	2.28E+01	1.39E+03
FW	m3	9.56E+00	2.83E-02	2.11E-02	3.73E-03	1.40E+00	6.43E-01	1.17E+01
SM	kg	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
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Waste Production Indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total
		Upstream module	Core module	Downstream module				
HWD	kg	6.54E-01	3.19E-03	3.55E-03	6.46E-04	7.36E-02	8.89E-01	1.62E+00
NHWD	kg	1.43E+02	7.61E-01	5.29E+00	1.59E+00	7.30E+00	3.13E+01	1.89E+02
RWD	kg	8.96E-03	1.69E-04	3.62E-05	7.96E-06	2.56E-03	1.67E-04	1.19E-02
Output Flows Indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total
		Upstream module	Core module	Downstream module				
MER	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	0.00E+00	3.73E-01	0.00E+00	4.93E-03	0.00E+00	1.91E+01	1.95E+01
CRU	kg	0.00E+00	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	4.21E+01	4.21E+01
ETE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.73E+01	8.73E+01

Acronyms: 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; PENRT = Total use of non-renewable primary energy resources; PERT = Total use of renewable primary energy resources; FW = Use of net fresh water; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed; MER = Materials for energy recovery; MFR = Materials for recycling; CRU = Components for reuse; ETE= Exported thermal energy; EEE= Exported electricity energy.

Additional environmental impact indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total
		Upstream module	Core module	Downstream module				
Particulate matter	disease inc.	5.47E-05	7.92E-07	7.64E-07	1.52E-07	1.48E-06	2.50E-07	5.81E-05
Ionising radiation	kBq U-235 eq	3.41E+01	7.13E-01	1.53E-01	3.28E-02	1.04E+01	6.50E-01	4.60E+01
Freshwater Ecotoxicity	CTUe	2.09E+04	2.75E+01	9.61E+01	1.23E+01	1.99E+02	1.11E+03	2.23E+04
Human toxicity, cancer	CTUh	4.29E-06	2.00E-09	6.46E-09	7.71E-10	2.44E-08	3.01E-07	4.63E-06
Human toxicity, non-cancer	CTUh	3.80E-04	9.68E-08	9.05E-08	1.75E-08	4.90E-07	2.05E-05	4.01E-04
Land use	Pt	8.15E+03	2.26E+01	6.80E+01	1.89E+01	2.04E+02	5.45E+01	8.52E+03

H1Z2Z2-K 4MM²(48/0.30TS)-INNER LAYER BLACK- OUTER LAYER BLACK

Table 10: Environmental performance results for H1Z2Z2-K 4mm²(48/0.30TS)-Inner Layer Black- Outer Layer Black

Mandatory environmental impact indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total
		Upstream module	Core module	Downstream module				
Climate change - Fossil	kg CO2 eq	3.32E+02	1.04E+01	1.42E+01	1.66E+00	9.68E+01	3.68E+01	4.91E+02
Climate change - Biogenic	kg CO2 eq	1.84E+00	-6.23E-02	2.02E-03	1.32E-03	7.41E+00	3.61E-01	9.56E+00
Climate change - Land use and LU change	kg CO2 eq	6.71E-01	1.64E-03	9.45E-03	8.17E-04	5.11E-02	4.49E-03	7.38E-01
Climate change	kg CO2 eq	3.34E+02	1.03E+01	1.42E+01	1.66E+00	1.04E+02	3.72E+01	5.02E+02
Ozone depletion	kg CFC11 eq	4.11E-06	1.42E-08	2.42E-07	3.54E-08	2.15E-06	4.96E-07	7.05E-06
Eutrophication, freshwater	kg P eq	1.19E+00	1.94E-03	7.10E-04	1.22E-04	2.36E-02	1.98E-03	1.22E+00
Eutrophication, marine	kg N eq	9.71E-01	1.21E-02	7.29E-02	2.59E-03	6.14E-02	1.44E-02	1.13E+00
Eutrophication, terrestrial	mol N eq	1.32E+01	1.29E-01	8.03E-01	2.76E-02	6.68E-01	8.31E-02	1.49E+01
Photochemical ozone formation	kg NMVOC eq	4.21E+00	3.33E-02	2.25E-01	1.01E-02	2.80E-01	3.10E-02	4.79E+00

