ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

Elfa storage - Melamine shelves and side panels
Elfa International AB

EPD HUB, HUB-4707
Published on 18.12.2025, last updated on 18.12.2030, valid until 17.12.2030

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	Elfa International AB
Address	Lilla Nygatan 7 5TR, 211 38, MALMO , SE
Contact details	heba.alwan@elfa.com
Website	www.elfa.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
Scope of the EPD	Cradle to gate with options, A4-A5, and modules C1-C4, D
EPD author	Heba Alwan, Elfa International AB
EPD verification	Independent verification of this EPD and data, according to ISO 14025: o Internal verification þ External verification
EPD verifier	Imane Uald Lamkaddam as an authorized verifier for EPD Hub

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	Elfa storage - Melamine shelves and side panels
Additional labels	-
Product reference	4300374-4300335
Place(s) of raw material origin	Germany, Poland, Taiwan
Place of production	Västervik, Sweden, and Koszalin, Poland, Multiple manufacturers.
Place(s) of installation and use	International
Period for data	31/03/2024-1/04/2025
Averaging in EPD	Multiple products and multiple factories
Variation in GWP-fossil for A1-A3 (%)	-36/+24
GTIN (Global Trade Item Number)	7315490003381-7315490000182
A1-A3 Specific data (%)	63,8

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 m^2 of Melamine shelves and side panels products calculated using the most common representative material composition.
Declared unit mass	12 kg
Mass of packaging	0,59 kg
GWP-fossil, A1-A3 (kgCO2e)	13,6
GWP-total, A1-A3 (kgCO2e)	-4,67
Secondary material, inputs (%)	43,7
Secondary material, outputs (%)	75,9
Total energy use, A1-A3 (kWh)	67,7
Net freshwater use, A1-A3 (m3)	0,25

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Elfa Manufacturing Sweden AB and Elfa Manufacturing Poland Sp. z o.o. are subsidiaries of the Elfa Group. Established in 1948, Elfa offers a range of durable and customizable home storage solutions, including wall-mounted and freestanding storage systems, top tracks, hang standards, brackets, shelves, drawers, and sliding doors. The Elfa Group operates three production sites located in Västervik and Mullsjö, Sweden, and Koszalin, Poland. Additionally, we have sales companies in Norway, Finland, Denmark, France, and Germany. At Elfa, we are deeply committed to a sustainable future and are proud signatories of the UN Global Compact. Our high rankings on networks like EcoVadis attest to our dedication. We've set ambitious environmental and climate sustainability targets, focusing on reducing our carbon footprint and developing long-lasting, high-quality products with timeless designs to encourage circular flows. Furthermore, all Elfa production sites hold ISO 14001:2015 certification.

PRODUCT DESCRIPTION

The results presented in this document are based on representative melamine shelves and side panels from Elfa. A selection of Elfa products with similar material compositions and origins has been grouped into a shared Life Cycle Assessment to ensure the EPD accurately reflects our complete product offering, which falls into three key categories:
Click-in Melamine shelf: The shelf is made from particleboard with a melamine surface and finished edges. It is designed to click easily into place between two bracket click-ins of matching depth, without the need for tools. The integrated plastic fittings on the sides provide a smooth transition between adjacent shelves. The melamine surface is durable, heat- and scratch-resistant, and water-repellent. The primary environmental impact comes from the melamine-faced particleboard, while the plastic fittings represent a minor but separate material stream.

