



ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

Aluminium alloys, aluminium ingots from recycling in continuous casting
Stam Trading JSC



EPD HUB, HUB-5192

Published on 29.01.2026, last updated on 29.01.2026, valid until 28.01.2031

Life Cycle Assessment study has been performed in accordance with the requirements of EN 15804, EPD Hub PCR version 1.2 (24 Mar 2025) and JRC characterization factors EF 3.1.



Created with One Click LCA



GENERAL INFORMATION

MANUFACTURER

Manufacturer	Stam Trading JSC
Address	Bulgaria,1839 Sofia 15 Kremikovsko shose str.
Contact details	office@stamtrade.com
Website	https://www.stamtrade.com/

EPD STANDARDS, SCOPE AND VERIFICATION

Program operator	EPD Hub, hub@epdhub.com
Reference standard	EN 15804:2012+A2:2019/AC:2021 and ISO 14025
PCR	EPD Hub Core PCR Version 1.2, 24 Mar 2025
Sector	Construction product
Category of EPD	Third party verified EPD
Parent EPD number	-
Scope of the EPD	Cradle to gate
EPD author	Polina Georgieva, SGS Bulgaria Ltd
EPD verification	Independent verification of this EPD and data, according to ISO 14025: <input type="checkbox"/> Internal verification <input checked="" type="checkbox"/> External verification
EPD verifier	Sarah Curpen, as 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	Aluminium alloys, aluminium ingots from recycling in continuous casting
Additional labels	No
Product reference	-
Place(s) of raw material origin	Bulgaria
Place of production	Bulgaria,1839 Sofia 15 Kremikovsko shose str.
Place(s) of installation and use	Europe
Period for data	calendar year 2024
Averaging in EPD	No grouping
Variation in GWP-fossil for A1-A3 (%)	-
GTIN (Global Trade Item Number)	-
NOBB (Norwegian Building Product Database)	-
A1-A3 Specific data (%)	99,9

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 kg
Declared unit mass	1 kg
Mass of packaging	0,00020 kg
GWP-fossil, A1-A3 (kgCO ₂ e)	0,42
GWP-total, A1-A3 (kgCO ₂ e)	0,42
Secondary material, inputs (%)	100
Secondary material, outputs (%)	0
Total energy use, A1-A3 (kWh)	1,89
Net freshwater use, A1-A3 (m ³)	0

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Stam Trading JSC is one of Bulgaria's leading manufacturers of aluminum alloys and components, as well as a major processor of scrap metal. The company's success is the result of effective management and strict adherence to European quality, environmental, and safety standards. "Stam Trading JSC holds certifications for EN ISO 9001:2008 (Quality Management), ISO 14001:2004 (Environmental Management), and OHSAS 18001:2007 (Occupational Health and Safety). It is currently preparing to implement ISO/TS 16949:2009 for the automotive sector and ISO 50001 to enhance energy efficiency and reduce environmental impact. In 2010, the company received a comprehensive environmental permit from Bulgaria's Ministry of Environment and Water, confirming its commitment to responsible resource use, emissions control, and sustainable waste management.

reflecting furnaces with a monthly output of approximately 1200 tonnes. Around 90% of production is exported to key European markets such as Germany, Italy, the Czech Republic, and Slovenia. In addition to manufacturing, the company is active in scrap metal trading. Its core objective is to provide flexible, timely, and customer-focused solutions backed by consistent quality.

PRODUCT DESCRIPTION

The product is an aluminum alloy ingot with a recycled content of 100%, manufactured using high-quality input materials and advanced casting technologies. The production process is aligned with European standards for quality, environmental protection, and occupational safety. Manufacturing is fully integrated—from scrap metal processing to the final casting—ensuring complete control over every stage of the production chain. The aluminum is cast using flame-reflecting furnaces and producing ingots in standardized forms. Each ingot carries a unique batch number engraved directly onto the

bar, enabling full traceability of the production cycle. This ensures transparency, consistency, and compliance with customer-specific technical and regulatory requirements. The process is designed for flexibility and efficiency, allowing customization of alloy composition and format according to the specific needs of various industrial applications, including automotive, construction, and general manufacturing.

Further information can be found at:
<https://www.stamtrade.com/>

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	100 %	Bulgaria, EU
Minerals	0	
Fossil materials	0	
Bio-based materials	0	

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	0

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 kg
Mass per declared unit	1 kg
Functional unit	-
Reference service life	-

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	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction/ demolition	Transport	Waste processing	Disposal	Reuse	Recycling

Not declared = ND.