Acidification	mol H+ eq	2.38E+01	5.29E-02	2.80E-01	6.85E-03	3.44E-01	3.33E-02	2.45E+01
Resource use, minerals and metals	kg Sb eq	3.37E-01	4.10E-06	2.59E-05	5.15E-06	1.59E-04	5.71E-05	3.38E-01
Resource use, fossils	MJ	4.68E+03	1.04E+02	1.86E+02	2.39E+01	1.47E+03	1.03E+02	6.57E+03
Water use	m3 depriv.	3.74E+02	1.18E+00	5.93E-01	1.06E-01	5.24E+01	6.64E+00	4.35E+02
Resource Use Indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total
		Upstream module	Core module	Downstream module				
PENRM	MJ	5.81E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.81E+02
PENRE	MJ	4.10E+03	1.04E+02	1.86E+02	2.39E+01	1.40E+03	1.03E+02	5.92E+03
PENRT	MJ	4.68E+03	1.04E+02	1.86E+02	2.39E+01	1.40E+03	1.03E+02	6.50E+03
PERM	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERE	MJ	8.87E+02	6.27E+00	1.95E+00	3.72E-01	4.09E+02	2.22E+01	1.33E+03
PERT	MJ	8.87E+02	6.27E+00	1.95E+00	3.72E-01	4.09E+02	2.22E+01	1.33E+03
FW	m3	8.93E+00	2.84E-02	2.05E-02	3.61E-03	1.40E+00	6.47E-01	1.10E+01
SM	kg	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
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Waste Production Indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total
		Upstream module	Core module	Downstream module				
HWD	kg	6.11E-01	3.20E-03	3.44E-03	6.26E-04	7.36E-02	8.99E-01	1.59E+00
NHWD	kg	1.34E+02	7.63E-01	5.13E+00	1.54E+00	7.30E+00	3.06E+01	1.80E+02
RWD	kg	8.40E-03	1.69E-04	3.50E-05	7.72E-06	2.56E-03	1.64E-04	1.13E-02
Output Flows Indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total
		Upstream module	Core module	Downstream module				
MER	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	0.00E+00	3.62E-01	0.00E+00	4.83E-03	0.00E+00	1.79E+01	1.82E+01
CRU	kg	0.00E+00	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	4.26E+01	4.26E+01
ETE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.83E+01	8.83E+01

Acronyms: 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; PENRT = Total use of non-renewable primary energy resources; PERT = Total use of renewable primary energy resources; FW = Use of net fresh water; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed; MER = Materials for energy recovery; MFR = Materials for recycling; CRU = Components for reuse; ETE= Exported thermal energy; EEE= Exported electricity energy.

Additional environmental impact indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total
		Upstream module	Core module	Downstream module				
Particulate matter	disease inc.	5.13E-05	7.95E-07	7.41E-07	1.47E-07	1.48E-06	2.46E-07	5.47E-05
Ionising radiation	kBq U-235 eq	3.20E+01	7.15E-01	1.48E-01	3.18E-02	1.04E+01	6.37E-01	4.39E+01
Freshwater Ecotoxicity	CTUe	1.95E+04	2.76E+01	9.32E+01	1.19E+01	1.99E+02	1.12E+03	2.09E+04
Human toxicity, cancer	CTUh	4.01E-06	2.00E-09	6.26E-09	7.47E-10	2.44E-08	2.81E-07	4.33E-06
Human toxicity, non-cancer	CTUh	3.54E-04	9.71E-08	8.77E-08	1.70E-08	4.90E-07	1.91E-05	3.74E-04
Land use	Pt	7.61E+03	2.26E+01	6.59E+01	1.83E+01	2.04E+02	5.32E+01	7.98E+03

H1Z2Z2-K 6MM²(78/0.30TS)-INNER LAYER WHITE- OUTER LAYER BLACK

Table 11: Environmental performance results for H1Z2Z2-K 6mm²(78/0.30TS)-Inner Layer White- Outer Layer Black

Mandatory environmental impact indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total
		Upstream module	Core module	Downstream module				
Climate change - Fossil	kg CO2 eq	5.10E+02	1.10E+01	2.00E+01	2.33E+00	6.44E+01	4.45E+01	6.52E+02

Climate change - Biogenic	kg CO2 eq	2.98E+00	-6.64E-02	2.84E-03	1.85E-03	4.94E+00	4.97E-01	8.35E+00
Climate change - Land use and LU change	kg CO2 eq	1.02E+00	1.75E-03	1.33E-02	1.15E-03	3.41E-02	5.95E-03	1.08E+00
Climate change	kg CO2 eq	5.14E+02	1.10E+01	2.00E+01	2.33E+00	6.94E+01	4.50E+01	6.62E+02
Ozone depletion	kg CFC11 eq	6.16E-06	1.51E-08	3.40E-07	4.97E-08	1.43E-06	6.11E-07	8.61E-06
Eutrophication, freshwater	kg P eq	1.91E+00	2.06E-03	9.97E-04	1.71E-04	1.57E-02	2.64E-03	1.93E+00
Eutrophication, marine	kg N eq	1.54E+00	1.29E-02	1.02E-01	3.63E-03	4.09E-02	1.79E-02	1.72E+00
Eutrophication, terrestrial	mol N eq	2.10E+01	1.37E-01	1.13E+00	3.88E-02	4.45E-01	1.08E-01	2.28E+01
Photochemical ozone formation	kg NMVOC eq	6.67E+00	3.55E-02	3.17E-01	1.42E-02	1.86E-01	4.05E-02	7.26E+00
Acidification	mol H+ eq	3.82E+01	5.64E-02	3.93E-01	9.63E-03	2.29E-01	4.41E-02	3.90E+01
Resource use, minerals and metals	kg Sb eq	5.43E-01	4.37E-06	3.64E-05	7.23E-06	1.06E-04	7.77E-05	5.44E-01
Resource use, fossils	MJ	7.00E+03	1.11E+02	2.61E+02	3.36E+01	9.76E+02	1.39E+02	8.52E+03
Water use	m3 depriv.	5.98E+02	1.26E+00	8.33E-01	1.48E-01	3.49E+01	8.43E+00	6.44E+02
Resource Use Indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total
		Upstream module	Core module	Downstream module				
PENRM	MJ	6.92E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.92E+02
PENRE	MJ	6.31E+03	1.11E+02	2.61E+02	3.36E+01	9.31E+02	1.39E+02	7.78E+03
PENRT	MJ	7.00E+03	1.11E+02	2.61E+02	3.36E+01	9.31E+02	1.39E+02	8.48E+03
PERM	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERE	MJ	1.42E+03	6.68E+00	2.73E+00	5.22E-01	2.72E+02	3.05E+01	1.73E+03
PERT	MJ	1.42E+03	6.68E+00	2.73E+00	5.22E-01	2.72E+02	3.05E+01	1.73E+03
FW	m3	1.43E+01	3.03E-02	2.88E-02	5.07E-03	9.30E-01	7.79E-01	1.61E+01
SM	kg	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
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Waste Production Indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total
		Upstream module	Core module	Downstream module				
HWD	kg	9.78E-01	3.41E-03	4.83E-03	8.79E-04	4.91E-02	1.06E+00	2.10E+00
NHWD	kg	2.09E+02	8.14E-01	7.20E+00	2.17E+00	4.86E+00	4.14E+01	2.66E+02
RWD	kg	1.33E-02	1.80E-04	4.92E-05	1.08E-05	1.70E-03	2.20E-04	1.55E-02
Output Flows Indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total
		Upstream module	Core module	Downstream module				
MER	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	0.00E+00	5.08E-01	0.00E+00	5.94E-03	0.00E+00	2.88E+01	2.93E+01
CRU	kg	0.00E+00	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	5.02E+01	5.02E+01
ETE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.04E+02	1.04E+02

