



ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

Uncoated Birch Plywood

AS Estonian Plywood



EPD program: Rakennustieto
Program operator: Rakennustieto Oy
Declaration number:
RTS_346_25

Published on 21.1.2025

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Valid until 21.1.2030

GENERAL INFORMATION

MANUFACTURER

Manufacturer	AS Estonian Plywood
Address	Jõgeva parish, Viruvere, Kase 48435, Estonia
Contact details	info@estply.com
Website	www.estply.com

EPD STANDARDS, SCOPE AND VERIFICATION

Program operator	Rakennustieto Oy, Malminkatu 16 A, 00100 Helsinki, Finland https://ymparisto.rakennustieto.fi/en/rakennustieto-epds
Reference standard	EN 15804+A2:2019 and ISO 14025
PCR and c-PCR	RTS PCR (English version, 26.8.2020) EN 16485 Round and sawn timber
Sector	Construction product
Category of EPD	Third party verified EPD
Scope of the EPD	Cradle to gate with modules C1-C4, D
EPD author	Mari Kirss, Rangi Maja OÜ
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	Sigita Židonienė Vesta Consulting UAB www.vestaconsulting.lt
Date of verification	9 th January 2024

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

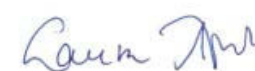
Product name	Uncoated birch plywood
Place of production	Jõgeva parish, Estonia
Period for data	2024
Averaging in EPD	No averaging
Variation in GWP-fossil for A1-A3	N/A

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 m ³
Declared unit mass	690.7 kg
Packaging mass	13.42 kg
GWP-fossil, A1-A3 (kgCO ₂ e)	1.38E+02
GWP-total, A1-A3 (kgCO ₂ e)	-1.03E+03



Jukka Seppänen
RTS EPD Committee Secretary



Laura Apilo
Managing Director

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Estonian Plywood AS or ESTPLY has the newest plywood factory in the Baltics and Scandinavia. The modern production complex with the most up to date technology in the world is located next to Jõgeva in Viruvere which is a good location for sourcing raw materials and for people living in the area to work close to home.

Estonian Plywood AS is part of the Lemeks Group, which is one of the largest industrial groups in Estonia. Among other things, the Lemeks Group is also one of the largest forestry companies, which enables the ESTPLY plywood factory to procure a sufficient amount of domestic raw materials all year round. Lemeks Grupp is a wholly Estonian company whose mission is to maximize the value of domestic timber right here in Estonia.

We mainly sell Birch plywood produced in the ESTPLY factory to Europe's largest industrial customers and distributors. ESTPLY plywood is used to make light trailers, heavy trailers, formwork for concrete work, furniture, packaging, etc.

PRODUCT DESCRIPTION

ESTPLY BIRCH plywood panel is made of cross bonded birch veneers. The outstanding strength properties makes it perfect for various kinds of demanding applications like vehicle industry, construction, and wood flooring.

Further information can be found at www.estply.com.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	0	N/A
Minerals	0	N/A
Fossil materials	8	EU
Bio-based materials	92	EU

PACKAGING RAW MATERIAL MAIN COMPOSITION*

Cardboard	2	EU
Wood	12	EU
Plastic film and other plastic packaging	<0.1	EU

* The amounts are rounded.

