Environmental Product Declaration

In accordance with ISO 14025:2006 and
EN 15804:2012+A2:2019/AC:2021 for:

Classic Sawn

by

Stora Enso

Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
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An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com

EPD of multiple products, based on the average results of the product group.

General information

Programme information

Programme:	The International EPD® System
Address:	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
Website:	www.environdec.com
E-mail:	info@environdec.com

Accountabilities for PCR, LCA and independent, third-party verification
Product Category Rules (PCR)
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product Category Rules (PCR): *PCR 2019:14, v1.3.4 Construction products (EN 15804:A2). Sub-PCR- 006, Wood and wood-based products for use in construction (EN 16485). UN CPC 316 Builders' joinery and carpentry of wood*
PCR review was conducted by: *The Technical Committee of the International EPD® System. See www.environdec.com/TC for a list of members. Review chair: Claudia A. Peña, University of Concepción, Chile. The review panel may be contacted via the Secretariat www.environdec.com/contact.*
Life Cycle Assessment (LCA)
LCA accountability: *Product Sustainability, Stora Enso – Division Wood Products*
Third-party verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006 via: ☒ EPD verification by EPD Process Certification* Third-party verification: *SGS Italia SpA* is an approved certification body accountable for third-party verification Third-party verifier is accredited by: *ACCREDIA, Accreditation Number n° 0005VV* *For EPD Process Certification, an accredited certification body certifies and reviews the management process and verifies EPDs published on a regular basis. For details about third-party verification procedure of the EPDs, see GPI.
Procedure for follow-up of data during EPD validity involves third party verifier: ☐ Yes ☒ No

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

Please note: *EPDs within the same product category but registered in different EPD programmes, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.*

Company information

Owner of the EPD: Stora Enso
Contact: Product Sustainability – Division Wood Products (*sustainability.wp@storaenso.com*)
Description of the organisation: Stora Enso is the leading provider of renewable products in packaging, biomaterials, and wooden construction, and one of the largest private forest owners in the world. We create better choices for society by accelerating the transition to a circular bioeconomy.

The Wood Products division is the largest sawn wood producer in Europe and a leading provider of renewable wood-based solutions for the construction industry. Our growing Building Solutions business offers building concepts to support low-carbon construction and sustainable designs. We develop digital tools to simplify the designing of building projects with wood. We also offer applications for windows, doors and for packaging industries, and our pellets provide a sustainable heating solution.

All our mills run an integrated management system, which is certified in accordance with Chain of Custody (FSC® and/or PEFC), quality management (ISO 9001), environmental management (ISO 14001), health and safety (ISO 45001), and energy management (ISO 50001) requirements.

Product-related or management system-related certifications:
ISO 9001:2015 Quality Management System
ISO 14001:2015 Environmental Management System
ISO 45001:2018 Occupational Health and Safety Management System
ISO 50001:2018 Energy Management System
FSC® and PEFC Chain of Custody multi-site certificates
Due Diligence System standard (FSC® Certified Wood, PEFC, Sustainable Biomass Program)

Name and location of production site(s):

Mill name	Location
Stora Enso Timber AB / Ala Sawmill	Industrivägen 7, 82020 Ljusne, Sweden
UAB Stora Enso Lietuva / Alytus Sawmill	Naujoji g. 134, 62175 Alytus, Lithuania
Stora Enso Wood Products GmbH / Brand Mill	Brand 44, AT-3531 Brand, Austria
Stora Enso WP Bad St. Leonhard / Bad St. Leonhard Sawmill	Wisperndorf 4, 9462 Bad St. Leonhard, Austria
Stora Enso Timber AB / Gruvön Mill	Timmervägen 2, 66433 Grums, Sweden
Stora Enso Oyj / Honkalahti Sawmill	Haukilahdentie 5, 54100 Joutseno, Finland
Stora Enso Eesti AS / Imavere Mill	EE-72 401 Imavere, Estonia
AS Stora Enso Latvija / Launkalne Sawmill	Krogzemji Valka, LV-4718 Launkalne, Smiltene County Latvia
Stora Enso Wood Products Sp. z.o.o. / Murow sawmill	Wolnosei 4, PL-46030 Murow, Poland
Stora Enso Wood Products Planá s.r.o / Planá Sawmill	Tachovská 824, 34815 Planá, Czech Republic
Stora Enso Oyj / Uimaharju Sawmill	Uimaharjun tehtaantie 1, 81280 Joensuu, Finland
Stora Enso Oyj / Varkaus Sawmill	Ahlströminkatu 39, FI-78201 Varkaus, Finland
Stora Enso Veitsiluoto Oy / Veitsiluoto Sawmill	Rivikarintie 69, FI-94830 Kemi, Finland
Stora Enso Wood Products GmbH / Ybbs Mill	Bahnhofstrasse 31, AT-3370 Ybbs, Austria
Stora Enso Wood Products Zdirec s.r.o / Zdirec Sawmill	Nádrazní 66, 58263 Zdírec and Doubravou, Czech Republic