Acronyms: 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; PENRT = Total use of non-renewable primary energy resources; PERT = Total use of renewable primary energy resources; FW = Use of net fresh water; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed; MER = Materials for energy recovery; MFR = Materials for recycling; CRU = Components for reuse; ETE= Exported thermal energy; EEE= Exported electricity energy.

Additional environmental impact indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total
		Upstream module	Core module	Downstream module				
Particulate matter	disease inc.	8.10E-05	8.47E-07	1.04E-06	2.07E-07	9.88E-07	3.23E-07	8.44E-05
Ionising radiation	kBq U-235 eq	5.06E+01	7.62E-01	2.08E-01	4.47E-02	6.90E+00	8.55E-01	5.94E+01
Freshwater Ecotoxicity	CTUe	3.13E+04	2.94E+01	1.31E+02	1.67E+01	1.33E+02	1.33E+03	3.29E+04
Human toxicity, cancer	CTUh	6.43E-06	2.14E-09	8.79E-09	1.05E-09	1.62E-08	4.51E-07	6.91E-06
Human toxicity, non-cancer	CTUh	5.70E-04	1.03E-07	1.23E-07	2.38E-08	3.26E-07	3.08E-05	6.02E-04
Land use	Pt	1.22E+04	2.41E+01	9.26E+01	2.57E+01	1.36E+02	7.27E+01	1.26E+04

H1Z2Z2-K 6MM²(72/0.30TS)-INNER LAYER BLACK- OUTER LAYER BLACK

Table 12: Environmental performance results for H1Z2Z2-K 6mm²(72/0.30TS)-Inner Layer Black- Outer Layer Black