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

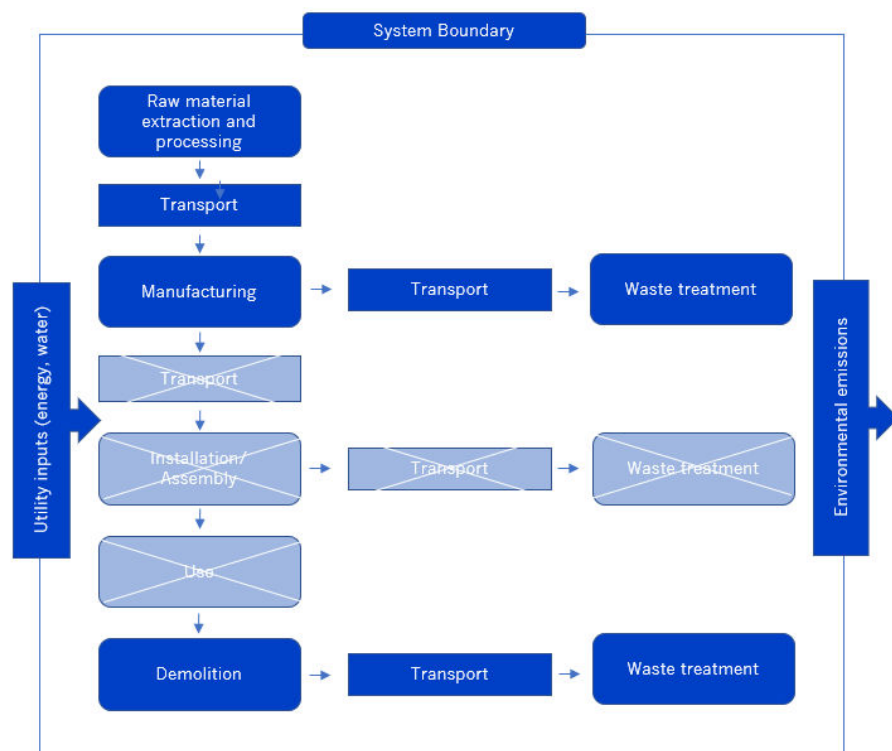
Biogenic carbon content in product, kg C	300
Biogenic carbon content in packaging, kg C	6.7

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

Modules not declared = MND. Modules not relevant = MNR

MANUFACTURING AND PACKAGING (A1-A3)

The environmental impacts considered for the product stage cover the manufacturing of raw materials used in the production as well as 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.

The factory produces coated and uncoated birch plywood. Ancillary materials and energy used in the factory have been allocated between the coated and uncoated products since they are collected on factory level.

The products are packaged using cardboard, pallets and packaging film. The mass of the packaging is 13.4 kg.

The electricity used in the factory is nuclear energy. heat used in the factory is district heat, which is fuelled by Estply's production waste (wood bark). Other wood waste

is collected and mostly sold as input for pellets, shaving. Co-product allocation has not been used.

Electricity data source and quality	Nuclear energy. Source: Ecoinvent 3.10, Region: Finland.
Specific emissions (GWP-fossil, CO₂e/kWh)	0.007 kg CO ₂ e/kWh
Heating data source and quality	Wood waste from the manufacturing process. Source: Ecoinvent 3.10, Region: global.
Specific emissions (GWP-fossil, CO₂e/kWh)	0.001 kg CO ₂ e/kWh

TRANSPORT AND INSTALLATION (A4-A5)

A4 and A5 have not been declared.

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)

The EOL scenarios are applicable to Europe.

Consumption of energy in demolition process is assumed to be negligible. It is assumed that 100 % of the waste is collected as a wood waste and that there is no mass loss during the use of the product. Therefore, the end-of-life product is assumed to have the same weight as the declared product.

The product is considered to be 100 % collected for energy recovery. Transportation distance to the closest incineration facilities is assumed to be 50 km and the transportation method is assumed as lorry, which is the most common option.

