epd-norway
Global Program Operator

Environmental product declaration

In accordance with ISO 14025, ISO 21930 and EN 15804+A2

A specific EPD from Derome for:

Bulk wood pellets

Owner of the declaration:
Derome Timber AB
Bjurumsvägen 14
432 68 Veddige
Sweden
www.derome.se

Program holder and publisher
The Norwegian EPD Foundation

Declaration number:
NEPD-11956-11918

Issue date:
06.08.2025
Valid to:
06.08.2030

Product category /PCR:
NPCR 015, Part B for wood and wood-based products

EPD Software:
This EPD is based on IVL EPD Generator for the Sawmill products (NEPDT26) and follow the approved background database verification approach.

The Norwegian EPD Foundation

ivl

Derome

General information

Product:
Bulk wood pellets

Program Operator:
The Norwegian EPD Foundation
Post Box 5250 Majorstuen, 0303 Oslo, Norway
Phone: +47 23 08 80 00
Email: post@epd-norge.no

Declaration Number:
NEPD-11956-11918

This declaration is based on Product Category Rules:
CEN Standard EN 15804 A2 serves as core PCR and PCR Part B for wood and wood-based products for use in construction (NPCR 015 07.10.2021).

Statement of liability:
The owner of the declaration shall be liable for the underlying information and evidence. EPD Norway shall not be liable with respect to manufacturer, life cycle assessment data and evidences.

Declared unit:

1 ton bulk wood pellets

Declared unit with option:
1 ton bulk wood pellets
A1-A5, B6 (only GWP-biogenic)

Functional unit:
—

Verification:
Independent verification of the declaration and data, according to ISO14025:2010.

☐ Internal ☒ External

Third party verifier:

Callum Hill
JCH Industrial Ecology Ltd (www.jchie.co.uk)
Independent verifier approved by EPD Norway

Owner of the declaration and manufacturer:
Derome Timber AB
Contact person: Elias Brag
Phone: +46 (0)340 666410
Email: info@derome.se
Web: www.derome.se

Place of production:
Kinnared
Sweden

Management system etc:
FSC DNV-COC-001567 & DNV-CW-001567
PEFC DNVSE-PEFC-COC-211

Organisation no:
SE 556550-6960

Issue date:
06.08.2025

Valid to:
06.08.2030

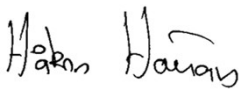
Year of study:
2022

Comparability:
EPD of construction products may not be comparable if they not comply with EN 15804 and seen in a building context.

The EPD has been worked out by:

Elias Brag
Project Manager, Derome Timber AB

Approved by:



Håkon Hauan
Managing Director EPD Norway

Product

Product description:

Bulk wood pellets are intended for use in pellet boilers to produce heating.The average moisture ratio of the declared products is < 10 % (EN 14298).

Product specification:

Wood pellets are produced from saw dust and wood shavings.

Materials, product	kg/ton	weight-%
Spruce/whitewood	1000	100%
Sum	1000	100%

Packaging materials	kg/m^3	weight-%
Sum	0,00	0%

Technical data:

The wood pellets have a moisture content of < 10 % and a diameter of 8 mm. The calorific value is 17 280 MJ/ton.

The wood pellets conform with Solid biofuels – Fuel specifications and classes – Part 2: Graded wood pellets (ISO 17225-2:2021).

The raw dry mass for spruce is 384 kg/m3 as Swedish average and used here to calculate biogenic carbon content and the delivery density including water according to the

Market:

Main markets are Sweden and Northern Europe.

Reference service life:

Not relevant.

Use QR code for **fact sheet** on Swedish wood products.

