



# ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

BOTKYRKA 25 L Waste Bin  
HITSA A/S



**EPD HUB, HUB-5944**

Published on 10.04.2026, last updated on 10.04.2026, valid until 09.04.2031

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	HITSA A/S
Address	Albuen 37, 6000 Kolding
Contact details	hitsa@hitsa.dk
Website	<a href="https://hitsa.dk/">https://hitsa.dk/</a>

### 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 with options, A4-A5, and modules C1-C4, D
EPD author	Tatjana Kasina
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	Yazan Badour 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	BOTKYRKA 25 L Waste Bin
Additional labels	-
Product reference	-
Place(s) of raw material origin	Europe, Rest of World
Place of production	Albuen 37, 6000 Kolding, Denmark
Place(s) of installation and use	Primarily Denmark and Sweden
Period for data	Calendar year 2024
Averaging in EPD	Multiple products
Variation in GWP-fossil for A1-A3 (%)	-13,8% / 14,6 %
GTIN (Global Trade Item Number)	-
NOBB (Norwegian Building Product Database)	-
A1-A3 Specific data (%)	94,2

## ENVIRONMENTAL DATA SUMMARY

Declared unit	1 unit of BOTKYRKA 25 L Waste Bin
Declared unit mass	29,555 kg
Mass of packaging	6,25 kg
GWP-fossil, A1-A3 (kgCO <sub>2</sub> e)	90,1
GWP-total, A1-A3 (kgCO <sub>2</sub> e)	89,8
Secondary material, inputs (%)	34,7
Secondary material, outputs (%)	85
Total energy use, A1-A3 (kWh)	420
Net freshwater use, A1-A3 (m <sup>3</sup> )	1,53

## PRODUCT AND MANUFACTURER

### ABOUT THE MANUFACTURER

HITSA designs and manufactures urban furniture and cycling products.

Our benches, bollards, bicycle racks and shelters provide attractive outdoor environments and good functionality for people in urban spaces. Production takes place at our own facilities, with a focus on design, craftsmanship and quality. As a business, we work on making social inclusion and environmental and climate sustainability a part of our culture.

HITSA has 110 employees at our sites in Denmark and Sweden, including metalworkers, carpenters, painters, designers, sales staff and installers.

Our values of honesty, responsibility and customer focus serve as guidelines for everything we do.

### PRODUCT DESCRIPTION

The BOTKYRKA waste bin is a 25-liter paper waste container designed with a discreet side-throw opening and a durable steel housing. It can be supplied either with its own post or adapted for installation on an existing post, making it suitable for a variety of public environments. The bin features a hinged front door with an integrated bag holder, ensuring quick and convenient emptying. It is available in a selection of RAL colors and can be opened using a triangular key. For added customization, the front panel can be perforated with a logo or municipal crest.

The construction is based on a combination of galvanized steel and stainless steel, and the model is also offered in a powder-coated version using the same materials. The front door is manufactured from 2 mm sheet steel, while the top section is made from 5 mm stainless steel. When supplied with its own post, the design uses a 60 mm steel tube and 50 × 50 mm square-tube brackets.

Installation can be carried out either by concreting the supplied post into the ground or, when attaching to an existing post, by using the included hose clamps. The recommended mounting height is a distance of 700 mm from the ground to the top edge of the bin.

This EPD represents an average of four BOTKYRKA waste bin variants, each weighted equally at 25%.

The variants differ in mounting method and surface coating.

BOTKYRKA 25 L V is mounted on an existing pole using hose clamps.

BOTKYRKA 25 L V RAL is identical to BOTKYRKA 25 L V but features powder coating in a selected colour.

BOTKYRKA 25 L N is supplied with an integrated post that is concreted into the ground.

BOTKYRKA 25 L N RAL is the same version with an integrated post, but with powder coating in a selected colour.

Further information can be found at:

<https://hitsa.dk/>

### PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	100	Europe, RoW
Minerals	-	-
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	2,25

## FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 unit of BOTKYRKA 25 L Waste Bin
Mass per declared unit	29,555 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	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	Recycling		
																Recovery		
																Reuse		

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.



A market-based approach is used in modelling the electricity mix utilized in the factory.

A1: This module covers the extraction and processing of raw materials, including the associated energy consumption.

A2: The raw materials are transported by lorry via road to the manufacturing facility.

A3: This module represents the manufacturing processes at HITSA A/S. The data field includes energy use, consumption of ancillary materials, and waste generation at the production site.