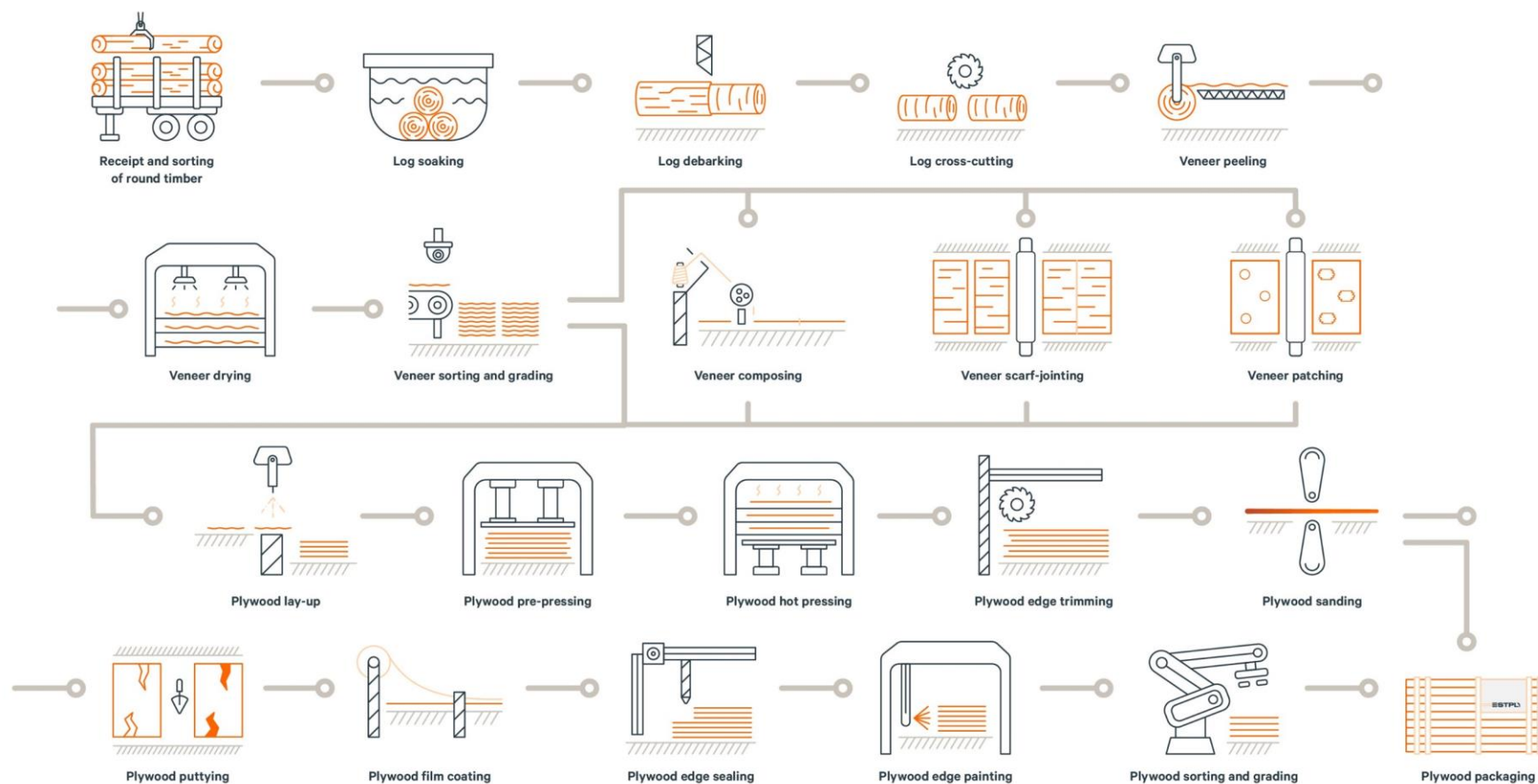
In stage D it is assumed that in the end of life the product is used as a substitution of virgin materials in heat and electricity production.

The efficiency of the incineration process in C3 is assumed to be 83%. 11% of the energy goes towards electricity generation and 73% towards heat generation (Eriksson O., et al., 2017).

EOL mass of product		690.7 kg
Collection	Collected separately	690.7 kg
	Collected with mixed waste	0 kg
Recovery	Re-use	0 kg
	Recycling	0 kg
	Incineration with energy recovery	690.7 kg
Disposal	Incineration without energy recovery	0 kg
	Landfill	0 kg
Total		690.7 kg
Scenario assumptions e.g. transportation		End-of-life product is transported with an average lorry

MANUFACTURING PROCESS

PLYWOOD MANUFACTURING PROCESS



ESTPL

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.

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	N/A
Ancillary materials	Allocated by mass or volume
Manufacturing energy and waste	Allocated by mass or volume

AVERAGES AND VARIABILITY

Type of average	No averaging
Averaging method	Not applicable
Variation in GWP-fossil for A1-A3	0 %

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

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator for EPD Hub V3. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. The EPD Generator uses Ecoinvent v3.10 and One Click LCA databases as sources of environmental data. The EN 15804 reference package based on EF 3.1.

