ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025 / ISO 21930

96 SMF OPGW
Melbye AS

EPD HUB, HUB-3392
Publishing date 1 June 2025, last updated on 1 June 2025, valid until 1 June 2030.

Life Cycle Assessment study has been performed in accordance with the requirements of EN 15804, EPD Hub PCR version 1.1 (5 Dec 2023) and JRC characterization factors EF 3.1.

Created with One Click LCA

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Melbye AS
Address	Prost Stabels Vei 22, 2019 Skedsmokorset, Norway
Contact details	kontakt@melbye.no
Website	https://melbye.no

EPD STANDARDS, SCOPE AND VERIFICATION

Program operator	EPD Hub, hub@epdhub.com
Reference standard	EN 15804+A2:2019 and ISO 14025
PCR	EPD Hub Core PCR Version 1.1, 5 Dec 2023
Sector	Electrical product
Category of EPD	Third party verified EPD
Parent EPD number	-
Scope of the EPD	Cradle to gate with options, A4-A5, B6 and modules C1-C4, D
EPD author	Aditya Dharmendra Nishad
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☑ External verification
EPD verifier	Magaly González Vázquez, as an authorized verifier acting for EPD Hub Limited

This EPD is intended for business-to-business and/or business-to-consumer communication. The manufacturer has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programs may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804 and if they are not compared in a building context.

PRODUCT

Product name	96 SMF OPGW
Additional labels	-
Product reference	-
Place(s) of raw material origin	China
Place of production	449 Fenhuguodao Rd, Wujiang,Suzhou, Jiangsu, China, 215211
Place(s) of installation and use	-
Period for data	1st January 2023 - 31st December 2023
Averaging in EPD	No averaging
Variation in GWP-fossil for A1-A3 (%)	-
GTIN (Global Trade Item Number)	-
NOBB (Norwegian Building Product Database)	-

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 Km
Declared unit mass	1082 kg
GWP-fossil, A1-A3 ($kgCO_2e$)	5.23E+03
GWP-total, A1-A3 ($kgCO_2e$)	5.13E+03
Secondary material, inputs (%)	38.8
Secondary material, outputs (%)	91.6
Total energy use, A1-A3 (kWh)	19300
Net freshwater use, A1-A3 (m^3)	53.7

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Melbye As is one of Norway's oldest family-owned companies, with a history dating all the way back to 1907. We have a proud tradition of technical innovation and trade, and today, we are a leading provider of forward-thinking products and system solutions for critical infrastructure. We have expertise within transmission and utilities, fiber, ducts and chambers and safety.

We serve customers throughout the Nordic region and the United Kingdom, engage with stakeholders across Europe, and collaborate with around 200 partners and suppliers.

While our headquarters are located just outside Oslo, Norway, we also have offices at multiple locations in Norway, Sweden, and the United Kingdom, as well as representatives in Finland, India and China. Together, we are more than 120 co-workers who share the company's core values: Innovation, teamwork, and professionalism.

With advanced expertise spread across our core areas and a dedication to long-term operation and future-oriented development, we stand at the forefront of addressing future challenges. We take pride in contributing to the development of critical infrastructure that will shape tomorrow's society.

PRODUCT DESCRIPTION

The product under consideration is 1 km of Optical Ground Wire (OPGW) cable, designed for use in high-voltage transmission lines. This cable serves two primary purposes: providing lightning protection and supporting data communication through the optical Fibers integrated into the design. The cable consists of durable materials like aluminum-clad steel for strength and stainless steel for corrosion resistance, ensuring long-term performance under typical environmental conditions.

The cable has a total weight of approximately 1059 kg per kilometer and is designed to withstand mechanical stress with a tensile strength of 167.7 kN. Its electrical resistance is low, making it efficient for power transmission. The embedded optical Fibers are used for communication purposes, with minimal signal loss. This product is expected to have a service life of about 40 years, and at the end of its life, its metal components can be recycled, reducing environmental impact. The specifications provided here offer an overview of the product's key characteristics, which are reflected in the environmental impact results of the EPD.

