



ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

TacoFlow3 circulation pumps

Taconova Group AG



EPD HUB, HUB-4299

Published on 31.10.2025, last updated on 31.10.2025, valid until 30.10.2030

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.

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Taconova Group AG
Address	Neunbrunnenstrasse 40, CH-8050 Zürich, Switzerland
Contact details	info@taconova.com
Website	www.taconova.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 with options, A4-B7, and modules C1-C4, D
EPD author	Thomas Engeler - Taconova Group AG
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 authorised 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	TacoFlow3 circulation pumps
Additional labels	-
Product reference	-
Place(s) of raw material origin	EU
Place of production	Boršov, Czech Republic
Place(s) of installation and use	EU
Period for data	01.06.2024 - 31.05.2025
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 (%)	1,8

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 Unit from circulation pumps for heating and cooling systems in residential and commercial building
Declared unit mass	1,8 kg
Mass of packaging	0,764 kg
GWP-fossil, A1-A3 (kgCO₂e)	17
GWP-total, A1-A3 (kgCO₂e)	16,4
Secondary material, inputs (%)	52,8
Secondary material, outputs (%)	64,3
Total energy use, A1-A3 (kWh)	67
Net freshwater use, A1-A3 (m³)	0,22

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Taconova Group AG is a Swiss specialist in hydronic and building-services technology, delivering integrated solutions for heating, sanitary, cooling and solar thermal systems. Its core expertise lies in hydronic balancing, area heating systems and system technology, as well as valves and accessories and pump technology.

PRODUCT DESCRIPTION

This pump is designed for durability, efficiency, and optimal energy consumption, making it suitable for various industrial and commercial applications.

Main Components are the following. Pump Body: Made from CDP-coated cast iron (EN-GJL-200) for high strength and corrosion resistance or PA66 GF30 composite plastic for a lightweight alternative. Impeller: Constructed from PP GF30 composite plastic, ensuring mechanical stability and wear resistance. Rotor Shaft: Made of ceramic for durability and smooth operation. Rotor Bearing: Built from graphite, minimizing friction and enhancing longevity. Rotor Housing: Composed of PA6T/6I GF40 composite plastic, providing heat resistance and structural integrity. Motor: Features a combination of PA66/6 GF30 composite plastic, steel, copper, and aluminum, ensuring reliable and efficient performance.

Technical Details: Operational Energy Consumption: 700 kWh. Materials: A blend of cast iron, composite plastics, ceramic, graphite, steel, copper, and aluminum for durability and efficiency.

Further information can be found at:
www.taconova.com

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	79	Europe
Minerals	0	-
Fossil materials	21	Europe
Bio-based materials	0	-

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	0,070
Biogenic carbon content in packaging, kg C	0,89

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 Unit from circulation pumps for heating and cooling systems in residential and commercial building
Mass per declared unit	1,8 kg
Functional unit	1 Unit of pump to produce 1 kW of heating or 1 kW of cooling, according to the reference usage scenario and during
Reference service life	15

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	x	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. 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.

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

The manufacturing process requires electricity which is produced by natural resources. The plastic waste produced at the plant is being recycled. Wooden pallets, cardboard boxes and packaging film are used as a packaging material for transporting the product from the factory gate. a) Transport assumptions and distances for materials: 577 km - 1671 km. b) Production losses considered: The production loss of 0.01430 kg per pump will be collected and later be recycled by an external company. d) Energy sources profile is according to the Overview. f) Assumptions for End of Life for Manufacturing Waste for A3, percentages applied and the references used. g) Transport assumptions and distances for A3 waste is 50 km.

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.

Average distance of transportation from production plant to retailer's site is assumed as 580 km and the transportation method is assumed to be by lorry. Vehicle capacity utilization volume factor is assumed to be 1 which means full load. In reality, this may vary but as the role of transportation emissions in the total results is small, the variety in load is assumed to be negligible. To be conservative, empty returns are included in this study as implemented through an average load factor in the Ecoinvent transport datapoints. Transportation does not cause losses as product is packaged properly. Environmental impacts from installation into the building include generation of waste packaging materials (A5) and release of biogenic carbon dioxide from wood pallets. The impacts of material production, its processing and disposal

as installation waste are also included. No energy consumption nor Installation materials during installation is needed. Based on End of Life for A5 Waste, the following assumption have been made: 45% is of cardboard packaging, 36% plastic packaging and 19% wood packaging. We assume that waste transport from our customers is done by lorry with an average distance of 50 km.