ENVIRONMENTAL IMPACT DATA (PER 1 M3)

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total ¹⁾	kg CO ₂ e	-2.92E+03	2.70E+01	1,88E+03	-1,01E+03	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+00	3.72E+00	1.14E+03	0.00E+00	-1.47E+01
GWP – fossil	kg CO ₂ e	9.73E+01	2.70E+01	1,34E+01	1,38E+02	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+00	3.72E+00	1.07E+01	0.00E+00	-1.45E+01
GWP – biogenic	kg CO ₂ e	-3.02E+03	0.00E+00	1,87E+03	-1,15E+03	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+00	0.00E+00	1.13E+03	0.00E+00	0.00E+00
GWP – LULUC	kg CO ₂ e	9.25E-01	1.08E-02	4,76E-02	9,83E-01	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+00	1.49E-03	2.63E-03	0.00E+00	-1.91E-01
Ozone depletion pot.	kg CFC-11e	1.11E-05	3.99E-07	2,81E-06	1,43E-05	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+00	5.49E-08	1.20E-07	0.00E+00	-2.68E-07
Acidification potential	mol H ⁺ e	1.43E+00	1.11E-01	4,37E-01	1,98E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+00	1.27E-02	1.11E-01	0.00E+00	-6.91E-02
EP-freshwater ²⁾	kg Pe	2.07E-02	2.42E-04	9,57E-04	2,19E-02	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+00	3.40E-05	1.48E-04	0.00E+00	-3.32E-03
EP-marine	kg Ne	2.82E-01	3.44E-02	2,03E-01	5,19E-01	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+00	4.12E-03	5.33E-02	0.00E+00	-2.17E-02
EP-terrestrial	mol Ne	3.09E+00	3.80E-01	2,26E+00	5,74E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+00	4.54E-02	5.68E-01	0.00E+00	-2.29E-01
POCP (“smog”) ³⁾	kg NMVOCe	1.92E+00	1.48E-01	5,55E-01	2,63E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+00	1.87E-02	1.43E-01	0.00E+00	-1.31E-01
ADP-minerals & metals ⁴⁾	kg Sbe	3.44E-03	7.39E-05	8,33E-05	3,59E-03	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+00	1.04E-05	2.20E-05	0.00E+00	-4.17E-05
ADP-fossil resources	MJ	8.67E+03	3.89E+02	3,70E+03	1,28E+04	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+00	5.40E+01	9.51E+01	0.00E+00	-2.54E+02
Water use ⁵⁾	m ³ e depr.	7.46E+01	1.85E+00	4,74E+01	1,24E+02	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+00	2.59E-01	2.25E+01	0.00E+00	-6.08E+00

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.

USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy ⁸⁾	MJ	1.79E+04	5.07E+00	1.74E+03	1.96E+04	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+00	7.09E-01	-1.17E+04	0.00E+00	3.77E+03
Renew. PER as material	MJ	1.51E+04	0.00E+00	-9.28E+03	5.77E+03	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+00	0.00E+00	-5.64E+03	0.00E+00	0.00E+00
Total use of renew. PER	MJ	3.29E+04	5.07E+00	-7.54E+03	2.54E+04	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+00	7.09E-01	-1.73E+04	0.00E+00	3.77E+03
Non-re. PER as energy	MJ	6.12E+03	3.90E+02	3.67E+03	1.02E+04	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+00	5.40E+01	9.52E+01	0.00E+00	-2.54E+02
Non-re. PER as material	MJ	2.55E+03	0.00E+00	1.27E+01	2.57E+03	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+00	0.00E+00	-3.34E+03	0.00E+00	0.00E+00
Total use of non-re. PER	MJ	8.68E+03	3.90E+02	3.68E+03	1.27E+04	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+00	5.40E+01	-2.46E+03	0.00E+00	-2.54E+02
Secondary materials	kg	2.01E+00	1.66E-01	7.08E-01	2.88E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+00	2.30E-02	2.23E-01	0.00E+00	0.00E+00
Renew. secondary fuels	MJ	1.50E-02	2.07E-03	4.33E+00	4.35E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+00	2.92E-04	5.27E-04	0.00E+00	-2.16E-03
Non-ren. secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of net fresh water	m ³	2.00E+00	5.56E-02	1.34E+00	3.40E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+00	7.82E-03	1.38E-01	0.00E+00	-1.67E-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+01	6.58E-01	2.14E+00	2.32E+01	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+00	9.20E-02	4.47E+00	0.00E+00	-6.32E-01
Non-hazardous waste	kg	4.59E+02	1.22E+01	3.88E+01	5.10E+02	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+00	1.71E+00	7.09E+02	0.00E+00	-2.89E+01
Radioactive waste	kg	5.69E-03	8.36E-05	4.65E-02	5.23E-02	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+00	1.17E-05	2.73E-05	0.00E+00	-9.43E-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	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy rec	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+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	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+00	0.00E+00	5.64E+03	0.00E+00	0.00E+00