Mandatory environmental impact indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total
		Upstream module	Core module	Downstream module				
Climate change - Fossil	kg CO2 eq	4.93E+02	1.10E+01	1.94E+01	2.26E+00	6.44E+01	4.39E+01	6.34E+02
Climate change - Biogenic	kg CO2 eq	2.87E+00	-6.59E-02	2.76E-03	1.80E-03	4.94E+00	4.84E-01	8.23E+00
Climate change - Land use and LU change	kg CO2 eq	9.91E-01	1.74E-03	1.29E-02	1.12E-03	3.41E-02	5.82E-03	1.05E+00
Climate change	kg CO2 eq	4.96E+02	1.09E+01	1.94E+01	2.27E+00	6.94E+01	4.44E+01	6.43E+02
Ozone depletion	kg CFC11 eq	5.97E-06	1.50E-08	3.31E-07	4.83E-08	1.43E-06	6.01E-07	8.40E-06
Eutrophication, freshwater	kg P eq	1.84E+00	2.05E-03	9.70E-04	1.66E-04	1.57E-02	2.58E-03	1.86E+00
Eutrophication, marine	kg N eq	1.48E+00	1.28E-02	9.96E-02	3.53E-03	4.09E-02	1.76E-02	1.66E+00
Eutrophication, terrestrial	mol N eq	2.02E+01	1.36E-01	1.10E+00	3.77E-02	4.45E-01	1.06E-01	2.20E+01
Photochemical ozone formation	kg NMVOC eq	6.43E+00	3.53E-02	3.08E-01	1.38E-02	1.86E-01	3.96E-02	7.01E+00
Acidification	mol H+ eq	3.68E+01	5.61E-02	3.83E-01	9.37E-03	2.29E-01	4.31E-02	3.75E+01
Resource use, minerals and metals	kg Sb eq	5.23E-01	4.34E-06	3.54E-05	7.04E-06	1.06E-04	7.58E-05	5.23E-01
Resource use, fossils	MJ	6.78E+03	1.10E+02	2.54E+02	3.27E+01	9.76E+02	1.35E+02	8.28E+03
Water use	m3 depriv.	5.76E+02	1.25E+00	8.10E-01	1.44E-01	3.49E+01	8.27E+00	6.22E+02
Resource Use Indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total
		Upstream module	Core module	Downstream module				
PENRM	MJ	6.80E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.80E+02
PENRE	MJ	6.10E+03	1.10E+02	2.54E+02	3.27E+01	9.31E+02	1.35E+02	7.56E+03
PENRT	MJ	6.78E+03	1.10E+02	2.54E+02	3.27E+01	9.31E+02	1.35E+02	8.24E+03
PERM	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERE	MJ	1.36E+03	6.64E+00	2.66E+00	5.08E-01	2.72E+02	2.97E+01	1.68E+03
PERT	MJ	1.36E+03	6.64E+00	2.66E+00	5.08E-01	2.72E+02	2.97E+01	1.68E+03
FW	m3	1.38E+01	3.01E-02	2.80E-02	4.94E-03	9.30E-01	7.68E-01	1.55E+01
SM	kg	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
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Waste Production Indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total
		Upstream module	Core module	Downstream module				
HWD	kg	9.42E-01	3.39E-03	4.70E-03	8.56E-04	4.91E-02	1.05E+00	2.05E+00
NHWD	kg	2.02E+02	8.09E-01	7.01E+00	2.11E+00	4.86E+00	4.05E+01	2.57E+02
RWD	kg	1.28E-02	1.79E-04	4.79E-05	1.05E-05	1.70E-03	2.15E-04	1.50E-02
Output Flows Indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total
		Upstream module	Core module	Downstream module				
MER	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	0.00E+00	4.95E-01	0.00E+00	5.30E-03	0.00E+00	2.77E+01	2.82E+01
CRU	kg	0.00E+00	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	4.96E+01	4.96E+01
ETE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.03E+02	1.03E+02
Additional environmental impact indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total
		Upstream module	Core module	Downstream module				
Particulate matter	disease inc.	7.81E-05	8.42E-07	1.01E-06	2.01E-07	9.88E-07	3.16E-07	8.15E-05

Acronyms: 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; PENRT = Total use of non-renewable primary energy resources; PERT = Total use of renewable primary energy resources; FW = Use of net fresh water; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed; MER = Materials for energy recovery; MFR = Materials for recycling; CRU = Components for reuse; ETE= Exported thermal energy; EEE= Exported electricity energy.

Ionising radiation	kBq U-235 eq	4.88E+01	7.57E-01	2.02E-01	4.35E-02	6.90E+00	8.35E-01	5.76E+01
Freshwater Ecotoxicity	CTUe	3.01E+04	2.92E+01	1.27E+02	1.62E+01	1.33E+02	1.31E+03	3.18E+04
Human toxicity, cancer	CTUh	6.20E-06	2.12E-09	8.55E-09	1.02E-09	1.62E-08	4.34E-07	6.66E-06
Human toxicity, non-cancer	CTUh	5.49E-04	1.03E-07	1.20E-07	2.32E-08	3.26E-07	2.96E-05	5.79E-04
Land use	Pt	1.18E+04	2.40E+01	9.01E+01	2.50E+01	1.36E+02	7.09E+01	1.21E+04

H1Z2Z2-K 10MM²(74/0.40TS)-INNER LAYER BLACK- OUTER LAYER BLACK

Table 13: Environmental performance results for H1Z2Z2-K 10mm²(74/0.40TS)-Inner Layer Black- Outer Layer Black