PRODUCT USE AND MAINTENANCE (B1-B7)

Results are calculated for 1 year. In order to have the total impact over the entire product reference service life, impacts shall be multiplied with 15 years of RSL.

PRODUCT END OF LIFE (C1-C4, D)

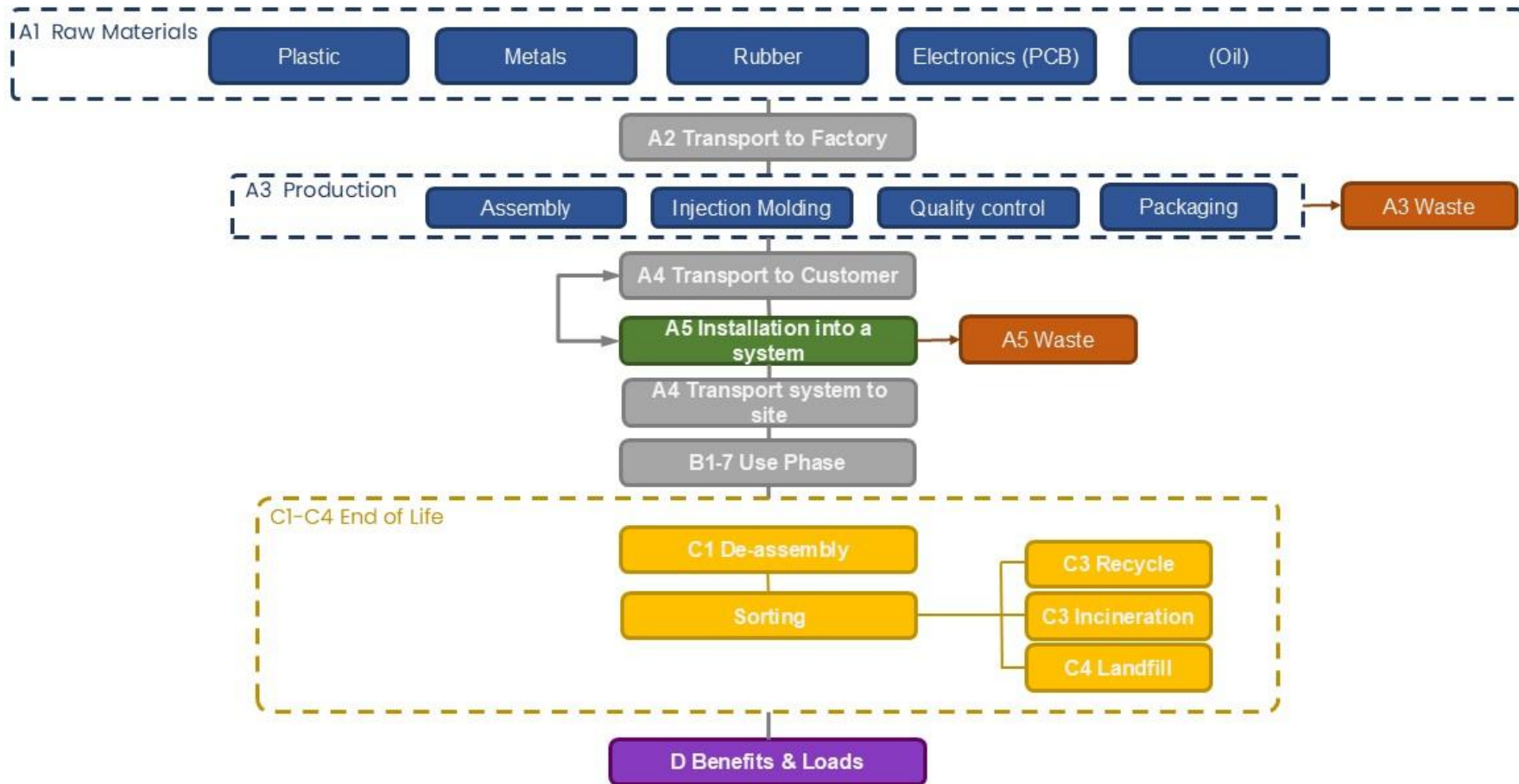
The consumption of energy for disassembling the product at End of Life is included by assuming the use of electric screwdrivers (C1).