Further information can be found at https://melbye.no.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	97.431	China
Minerals	2.658	China
Fossil materials	-	-
Bio-based materials	-	-

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	0
Biogenic carbon content in packaging, kg C	28.75

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 Km
Mass per declared unit	1082 kg
Functional unit	-
Reference service life	40 Years

SUBSTANCES, REACH - VERY HIGH CONCERN

The product does not contain any REACH SVHC substances in amounts greater than 0,1 % (1000 ppm).

PRODUCT LIFE-CYCLE

SYSTEM BOUNDARY

This EPD covers the life-cycle modules listed in the following table.

Product stage			Assembly stage		Use stage							End of life stage				Beyond the system boundaries		
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D		
x	x	x	x	x	MND	MND	MND	MND	MND	x	MND	x	x	x	x	x		
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction/ demolition	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling

Modules not declared = MND. Modules not relevant = MNR

MANUFACTURING AND PACKAGING (A1-A3)

The environmental impacts considered for the product stage cover the manufacturing of raw materials used in the production as well as packaging materials and other ancillary materials. Also, fuels used by machines, and handling of waste formed in the production processes at the manufacturing facilities are included in this stage. The study also considers the material losses occurring during the manufacturing processes as well as losses during electricity transmission.

Manufacturing waste generated is different for each item in the OPGW cable: 5.05%, SS-tape is 0.99%, ACS is 0.30%. Actual transport distances are considered for materials, All the manufacturing process are done inhouse, the facility uses conventional energy sources.
Cable are pack on steel and wooden drum, wrapped with plastic sheet.
Manufacturing waste – generated waste from is collected and sent for recycling & land filling using truck, 250 km and 50 km is considered respectively.

The use of green energy in manufacturing is demonstrated through contractual instruments (GOs, RECs, etc.), and its use is ensured throughout the validity period of this EPD.

TRANSPORT AND INSTALLATION (A4-A5)

Transportation impacts occurred from final products delivery to construction site (A4) cover fuel direct exhaust emissions, environmental impacts of fuel production, as well as related infrastructure emissions.

A4 – Transportation to Construction Site
The transportation impacts from the delivery of the OPGW cable to the construction site (A4) include emissions from direct fuel combustion, environmental impacts associated with fuel production, and emissions related to the transportation infrastructure.
OPGW cables are primarily used in European countries such as Norway and Sweden. An average transport distance of 100 km has been considered, accounting for the journey from the port to the end-user location.
A5 – Installation Phase
There is no material loss during installation, as OPGW cables are robust and designed to withstand mechanical stress during handling and installation. The cable is strung along high-voltage transmission towers and secured using standard fittings, with no need for additional installation materials.
Installation is performed using a combination of manual labor and mechanical equipment. A standard energy consumption of 0.01 kWh/kg has been assumed to account for energy use during installation.

PRODUCT USE AND MAINTENANCE (B1-B7)

The Reference Service Life (RSL) of 40 years is based on the expected durability and performance of the OPGW cable under standard operating conditions. This estimate considers the cable's material composition, resistance to environmental factors such as UV radiation, temperature fluctuations, and corrosion, as well as the manufacturer's experience with similar products in high-voltage transmission networks. The RSL is valid when the cable is installed and used as intended, without being subjected to abnormal mechanical loads, accidental damage, or exposure to extreme environmental conditions beyond typical outdoor use.

B6 – Operational Energy Use

The OPGW (Optical Ground Wire) cable is a passive component used in overhead power lines for grounding and optical communication. It does not consume any energy during its operational phase. Therefore, no electricity or fuel is used throughout its service life.

Although B6 is included in the scope to meet the requirements of EN 15804 and the program operator's General Program Instructions (GPI) for electrical products, the operational energy use is 0 kWh per declared unit (1 km of cable over a 40-year Reference Service Life). Accordingly, there are no environmental impacts attributed to this stage, and all B6 impact indicators are reported as zero.

Air, soil, and water impacts during the use phase have not been studied.