Key process steps:

1. Material Preparation: Steel profiles required for production are retrieved and prepared, ensuring raw materials are ready for processing.
2. Cutting: Steel and wood profiles, respectively, are cut and to the specified lengths and dimensions using specialized cutting equipment in line with product design requirements. After this additional grinding is performed as needed.
3. Oil treatment of wood is conducted by full immersion in an open tank system.
4. Welding: Cut steel components are welded together to form the final steel structure.
5. External Galvanization: Steel components are sent to an external facility for hot galvanization, where they are immersed in molten zinc to create a protective coating against corrosion.
6. Receiving Galvanized Components: Following hot-dip galvanization, the components are returned to the production facility. The galvanized items are inspected to ensure the coating is uniform and compliant with quality standards.
7. Optional coating: Upon request RAL-coating is performed in the internal, fully automated paint/coating facility.
8. Final Assembly: Galvanized components are assembled into their final configuration, if not done prior to galvanization. Wooden parts are

mounted. This includes joining parts, ensuring alignment, and making final adjustments before the product is prepared for delivery.

## 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: Transport to Installation Site

Transport of the finished product to the site of installation is performed by lorry via road. The average transport distance is calculated at 187.9 km, based on an average of the following two distribution scenarios:

- Company-operated transport: Products sold with installation service are transported directly to the installation site using HITSA's own fleet.
- External logistics: Products sold as self-installation are transported by an external logistics provider.

For transport, double wooden pallets are used. To ensure conservative modelling, a worst-case scenario is applied, assuming one product per double pallet regardless of potential consolidation. As the product consists entirely of galvanized/coated steel and hardwood, it is robust and non-fragile and therefore requires no additional packaging or protective materials during transport other than potential strapping and foam end-protection, which is not considered as this constitutes less than 1% of the total product.

### A5: Installation

Products are delivered in a ready-to-install condition. Installation is assumed to be performed on-site using only basic handheld tools (e.g., screwdrivers). No additional materials, energy inputs, or auxiliary processes are required.

## 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)

### C1. Deconstruction / Demolition

The end-of-life stage accounts for the deconstruction and demolition of the galvanized steel structure and the demounting of wooden planks. Based on literature sources (Ö. Bozdağ, 2007; Broniewicz & Dec, 2022), the energy requirement for demolition is estimated at 10 kWh per ton of steel. This value has been applied to calculate electricity consumption during the demolition phase.

### C2. Transport to Waste Processing Facility

As no mass loss occurs during the use stage, the mass of the end-of-life product is assumed to be equal to that of the declared product. All end-of-life steel components are collected and transported to appropriate waste management facilities. An average transport distance of 50 km has been applied, based on Google Maps estimations.

### C3. Recycling

Steel products and components are considered highly recyclable. The recyclability rate is slightly lower for painted or galvanized steel compared to untreated steel, as surface coatings (zinc and paint) must be removed prior to remelting. Nevertheless, both steel and zinc are efficiently recycled. According to Broniewicz & Dec (2022), 90 % of the steel content is assumed to be recycled, while the remaining 10 % is directed to landfill.