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 process (for Aluminium Ingots)

Product stage (A1–A3): Manufacturing process

The aluminium ingots are produced in a facility equipped with direct-fired melting furnaces fueled by CNG (Compressed Natural Gas). The process begins with charging recycled aluminium scrap into the furnace. Thermal energy generated by CNG combustion melts the aluminium to the target casting temperature.

To improve energy efficiency and reduce environmental impact, the furnace is equipped with a recuperative burner system. Part of the hot exhaust gases from the combustion process is recirculated to preheat the incoming combustion air (hot gas recirculation). This reduces the specific fuel demand and lowers total emissions.

Once fully molten, the aluminium is cleaned (fluxing and degassing) and poured into moulds or continuous casting systems to form ingots. After solidification, the ingots are demoulded, cooled, surface cleaned if needed, and then stacked, packaged, and stored for delivery.

The process includes the following typical steps:

- Receipt of raw materials—aluminium waste—and sorting by category;
- Cutting of oversized materials and baling of thin-walled waste;
- Melting in flame reverberatory furnaces;
- Casting of the resulting slag;
- Melt control;
- Adjustment of the melt composition with the required additives;
- Pouring;
- Storage;
- Dispatch.

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)

Those stages are not included into the scope.

PRODUCT USE AND MAINTENANCE (B1-B7)

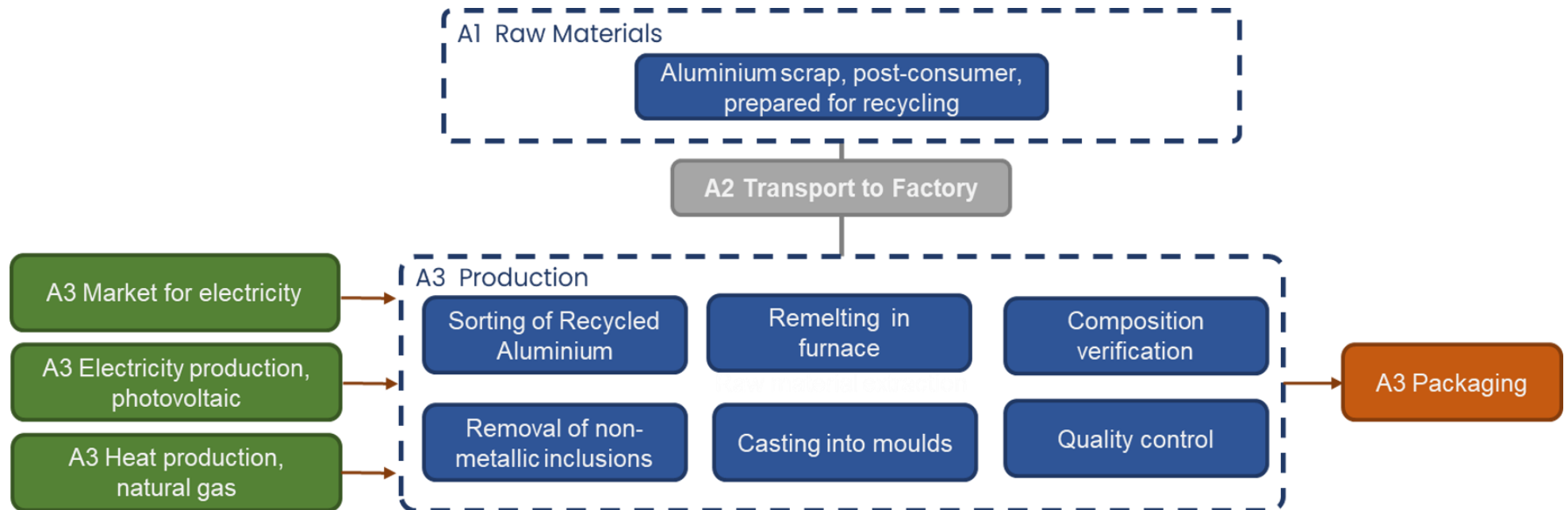
This EPD does not cover the use phase.

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

PRODUCT END OF LIFE (C1-C4, D)

For aluminium ingots, demolition energy in C1 does not need to be declared, and modules C1–C4 can often be excluded entirely. This is because ingots are intermediate materials used for further processing (casting, extrusion, rolling) and are not installed construction products. According to EN 15804+A2, end-of-life modelling only applies to products physically installed in a building, which ingots are not.

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.

The production of capital equipment, construction activities, and infrastructure, maintenance and operation of capital equipment, personnel-related activities, energy and water use related to company management and sales activities are excluded.