The end-of-life product is assumed to be sent to the closest facilities by lorry and is assumed to be 50 km away (C2). 100 % of the product is collected separately from the demolition site 74% are sent to recycling and 9 % to incineration facilities (C3). Only 16 % of the end-of-life product goes to landfill (C4).

Due to the recycling and incineration potential of metals and plastics, the end-of-life product is converted into recycled materials, while energy and heat is produced from material incineration (D). The benefits and loads of waste packaging materials in A5 are also considered in module D.

SYSTEM DIAGRAM

Life-cycle diagram for TacoFow 3



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.

Labels were not declared in this EPD because <1% of total product mass and no information about related process and composition.

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	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 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 – total ¹⁾	kg CO ₂ e	1,54E+01	6,96E-02	8,99E-01	1,64E+01	1,62E-01	1,23E+00	ND	ND	ND	ND	ND	1,11E+01	ND	0,00E+00	1,62E-02	3,98E-01	2,79E-02	-2,22E+00
GWP – fossil	kg CO ₂ e	1,51E+01	6,96E-02	1,78E+00	1,70E+01	1,62E-01	3,57E-01	ND	ND	ND	ND	ND	1,11E+01	ND	0,00E+00	1,62E-02	3,98E-01	2,79E-02	-2,23E+00
GWP – biogenic	kg CO ₂ e	2,57E-01	1,53E-05	-8,90E-01	-6,32E-01	3,67E-05	8,69E-01	ND	ND	ND	ND	ND	5,33E-03	ND	0,00E+00	3,56E-06	-9,62E-05	-1,24E-05	1,03E-02
GWP – LULUC	kg CO ₂ e	1,58E-02	3,11E-05	1,22E-02	2,81E-02	7,24E-05	3,12E-05	ND	ND	ND	ND	ND	1,35E-02	ND	0,00E+00	7,19E-06	4,20E-05	2,70E-06	-3,60E-03
Ozone depletion pot.	kg CFC ₋₁₁ e	1,99E-07	1,03E-09	4,06E-08	2,41E-07	2,39E-09	3,93E-10	ND	ND	ND	ND	ND	5,63E-07	ND	0,00E+00	2,28E-10	4,00E-10	1,15E-10	-1,77E-08
Acidification potential	mol H ⁺ e	2,09E-01	2,37E-04	7,39E-03	2,17E-01	5,52E-04	1,66E-04	ND	ND	ND	ND	ND	2,99E-02	ND	0,00E+00	5,42E-05	3,81E-04	3,07E-05	-2,93E-02
EP-freshwater ²⁾	kg Pe	1,72E-02	5,42E-06	6,44E-04	1,79E-02	1,26E-05	7,99E-06	ND	ND	ND	ND	ND	1,07E-03	ND	0,00E+00	1,26E-06	1,77E-05	4,22E-07	-1,71E-02
EP-marine	kg Ne	2,28E-02	7,80E-05	2,23E-03	2,51E-02	1,81E-04	1,69E-04	ND	ND	ND	ND	ND	8,35E-03	ND	0,00E+00	1,76E-05	1,04E-04	1,30E-04	-7,62E-03
EP-terrestrial	mol Ne	2,35E-01	8,48E-04	1,83E-02	2,54E-01	1,97E-03	6,22E-04	ND	ND	ND	ND	ND	9,59E-02	ND	0,00E+00	1,91E-04	1,08E-03	1,26E-04	-1,11E-01
POCP (“smog”) ³⁾	kg NMVOCe	7,53E-02	3,50E-04	8,23E-03	8,39E-02	8,14E-04	1,99E-04	ND	ND	ND	ND	ND	2,64E-02	ND	0,00E+00	7,60E-05	3,08E-04	4,79E-05	-2,34E-02
ADP-minerals & metals ⁴⁾	kg Sbe	2,63E-03	1,94E-07	8,86E-06	2,64E-03	4,52E-07	1,81E-07	ND	ND	ND	ND	ND	3,30E-05	ND	0,00E+00	5,24E-08	1,80E-06	8,61E-09	-3,19E-04
ADP-fossil resources	MJ	1,91E+02	1,01E+00	3,72E+01	2,29E+02	2,35E+00	3,57E-01	ND	ND	ND	ND	ND	3,09E+02	ND	0,00E+00	2,28E-01	4,19E-01	9,77E-02	-2,57E+01