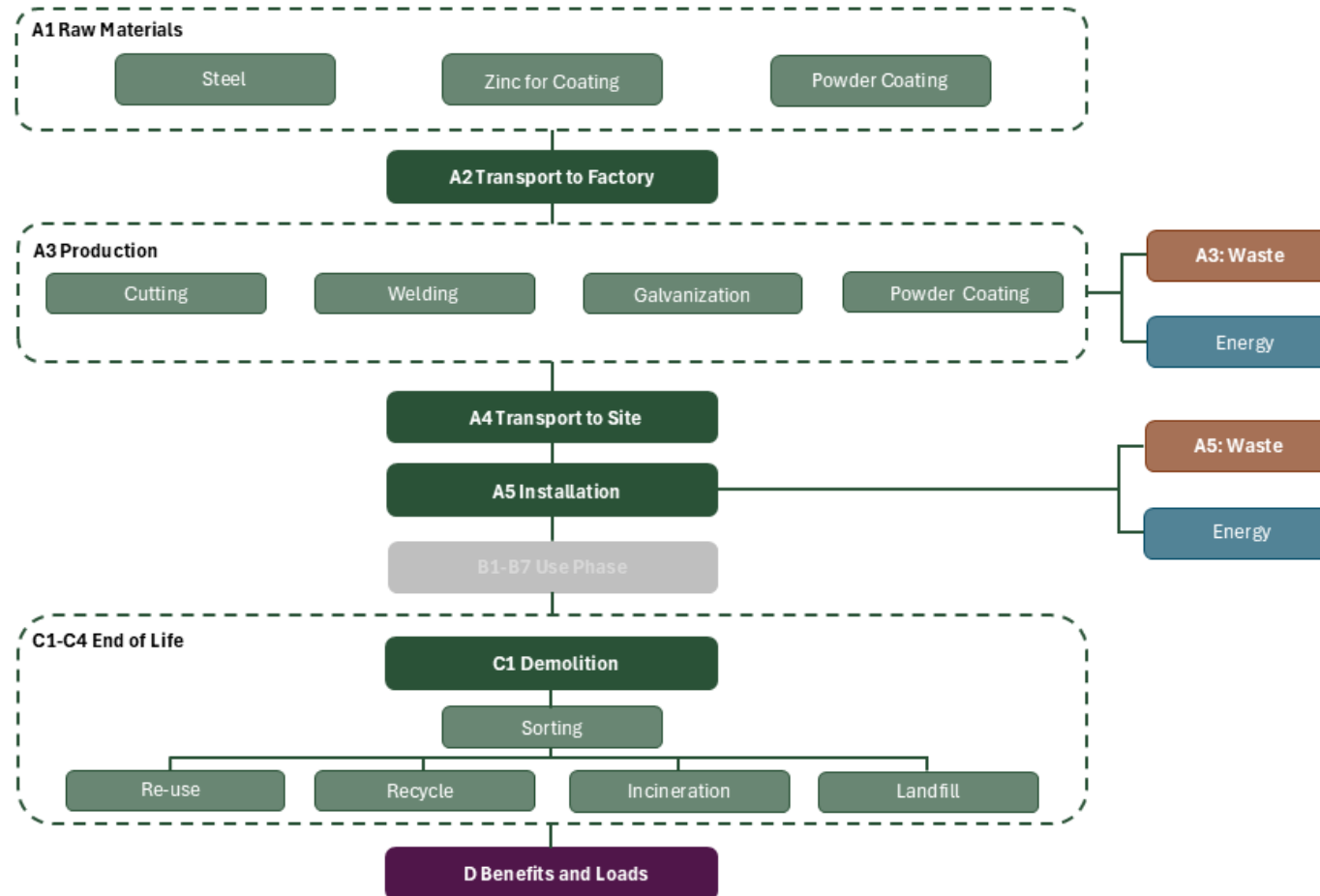
### C4. Disposal

Residual steel material not suitable for recycling (estimated at 10 %) is assumed to be sent to landfill (Broniewicz & Dec, 2022).

## Module D – Reuse, Recovery and Recycling Potential

Module D accounts for the environmental impacts and benefits associated with the net end-of-life recycling of steel, including the substitution of primary steel and primary zinc production outside the system boundary. Packaging materials, including wooden pallets used for transport, are treated exclusively as installation waste in module A5 and are not included in modules C–D.

# 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.

### 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	No allocation
Ancillary materials	No allocation
Manufacturing energy and waste	Allocated by mass or volume

### PRODUCT & MANUFACTURING SITES GROUPING

Type of grouping	Averaged/grouped product
Grouping method	Equal weighting (25 % each) of four product variants
Variation in GWP-fossil for A1-A3, %	-13,8 % / 14,6 %

## LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator for EPD Hub V3 and EPD Process Certification v3.2.4. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. The EPD Generator uses Ecoinvent v3.10.1/3.11/3.12 and One Click LCA databases as sources of environmental data. Allocation used in Ecoinvent 3.10.1/3.11/3.12 environmental data sources follow the methodology 'allocation, Cut-off, EN 15804+A2'.

- EN 15804+A2:2019/2022 – Sustainability of construction works – Environmental product declarations.
- EN 15941:2017 – Sustainability of construction works – Data quality for environmental assessment.
- Ecoinvent Association (2023). *Ecoinvent database v3.10–3.12*.
- Danish Energy Agency (2024). *Lower heating value (LHV) of natural gas*.
- Google Maps (2025). Transport distance estimations.
- Ö. Bozdağ (2007). *Energy requirements for demolition processes*.
- Broniewicz, E., & Dec, M. (2022). *Recycling and disposal rates of steel products*.
- Structure Magazine (n.d.). *10 things every structural engineer should know about embodied carbon in wood*.  
<https://www.structuremag.org/article/10-things-every-structural-engineer-should-know-about-embodied-carbon-wood/>