Mandatory environmental impact indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total
		Upstream module	Core module					
Climate change - Fossil	kg CO2 eq	8.45E+02	1.16E+01	2.99E+01	3.49E+00	3.71E+01	5.35E+01	9.80E+02
Climate change - Biogenic	kg CO2 eq	5.16E+00	-7.00E-02	4.25E-03	2.77E-03	2.84E+00	7.25E-01	8.66E+00
Climate change - Land use and LU change	kg CO2 eq	1.70E+00	1.85E-03	1.99E-02	1.72E-03	1.96E-02	8.26E-03	1.75E+00
Climate change	kg CO2 eq	8.51E+02	1.16E+01	2.99E+01	3.49E+00	3.99E+01	5.42E+01	9.91E+02
Ozone depletion	kg CFC11 eq	9.99E-06	1.60E-08	5.09E-07	7.44E-08	8.23E-07	7.58E-07	1.22E-05
Eutrophication, freshwater	kg P eq	3.30E+00	2.18E-03	1.49E-03	2.56E-04	9.05E-03	3.68E-03	3.32E+00
Eutrophication, marine	kg N eq	2.63E+00	1.36E-02	1.53E-01	5.44E-03	2.35E-02	2.26E-02	2.85E+00
Eutrophication, terrestrial	mol N eq	3.59E+01	1.45E-01	1.69E+00	5.81E-02	2.56E-01	1.45E-01	3.82E+01
Photochemical ozone formation	kg NMVOC eq	1.14E+01	3.75E-02	4.74E-01	2.12E-02	1.07E-01	5.51E-02	1.21E+01
Acidification	mol H+ eq	6.60E+01	5.95E-02	5.89E-01	1.44E-02	1.32E-01	6.09E-02	6.69E+01
Resource use, minerals and metals	kg Sb eq	9.41E-01	4.62E-06	5.45E-05	1.08E-05	6.09E-05	1.12E-04	9.42E-01
Resource use, fossils	MJ	1.12E+04	1.17E+02	3.91E+02	5.03E+01	5.61E+02	1.97E+02	1.26E+04
Water use	m3 depriv.	1.03E+03	1.32E+00	1.25E+00	2.22E-01	2.01E+01	1.10E+01	1.06E+03
Resource Use Indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total
		Upstream module	Core module					
PENRM	MJ	7.89E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.89E+02
PENRE	MJ	1.05E+04	1.17E+02	3.91E+02	5.03E+01	5.35E+02	1.97E+02	1.17E+04
PENRT	MJ	1.12E+04	1.17E+02	3.91E+02	5.03E+01	5.35E+02	1.97E+02	1.25E+04
PERM	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERE	MJ	2.43E+03	7.05E+00	4.10E+00	7.83E-01	1.57E+02	4.43E+01	2.64E+03
PERT	MJ	2.43E+03	7.05E+00	4.10E+00	7.83E-01	1.57E+02	4.43E+01	2.64E+03
FW	m3	2.47E+01	3.19E-02	4.31E-02	7.60E-03	5.35E-01	9.29E-01	2.62E+01
SM	kg	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
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Waste Production Indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total
		Upstream module	Core module					
HWD	kg	1.69E+00	3.60E-03	7.24E-03	1.32E-03	2.82E-02	1.22E+00	2.94E+00
NHWD	kg	3.51E+02	8.61E-01	1.08E+01	3.24E+00	2.80E+00	5.92E+01	4.28E+02
RWD	kg	2.27E-02	1.90E-04	7.37E-05	1.62E-05	9.79E-04	3.12E-04	2.43E-02
Output Flows Indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total
		Upstream module	Core module					
MER	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	0.00E+00	7.62E-01	0.00E+00	6.03E-03	0.00E+00	4.99E+01	5.07E+01
CRU	kg	0.00E+00	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	5.75E+01	5.75E+01

ETE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.19E+02	1.19E+02
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Acronyms: 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; PENRT = Total use of non-renewable primary energy resources; PERT = Total use of renewable primary energy resources; FW = Use of net fresh water; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed; MER = Materials for energy recovery; MFR = Materials for recycling; CRU = Components for reuse; ETE= Exported thermal energy; EEE= Exported electricity energy.

Additional environmental impact indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total
		Upstream module	Core module					
Particulate matter	disease inc.	1.38E-04	8.94E-07	1.56E-06	3.10E-07	5.68E-07	4.44E-07	1.41E-04
Ionising radiation	kBq U-235 eq	8.63E+01	8.04E-01	3.11E-01	6.69E-02	3.97E+00	1.21E+00	9.27E+01
Freshwater Ecotoxicity	CTUe	5.41E+04	3.11E+01	1.96E+02	2.50E+01	7.63E+01	1.56E+03	5.59E+04
Human toxicity, cancer	CTUh	1.11E-05	2.25E-09	1.32E-08	1.57E-09	9.33E-09	7.79E-07	1.19E-05
Human toxicity, non-cancer	CTUh	9.88E-04	1.09E-07	1.85E-07	3.57E-08	1.88E-07	5.32E-05	1.04E-03
Land use	Pt	2.11E+04	2.55E+01	1.39E+02	3.85E+01	7.80E+01	1.05E+02	2.14E+04

H1Z2Z2-K 16MM²(128/0.40TS)-INNER LAYER BLACK- OUTER LAYER BLACK

Table 14: Environmental performance results for H1Z2Z2-K 16mm²(128/0.40TS)-Inner Layer Black- Outer Layer Black