Water use ⁵⁾	m ³ e depr.	7,59E+00	4,99E-03	8,44E-01	8,44E+00	1,16E-02	1,59E-02	ND	ND	ND	ND	ND	2,54E+00	ND	0,00E+00	1,07E-03	1,67E-02	8,39E-04	-4,54E-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	1,28E-06	6,97E-09	9,08E-08	1,37E-06	1,62E-08	2,13E-09	ND	ND	ND	ND	ND	2,12E-07	ND	0,00E+00	1,32E-09	4,95E-09	6,71E-10	-2,85E-07
Ionizing radiation ⁶⁾	kBq I1235e	1,13E+00	8,80E-04	2,33E-01	1,36E+00	2,05E-03	2,56E-03	ND	ND	ND	ND	ND	1,10E+01	ND	0,00E+00	1,87E-04	1,59E-03	8,24E-05	-1,42E-01
Ecotoxicity (freshwater)	CTUe	2,60E+02	1,43E-01	9,10E+00	2,70E+02	3,32E-01	5,90E-01	ND	ND	ND	ND	ND	1,53E+01	ND	0,00E+00	3,57E-02	3,32E-01	1,04E+00	-1,94E+02
Human toxicity, cancer	CTUh	3,07E-08	1,15E-11	9,12E-10	3,17E-08	2,67E-11	3,01E-11	ND	ND	ND	ND	ND	2,12E-09	ND	0,00E+00	2,75E-12	3,91E-11	1,76E-12	-2,27E-10
Human tox. non-cancer	CTUh	2,23E-06	6,54E-10	1,77E-08	2,25E-06	1,52E-09	1,31E-09	ND	ND	ND	ND	ND	6,80E-08	ND	0,00E+00	1,44E-10	2,09E-09	2,58E-10	3,80E-08
SQP ⁷⁾	-	1,15E+02	1,02E+00	6,42E+01	1,80E+02	2,37E+00	3,25E-01	ND	ND	ND	ND	ND	1,58E+02	ND	0,00E+00	1,47E-01	7,36E-01	2,06E-01	-2,33E+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 energy ⁸⁾	MJ	2,06E+01	1,38E-02	4,57E+00	2,52E+01	3,22E-02	-7,53E+00	ND	ND	ND	ND	ND	9,05E+01	ND	0,00E+00	3,13E-03	5,97E-02	1,30E-03	-6,48E+00
Renew. PER as material	MJ	0,00E+00	0,00E+00	7,77E+00	7,77E+00	0,00E+00	-7,77E+00	ND	ND	ND	ND	ND	0,00E+00	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,58E-01
Total use of renew. PER	MJ	2,06E+01	1,38E-02	1,23E+01	3,30E+01	3,22E-02	-1,53E+01	ND	ND	ND	ND	ND	9,05E+01	ND	0,00E+00	3,13E-03	5,97E-02	1,30E-03	-6,32E+00
Non-re. PER as energy	MJ	1,90E+02	1,01E+00	2,46E+01	2,16E+02	2,35E+00	-1,07E+01	ND	ND	ND	ND	ND	3,09E+02	ND	0,00E+00	2,29E-01	-7,57E+00	-6,63E+00	-2,50E+01
Non-re. PER as material	MJ	2,06E+00	0,00E+00	1,20E+01	1,41E+01	0,00E+00	-1,20E+01	ND	ND	ND	ND	ND	0,00E+00	ND	0,00E+00	0,00E+00	-1,45E+00	-6,09E-01	6,27E+00
Total use of non-re. PER	MJ	1,92E+02	1,01E+00	3,67E+01	2,30E+02	2,35E+00	-2,28E+01	ND	ND	ND	ND	ND	3,09E+02	ND	0,00E+00	2,29E-01	-9,01E+00	-7,24E+00	-1,88E+01
Secondary materials	kg	9,50E-01	4,30E-04	2,69E-01	1,22E+00	1,00E-03	6,73E-04	ND	ND	ND	ND	ND	3,53E-02	ND	0,00E+00	1,02E-04	6,84E-04	3,06E-05	7,34E-01
Renew. secondary fuels	MJ	1,41E-02	5,46E-06	1,56E-01	1,70E-01	1,27E-05	5,04E-06	ND	ND	ND	ND	ND	1,19E-04	ND	0,00E+00	1,30E-06	2,05E-05	6,11E-07	-6,50E-04
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	0,00E+00	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m ³	1,96E-01	1,49E-04	2,57E-02	2,22E-01	3,47E-04	-3,42E-04	ND	ND	ND	ND	ND	5,91E-02	ND	0,00E+00	3,07E-05	2,55E-04	-6,03E-04	-4,86E-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	2,36E+00	1,71E-03	1,38E-01	2,50E+00	3,98E-03	6,23E-03	ND	ND	ND	ND	ND	3,86E-01	ND	0,00E+00	3,97E-04	6,58E-03	3,25E-04	-7,32E-01
Non-hazardous waste	kg	1,28E+02	3,17E-02	7,79E+00	1,36E+02	7,37E-02	9,90E-01	ND	ND	ND	ND	ND	6,17E+00	ND	0,00E+00	7,44E-03	2,41E-01	8,97E-01	1,09E+01
Radioactive waste	kg	2,84E-04	2,15E-07	5,69E-05	3,41E-04	5,01E-07	6,53E-07	ND	ND	ND	ND	ND	2,40E-03	ND	0,00E+00	4,57E-08	3,93E-07	2,02E-08	-3,62E-05