## 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 <sup>1)</sup>	kg CO <sub>2</sub> e	7,13E+01	1,09E+00	1,74E+01	8,98E+01	1,27E+00	6,02E-01	ND	ND	ND	ND	ND	ND	ND	3,16E-02	1,27E+00	5,67E-01	2,77E-02	-4,50E+01
GWP – fossil	kg CO <sub>2</sub> e	7,13E+01	1,09E+00	1,78E+01	9,01E+01	1,27E+00	1,97E-01	ND	ND	ND	ND	ND	ND	ND	3,13E-02	1,27E+00	5,68E-01	2,77E-02	-4,54E+01
GWP – biogenic	kg CO <sub>2</sub> e	3,15E-02	2,40E-04	-3,90E-01	-3,58E-01	2,83E-04	4,05E-01	ND	ND	ND	ND	ND	ND	ND	1,38E-04	2,77E-04	-1,21E-03	-8,80E-06	4,05E-01
GWP – LULUC	kg CO <sub>2</sub> e	4,47E-02	4,92E-04	1,55E-02	6,07E-02	5,75E-04	2,99E-04	ND	ND	ND	ND	ND	ND	ND	1,40E-04	5,62E-04	7,01E-04	1,58E-05	-1,77E-02
Ozone depletion pot.	kg CFC <sub>11</sub> e	2,40E-06	1,61E-08	7,07E-07	3,13E-06	1,88E-08	3,24E-09	ND	ND	ND	ND	ND	ND	ND	6,21E-10	1,78E-08	7,63E-09	8,02E-10	-1,93E-07
Acidification potential	mol H <sup>+</sup> e	8,68E-01	2,50E-03	3,92E-02	9,10E-01	2,90E-03	1,09E-03	ND	ND	ND	ND	ND	ND	ND	1,40E-04	4,23E-03	6,76E-03	1,96E-04	-1,99E-01
EP-freshwater <sup>2)</sup>	kg Pe	1,87E-02	8,51E-05	2,78E-03	2,16E-02	9,94E-05	5,24E-05	ND	ND	ND	ND	ND	ND	ND	1,99E-05	9,88E-05	3,66E-04	2,27E-06	-2,20E-02
EP-marine	kg Ne	9,47E-02	5,83E-04	8,58E-03	1,04E-01	6,74E-04	1,16E-03	ND	ND	ND	ND	ND	ND	ND	3,20E-05	1,37E-03	1,50E-03	7,48E-05	-4,50E-02
EP-terrestrial	mol Ne	2,89E+00	6,30E-03	9,42E-02	2,99E+00	7,28E-03	4,43E-03	ND	ND	ND	ND	ND	ND	ND	3,83E-04	1,49E-02	1,69E-02	8,17E-04	-4,91E-01
POCP (“smog”) <sup>3)</sup>	kg NMVOCe	3,06E-01	3,50E-03	3,70E-02	3,46E-01	4,07E-03	1,46E-03	ND	ND	ND	ND	ND	ND	ND	9,26E-05	5,89E-03	5,01E-03	2,93E-04	-1,61E-01
ADP-minerals & metals <sup>4)</sup>	kg Sbe	2,94E+02	3,63E-06	3,53E-05	2,94E+02	4,25E-06	5,51E-07	ND	ND	ND	ND	ND	ND	ND	2,83E-07	4,17E-06	4,02E-05	4,40E-08	-2,41E-03
ADP-fossil resources	MJ	6,09E+02	1,53E+01	2,73E+02	8,97E+02	1,78E+01	2,80E+00	ND	ND	ND	ND	ND	ND	ND	5,13E-01	1,78E+01	7,61E+00	6,79E-01	-4,31E+02
Water use <sup>5)</sup>	m <sup>3</sup> e depr.	3,62E+01	7,16E-02	4,35E+01	7,98E+01	8,36E-02	7,52E-02	ND	ND	ND	ND	ND	ND	ND	5,86E-02	8,26E-02	1,37E-01	1,96E-03	-1,16E+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 PO<sub>4</sub>e; 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	6,42E-06	8,12E-08	2,31E-07	6,73E-06	9,46E-08	1,94E-08	ND	ND	ND	ND	ND	ND	ND	1,09E-09	1,01E-07	9,18E-08	4,47E-09	-2,93E-06
Ionizing radiation <sup>6)</sup>	kBq U235e	8,85E+02	1,25E-02	2,36E+00	8,88E+02	1,46E-02	7,29E-03	ND	ND	ND	ND	ND	ND	ND	1,18E-02	1,44E-02	6,46E-02	4,27E-04	9,44E-01
Ecotoxicity (freshwater)	CTUe	5,83E+02	2,42E+00	1,96E+01	6,05E+02	2,83E+00	9,32E-01	ND	ND	ND	ND	ND	ND	ND	1,12E-01	2,82E+00	4,44E+00	5,70E-02	-6,58E+02
Human toxicity, cancer	CTUh	9,09E-08	1,82E-10	2,96E-09	9,41E-08	2,12E-10	9,61E-11	ND	ND	ND	ND	ND	ND	ND	1,18E-11	2,16E-10	5,07E-10	5,10E-12	-2,08E-08
Human tox. non-cancer	CTUh	6,33E-07	9,63E-09	8,23E-08	7,25E-07	1,13E-08	5,26E-09	ND	ND	ND	ND	ND	ND	ND	5,13E-10	1,12E-08	3,45E-08	1,17E-10	-7,53E-07
SQP <sup>7)</sup>	-	4,35E+01	9,31E+00	9,89E+01	1,52E+02	1,08E+01	2,62E+00	ND	ND	ND	ND	ND	ND	ND	9,17E-01	1,06E+01	1,48E+01	1,34E+00	-1,45E+02