This EPD covers 100% of the Classic Sawn by Stora Enso production (volume). Life Cycle Impact Assessment results are weighted averages of the production volumes of the reference year of data.

Product information

Product name: Classic Sawn by Stora Enso.

Product identification: Classic Sawn by Stora Enso covers an extensive range of sawn timber grades. We refer to the technical description on page 9 and the additional information link provided on this page. Classic Sawn by Stora Enso is produced and placed on the market according to EN 14081-1:2016+A1:2019.

Product description: Stora Enso provides an extensive range of standard and special pine and spruce timber grades. With sawmills across Europe, Stora Enso supplies quality raw materials for wood construction that are fully compliable with our other wood product offerings. Manufacturing processes are designed for different customer needs and are continuously improving. Our units utilise the most modern technology to select the best rough and sawn pine timber for any use. The average density 460 kg/m^3 of Classic Sawn by Stora Enso is based on the dry-fresh densities of the wood species spruce and pine (391 kg/m^3 and 403 kg/m^3 respectively), and the moisture content average (17%) of the products. 62% of the wood log raw material in 2023 is spruce and 38% is pine.

UN CPC code: 316 Builders' joinery and carpentry of wood

Product sustainability: Stora Enso is at the forefront of the global megatrend calling for fossil-free materials and new applications for renewable and innovative materials. We know the origin of all the wood we use: 100% comes from sustainable sources. We use various tools to ensure this, including forest certification and third-party traceability systems. We always ensure that the forests we harvest wood from are duly regenerated

Product market: Wood constructions, packaging and joinery primarily in Europe, also globally.

Additional information about the product, it's application, technical details etc. can be accessed via Sawn wood - Wood products | Stora Enso .

LCA information

Declared unit: 1 m³ of Classic Sawn by Stora Enso of 62% spruce and 38% pine with a moisture content of 17%.
Reference service life: The reference service life (RSL) is understood as the period of time until the structure is replaced, rebuild, renovated or restored. Wood products can reach over 100 years' service life in service classes 1 and 2.
Time representativeness: Data for the study was collected from the production sites and represents the year 2023. This data includes raw material supply, transport distances, fuels, energy consumption, packaging, produced Classic Sawn by Stora Enso, by-products and waste.
Database used: ecoinvent 3.10 (September 2024)
LCA software used: SimaPro 10.1.

Description of system boundaries:
Cradle to gate with options, modules C1–C4, module D and with optional modules (A1–A3 + C + D and additional modules). Infrastructure/capital goods have been excluded in upstream, core and downstream processes, where feasible.

Target group: business to business and business to consumers

Allocation: Environmental impact from forestry operations is allocated to the roundwood only and nothing to forestry residues such as branches and tops.