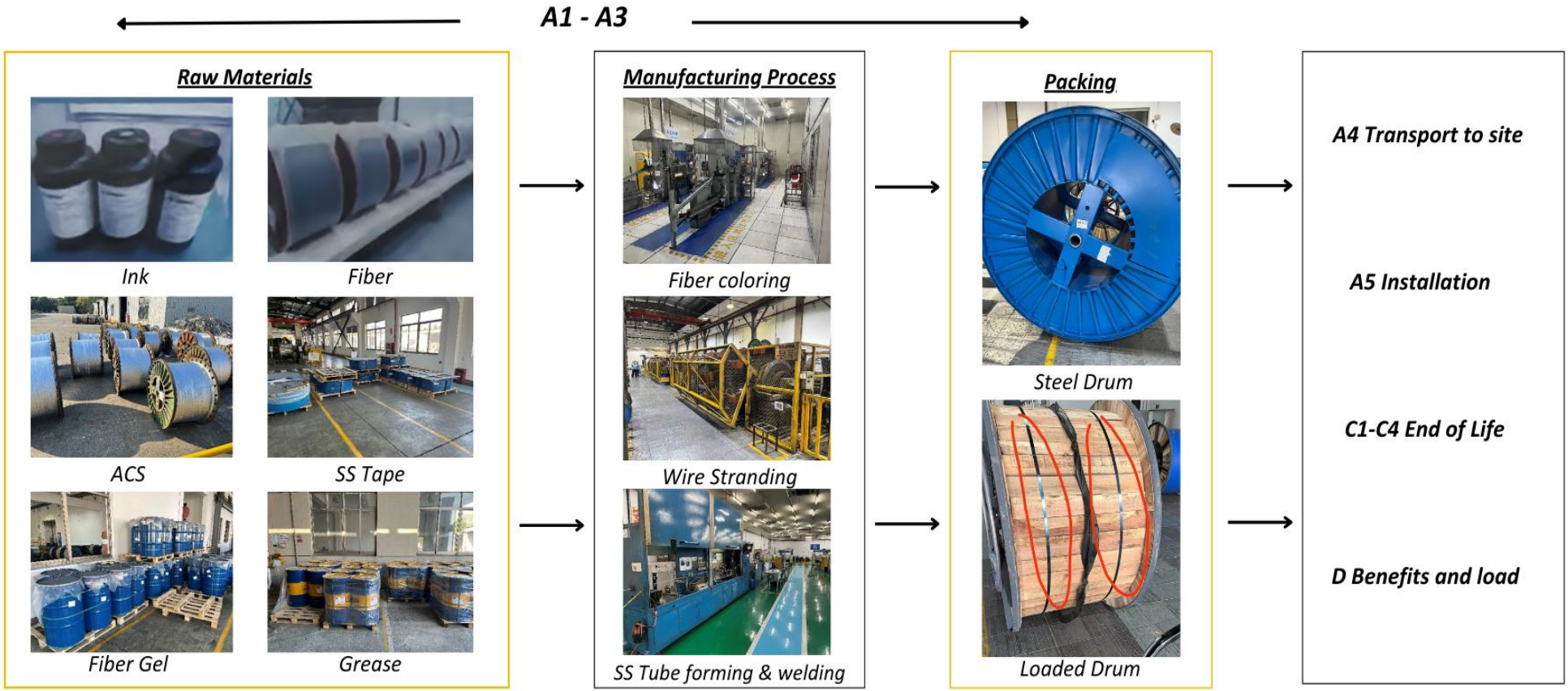
PRODUCT END OF LIFE (C1-C4, D)

At the end of its 40-year service life, the OPGW cable is manually dismantled, with an assumed energy consumption of 0.01 kWh/kg for removal. The cable is then transported to recycling or landfill sites in Norway and Sweden using lorries (16–32 metric tons, Euro 6). The average transportation distances are 250 km for recycling facilities and 50 km for landfill disposal. The aluminum and steel components of the OPGW cable are primarily sent for recycling, with an estimated 5% of steel and 10% of aluminum potentially being landfilled due to non-recyclable materials or local recycling limitations.

D —

The steel-wooden drum used for packaging, steel is recycled at the end of its life, with the transport distance to recycling facilities averaging 250 km. A small portion of the steel drum may be landfilled, with the landfill site located 50 km away, while wood is incinerated at the end of their life, with energy and heat recovery considered in accordance with the EU Wood Packaging scenario.