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 <sup>8)</sup>	MJ	7,87E+01	2,12E-01	1,57E+02	2,36E+02	2,48E-01	-8,41E+01	ND	ND	ND	ND	ND	ND	ND	7,83E-01	2,44E-01	1,42E+00	6,56E-03	-3,65E+01
Renew. PER as material	MJ	0,00E+00	0,00E+00	3,70E+00	3,70E+00	0,00E+00	-3,70E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of renew. PER	MJ	7,87E+01	2,12E-01	1,61E+02	2,40E+02	2,48E-01	-8,78E+01	ND	ND	ND	ND	ND	ND	ND	7,83E-01	2,44E-01	1,42E+00	6,56E-03	-3,65E+01
Non-re. PER as energy	MJ	9,80E+02	1,53E+01	2,79E+02	1,27E+03	1,78E+01	2,80E+00	ND	ND	ND	ND	ND	ND	ND	5,13E-01	1,78E+01	7,62E+00	6,79E-01	-4,30E+02
Non-re. PER as material	MJ	0,00E+00	0,00E+00	7,45E-01	7,45E-01	0,00E+00	-7,45E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of non-re. PER	MJ	9,80E+02	1,53E+01	2,79E+02	1,27E+03	1,78E+01	2,06E+00	ND	ND	ND	ND	ND	ND	ND	5,13E-01	1,78E+01	7,62E+00	6,79E-01	-4,30E+02
Secondary materials	kg	1,02E+01	6,94E-03	6,67E-02	1,03E+01	8,12E-03	1,92E-03	ND	ND	ND	ND	ND	ND	ND	2,18E-04	8,01E-03	9,30E-03	1,71E-04	2,50E+01
Renew. secondary fuels	MJ	3,37E-03	8,87E-05	2,28E-04	3,69E-03	1,04E-04	1,90E-05	ND	ND	ND	ND	ND	ND	ND	9,45E-07	1,02E-04	4,32E-04	3,53E-06	-3,49E-03
Non-ren. secondary fuels	MJ	2,31E-03	0,00E+00	0,00E+00	2,31E-03	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	m <sup>3</sup>	1,29E+00	2,09E-03	2,36E-01	1,53E+00	2,44E-03	-7,27E-03	ND	ND	ND	ND	ND	ND	ND	1,92E-03	2,36E-03	4,04E-03	7,06E-04	-1,97E-01

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	2,05E+00	2,68E-02	4,96E-01	2,57E+00	3,13E-02	1,78E-02	ND	ND	ND	ND	ND	ND	ND	2,88E-03	3,11E-02	4,98E-02	7,50E-04	-1,40E+01
Non-hazardous waste	kg	2,51E+01	5,02E-01	1,19E+01	3,75E+01	5,87E-01	1,28E+01	ND	ND	ND	ND	ND	ND	ND	9,89E-02	5,82E-01	1,80E+00	1,71E-02	-1,20E+02
Radioactive waste	kg	2,65E-02	3,06E-06	4,15E-04	2,69E-02	3,57E-06	1,82E-06	ND	ND	ND	ND	ND	ND	ND	2,69E-06	3,53E-06	1,65E-05	1,04E-07	2,44E-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	2,79E-01	0,00E+00	1,10E-12	2,79E-01	0,00E+00	1,84E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	2,51E+01	0,00E+00	0,00E+00
Materials for energy rec	kg	1,78E-03	0,00E+00	5,77E-21	1,78E-03	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
Exported energy	MJ	1,68E-02	0,00E+00	0,00E+00	1,68E-02	0,00E+00	9,13E+00	ND	ND	ND	ND	ND	ND	ND	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	3,85E+00	ND	ND	ND	ND	ND	ND	ND	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	5,28E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