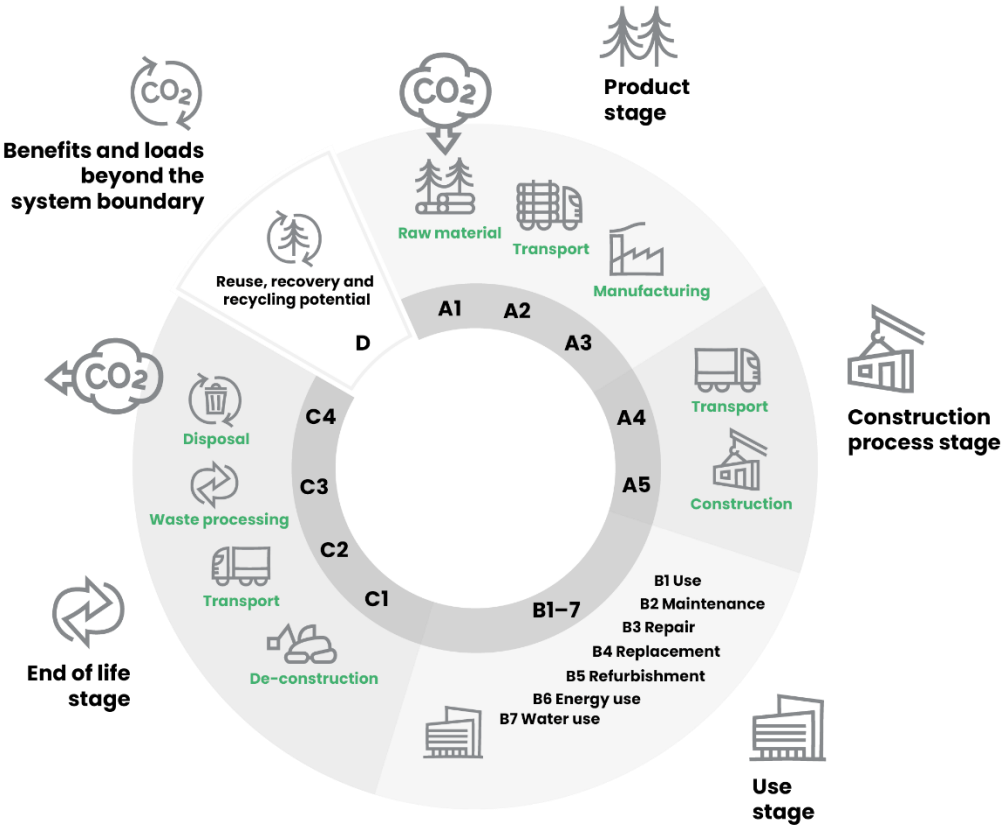
The production of sawn timber by Stora Enso, and further processing where applied, results in several valuable by-products like wood chips used for example in cellulose pulp production, as well as sawdust, bark and dry wood chips that can be used as biofuels.

The environmental impact allocation from the sawmill and further processing where applied have been done between sawn timber and by-products as well as the main product and by-products based on economic revenue in accordance with EN 15804.

Cut-Off Rule: 1%. This rule is based on the assumption that the input flows do not have a major impact on the environmental impacts as a whole. In insufficient data cases for such material flows known to have the potential to cause significant emissions into air and water or soil related to the environmental indicators, conservative "worst case" assumptions have been used when filling the data gaps.

Characterisation factors: EN 15804 reference package based on EF 3.1 has been used.

System diagram:

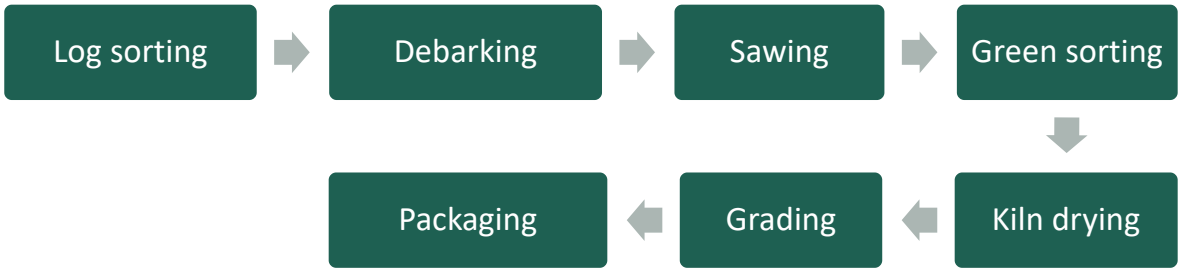


Product stage:

A1: This stage covers the extraction and processing of raw materials, such as forestry operations. All Stora Enso's wood raw material is sourced through a third-party certified wood traceability system. Stora Enso traceability system is certified according to FSC® and PEFC Chain of Custody systems.[1]

A2: This stage covers the transportation of the raw materials to the mill and the fuels needed for on-site transportation. The wood supply operations include the acquisition of softwood for each unit, as well as the optional procurement of sawn timber from other Stora Enso units or external suppliers. The purchased spruce or pine logs are transported by trucks, vessels and trains.