LCA: Calculation rules

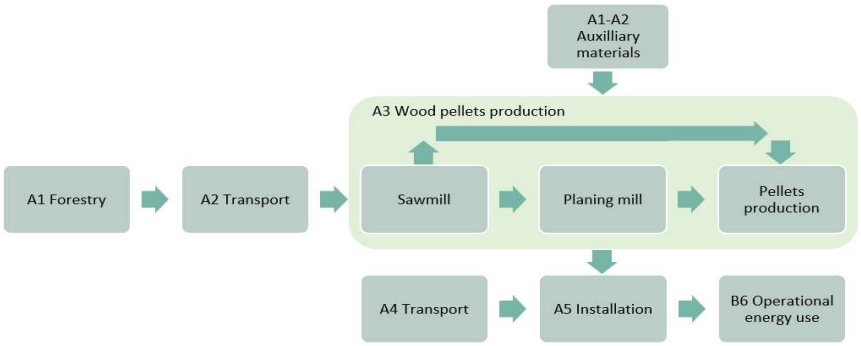
Declared unit:

1 ton bulk wood pellets

System boundary:

Flow chart over production (A3) of the declared product and all other modules is shown below. Modules A4, A5 and B6 are further explained in the scenario section.

Figure 1 Declared product manufacturing and transport to a customer and the remaining lifecycle.



Data quality:

Specific LCA data is used for the wood pellets production. Specific LCA data is used for the saw dust and wood shavings used as raw material. Representative generic LCA data is used for the forestry. Generic upstream database data are used for energy wares and small amount of auxiliary materials (oils, fats, water) that are mainly from ecoinvent 3.10. LCA data for diesel is based on European average (6% biobased components).

Cut-off criteria:

All major raw materials and all the essential energy used are included. All production process are included.

Allocation:

The allocation is made in accordance with the provisions of EN15804. The saw dust and shavings used for wood pellets production have the same impact as the main product of the sawmill / planing mill, including its upstream impact from previous processes. A conservative approach is used for the co-products, the proportion of the raw material that is cutter shavings (50%) are accounted for the impact from all process steps: sawing, timber dryers and planing. A conservative approach (double accounting) is used for transport (module A2) of round timber to the sawmill based on economic allocation factors as outlined in cPCR EN16485. A conservative economic allocation approach is used for forestry products, where no impact is allocated to the tops and branches (GROT), except forestry operations aimed for GROT (forwarding and shipping). Indicator result on potential soil quality (SQP) is assessed based on national characterisation factors for Swedish forestry (Horn et al 2021).

Calculation of biogenic carbon content:

Sequestration (module A1) and emissions of biogenic carbon are calculated according to EN16485:2014/EN15804+A2 and EN16449:2014, where the net biogenic carbon cycle A to B is zero (i.e. carbon dioxide neutral). In this EPD, the amount of biogenic carbon stored in the product (module A3) is reported additionally (according to EN 15804 A2) as biogenic carbon stored in the product (see table 'Resource use'). For biogenic carbon in all other modules after A3, the carbon in the products is assigned to the module where the emission occurs in order to support the modularity principle in EN15804, so the net result is zero. B6 is used to balance out the biogenic carbon for field, meaning the module that represents this products EoL (end of life). The scenario settings for Stage C is out of scope for a fuel.

LCA: Scenarios and additional technical information

The following information below describe the scenarios in the different modules of the EPD.

Transport from production place to user (A4)

Type	Load factor, % (90+0%)	Type of vehicle	Distance km	Fuel		Value (l/t)
Semi-trailer	45%	TT/AT 28-34 + 34-40t	300	0,027	l/tkm	8,2

A4: The transportation is reported as 300 km and can be used as factor to estimate the actual distance to the specific object.

Assembly (A5)

	Unit	Value
Material loss	%	0
Front loader, diesel	kWh	5,8E-01

A5: At the construction site, 4 minutes of work with front loader is assumed

Use (B1)

	Unit	Value
MND		

Maintenance (B2)/Repair (B3)

	Unit	Value
MND		

Replacement (B4)/Refurbishment (B5)

	Unit	Value
MND		

The declared product is not assumed to be exposed for wether and for that reason no mainatance is needed during the service life.