## SCENARIO DOCUMENTATION

### DATA SOURCES

#### Manufacturing energy scenario documentation

1. Electricity, Denmark, residual mix, 2024, Denmark, One Click LCA, 0.59 kgCO<sub>2</sub>e/kWh
2. Electricity production, wind, <1MW turbine, onshore, Denmark, Ecoinvent, 0.0127 kgCO<sub>2</sub>e/kWh
3. Electricity voltage transformation from high to medium voltage, Denmark, Ecoinvent, 0.15 kgCO<sub>2</sub>e/kWh
4. Heat production, natural gas, at boiler condensing modulating >100kW, Albania, Ecoinvent, 0.0721 kgCO<sub>2</sub>e/MJ
5. Electricity, Denmark, residual mix, 2024, Denmark, One Click LCA, 0.59 kgCO<sub>2</sub>e/kWh
6. Electricity production, wind, <1MW turbine, onshore, Denmark, Ecoinvent, 0.0127 kgCO<sub>2</sub>e/kWh
7. Electricity voltage transformation from high to medium voltage, Denmark, Ecoinvent, 0.15 kgCO<sub>2</sub>e/kWh
8. Heat production, natural gas, at boiler condensing modulating >100kW, Albania, Ecoinvent, 0.0721 kgCO<sub>2</sub>e/MJ
9. Electricity, Denmark, residual mix, 2024, Denmark, One Click LCA, 0.59 kgCO<sub>2</sub>e/kWh
10. Electricity production, wind, <1MW turbine, onshore, Denmark, Ecoinvent, 0.0127 kgCO<sub>2</sub>e/kWh
11. Electricity voltage transformation from high to medium voltage, Denmark, Ecoinvent, 0.15 kgCO<sub>2</sub>e/kWh
12. Heat production, natural gas, at boiler condensing modulating >100kW, Albania, Ecoinvent, 0.0721 kgCO<sub>2</sub>e/MJ
13. Electricity, Denmark, residual mix, 2024, Denmark, One Click LCA, 0.59 kgCO<sub>2</sub>e/kWh
14. Electricity production, wind, <1MW turbine, onshore, Denmark, Ecoinvent, 0.0127 kgCO<sub>2</sub>e/kWh
15. Electricity voltage transformation from high to medium voltage, Denmark, Ecoinvent, 0.15 kgCO<sub>2</sub>e/kWh
16. Heat production, natural gas, at boiler condensing modulating >100kW, Albania, Ecoinvent, 0.0721 kgCO<sub>2</sub>e/MJ

#### Transport scenario documentation - A4 (Transport resources)

1. Transport, freight, lorry 16-32 metric ton, EURO6, 187.9 km



#### Transport scenario documentation A4

Scenario parameter	Value
Capacity utilization (including empty return) %	50
Bulk density of transported products	0,00E+00
Volume capacity utilization factor	

#### Installation scenario documentation - A5 (Installation resources)

1. Electricity production, wind, 1-3MW turbine, onshore, Ecoinvent, 0.063 kWh

#### Installation scenario documentation - A5 (Installation waste)

1. Exported Energy: Electricity, Ecoinvent, 3.846 MJ
2. Treatment of waste wood, post-consumer, sorting and shredding, Ecoinvent, Materials for recycling, 1.837 kg
3. Exported Energy: Thermal, Ecoinvent, 5.281 MJ
4. Treatment of waste wood, untreated, municipal incineration, Ecoinvent, 1.722 kg
5. Treatment of waste wood, untreated, sanitary landfill, Ecoinvent, 2.181 kg

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

1. Sorting and pressing of iron scrap, Ecoinvent, Materials for recycling, 25.122 kg
2. Treatment of scrap steel, inert material landfill, Ecoinvent, 4.433 kg
3. Market for electricity, medium voltage, Ecoinvent, 0.21 kWh

## 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

Yazan Badour as an authorized verifier for EPD Hub Limited 10.04.2026