MANUFACTURING PROCESS



LIFE-CYCLE ASSESSMENT

CUT-OFF CRITERIA

The study does not exclude any modules or processes which are stated mandatory in the reference standard and the applied PCR. The study does not exclude any hazardous materials or substances. The study includes all major raw material and energy consumption. All inputs and outputs of the unit processes, for which data is available for, are included in the calculation. There is no neglected unit process more than 1% of total mass or energy flows. The module specific total neglected input and output flows also do not exceed 5% of energy usage or mass.

VALIDATION OF DATA

Data collection for production, transport, and packaging was conducted using time and site-specific information, as defined in the general information section on page 1 and 2. Upstream process calculations rely on generic data as defined in the Bibliography section. Manufacturer-provided specific and generic data were used for the product's manufacturing stage. The analysis was performed in One Click LCA EPD Generator, with the 'Cut-Off, EN 15804+A2' allocation method, and characterization factors according to EN 15804:2012+A2:2019/AC2021 and JRC EF 3.1.

ALLOCATION, ESTIMATES AND ASSUMPTIONS

Allocation is required if some material, energy, and waste data cannot be measured separately for the product under investigation. All allocations are done as per the reference standards and the applied PCR. In this study, allocation has been done in the following ways:

Data type	Allocation
Raw materials	Partly allocated by mass or volume
Packaging material	No allocation
Ancillary materials	Allocated by mass or volume
Manufacturing energy and waste	Allocated by mass or volume

AVERAGES AND VARIABILITY

Type of average	No averaging
Averaging method	Not applicable
Variation in GWP-fossil for A1-A3 (%)	-

This EPD is product and factory specific and does not contain average calculations.

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. The EPD Generator uses Ecoinvent v3.10.1 and One Click LCA databases as sources of environmental data. Allocation used in Ecoinvent 3.10.1 environmental data sources follow the methodology ‘allocation, Cut-off, EN 15804+A2‘.

ENVIRONMENTAL IMPACT DATA

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total[1)]	kg CO_2e	4.35E+03	7.70E+01	7.08E+02	5.13E+03	1.13E+03	1.17E+02	MND	MND	MND	MND	MND	0.00E+00	MND	3.90E+00	4.31E+01	2.36E+01	6.09E+01	-1.72E+03
GWP – fossil	kg CO_2e	4.34E+03	7.70E+01	8.13E+02	5.23E+03	1.13E+03	1.14E+01	MND	MND	MND	MND	MND	0.00E+00	MND	3.90E+00	4.30E+01	2.36E+01	6.09E+01	-1.72E+03
GWP – biogenic	kg CO_2e	0.00E+00	0.00E+00	-1.05E+02	-1.05E+02	0.00E+00	1.05E+02	MND	MND	MND	MND	MND	0.00E+00	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.10E-03
GWP – LULUC	kg CO_2e	9.39E+00	3.44E-02	5.58E-01	9.98E+00	5.05E-01	4.94E-03	MND	MND	MND	MND	MND	0.00E+00	MND	4.00E-04	1.91E-02	2.87E-02	1.53E-03	-6.87E-01
Ozone depletion pot.	kg CFC_{-11}e	3.18E-05	1.14E-06	7.46E-06	4.04E-05	1.67E-05	1.27E-07	MND	MND	MND	MND	MND	0.00E+00	MND	5.97E-08	6.08E-07	2.97E-07	3.40E-08	-8.84E-06
Acidification potential	mol H^+e	2.30E+01	2.62E-01	4.71E+00	2.80E+01	3.85E+00	5.82E-02	MND	MND	MND	MND	MND	0.00E+00	MND	3.52E-02	1.44E-01	2.72E-01	1.18E-02	-6.87E+00
EP-freshwater[2)]	kg Pe	1.43E+00	5.99E-03	3.22E-01	1.76E+00	8.79E-02	1.47E-03	MND	MND	MND	MND	MND	0.00E+00	MND	1.13E-04	3.35E-03	1.44E-02	4.02E-03	-7.76E-01
EP-marine	kg Ne	4.24E+00	8.62E-02	8.48E-01	5.18E+00	1.27E+00	3.12E-02	MND	MND	MND	MND	MND	0.00E+00	MND	1.63E-02	4.68E-02	6.02E-02	4.56E-03	-1.51E+00
EP-terrestrial	mol Ne	4.48E+01	9.39E-01	8.88E+00	5.46E+01	1.38E+01	2.57E-01	MND	MND	MND	MND	MND	0.00E+00	MND	1.79E-01	5.09E-01	6.80E-01	4.91E-02	-1.63E+01
POCP ("smog")[3)]	kg NMVOCe	1.46E+01	3.87E-01	2.79E+00	1.78E+01	5.68E+00	7.96E-02	MND	MND	MND	MND	MND	0.00E+00	MND	5.33E-02	2.03E-01	2.01E-01	1.36E-02	-5.51E+00
ADP-minerals & metals[4)]	kg Sbe	9.44E-02	2.15E-04	3.92E-03	9.85E-02	3.15E-03	5.05E-05	MND	MND	MND	MND	MND	0.00E+00	MND	1.40E-06	1.38E-04	1.58E-03	6.81E-06	-1.41E-02
ADP-fossil resources	MJ	4.83E+04	1.12E+03	9.12E+03	5.85E+04	1.64E+04	1.09E+02	MND	MND	MND	MND	MND	0.00E+00	MND	5.10E+01	6.07E+02	3.04E+02	2.59E+01	-1.76E+04
Water use[5)]	m^3e depr.	1.74E+03	5.52E+00	3.17E+02	2.06E+03	8.10E+01	1.35E+00	MND	MND	MND	MND	MND	0.00E+00	MND	1.27E-01	2.85E+00	5.28E+00	1.09E+00	-4.35E+02