Mandatory environmental impact indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total
		Upstream module	Core module					
Climate change - Fossil	kg CO2 eq	1.46E+03	1.52E+01	5.16E+01	6.02E+00	2.36E+01	9.20E+01	1.65E+03
Climate change - Biogenic	kg CO2 eq	8.94E+00	-9.15E-02	7.34E-03	4.78E-03	1.81E+00	1.25E+00	1.19E+01
Climate change - Land use and LU change	kg CO2 eq	2.92E+00	2.41E-03	3.43E-02	2.97E-03	1.25E-02	1.42E-02	2.99E+00
Climate change	kg CO2 eq	1.47E+03	1.51E+01	5.17E+01	6.03E+00	2.54E+01	9.33E+01	1.66E+03
Ozone depletion	kg CFC11 eq	1.72E-05	2.09E-08	8.79E-07	1.28E-07	5.23E-07	1.30E-06	2.01E-05
Eutrophication, freshwater	kg P eq	5.71E+00	2.85E-03	2.58E-03	4.42E-04	5.75E-03	6.35E-03	5.73E+00
Eutrophication, marine	kg N eq	4.55E+00	1.78E-02	2.65E-01	9.39E-03	1.50E-02	3.88E-02	4.89E+00
Eutrophication, terrestrial	mol N eq	6.22E+01	1.89E-01	2.92E+00	1.00E-01	1.63E-01	2.51E-01	6.58E+01
Photochemical ozone formation	kg NMVOC eq	1.97E+01	4.90E-02	8.19E-01	3.67E-02	6.82E-02	9.49E-02	2.07E+01
Acidification	mol H+ eq	1.14E+02	7.79E-02	1.02E+00	2.49E-02	8.39E-02	1.05E-01	1.16E+02
Resource use, minerals and metals	kg Sb eq	1.63E+00	6.03E-06	9.41E-05	1.87E-05	3.87E-05	1.93E-04	1.63E+00
Resource use, fossils	MJ	1.94E+04	1.52E+02	6.76E+02	8.69E+01	3.57E+02	3.39E+02	2.10E+04
Water use	m3 depriv.	1.78E+03	1.73E+00	2.15E+00	3.84E-01	1.28E+01	1.89E+01	1.82E+03
Resource Use Indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total
		Upstream module	Core module					
PENRM	MJ	1.36E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.36E+03
PENRE	MJ	1.81E+04	1.52E+02	6.76E+02	8.69E+01	3.41E+02	3.39E+02	1.97E+04
PENRT	MJ	1.94E+04	1.52E+02	6.76E+02	8.69E+01	3.41E+02	3.39E+02	2.10E+04
PERM	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERE	MJ	4.20E+03	9.22E+00	7.07E+00	1.35E+00	9.96E+01	7.65E+01	4.40E+03
PERT	MJ	4.20E+03	9.22E+00	7.07E+00	1.35E+00	9.96E+01	7.65E+01	4.40E+03
FW	m3	4.26E+01	4.17E-02	7.44E-02	1.31E-02	3.40E-01	1.60E+00	4.47E+01
SM	kg	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
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Waste Production Indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total
		Upstream module	Core module					
HWD	kg	2.92E+00	4.70E-03	1.25E-02	2.27E-03	1.79E-02	2.09E+00	5.05E+00
NHWD	kg	6.07E+02	1.13E+00	1.86E+01	5.60E+00	1.78E+00	1.02E+02	7.36E+02

RWD	kg	3.93E-02	2.49E-04	1.27E-04	2.80E-05	6.23E-04	5.38E-04	4.08E-02
Output Flows Indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total
		Upstream module	Core module	Downstream module				
MER	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	0.00E+00	1.31E+00	0.00E+00	6.38E-03	0.00E+00	8.63E+01	8.76E+01
CRU	kg	0.00E+00	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	9.89E+01	9.89E+01
ETE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.05E+02	2.05E+02

Acronyms: 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; PENRT = Total use of non-renewable primary energy resources; PERT = Total use of renewable primary energy resources; FW = Use of net fresh water; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed; MER = Materials for energy recovery; MFR = Materials for recycling; CRU = Components for reuse; ETE= Exported thermal energy; EEE= Exported electricity energy.

Additional environmental impact indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total
		Upstream module	Core module	Downstream module				
Particulate matter	disease inc.	2.38E-04	1.17E-06	2.69E-06	5.35E-07	3.61E-07	7.65E-07	2.44E-04
Ionising radiation	kBq U-235 eq	1.49E+02	1.05E+00	5.37E-01	1.16E-01	2.53E+00	2.08E+00	1.56E+02
Freshwater Ecotoxicity	CTUe	9.35E+04	4.06E+01	3.39E+02	4.32E+01	4.85E+01	2.69E+03	9.66E+04
Human toxicity, cancer	CTUh	1.92E-05	2.95E-09	2.27E-08	2.71E-09	5.93E-09	1.35E-06	2.06E-05
Human toxicity, non-cancer	CTUh	1.71E-03	1.43E-07	3.19E-07	6.17E-08	1.19E-07	9.21E-05	1.80E-03
Land use	Pt	3.64E+04	3.33E+01	2.40E+02	6.65E+01	4.96E+01	1.81E+02	3.70E+04

H1Z2Z2-K 25MM²(196/0.40TS)-INNER LAYER BLACK- OUTER LAYER BLACK

Table 15: Environmental performance results for H1Z2Z2-K 25mm²(196/0.40TS)-Inner Layer Black- Outer Layer Black