Melamine Shelf: The shelf is made from particleboard with a melamine surface and finished on all four edges. It is designed to resist bowing under normal conditions and can be installed on brackets using screws or pins. Available in various depths and widths, it can also be cut to a desired size. The melamine surface is durable, heat- and scratch-resistant, and water-repellent. The material composition is nearly identical to the Click-in Melamine shelf, with a slightly higher proportion of edge-banding material and the use of fasteners instead of plastic fittings.
Top shelf and side panel: Top shelves function as horizontal top panels for drawer units, secured with double-sided tape. Side panels serve as vertical elements and are made from the same melamine-faced particleboard, finished with edge banding along one side. Both represent the most simplified products in the group. Their impact is dominated solely by the particleboard and melamine.
These results are subject to potential variation over the EPD's validity period and must be reviewed if there are significant changes in sales volumes or material composition.
The EPD presents the results by a declared unit of 1 m^2 of a reference Product, where the values are based on a representative product with dimensions of (605 X 424) mm and a thickness of (16-20) mm. This approach is considered reasonable because the environmental impact is expected to scale linearly as long as the (16 – 20) mm thickness is maintained. Therefore, individual variations in height and width are not listed.
The declared life cycle stages correspond to a *Type* ***b) EPD according to EN 15804: 2012 + A2,*** representing “Cradle to gate with options — including Modules C1–C4, Module D, and the optional Modules A4–A5.
All activities within these modules take place in Sweden and Poland, with raw materials sourced from Poland and Germany. Module A5 is included only to account for packaging waste.
The EPD is declared as an EPD for multiple products based on a

representative product, covering the product variations described in the product range series table.

Table: Product range series

Product series	***Size range W X D [mm]***
Melamine shelf, thickness 18-19mm	900- 2480 X 250-600
Click-in Melamine shelf, thickness 18 mm	450-600 X 300-500
Top shelf, thickness 16 mm	350-5450 X 535-535
Side panels, thickness 19 mm	675-725 x2608-3000

Further information can be found at www.elfa.com

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	0,5	Europe
Minerals	0	
Fossil materials	13	Europe / Taiwan
Bio-based materials	86,5	Europe

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	4,9
Biogenic carbon content in packaging, kg C	0,17

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 m^2 of Melamine shelves and side panels products calculated using the most common representative material composition.
Mass per declared unit	12 kg
Functional unit	-

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	ND	ND	ND	ND	ND	ND	ND	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 = ND.

MANUFACTURING AND PACKAGING (A1-A3)

The environmental impacts considered for the product stage cover the manufacturing of raw materials used in 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.
A market-based approach is used in modelling the electricity mix utilized in the factory.

Module A1(Raw Material Supply): This module encompasses the environmental impacts associated with the production of key input materials sourced from their respective suppliers. The materials included are MF PB (Melamine-Faced Particleboard), Edgebanding, Screws, and Plastic Fittings. Material suppliers are located in Germany, Poland, and Taiwan.

Module A2 (Transportation): The module accounts for the transportation of all materials to the manufacturing facilities. This includes inbound transport of all incoming raw materials and packaging materials to the primary manufacturing sites, as well as the transportation between the two main production locations: Elfa Manufacturing Poland Sp. z o.o. in Koszalin, Poland, and Elfa Manufacturing Sweden AB in Västervik, Sweden. The two production facilities are ISO 14001:2015 certified.

Module A3 (manufacturing): This module covers the assembly and packaging processes for the representative products at the two primary locations: Koszalin, Poland, and Västervik, Sweden. The following elements are included in the scope: process inputs, including electricity consumption, packaging materials, and process waste.

Electricity is modeled based on the certificates provided by the electricity supplier for the own consumption of both Elfa Manufacturing AB (Sweden) and Elfa Manufacturing Poland Sp. z o.o.

Finished products are packaged in plastic film, corrugated boxes, and wooden pallets for truck delivery to the customer.

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.

Considering this phase of the life cycle, the transportation endpoint is not limited to a single location, as our customers may have multiple destinations. This variability results in differences in transport distances and the types of vehicles required. Therefore, the travel distances used in the transportation data are theoretical values. When the product is produced and packaged, it is distributed from Elfa Manufacturing Sweden AB. The most common distribution scenario in the Swedish market is used for this assessment. The product is transported by truck to a distribution center in Stockholm, a route of 278 km. The truck has a size of 22,5t, is diesel-fuelled, and has a load factor of 95%, which means full load. From the distribution center, the product is distributed to the end customer, an average route of 30 km. The truck has a size of 2,5t, is HVO fuelled and has a load factor of 50% **(A4)**.