Operational energy (B6) and water consumption (B7)

	Unit	Value
Emissions of biogenic carbon	kg CO2 e	1577

In module B6, only the emissions of biogenic carbon is declared to balance out the biogenic carbon throughout the life cycle of the wood pellets. Due to varying emissions during usage in different pellet boilers, the emissions related to incinerating wood pellets and the energy produced thereby is not declared in this module. Reference is made to generic datasets for incineration of wood in pellets boilers, in accordance with EN15804:2012+A2:2019. No operational water use.

The following datasets are applicable for usage scenarios in module B6:
Usage - pellet boiler 20-120 kW; 20-120 kW OEKOBAU.DAT (oekobaudat.de)
Usage - pellet boiler < 20 kW; < 20 kW OEKOBAU.DAT (oekobaudat.de)

End of Life (C1, C3, C4) - base scenario*

	Unit	Value
MND		

Transport to waste processing (C2)

Type	Load factor, % (90+0%)	Type of vehicle	Distance km	Fuel	Value (l/t)
MND					

Benefits and loads beyond the system boundaries (D) - base scenario*

	Unit	Value
MND		

Additional technical information

No additional information given.

LCA: Results

The LCA results are presented for the declared unit defined on page 2 of the EPD document. EN 15804 exists in two versions and version 2 is the latest.

System boundaries: **X**=included, **MND**= module not declared, **MNR**=module not relevant.

Product stage			Construction process stage		Use stage							End of life stage				Beyond the system boundary
Raw materials	Transport	Manufacturing	Transport	Construction, installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
x	x	x	x	x	MND	MND	MND	MND	MND	x	MND	x	x	x	x	x
SE	SE	SE	SE	SE	—	—	—	—	—	GLO	—	—	—	—	—	—

Core environmental impact, version A2 and EF 3.1 — mandatory indicators

Parameter	Unit	A1-3	A4	A5	B6
GWP-total	kg CO_2 e	-1,51E+03	2,94E+01	1,90E-01	1,58E+03
GWP-fossil	kg CO_2 e	6,88E+01	2,94E+01	1,90E-01	-
GWP-biogenic	kg CO_2 e	-1,58E+03	3,95E-01	2,55E-03	1,58E+03
GWP-LULUC	kg CO_2 e	2,54E-01	2,07E-02	1,34E-04	-
GWP-IOBC/GHG [1)]	kg CO_2 e	6,93E+01	2,94E+01	1,90E-01	-
ODP	kg CFC11 eq.	1,17E-06	5,98E-07	3,86E-09	-
AP	mol H^+ eq.	1,11E+00	2,86E-01	1,84E-03	-
EP-freshwater	kg P eq.	8,62E-03	4,85E-04	3,13E-06	-
EP-marine	kg N eq.	5,47E-01	1,41E-01	9,08E-04	-
EP-terrestial	mol N eq.	5,65E+00	1,48E+00	9,53E-03	-
POCP	kg NMVOC eq.	1,53E+00	4,41E-01	2,85E-03	-
ADP-m&m [2)]	kg Sb eq.	5,98E-04	9,07E-06	5,85E-08	-
ADP-fossil [2)]	MJ	9,90E+02	3,74E+02	2,42E+00	-
WDP	m^3	2,12E+01	1,04E+00	6,70E-03	-

GWP-total: *Global Warming Potential;* ***GWP-fossil:*** *Global Warming Potential fossil fuels;* ***GWP-biogenic:*** *Global Warming Potential biogenic;* ***GWP-LULUC:*** *Global Warming Potential land use and land use change;* ***ODP:*** *Depletion potential of the stratospheric ozone layer;* ***AP:*** *Acidification potential, Accumulated Exceedance;* ***EP-freshwater:*** *Eutrophication potential, fraction of nutrients reaching freshwater end compartment;* ***EP-marine:*** *Eutrophication potential, fraction of nutrients reaching freshwater end compartment;* ***EP-terrestial:*** *Eutrophication potential, Accumulated Exceedance;* ***POCP****: Formation potential of tropospheric ozone;* ***ADP-m&m****: Abiotic depletion potential for non-fossil resources (****minerals and metals****);* ***ADP-fossil:*** *Abiotic depletion potential for fossil resources;* ***WDP:*** *Water deprivation potential, deprivation weighted water counsumption*

Note 1 *– This additional indicator* ***GWP-GHG/IOBC*** *is also referred to as* ***GWP-GHG*** *in the context of Swedish and Finish legislation.*
Disclaimer 2 – The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.