This LCA study encompasses the provision of all materials, transportation, energy and emission flows, as well as end-of-life processing of the product. The use phase is excluded from the assessment, on the assumption that it involves no emissions or replacements. The system boundaries cover all industrial processes, including raw material extraction and pre-processing, production, product distribution and installation, and end-of-life management.

In available data, certain components representing less than 1% of the product mass have been excluded. These are primarily ancillary materials used in minimal quantities during manufacturing, whose contribution to overall emissions is considered negligible. The study also excludes the production of capital goods, construction activities and infrastructure, maintenance and operation of capital equipment, personnel-related activities, and energy and water consumption associated with company administration and sales operations.

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/AC:2021 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	No allocation
Packaging material	Allocated by mass or volume
Ancillary materials	Allocated by mass or volume
Manufacturing energy and waste	Allocated by mass or volume

All estimations and assumptions related to cut-off criteria and allocation are specified in the section titled "Cut-off Criteria, except for the following considerations:

Module A3: Proxy data have been applied for certain materials not available in the database, such as recycled aluminium. Modules A2 & C2: A vehicle capacity utilization volume factor of 1 has been assumed, representing full loading. Although actual load factors may vary,

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this variation is considered negligible due to the relatively minor contribution of transport emissions to the overall results. Empty returns have been accounted for through the average load factor provided by the Ecoinvent database. Transport distances for waste have been assumed to fall within a 50 km radius.

PRODUCT & MANUFACTURING SITES GROUPING

Type of grouping	No grouping
Grouping method	Not applicable
Variation in GWP-fossil for A1-A3, %	-

This EPD is product and factory specific.

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator for EPD Hub V3 and EPD Process Certification v3.2.3. 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'.

ISO 14025:2006 — Environmental labels and declarations — Type III environmental declarations — Principles and procedures
 EN 15804:2012+A2:2020 — Sustainability of construction works — Environmental product declarations — Core rules for the product category of construction products
 ISO 14040:2006 — Environmental management — Life cycle assessment — Principles and framework

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ISO 14044:2006 — Environmental management — Life cycle assessment — Requirements and guidelines
 EPD Hub Product Category Rules (PCR)
 EPD Hub General Programme Instructions (GPI)

ENVIRONMENTAL IMPACT DATA

The estimated impact results are only relative statements which do not indicate the end points of the impact categories, exceeding threshold values, safety margins or risks.

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, EF 3.1

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 ₂ e	0,00E+00	4,76E-02	3,76E-01	4,23E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
GWP – fossil	kg CO ₂ e	0,00E+00	4,75E-02	3,76E-01	4,23E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
GWP – biogenic	kg CO ₂ e	0,00E+00	1,08E-05	3,40E-05	4,48E-05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
GWP – LULUC	kg CO ₂ e	0,00E+00	2,13E-05	3,23E-05	5,35E-05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
Ozone depletion pot.	kg CFC ₋₁₁ e	0,00E+00	7,03E-10	1,58E-08	1,65E-08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
Acidification potential	mol H ⁺ e	0,00E+00	1,62E-04	3,26E-04	4,88E-04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
EP-freshwater ²⁾	kg Pe	0,00E+00	3,70E-06	2,75E-05	3,12E-05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
EP-marine	kg Ne	0,00E+00	5,33E-05	1,03E-04	1,57E-04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
EP-terrestrial	mol Ne	0,00E+00	5,80E-04	1,04E-03	1,62E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
POCP (“smog”) ³⁾	kg NMVOCe	0,00E+00	2,39E-04	6,73E-04	9,11E-04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
ADP-minerals & metals ⁴⁾	kg Sbe	0,00E+00	1,33E-07	1,89E-07	3,21E-07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
ADP-fossil resources	MJ	0,00E+00	6,90E-01	6,04E+00	6,73E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
Water use ⁵⁾	m ³ e depr.	0,00E+00	3,41E-03	1,18E-02	1,52E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0

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, EF 3.1

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	0,00E+00	4,76E-09	1,88E-09	6,64E-09	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
Ionizing radiation ⁶⁾	kBq U235e	0,00E+00	6,02E-04	8,98E-03	9,58E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
Ecotoxicity (freshwater)	CTUe	0,00E+00	9,76E-02	1,86E-01	2,83E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
Human toxicity, cancer	CTUh	0,00E+00	7,85E-12	3,85E-11	4,64E-11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
Human tox. non-cancer	CTUh	0,00E+00	4,47E-10	6,13E-10	1,06E-09	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
SQP ⁷⁾	-	0,00E+00	6,94E-01	1,16E-01	8,09E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0