A3: This stage covers the production of Classic Sawn by Stora Enso and by-products. Generation of electricity or heat from primary energy resources are counted. The Stora Enso contracted electricity used in the manufacturing process is varying between production sites and fossil-free electricity covered by Guarantees of Origin, with a weighted climate impact of GWP-GHG: 0,0157 kg CO_2-eq./kWh. Also packaging materials and the treatment of waste not leaving the factory with the product are counted.



[1] FSC® trademark license no. C125195

Construction process stage:

A4: This stage covers transportation to the construction site or to the location of the customer on global level. The figures show the average impact of 1 m^3 Classic Sawn by Stora Enso delivered to customers from its production units. Transportation distance is a weighted average based on % of sales volumes. According to Stora Enso specific logistic emission reporting system, the average delivery was 344 km by road, 377 km by rail or 2672 km via container ships in year 2023. Transport specific greenhouse gas emission data, provided by the transport service operator or default values according to the Clean Cargo Working Group (CCWG) & Network for Transport Measures (NTM) emission factors has been used for greenhouse gas emissions for the packed product transport, otherwise the data used is generic from respective transport modes in ecoinvent database, as shown in below table.

Transport type	Vehicle type	Fuel type	Consumption	Distance	Capacity utilisation (incl. empty returns)
Truck (road)	Transport, freight, lorry >32 metric ton, EURO6	Low sulphur diesel	0,0160 liter/tkm	344 km	50%
Train (rail)	Transport, freight train, diesel	Petroleum	0,0129 liter/tkm	377 km	NA
	Transport, freight train, electricity	High voltage electricity	0,0478 kWh/tkm		
Ship (container)	Transport, freight, sea, container ship	Heavy fuel oil	0,0001 liter/tkm	2672 km	70%

A5: The construction process only includes packaging waste, which relates to the delivered product. There are various applications and further processing possibilities, which are up to the customer and are therefore excluded from the product system.

Use stage:

B1–B7: There are no environmental impacts expected in the use phase, and at least no harmful substances are released to air, water or ground during the use of the product.

End-of-life scenarios:

C1–C4 and Module D: Four alternative European average scenarios have been presented for the end-of-life stage as the main market is in Europe. Wood has an average content in European Construction and Demolition waste of around 2,3%. Cascading usage should be applied and therefore re-use and recycling should be preferred over incineration. If this principle can't be followed incineration in general is a treatment with the highest net savings and therefore considered as main scenario in this EPD.[2]

Disclaimer: *Use of the results of modules A1–A3 without considering the results of module C is discouraged.*

Please note: *The end-of-life options are scenario based and the choice of the most appropriate one can vary from situation, country and their legislation, energy and raw material availability. The options should indicate the potential environmental impact. Specific scenarios are available on request.*

Scenario	100% Incineration with energy recovery	100% Recycling to wood chips	100% Re-Use in coherent form	100% Landfill with energy recovery
Module C1	Deconstruction / Demolition of the building. 460 kg which equals the declared unit is collected separately per scenario.			
Module C2	Transport to the incineration site	Transport to the sorting platform	Transport to the sorting platform	Transport to landfill
	Distance is assumed to be 50 km in each scenario.			
Module C3	Crushing, site operation and wood combustion. Biogenic carbon flows and energy stored as material are balanced out according to EN 16485.	Sorting and crushing at the platform. Biogenic carbon flows and energy stored as material are balanced out according to EN 16485.	Sorting and preparing at the platform. Biogenic carbon flows and energy stored as material are balanced out according to EN 16485.	-
Module C4	-	-	-	Landfilling (waste operation, leachate treatment and landfill gas combustion). Biogenic carbon flows and energy stored as material are balanced out according to EN 16485 as if released immediately without taking into account delayed emissions.
Module D	Avoided impact of electricity production and thermal energy recovery.	Avoided impact of forestry, harvesting, wood chips preparation and drying.	Avoided impact of producing Classic Sawn from virgin wood.	Avoided impact of electricity production and thermal energy recovery from landfill gas.
Additional information on Module D scenario	*For the thermal energy recovery, it is assumed that average heat produced from natural gas in Europe is replaced. The replaced electricity is referring to the European average grid mix.*	*Wood chips produced from virgin wood are replaced, considering additional transport and energy to produce wood chips in the same quality from the recycled product.*	*Classic Sawn produced from virgin wood and representing Stora Enso's Classic Sawn production units, as declared in this EPD, are replaced, considering additional energy for cutting, drilling or sanding of the re-used product.*	*For the thermal energy recovery, it is assumed that average heat produced from natural gas in Europe is replaced. The replaced electricity is referring to the European average grid mix.*