Packaging waste (A5): Upon installation of the products, the packaging materials are separated, generating packaging waste. The packaging materials—EU pallets, corrugated paper boxes, and plastics—are declared using the average EU end-of-life scenario, with specific shares allocated to recycling, incineration, and landfill, according to EUROSTAT. Transportation distance to the waste treatment plant and the landfill is assumed to be 50 km; the transportation method is assumed to be a lorry. As the final product is delivered in its complete form and requires only installation, no material losses are expected during the installation phase. Furthermore, the process does not involve any construction practices that could result in material waste. Installation consists solely of mounting and fastening using standard hand tools, and no additional materials are required.

PRODUCT USE AND MAINTENANCE (B1-B7)

The products should occasionally be cleaned with mild and common household cleaning agents. During normal use, no significant impacts are expected to arise from the use stage.
Air, soil, and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-C4, D)

Module C1 (Deconstruction/Demolition) is modelled with zero energy demand, as the shelf is designed for manual disassembly without the need for powered equipment.
Module C2 (Transport to Waste Processing), transport of separately collected waste fractions is modelled as truck transport to a Swedish waste-processing facility. A default distance of 50 km is applied as a representative average; actual transport distances will vary depending on customer location and the end-of-life route selected.
Modules C3–C4 (Waste Processing and Disposal) cover the sorting, treatment, and final disposition of all material fractions.

Plastic components follow typical end-of-life outcomes for plastics in the European building and construction sector: approximately 26 % recycling, 49 % incineration with energy recovery, and 27 % landfill (Plastics Europe, 2021. Building and Construction Plastics – Waste Management Data Table).

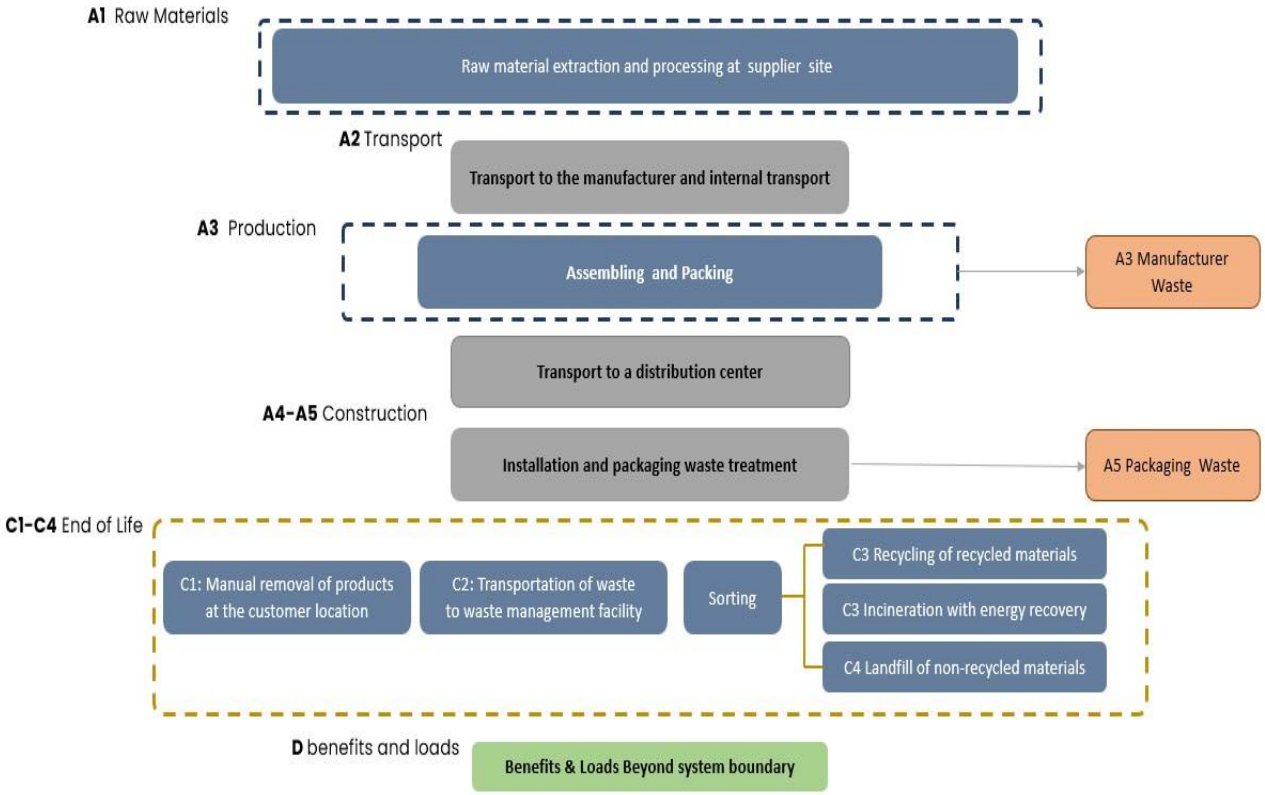
Melamine-particle board is modelled using European waste-treatment statistics: approximately 26 % recycling, 50 % energy recovery, and 24 % landfill (Eurostat & Build LCA 2020).