Mandatory environmental impact indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total
		Upstream module	Core module	Downstream module				
Climate change - Fossil	kg CO2 eq	2.19E+03	1.90E+01	7.67E+01	8.94E+00	1.51E+01	1.34E+02	2.44E+03
Climate change - Biogenic	kg CO2 eq	1.35E+01	-1.14E-01	1.09E-02	7.10E-03	1.16E+00	1.85E+00	1.64E+01
Climate change - Land use and LU change	kg CO2 eq	4.36E+00	3.01E-03	5.10E-02	4.41E-03	7.99E-03	2.10E-02	4.44E+00
Climate change	kg CO2 eq	2.21E+03	1.89E+01	7.67E+01	8.95E+00	1.63E+01	1.35E+02	2.46E+03
Ozone depletion	kg CFC11 eq	2.57E-05	2.62E-08	1.30E-06	1.91E-07	3.35E-07	1.90E-06	2.95E-05
Eutrophication, freshwater	kg P eq	8.59E+00	3.55E-03	3.83E-03	6.56E-04	3.69E-03	9.37E-03	8.61E+00
Eutrophication, marine	kg N eq	6.83E+00	2.23E-02	3.93E-01	1.39E-02	9.59E-03	5.67E-02	7.32E+00
Eutrophication, terrestrial	mol N eq	9.34E+01	2.37E-01	4.33E+00	1.49E-01	1.04E-01	3.69E-01	9.85E+01
Photochemical ozone formation	kg NMVOC eq	2.95E+01	6.12E-02	1.22E+00	5.44E-02	4.37E-02	1.40E-01	3.11E+01
Acidification	mol H+ eq	1.72E+02	9.73E-02	1.51E+00	3.70E-02	5.38E-02	1.55E-01	1.73E+02
Resource use, minerals and metals	kg Sb eq	2.45E+00	7.53E-06	1.40E-04	2.78E-05	2.48E-05	2.86E-04	2.45E+00
Resource use, fossils	MJ	2.91E+04	1.90E+02	1.00E+03	1.29E+02	2.29E+02	5.01E+02	3.11E+04
Water use	m3 depriv.	2.68E+03	2.16E+00	3.20E+00	5.70E-01	8.18E+00	2.77E+01	2.72E+03
Resource Use Indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total
		Upstream module	Core module	Downstream module				
PENRM	MJ	2.00E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.00E+03
PENRE	MJ	2.71E+04	1.90E+02	1.00E+03	1.29E+02	2.18E+02	5.01E+02	2.91E+04
PENRT	MJ	2.91E+04	1.90E+02	1.00E+03	1.29E+02	2.18E+02	5.01E+02	3.11E+04
PERM	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERE	MJ	6.31E+03	1.15E+01	1.05E+01	2.01E+00	6.39E+01	1.13E+02	6.51E+03
PERT	MJ	6.31E+03	1.15E+01	1.05E+01	2.01E+00	6.39E+01	1.13E+02	6.51E+03
FW	m3	6.41E+01	5.21E-02	1.10E-01	1.95E-02	2.18E-01	2.32E+00	6.68E+01

SM	kg	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
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Waste Production Indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total
		Upstream module	Core module	Downstream module				
HWD	kg	4.38E+00	5.87E-03	1.85E-02	3.38E-03	1.15E-02	3.02E+00	7.44E+00
NHWD	kg	9.10E+02	1.41E+00	2.77E+01	8.32E+00	1.14E+00	1.51E+02	1.10E+03
RWD	kg	5.90E-02	3.11E-04	1.89E-04	4.16E-05	3.99E-04	7.95E-04	6.07E-02
Output Flows Indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total
		Upstream module	Core module	Downstream module				
MER	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	0.00E+00	1.97E+00	0.00E+00	7.12E-03	0.00E+00	1.30E+02	1.32E+02
CRU	kg	0.00E+00	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	1.43E+02	1.43E+02
ETE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.96E+02	2.96E+02

Acronyms: 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; PENRT = Total use of non-renewable primary energy resources; PERT = Total use of renewable primary energy resources; FW = Use of net fresh water; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed; MER = Materials for energy recovery; MFR = Materials for recycling; CRU = Components for reuse; ETE = Exported thermal energy; EEE = Exported electricity energy.

Additional environmental impact indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total
		Upstream module	Core module	Downstream module				
Particulate matter	disease inc.	3.57E-04	1.46E-06	3.99E-06	7.94E-07	2.32E-07	1.13E-06	3.65E-04
Ionising radiation	kBq U-235 eq	2.24E+02	1.31E+00	7.97E-01	1.72E-01	1.62E+00	3.08E+00	2.31E+02
Freshwater Ecotoxicity	CTUe	1.40E+05	5.08E+01	5.03E+02	6.41E+01	3.11E+01	3.89E+03	1.45E+05
Human toxicity, cancer	CTUh	2.88E-05	3.68E-09	3.38E-08	4.03E-09	3.80E-09	2.02E-06	3.09E-05
Human toxicity, non-cancer	CTUh	2.57E-03	1.78E-07	4.73E-07	9.15E-08	7.65E-08	1.38E-04	2.71E-03
Land use	Pt	5.47E+04	4.17E+01	3.56E+02	9.87E+01	3.18E+01	2.68E+02	5.55E+04

H1Z2Z2-K 35MM²(276/0.40TS)-INNER LAYER BLACK- OUTER LAYER BLACK

Table 16: Environmental performance results for H1Z2Z2-K 35mm²(276/0.40TS)-Inner Layer Black- Outer Layer Black