1) GWP = Global Warming Potential; 2) EP = Eutrophication potential. Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO4e; 3) POCP = Photochemical ozone formation; 4) ADP = Abiotic depletion potential; 5) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

ADDITIONAL (OPTIONAL) ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Particulate matter	Incidence	3.39E-04	7.71E-06	5.38E-05	4.00E-04	1.13E-04	1.44E-06	MND	MND	MND	MND	MND	0.00E+00	MND	1.00E-06	3.57E-06	3.72E-06	3.62E-07	-1.27E-04
Ionizing radiation[6)]	kBq U235e	2.49E+02	9.73E-01	3.82E+01	2.88E+02	1.43E+01	3.42E-01	MND	MND	MND	MND	MND	0.00E+00	MND	2.26E-02	4.98E-01	2.15E+00	4.51E-02	-4.73E+01
Ecotoxicity (freshwater)	CTUe	1.43E+04	1.58E+02	5.18E+03	1.96E+04	2.32E+03	4.10E+01	MND	MND	MND	MND	MND	0.00E+00	MND	2.81E+00	9.42E+01	1.77E+02	5.37E+03	-4.62E+03
Human toxicity, cancer	CTUh	5.21E-06	1.27E-08	6.15E-07	5.84E-06	1.86E-07	4.01E-09	MND	MND	MND	MND	MND	0.00E+00	MND	4.01E-10	7.28E-09	2.04E-08	5.89E-09	-2.07E-06
Human tox. non-cancer	CTUh	7.77E-05	7.23E-07	9.85E-06	8.83E-05	1.06E-05	1.23E-07	MND	MND	MND	MND	MND	0.00E+00	MND	6.35E-09	3.83E-07	1.36E-06	1.93E-07	-1.63E-05
SQP[7)]	-	2.02E+04	1.13E+03	2.67E+03	2.40E+04	1.65E+04	1.28E+02	MND	MND	MND	MND	MND	0.00E+00	MND	3.58E+00	4.08E+02	5.88E+02	3.51E+01	-5.35E+03

6) EN 15804+A2 disclaimer for Ionizing radiation, human health. This impact category deals mainly with the eventual impact of low-dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator; 7) SQP = Land use related impacts/soil quality.

USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy[8)]	MJ	1.02E+04	1.53E+01	1.35E+03	1.16E+04	2.25E+02	-5.84E+02	MND	MND	MND	MND	MND	0.00E+00	MND	3.23E-01	8.33E+00	5.40E+01	7.55E-01	-1.63E+03
Renew. PER as material	MJ	0.00E+00	0.00E+00	1.07E+03	1.07E+03	0.00E+00	-1.07E+03	MND	MND	MND	MND	MND	0.00E+00	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.61E+02
Total use of renew. PER	MJ	1.02E+04	1.53E+01	2.42E+03	1.26E+04	2.25E+02	-1.65E+03	MND	MND	MND	MND	MND	0.00E+00	MND	3.23E-01	8.33E+00	5.40E+01	7.55E-01	-1.46E+03
Non-re. PER as energy	MJ	4.78E+04	1.12E+03	9.06E+03	5.79E+04	1.64E+04	2.83E+01	MND	MND	MND	MND	MND	0.00E+00	MND	5.10E+01	6.07E+02	3.04E+02	-7.03E+02	-1.76E+04
Non-re. PER as material	MJ	0.00E+00	0.00E+00	6.56E+01	6.56E+01	0.00E+00	-6.56E+01	MND	MND	MND	MND	MND	0.00E+00	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.06E+01
Total use of non-re. PER	MJ	4.78E+04	1.12E+03	9.12E+03	5.80E+04	1.64E+04	-3.73E+01	MND	MND	MND	MND	MND	0.00E+00	MND	5.10E+01	6.07E+02	3.04E+02	-7.03E+02	-1.76E+04
Secondary materials	kg	4.20E+02	4.76E-01	5.97E+01	4.80E+02	6.98E+00	7.82E-02	MND	MND	MND	MND	MND	0.00E+00	MND	2.12E-02	2.70E-01	3.66E-01	2.35E-02	-5.95E+01
Renew. secondary fuels	MJ	1.08E+00	6.04E-03	1.52E-01	1.24E+00	8.86E-02	2.83E-03	MND	MND	MND	MND	MND	0.00E+00	MND	5.54E-05	3.44E-03	1.69E-02	1.86E-04	-1.86E-01
Non-ren. secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MND	MND	MND	MND	0.00E+00	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of net fresh water	m^3	4.93E+01	1.65E-01	4.23E+00	5.37E+01	2.42E+00	-3.36E-02	MND	MND	MND	MND	MND	0.00E+00	MND	3.37E-03	8.22E-02	1.51E-01	-1.02E-01	-9.68E+00

8) PER = Primary energy resources.

END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	3.73E+03	1.89E+00	1.63E+02	3.89E+03	2.78E+01	4.74E-01	MND	MND	MND	MND	MND	0.00E+00	MND	5.68E-02	1.05E+00	2.10E+00	3.91E-01	-7.28E+02
Non-hazardous waste	kg	8.54E+03	3.50E+01	3.55E+03	1.21E+04	5.14E+02	1.07E+02	MND	MND	MND	MND	MND	0.00E+00	MND	7.74E-01	1.97E+01	7.29E+01	1.81E+02	-4.36E+03
Radioactive waste	kg	6.18E-02	2.38E-04	1.17E-02	7.38E-02	3.49E-03	8.70E-05	MND	MND	MND	MND	MND	0.00E+00	MND	5.55E-06	1.22E-04	5.47E-04	1.12E-05	-1.19E-02

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MND	MND	MND	MND	0.00E+00	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	kg	0.00E+00	0.00E+00	4.71E+02	4.71E+02	0.00E+00	1.17E+02	MND	MND	MND	MND	MND	0.00E+00	MND	0.00E+00	0.00E+00	9.91E+02	0.00E+00	0.00E+00
Materials for energy rec	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MND	MND	MND	MND	0.00E+00	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.55E+01	MND	MND	MND	MND	MND	0.00E+00	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy – Electricity	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.18E+01	MND	MND	MND	MND	MND	0.00E+00	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy – Heat	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.37E+01	MND	MND	MND	MND	MND	0.00E+00	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