Screws follow established end-of-life recovery rates for steel products. Approximately 85 % is recycled, and 15 % is sent to landfill (World Steel Association, Life Cycle Inventory Study 2020).

Module D captures the net benefits and loads arising from the end-of-life recovery processes. Recycling: The use of recycled raw materials leads to the avoidance of virgin material production. Energy Recovery (Incineration): The energy recovered from efficient incineration (heat and electricity) is assumed to replace conventional electricity and heat production. The environmental benefits and loads resulting from both the recycling and incineration processes are fully accounted for in Module D.

MANUFACTURING PROCESS

System boundary



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.

All industrial processes from raw material acquisition and pre-processing, production, product distribution, installation, use of the product and end-of-life management are included. Due to lack of data some constituents under might be excluded. They do not exceed 1% of the product mass, and refer to some substances which are present in the product only in very small amounts as they have no significant impact on the emissions.

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

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 pages 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	No allocation
Ancillary materials	Not applicable
Manufacturing energy and waste	Allocated by mass or volume

Transports not under Elfa´s control are assumed to be performed by Euro 6 class vehicles.
Module A4: Transportation does not cause losses as products are packaged properly. Also, the volume capacity utilization factor is assumed to be 1 for the nested packaged products. Additionally, transportation distances are assumed based on data from the manufacturer.
Module A5: Packaging waste is declared as installation waste.
Module C2: The Transportation distance to the waste handling facility is estimated to be 50 km.
Module C3, C4, D: Part of the product is sent for recycling, another part is assumed to be for incineration, and the rest is sent to landfill. Module C3 accounts for energy and resource inputs for sorting and treating these waste streams for recycling and incineration with energy recovery. Ash from recycling processes is negligible. Recycled end-of-life materials are assumed to serve as secondary raw materials in manufacturing, while incinerated materials displace the need for electricity and heat production.

PRODUCT & MANUFACTURING SITES GROUPING

Type of grouping	Multiple products and multiple factories
Grouping method	Based on a representative product
Variation in GWP-fossil for A1- A3, %	-36 /+24

The declared unit for the product series is 1 m², produced based on a representative product (click-in melamine shelf with dimensions 591 x 424 mm and a thickness 16-20 mm). The conversion factors for mass are 3 kg for the standard size and 12 kg per square meter.
For the variance against the representative products, GWP fossils are shown below:

Product A (Click-in melamine shelf with plastic sides): MAX GWP (Fossil) value 1,69E+01 kg CO2e/ + 24 % relative to the representative fossil value.

Product B (Click in melamine shelves and side panels): Representative (Fossil) value: 1,36E+01 kg CO2e.