Mandatory environmental impact indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total
		Upstream module	Core module	Downstream module				
Climate change - Fossil	kg CO2 eq	3.09E+03	2.13E+01	1.04E+02	1.22E+01	1.07E+01	1.63E+02	3.40E+03
Climate change - Biogenic	kg CO2 eq	1.93E+01	-1.28E-01	1.48E-02	9.66E-03	8.23E-01	2.49E+00	2.25E+01
Climate change - Land use and LU change	kg CO2 eq	6.16E+00	3.38E-03	6.93E-02	6.00E-03	5.68E-03	2.76E-02	6.27E+00
Climate change	kg CO2 eq	3.11E+03	2.12E+01	1.04E+02	1.22E+01	1.16E+01	1.66E+02	3.43E+03
Ozone depletion	kg CFC11 eq	3.60E-05	2.94E-08	1.77E-06	2.59E-07	2.38E-07	2.36E-06	4.07E-05
Eutrophication, freshwater	kg P eq	1.23E+01	3.98E-03	5.21E-03	8.92E-04	2.62E-03	1.24E-02	1.23E+01
Eutrophication, marine	kg N eq	9.73E+00	2.50E-02	5.35E-01	1.90E-02	6.82E-03	7.10E-02	1.04E+01
Eutrophication, terrestrial	mol N eq	1.33E+02	2.65E-01	5.89E+00	2.02E-01	7.42E-02	4.78E-01	1.40E+02
Photochemical ozone formation	kg NMVOC eq	4.21E+01	6.86E-02	1.65E+00	7.41E-02	3.11E-02	1.82E-01	4.41E+01
Acidification	mol H+ eq	2.46E+02	1.09E-01	2.06E+00	5.03E-02	3.82E-02	2.03E-01	2.48E+02
Resource use, minerals and metals	kg Sb eq	3.51E+00	8.46E-06	1.90E-04	3.78E-05	1.77E-05	3.83E-04	3.51E+00
Resource use, fossils	MJ	4.06E+04	2.13E+02	1.36E+03	1.75E+02	1.63E+02	6.66E+02	4.32E+04
Water use	m3 depriv.	3.83E+03	2.42E+00	4.35E+00	7.76E-01	5.81E+00	3.53E+01	3.88E+03
Resource Use Indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total

		Upstream module	Core module	Downstream module				
PENRM	MJ	2.37E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.37E+03
PENRE	MJ	3.82E+04	2.13E+02	1.36E+03	1.75E+02	1.55E+02	6.66E+02	4.08E+04
PENRT	MJ	4.06E+04	2.13E+02	1.36E+03	1.75E+02	1.55E+02	6.66E+02	4.32E+04
PERM	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERE	MJ	9.02E+03	1.29E+01	1.43E+01	2.73E+00	4.54E+01	1.52E+02	9.25E+03
PERT	MJ	9.02E+03	1.29E+01	1.43E+01	2.73E+00	4.54E+01	1.52E+02	9.25E+03
FW	m3	9.17E+01	5.84E-02	1.50E-01	2.65E-02	1.55E-01	2.82E+00	9.49E+01
SM	kg	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
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Waste Production Indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total
		Upstream module	Core module	Downstream module				
HWD	kg	6.27E+00	6.59E-03	2.52E-02	4.59E-03	8.18E-03	3.59E+00	9.90E+00
NHWD	kg	1.29E+03	1.58E+00	3.76E+01	1.13E+01	8.10E-01	2.01E+02	1.54E+03
RWD	kg	8.41E-02	3.48E-04	2.57E-04	5.66E-05	2.84E-04	1.06E-03	8.61E-02
Output Flows Indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total
		Upstream module	Core module	Downstream module				
MER	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	0.00E+00	2.65E+00	0.00E+00	8.09E-03	0.00E+00	1.86E+02	1.89E+02
CRU	kg	0.00E+00	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	1.69E+02	1.69E+02
ETE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.51E+02	3.51E+02

Acronyms: 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; PENRT = Total use of non-renewable primary energy resources; PERT = Total use of renewable primary energy resources; FW = Use of net fresh water; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed; MER = Materials for energy recovery; MFR = Materials for recycling; CRU = Components for reuse; ETE= Exported thermal energy; EEE= Exported electricity energy.

Additional environmental impact indicators	Unit	Manufacturing stage		Distribution stage	Installation stage	Use & Maintenance stage	End-of-Life Stage	Total
		Upstream module	Core module	Downstream module				
Particulate matter	disease inc.	5.09E-04	1.64E-06	5.43E-06	1.08E-06	1.65E-07	1.47E-06	5.18E-04
Ionising radiation	kBq U-235 eq	3.19E+02	1.47E+00	1.08E+00	2.33E-01	1.15E+00	4.08E+00	3.27E+02
Freshwater Ecotoxicity	CTUe	2.01E+05	5.69E+01	6.84E+02	8.72E+01	2.21E+01	4.68E+03	2.07E+05
Human toxicity, cancer	CTUh	4.13E-05	4.13E-09	4.59E-08	5.48E-09	2.70E-09	2.90E-06	4.42E-05
Human toxicity, non-cancer	CTUh	3.68E-03	2.00E-07	6.44E-07	1.25E-07	5.44E-08	1.98E-04	3.88E-03
Land use	Pt	7.83E+04	4.67E+01	4.84E+02	1.34E+02	2.26E+01	3.60E+02	7.94E+04

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