Additional environmental impact, version A2 & EF 3.1 — addition of non-mandatory indicators with poor reliability

Parameter	Unit	A1-3	A4	A5	B6
PM [2)]	Disease incidence	3,10E-05	8,14E-06	5,25E-08	-
IRP [1)]	kBq U235 eq	4,06E+00	1,80E-01	1,16E-03	-
ETP-fw [2)]	CTUe	5,60E+03	8,67E+02	5,59E+00	-
HTP-c [2)]	CTUh	6,93E-08	3,24E-09	2,09E-11	-
HTP-nc [2)]	CTUh	5,55E-06	6,89E-07	4,45E-09	-
SQP [2)]	Dimensionless	1,28E+05	3,87E+01	2,49E-01	-

PM: *Particulate matter emissions;* ***IRP:*** *Ionising radiation, human health;* ***ETP-fw:*** *Ecotoxicity (freshwater);* ***ETP-c:*** *Human toxicity, cancer effects;* ***HTP-nc:*** *Human toxicity, non-cancer effects;* ***SQP:*** *Land use related impacts / soil quality*

Disclaimer 1 – 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.
Disclaimer 2 – The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.

Environmental impact, version A1 & CF based on CML 2012

Parameter	Unit	A1-3	A4	A5	B6
GWP-TOT	kg CO_2 e	-1,51E+03	2,94E+01	1,90E-01	1,58E+03
GWP-IOBC*	kg CO_2 e	6,78E+01	2,90E+01	1,87E-01	-
ODP	kg CFC11 e	8,20E-07	4,76E-07	3,07E-09	-
POCP**	kg C_2H_4 e	1,02E-01	2,90E-02	1,87E-04	-
AP	kg SO_2 e	6,51E-01	2,00E-01	1,29E-03	-
EP	kg PO_4^{3-} e	4,21E-01	8,81E-02	5,68E-04	-
ADPE	MJ	5,28E-04	9,07E-06	5,85E-08	-
ADPM	kg Sb e	8,78E+02	3,72E+02	2,40E+00	-

GWP Global warming potential; **ODP** Depletion potential of the stratospheric ozone layer; **POCP** Formation potential of tropospheric photochemical oxidants; **AP** Acidification potential of land and water; **EP** Eutrophication potential; **ADPM** Abiotic depletion potential for non fossil resources; **ADPE** Abiotic depletion potential for fossil resources.
***** This indicator is also referred to as **GWP-GHG** in Swedish legislation and used in the Finish and Swedish mandatory generic database for building climate declarations.
**LCI origin from GaBi database separates NOx into NO and NO_2, in combination with the applied characterization model with a marginal approach for POCP based on highly polluted ambient air, can result in a negative characterization factor for nitric oxide.

Resource use, version A1+A2 and EF 3.1 — mandatory indicators

Parameter	Unit	A1-3	A4	A5	B6
RPEE	MJ	2,96E+03	8,26E+00	5,33E-02	-
RPEM	MJ	1,66E+04	0,00E+00	0,00E+00	-
TPE	MJ	1,95E+04	8,26E+00	5,33E-02	-
NRPE	MJ	8,22E+02	3,74E+02	2,42E+00	-
NRPM	MJ	0,00E+00	0,00E+00	0,00E+00	-
TRPE	MJ	8,22E+02	3,74E+02	2,42E+00	-
SM	kg	0,00E+00	0,00E+00	0,00E+00	-
RSF	MJ	0,00E+00	0,00E+00	0,00E+00	-
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	-
W	m^3	1,67E-01	2,42E-02	1,56E-04	-