ENVIRONMENTAL IMPACTS – FRENCH NATIONAL COMPLEMENTS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
ADP-elements	kg Sbe	3.41E-03	7.20E-05	8.59E-05	3.57E-03	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+00	1.01E-05	1.82E-05	0.00E+00	-4.10E-05
Hazardous waste disposed	kg	2.05E+01	6.58E-01	2.14E+00	2.32E+01	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+00	9.20E-02	4.47E+00	0.00E+00	-6.32E-01
Non-haz. waste disposed	kg	4.59E+02	1.22E+01	3.88E+01	5.10E+02	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+00	1.71E+00	7.09E+02	0.00E+00	-2.89E+01
Air pollution	m³	1.57E+05	5.89E+03	3.98E+04	2.03E+05	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+00	8.16E+02	3.96E+03	0.00E+00	-5.13E+03
Water pollution	m³	4.54E+03	1.79E+02	5.82E+02	5.31E+03	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+00	2.48E+01	5.57E+01	0.00E+00	-1.69E+02

ENVIRONMENTAL IMPACTS – BEPALINGSMETODE, NETHERLANDS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Shadow price	€	9.00E+02	1.37E+01	1.83E+01	9.32E+02	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+00	1.89E+00	1.63E+01	0.00E+00	-9.30E+00
Terrestrial ecotoxicity	DCB eq	3.82E+01	6.15E-01	1.71E+00	4.06E+01	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+00	8.51E-02	9.53E-01	0.00E+00	-4.68E-01
Seawater ecotoxicity	DCB eq	1.82E+06	3.00E+04	2.84E+04	1.88E+06	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+00	4.17E+03	4.09E+04	0.00E+00	-2.04E+04
Freshwater ecotoxicity	DCB eq	3.70E+02	5.66E+00	6.34E+00	3.82E+02	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+00	7.86E-01	7.41E+00	0.00E+00	-4.12E+00
Human ecotoxicity	DCB eq	6.52E+03	9.58E+01	1.23E+02	6.74E+03	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+00	1.33E+01	1.20E+02	0.00E+00	-6.56E+01
EEE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+00	0.00E+00	6.20E+02	0.00E+00	0.00E+00
ETE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+00	0.00E+00	4.98E+03	0.00E+00	0.00E+00
ADP Fossil Fuels	kg Sbe	4.17E+00	1.87E-01	1.78E+00	6.14E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+00	2.60E-02	4.58E-02	0.00E+00	-1.22E-01

ENVIRONMENTAL IMPACTS PER 1 KG OF PRODUCT

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total	kg Sbe	-4.23E+00	3.91E-02	2.72E+00	-1.46E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+00	5.39E-03	1.65E+00	0.00E+00	-2.13E-02
GWP – fossil	kg	1.41E-01	3.91E-02	1.94E-02	2.00E-01	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+00	5.39E-03	1.55E-02	0.00E+00	-2.10E-02
GWP – biogenic	kg	-4.37E+00	0.00E+00	2.71E+00	-1.66E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+00	0.00E+00	1.64E+00	0.00E+00	0.00E+00
ADP - minerals & metals	m³	4.98E-06	1.07E-07	1.21E-07	5.20E-06	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+00	1.51E-08	3.19E-08	0.00E+00	-6.04E-08
ADP- fossil	m³	1.26E+01	5.63E-01	5.36E+00	1.85E+01	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+00	7.82E-02	1.38E-01	0.00E+00	-3.68E-01
Water use	m3e depr.	1.08E-01	2.68E-03	6.86E-02	1.80E-01	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+00	3.75E-04	3.26E-02	0.00E+00	-8.80E-03
Secondary materials	kg	2.91E-03	2.40E-04	2.72E+00	-1.46E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.0E+00	3.33E-05	3.23E-04	0.00E+00	0.00E+00
Biogenic carbon in product (A3)	kg C	N/A	N/A	4.34E-01	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Biogenic carbon in packaging (A3)	kg C	N/A	N/A	9.70E-03	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A