Product C(Melamine shelf): MIN GWP (Fossil) value: 0,87E+01 kg CO2e / -36 % relative to the representative fossil value.
Based on the Global Warming Potential (GWP) results for the (A1-A3) life cycle stages (EN 15804+A2 standard), the three products demonstrate a clear hierarchy in environmental performance, with Product C being the best and Product A the least favorable.
All three products show negative total GWP values in the A1–A3 stages, mainly due to the use of bio-based materials that store biogenic carbon. However, Product C maximizes this benefit by combining the 36% reduction in fossil emissions relative to the representative product with superior biogenic carbon uptake.

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator for EPD Hub V3 and EPD System Verification v3.2.3. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. The EPD Generator uses Ecoinvent v3.10.1/3.11 and One Click LCA databases as sources of environmental data. Allocation used in Ecoinvent 3.10.1/3.11 environmental data sources follow the methodology ‘allocation, Cut-off, EN 15804+A2‘.

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 – total1)	kg CO2e	-6,78E+00	1,82E+00	2,85E-01	-4,67E+00	9,04E-02	6,64E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,49E-02	1,84E+01	5,02E-02	-2,22E+00
GWP – fossil	kg CO2e	1,12E+01	1,82E+00	5,00E-01	1,36E+01	9,04E-02	5,32E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,48E-02	5,26E-01	5,02E-02	-1,86E+00
GWP – biogenic	kg CO2e	-1,80E+01	1,78E-04	-2,23E-01	-1,83E+01	1,76E-05	6,11E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,67E-07	1,78E+01	2,63E-05	-3,60E-01
GWP – LULUC	kg CO2e	1,02E-02	7,26E-04	7,57E-03	1,85E-02	3,03E-05	2,53E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,90E-05	9,54E-05	2,22E-05	-4,59E-03
Ozone depletion pot.	kg CFC-11e	8,74E-07	3,72E-08	9,31E-09	9,20E-07	1,81E-09	3,03E-10	ND	ND	ND	ND	ND	ND	ND	0,00E+00	9,57E-10	1,46E-09	9,28E-10	-4,72E-08
Acidification potential	mol H+e	5,93E-02	6,81E-03	2,27E-03	6,84E-02	1,77E-04	1,08E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,21E-04	1,13E-03	2,38E-04	-1,11E-02
EP-freshwater2)	kg Pe	8,75E-03	1,24E-04	1,76E-04	9,05E-03	5,90E-06	5,20E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,05E-06	5,95E-05	2,72E-05	-1,49E-03
EP-marine	kg Ne	1,26E-02	1,76E-03	7,78E-04	1,51E-02	4,18E-05	1,25E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,26E-05	5,57E-04	1,05E-03	-2,63E-03
EP-terrestrial	mol Ne	1,40E-01	1,92E-02	6,61E-03	1,66E-01	4,51E-04	4,23E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,90E-04	5,31E-03	9,61E-04	-2,62E-02
POCP (“smog”)3)	kg NMVOCe	3,67E-02	9,15E-03	2,26E-03	4,81E-02	3,00E-04	1,41E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,26E-04	1,35E-03	3,92E-04	-8,48E-03
ADP-minerals & metals4)	kg Sbe	9,28E-05	5,04E-06	1,83E-06	9,96E-05	2,97E-07	8,02E-08	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,81E-07	3,72E-07	1,00E-07	-5,72E-06
ADP-fossil resources	MJ	2,00E+02	2,71E+01	1,40E+03	1,63E+03	1,26E+00	2,63E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	9,41E-01	1,37E+00	7,59E-01	-4,10E+01
Water use5)	m3e depr.	1,38E+01	1,36E-01	2,38E-01	1,41E+01	6,14E-03	7,86E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,64E-03	2,14E-01	4,04E-03	-8,94E-01