RPEE Renewable primary energy resources used as energy carrier; **RPEM** Renewable primary energy resources used as raw materials; **TPE** Total use of renewable primary energy resources; **NRPE** Non renewable primary energy resources used as energy carrier; **NRPM** Non renewable primary energy resources used as materials; **TRPE** Total use of non renewable primary energy resources; **SM** Use of secondary materials; **RSF** Use of renewable secondary fuels; **NRSF** Use of non renewable secondary fuels; **W** Use of net fresh water.
Energy stored as material in the packaging materials is direct balanced out in the module it arrise and stored in the product is balanced out over the life cycle, exactly the same as stored biogenic carbon is reported in GWP.

End of life — Waste, version A1+A2 and EF 3.1 — mandatory indicators

Parameter	Unit	A1-3	A4	A5	B6
HW	kg	2,07E+00	2,35E-01	1,52E-03	-
NHW	kg	8,76E+00	0,00E+00	0,00E+00	-
RW	kg	1,35E-03	0,00E+00	0,00E+00	-

HW Hazardous waste disposed; **NHW** Non hazardous waste disposed; **RW** Radioactive waste disposed

End of life — Output flow, version A1+A2 and EF 3.1 — mandatory indicators

Parameter	Unit	A1-3	A4	A5	B6
CR	kg	0,00E+00	0,00E+00	0,00E+00	-
MR	kg	3,39E-01	0,00E+00	0,00E+00	-
MER	kg	1,42E-01	0,00E+00	0,00E+00	-
EEE	MJ	0,00E+00	0,00E+00	0,00E+00	-
ETE	MJ	0,00E+00	0,00E+00	0,00E+00	-

CR Components for reuse; **MR** Materials for recycling; **MER** Materials for energy recovery; **EEE** Exported electric energy; **ETE** Exported thermal energy

Information describing the biogenic carbon content at the factory gate

Biogenic carbon content	Amount	Unit/DU
Biogenic carbon content in product	431	kg C

44/12 is the ratio between the molecular mass of CO_2 and C molecules.

Additional requirements

The GWP total indicator result reported below is the same result as the indicator value as for GWP-IOBC/GHG.

The reported LCA result in this EPD and the core process in A3 use this approch:

Location based electricity mix from the use of electricity in manufacturing

National electricity grid	Data source	Foreground /core [kWh]	GWPtotal [kg CO_2e/kWh]	Sum [kg CO_2e]
Electricity grid mix Sweden	ecoinvent	229	0,020	4,655

The GWP result above is based on national production mix from import, low voltage (production of transmission lines, in addition to direct emissions and losses in grid) of applied electricity bought in the core manufacturing process in module A3 per declared unit.

An alternative figure for electricity used in the core process are reported here that can be used to recalulate the result A1-3:

Market-based use of electricity in the manufacturing phase

Electricity source	Data source	Foreground /core [kWh]	GWPtotal [kg CO_2e/kWh]	Sum [kg CO_2e]
Electricity in A3 are using residual mix Sweden	ecoinvent	229	0,035	8,044

The GWP result above is based on:

- ☑ Guarantee of origin (GoO) electricity used
- ☐ National residual mix electricity accourding to Grexel/AIB

Data used in the upstream system that use source of origion are listed below:

No such data are used.

Hazardous substances

- ☑ The product contains no substances given by the REACH Candidate list
- ☐ The product contains substances given by the REACH Candidate list or the Norwegian priority list that are less than 0,1 % by
- ☐ The product contain dangerous substances, more then 0,1% by weight, given by the REACH Candidate List, see table.
- ☐ The product contains no substances given by the REACH Candidate list or the Norwegian priority list.
- ☐ The product is classified as hazardous waste (Avfallsforskiften, Annex III), see table below.

Name	CAS no.	Amount
—	—	—

Indoor environment

Not relevant

Carbon footprint

Carbon footprint according to ISO 14067 has not been worked out for the product.

Bibliography

ISO 14025:2006	Environmental labels and declarations - Type III environmental declarations - Principles and procedures.
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