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	0,00E+00	ND	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	1,43E-02	1,43E-02	0,00E+00	4,43E-01	ND	ND	ND	ND	ND	0,00E+00	ND	0,00E+00	0,00E+00	1,16E+00	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	ND	ND	ND	ND	ND	0,00E+00	ND	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	2,01E+00	ND	ND	ND	ND	ND	0,00E+00	ND	0,00E+00	0,00E+00	1,69E+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	8,46E-01	ND	ND	ND	ND	ND	0,00E+00	ND	0,00E+00	0,00E+00	7,12E-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	1,16E+00	ND	ND	ND	ND	ND	0,00E+00	ND	0,00E+00	0,00E+00	9,80E-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 CO ₂ e	1,53E+01	6,92E-02	1,81E+00	1,72E+01	1,61E-01	3,96E-01	ND	ND	ND	ND	ND	1,10E+01	ND	0,00E+00	1,61E-02	3,98E-01	2,72E-02	-2,22E+00
Ozone depletion Pot.	kg CFC ₁₁ e	1,95E-07	8,20E-10	3,57E-08	2,32E-07	1,91E-09	3,22E-10	ND	ND	ND	ND	ND	4,58E-07	ND	0,00E+00	1,82E-10	3,32E-10	9,22E-11	-1,52E-08
Acidification	kg SO ₂ e	1,80E-01	1,81E-04	5,71E-03	1,86E-01	4,22E-04	1,25E-04	ND	ND	ND	ND	ND	2,27E-02	ND	0,00E+00	4,15E-05	3,01E-04	2,28E-05	-2,07E-02
Eutrophication	kg PO ₄ ³ e	2,29E-02	4,42E-05	1,58E-02	3,87E-02	1,03E-04	8,57E-05	ND	ND	ND	ND	ND	4,62E-03	ND	0,00E+00	1,01E-05	5,02E-05	1,35E-05	-5,61E-03
POCP (“smog”)	kg C ₂ H ₄ e	1,16E-02	1,61E-05	7,98E-04	1,24E-02	3,76E-05	2,02E-05	ND	ND	ND	ND	ND	1,83E-03	ND	0,00E+00	3,72E-06	1,86E-05	4,46E-06	-1,52E-03
ADP-elements	kg Sbe	2,62E-03	1,89E-07	8,72E-06	2,63E-03	4,40E-07	1,77E-07	ND	ND	ND	ND	ND	3,25E-05	ND	0,00E+00	5,12E-08	1,79E-06	8,21E-09	-3,18E-04
ADP-fossil	MJ	1,69E+02	9,96E-01	3,32E+01	2,03E+02	2,32E+00	3,13E-01	ND	ND	ND	ND	ND	1,62E+02	ND	0,00E+00	2,26E-01	3,94E-01	9,64E-02	-2,33E+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-GHG ⁹⁾	kg CO ₂ e	1,52E+01	6,96E-02	1,79E+00	1,70E+01	1,62E-01	3,57E-01	ND	ND	ND	ND	ND	1,11E+01	ND	0,00E+00	1,62E-02	3,98E-01	2,79E-02	-2,23E+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, medium voltage, residual mix, Czech Republic, Ecoinvent, 0.76 kgCO_{2e}/kWh