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	6,55E-07	1,72E-07	2,15E-08	8,48E-07	5,61E-09	1,78E-09	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,48E-09	1,17E-08	5,29E-09	-2,40E-07
Ionizing radiation6)	kBq U235e	3,58E-01	3,16E-02	2,91E-01	6,80E-01	1,93E-03	8,88E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	8,19E-04	1,44E-02	9,35E-04	-9,15E-01
Ecotoxicity (freshwater)	CTUe	1,25E+02	3,16E+00	2,71E+00	1,31E+02	1,81E-01	2,52E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,33E-01	7,89E-01	5,54E-01	-5,82E+00
Human toxicity, cancer	CTUh	2,19E-08	3,08E-10	4,39E-10	2,26E-08	1,41E-11	1,26E-11	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,07E-11	1,92E-10	2,09E-11	-5,59E-10
Human tox. non-cancer	CTUh	7,20E-08	1,71E-08	4,49E-09	9,36E-08	7,38E-10	6,55E-10	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,09E-10	1,23E-08	8,57E-10	-2,13E-08
SQP7)	-	1,87E+02	2,62E+01	3,70E+01	2,50E+02	6,51E-01	2,41E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	9,44E-01	4,13E-01	1,67E+00	-5,46E+01

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 energy8)	MJ	3,45E+01	4,30E-01	8,49E-01	3,57E+01	2,47E-02	-8,27E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,29E-02	-9,86E+01	-4,74E+01	4,24E+00
Renew. PER as material	MJ	3,68E+01	0,00E+00	4,90E+00	4,17E+01	0,00E+00	-5,30E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	-3,64E+01	0,00E+00	4,35E+01
Total use of renew. PER	MJ	7,13E+01	4,30E-01	5,75E+00	7,74E+01	2,47E-02	-1,36E+01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,29E-02	-1,35E+02	-4,74E+01	4,77E+01
Non-re. PER as energy	MJ	1,56E+02	2,71E+01	7,79E+00	1,91E+02	1,26E+00	-8,38E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	9,41E-01	-6,48E+00	-2,17E+00	-4,11E+01
Non-re. PER as material	MJ	1,62E+01	0,00E+00	1,19E+00	1,74E+01	0,00E+00	-1,37E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	-1,61E+01	0,00E+00	9,62E+00
Total use of non-re. PER	MJ	1,72E+02	2,71E+01	8,98E+00	2,09E+02	1,26E+00	-2,21E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	9,41E-01	-2,25E+01	-2,17E+00	-3,15E+01
Secondary materials	kg	5,25E+00	1,18E-02	1,79E-01	5,44E+00	5,54E-04	2,57E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,01E-04	2,38E-03	2,71E-04	2,14E-01
Renew. secondary fuels	MJ	1,68E+01	1,43E-04	1,22E-01	1,69E+01	5,62E-06	2,15E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,09E-06	7,73E-06	5,08E-06	-4,25E-05
Non-ren. secondary fuels	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m3	2,29E-01	3,91E-03	1,36E-02	2,46E-01	1,73E-04	-5,74E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,39E-04	1,67E-03	-1,06E-02	-2,76E-02

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	5,45E-01	3,92E-02	2,60E-02	6,10E-01	1,64E-03	2,46E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,59E-03	4,32E-02	2,87E-03	-1,26E-01
Non-hazardous waste	kg	1,38E+01	7,74E-01	1,68E+00	1,63E+01	3,87E-02	1,08E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,95E-02	6,24E+00	1,43E+01	-7,79E+00
Radioactive waste	kg	2,19E-04	7,82E-06	6,34E-05	2,91E-04	4,82E-07	2,23E-07	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,00E-07	3,69E-06	2,34E-07	-2,35E-04

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	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	3,92E-02	0,00E+00	2,00E-02	5,92E-02	0,00E+00	2,61E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	3,15E+00	0,00E+00	0,00E+00
Materials for energy rec	kg	1,20E+00	0,00E+00	1,30E-01	1,33E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	5,96E+00	0,00E+00	0,00E+00
Exported energy	MJ	3,91E+00	0,00E+00	0,00E+00	3,91E+00	0,00E+00	8,82E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	3,60E+01	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	3,73E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	1,51E+01	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	5,09E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	2,08E+01	0,00E+00	0,00E+00