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	0,00E+00	9,47E-03	8,80E-02	9,75E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
Renew. PER as material	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
Total use of renew. PER	MJ	0,00E+00	9,47E-03	8,80E-02	9,75E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
Non-re. PER as energy	MJ	0,00E+00	6,90E-01	6,03E+00	6,72E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
Non-re. PER as material	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
Total use of non-re. PER	MJ	0,00E+00	6,90E-01	6,03E+00	6,72E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
Secondary materials	kg	0,00E+00	2,94E-04	7,50E-04	1,04E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
Renew. secondary fuels	MJ	0,00E+00	3,73E-06	8,39E-06	1,21E-05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
Non-ren. secondary fuels	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
Use of net fresh water	m ³	0,00E+00	1,02E-04	3,20E-04	4,22E-04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0

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	0,00E+00	1,17E-03	2,42E-03	3,59E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
Non-hazardous waste	kg	0,00E+00	2,16E-02	1,77E-01	1,99E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
Radioactive waste	kg	0,00E+00	1,47E-07	2,19E-06	2,34E-06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0

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	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
Materials for recycling	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
Materials for energy rec	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
Exported energy	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
Exported energy – Electricity	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
Exported energy – Heat	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0

ENVIRONMENTAL IMPACTS – EN 15804+A1, CML

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 ₂ e	0,00E+00	4,73E-02	3,73E-01	4,21E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
Ozone depletion Pot.	kg CFC ₁₁ e	0,00E+00	5,61E-10	1,29E-08	1,35E-08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
Acidification	kg SO ₂ e	0,00E+00	1,24E-04	2,55E-04	3,79E-04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
Eutrophication	kg PO ₄ ³ e	0,00E+00	3,02E-05	5,85E-05	8,87E-05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
POCP (“smog”)	kg C ₂ H ₄ e	0,00E+00	1,10E-05	3,69E-05	4,79E-05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
ADP-elements	kg Sbe	0,00E+00	1,29E-07	1,61E-07	2,90E-07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
ADP-fossil	MJ	0,00E+00	6,80E-01	5,88E+00	6,56E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0

ADDITIONAL INDICATOR – GWP-GHG

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 ₂ e	0,00E+00	4,76E-02	3,76E-01	4,23E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0

9) This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. In addition, the characterisation factors for the flows – CH₄ fossil, CH₄ biogenic and Dinitrogen monoxide – were updated. This indicator is identical to the GWP-total of EN 15804:2012+A2:2019 except that the characterisation factor for biogenic CO₂ is set to zero.

SCENARIO DOCUMENTATION

DATA SOURCES

Manufacturing energy scenario documentation

Scenario parameter	Value
Electricity data source and quality	Electricity production, photovoltaic, 3kWp slanted-roof installation, multi-Si, panel, mounted, Bulgaria, ecoinvent 3.10.1
Electricity CO2e / kWh	0.0706
Electricity data source and quality	Market for electricity, medium voltage, Bulgaria, ecoinvent 3.10.1
Electricity CO2e / kWh	0.50
District heating data source and quality	Heat production, natural gas, at industrial furnace >100kW, Europe, ecoinvent 3.10.1
District heating CO2e / MJ	0.0773

THIRD-PARTY VERIFICATION STATEMENT

EPD Hub declares that this EPD is verified in accordance with ISO 14025 by an independent, third-party verifier. The project report on the Life Cycle Assessment and the report(s) on features of environmental relevance are filed at EPD Hub. EPD Hub PCR and ECO Platform verification checklist are used.

EPD Hub is not able to identify any unjustified deviations from the PCR and EN 15804+A2 in the Environmental Product Declaration and its project report.

EPD Hub maintains its independence as a third-party body; it was not involved in the execution of the LCA or in the development of the declaration and has no conflicts of interest regarding this verification.

The company-specific data and upstream and downstream data have been examined as regards plausibility and consistency. The publisher is responsible for ensuring the factual integrity and legal compliance of this declaration.

The software used in creation of this LCA and EPD is verified by EPD Hub to conform to the procedural and methodological requirements outlined in ISO 14025:2010, ISO 14040/14044, EN 15804+A2, and EPD Hub Core Product Category Rules and General Program Instructions.

Verified tools

Tool verifier: Magaly Gonzalez Vazquez

Tool verification validity: 27 March 2025 - 26 March 2028

Sarah Curpen, as authorized verifier acting for EPD HUB Limited
29.01.2026