ENVIRONMENTAL IMPACTS – EN 15804+A1, CML / ISO 21930

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Global Warming Pot.	kg CO_2e	4.33E+03	7.66E+01	8.23E+02	5.22E+03	1.12E+03	1.36E+01	MND	MND	MND	MND	MND	0.00E+00	MND	3.88E+00	4.28E+01	2.35E+01	6.09E+01	-1.71E+03
Ozone depletion Pot.	kg $CFC_{-11}e$	2.70E-05	9.07E-07	6.52E-06	3.44E-05	1.33E-05	1.02E-07	MND	MND	MND	MND	MND	0.00E+00	MND	4.73E-08	4.85E-07	2.45E-07	2.85E-08	-8.51E-06
Acidification	kg SO_2e	1.91E+01	2.00E-01	3.96E+00	2.32E+01	2.94E+00	4.24E-02	MND	MND	MND	MND	MND	0.00E+00	MND	2.48E-02	1.10E-01	2.18E-01	8.49E-03	-5.55E+00
Eutrophication	kg PO_4^3e	2.90E+00	4.88E-02	1.12E+00	4.06E+00	7.17E-01	1.22E-02	MND	MND	MND	MND	MND	0.00E+00	MND	5.78E-03	2.68E-02	3.15E-02	4.37E-03	-9.84E-01
POCP (“smog”)	kg C_2H_4e	1.20E+00	1.79E-02	2.73E-01	1.49E+00	2.62E-01	3.84E-03	MND	MND	MND	MND	MND	0.00E+00	MND	1.86E-03	9.87E-03	1.29E-02	6.18E-04	-7.72E-01
ADP-elements	kg Sbe	9.40E-02	2.09E-04	3.87E-03	9.81E-02	3.07E-03	4.99E-05	MND	MND	MND	MND	MND	0.00E+00	MND	1.36E-06	1.34E-04	1.58E-03	5.14E-06	-1.40E-02
ADP-fossil	MJ	4.44E+04	1.10E+03	8.72E+03	5.42E+04	1.62E+04	1.03E+02	MND	MND	MND	MND	MND	0.00E+00	MND	5.07E+01	6.00E+02	2.68E+02	2.52E+01	-1.68E+04

ENVIRONMENTAL IMPACTS – GWP-GHG - THE INTERNATIONAL EPD SYSTEM

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG[9)]	kg CO_2e	4.35E+03	7.70E+01	8.13E+02	5.24E+03	1.13E+03	1.14E+01	MND	MND	MND	MND	MND	0.00E+00	MND	3.90E+00	4.31E+01	2.36E+01	6.09E+01	-1.72E+03

9) This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product as defined by IPCC AR 5 (IPCC 2013). In addition, the characterisation factors for the flows - CH4 fossil, CH4 biogenic and Dinitrogen monoxide - were updated in line with the guidance of IES PCR 1.2.5 Annex 1. This indicator is identical to the GWP-total of EN 15804:2012+A2:2019 except that the characterization factor for biogenic CO2 is set to zero.

VERIFICATION STATEMENT

VERIFICATION PROCESS FOR THIS EPD

This EPD has been verified in accordance with ISO 14025 by an independent, third-party verifier by reviewing results, documents and compliancy with reference standard, ISO 14025 and ISO 14040/14044, following the process and checklists of the program operator for:

- This Environmental Product Declaration
- The Life-Cycle Assessment used in this EPD
- The digital background data for this EPD

Why does verification transparency matter? Read more online
This EPD has been generated by One Click LCA EPD generator, which has been verified and approved by the EPD Hub.

THIRD-PARTY VERIFICATION STATEMENT

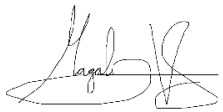
I hereby confirm that, following detailed examination, I have not established any relevant deviations by the studied Environmental Product Declaration (EPD), its LCA and project report, in terms of the data collected and used in the LCA calculations, the way the LCA-based calculations have been carried out, the presentation of environmental data in the EPD, and other additional environmental information, as present with respect to the procedural and methodological requirements in ISO 14025:2010 and reference standard.

I confirm that the company-specific data has been examined as regards plausibility and consistency; the declaration owner is responsible for its factual integrity and legal compliance.

I confirm that I have sufficient knowledge and experience of construction products, this specific product category, the construction industry, relevant standards, and the geographical area of the EPD to carry out this verification.

I confirm my independence in my role as verifier; I have not been involved in the execution of the LCA or in the development of the declaration and have no conflicts of interest regarding this verification.

Magaly González Vázquez, as an authorized verifier acting for EPD Hub Limited
01.06.2025



VERIFIED ISO 14025