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 CO2e	1,11E+01	1,81E+00	5,09E-01	1,34E+01	8,98E-02	7,68E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,45E-02	5,26E-01	2,10E-01	-1,85E+00
Ozone depletion Pot.	kg CFC-11e	6,64E-07	2,96E-08	7,72E-09	7,02E-07	1,44E-09	2,45E-10	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,64E-10	1,21E-09	7,49E-10	-4,50E-08
Acidification	kg SO2e	4,71E-02	5,41E-03	1,75E-03	5,43E-02	1,43E-04	8,06E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,69E-04	8,07E-04	1,77E-04	-9,00E-03
Eutrophication	kg PO43e	3,71E-01	1,05E-03	4,28E-03	3,76E-01	3,41E-05	4,72E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,11E-05	2,81E-04	1,34E-04	-4,69E-03
POCP (“smog”)	kg C2H4e	3,48E-03	4,38E-04	1,92E-04	4,11E-03	1,51E-05	1,20E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,50E-05	6,17E-05	5,04E-05	-8,03E-04
ADP-elements	kg Sbe	8,90E-05	4,92E-06	1,82E-06	9,57E-05	2,88E-07	7,77E-08	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,77E-07	3,37E-07	8,36E-08	-5,68E-06
ADP-fossil	MJ	1,90E+02	2,66E+01	1,40E+03	1,61E+03	1,23E+00	2,48E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	9,28E-01	1,12E+00	7,44E-01	-2,49E+01

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-GHG9)	kg CO2e	1,13E+01	1,82E+00	5,08E-01	1,36E+01	9,04E-02	5,32E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,49E-02	5,27E-01	5,02E-02	-1,86E+00

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

1- Electricity production, wind, 1-3MW turbine, onshore, Poland, Ecoinvent, 0.0176 kgCO2e/kWh.
2- Electricity voltage transformation from high to medium voltage, Poland, Ecoinvent, 0.90 kgCO2e/kW.
3- Electricity production, wind, 1-3MW turbine, onshore, Sweden, Ecoinvent, 0.0175 kgCO2e/kWh.
4- Electricity production, hydro, run-of-river, Sweden, Ecoinvent, 0.0044 kgCO2e/kW.
5- Electricity voltage transformation, residual mix, from high to medium voltage, Sweden, Ecoinvent, 0.0492 kgCO2e/kWh.

Transport scenario documentation - A4 (Transport resources)

Transport, freight, lorry 16-32 metric ton, EURO6, 308 km.

Transport scenario documentation A4

Scenario parameter	Value
Capacity utilization (including empty return) %	50
Bulk density of transported products	1,57E+03
Volume capacity utilization factor	<1

Installation scenario documentation - A5 (Installation waste)

Scenario information	Value			
Waste materials on the building site before waste processing, generated by the product's installation (specified by type) / kg	Wood packaging			0.42
	Paper/Cardboard packaging			0.14
	Plastic packaging			0.03
Output materials (specified by type) as a result of waste processing at the building site, e.g., collection for recycling, for energy recovery, disposal (specified by route) / kg		Wood packaging	Paper / Cardboard	Plastic packaging
	Recycling	0.13	0.12	0.011
	Energy recovery	0.13	0.01	0.010
	Disposal	0.16	0.01	0.006
Direct emissions to ambient air, soil and water / kg	0			

End of life scenario documentation - C1-C4 (Data source)

Scenario information	Value
Collection process – kg collected separately	12,00
Collection process – kg collected with mixed waste	0
Recovery process – kg for re-use	0
Recovery process – kg for recycling	3,15
Recovery process – kg for energy recovery	5.96
Disposal (total) – kg for final deposition	2,88
Scenario assumptions, e.g., transportation	Transportation to waste processing assumes an average distance of 50 km by >32 t lorry (Euro 6)

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

Imane Uald Lamkaddam as an authorized verifier for EPD Hub Limited
18.12.2025