Transport scenario documentation - A4 (Transport resources)

1. Market for transport, freight, lorry >32 metric ton, EURO5, 580 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	1

Installation scenario documentation - A5 (Installation resources)

1. Market group for electricity, medium voltage, Ecoinvent, 0.0178 MJ

Installation scenario documentation - A5 (Installation waste)

1. Treatment of waste paperboard, unsorted, sorting, Ecoinvent, Materials for recycling, 0.29 kg
2. Treatment of waste packaging paper, municipal incineration, Ecoinvent, 0.028 kg
3. Treatment of waste packaging paper, sanitary landfill, Ecoinvent, 0.032 kg
4. Exported Energy: Electricity, Ecoinvent, 0.056 MJ
5. Exported Energy: Electricity, Ecoinvent, 0.7 MJ
6. Exported Energy: Electricity, Ecoinvent, 0.09 MJ
7. Exported Energy: Thermal, Ecoinvent, 0.081 MJ
8. Exported Energy: Thermal, Ecoinvent, 0.96 MJ
9. Exported Energy: Thermal, Ecoinvent, 0.12 MJ

10. Treatment of waste polyethylene, for recycling, unsorted, sorting, Ecoinvent, Materials for recycling, 0.11 kg
11. Treatment of waste polyethylene, municipal incineration, Ecoinvent, 0.1 kg
12. Treatment of waste polyethylene, sanitary landfill, Ecoinvent, 0.064 kg
13. Treatment of waste wood, post-consumer, sorting and shredding, Ecoinvent, Materials for recycling, 0.043 kg
14. Treatment of waste wood, untreated, municipal incineration, Ecoinvent, 0.041 kg
15. Treatment of waste wood, untreated, sanitary landfill, Ecoinvent, 0.051 kg

Use stages scenario documentation - C1-C4 (Data source)

1. Sorting and pressing of iron scrap, Ecoinvent, Materials for recycling, 0.94 kg
2. Sorting and pressing of iron scrap, Ecoinvent, Materials for recycling, 0.14 kg
3. Sorting and pressing of iron scrap, Ecoinvent, Materials for recycling, 0.011 kg
4. Treatment of scrap steel, inert material landfill, Ecoinvent, 0.24 kg
5. Treatment of scrap steel, inert material landfill, Ecoinvent, 0.094 kg
6. Treatment of waste polyethylene, for recycling, unsorted, sorting, Ecoinvent, Materials for recycling, 0.066 kg
7. Treatment of waste polypropylene, municipal incineration, Ecoinvent, 0.13 kg
8. Exported Energy: Electricity, Ecoinvent, 0.69 MJ
9. Exported Energy: Electricity, Ecoinvent, 0.022 MJ
10. Exported Energy: Thermal, Ecoinvent, 0.95 MJ
11. Exported Energy: Thermal, Ecoinvent, 0.03 MJ
12. Treatment of waste polypropylene, sanitary landfill, Ecoinvent, 0.13 kg
13. Treatment of waste plastic, mixture, sanitary landfill, Ecoinvent, 0.042 kg
14. Treatment of waste plastic, mixture, sanitary landfill, Ecoinvent, 0.0026 kg
15. Treatment of waste aluminium, sanitary landfill, Ecoinvent, 0.0047 kg
16. Treatment of waste rubber, unspecified, municipal incineration, Ecoinvent, 0.0053 kg
17. Treatment of waste rubber, unspecified, municipal incineration, Ecoinvent, 0.0026 kg

Scenario information	Value
Scenario assumptions e.g. transportation	50 km

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 15802+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 authorised verifier acting for EPD Hub Limited

31.10.2025