Please note: *Module D declares potential benefits and loads of secondary material, secondary fuel or recovered energy leaving the product system. The information given in Module D lies beyond the system boundary.*

[2] Damgaard, Anders, et al. "Background data collection and life cycle assessment for construction and demolition waste (CDW) management." (2022).

Modules declared, geographical scope, share of specific data (in GWP-GHG results) and data variation (in GWP-GHG results):

	Product stage			Construction process stage		Use stage	End-of-life stage				Resource recovery stage
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use, maintenance, repair, replacement, refurbishment, operational energy use and water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-Landfill-potential
Module	**A1**	**A2**	**A3**	**A4**	**A5**	**B1 – B7**	**C1**	**C2**	**C3**	**C4**	**D**
Modules declared	X	X	X	X	X	ND	X	X	X	X	X
Geography	EU	EU	AT, CZ, EE, FI, LT, LV, PL, SE	GLO	EU	-	EU	EU	EU	EU	EU

GWP-GHG (A1–A3): specific data used: 34%.
variation – products: +32%/-21%, variation - sites: +24%/-16%.

Technical information

Properties	Classic Sawn for joinery	Classic Sawn for packaging	Classic Sawn for construction
Wood species	Spruce (Picea abies), Pine (Pinus sylvestris)	Spruce (Picea abies), Pine (Pinus sylvestris)	Spruce (Picea abies), Pine (Pinus sylvestris)
Thickness	16 – 100 mm	12 – 50 mm	20 – 140 mm
Widths	75 - 275 mm	60 – 150 mm	40 – 300 mm
Lengths	2,5 – 6,0 m	2,4 – 6,0 m	2,5 – 6,0 m
Moisture content	Standard 16-18% ± 2%, possible from green to 8% ± 2%	20% ± 2%	Standard 10-20% ± 2%, green
Surface	Rough sawn	Rough sawn	Rough sawn
Weight	Average approx. 460 kg/m³ (varying depending on wood species and moisture)		

Content information

Product components	Weight, kg	Post-consumer material, weight-%	Biogenic material, weight-% and kg C/m³
Wood (*Picea abies* and *Pinus sylvestris*)	460,0	-	100 % / 200,4
TOTAL	**460,0**	-	**100 % / 200,4**

Packaging materials	Weight, kg	Weight-% (versus the product)	Weight biogenic carbon, kg C/kg
Plastic wrap	0,32	< 0,1	0
Plastic straps	0,22	< 0,1	0
Cardboard	0,00	< 0,1	< 0,1
TOTAL	**0,54**	**0,12**	**< 0,1**

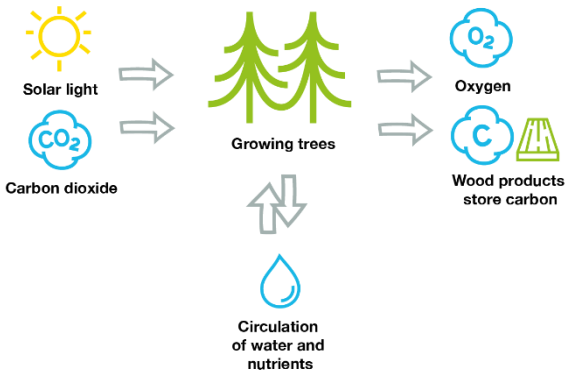
Dangerous substances from the candidate list of SVHC for Authorisation	EC No.	CAS No.	Weight-% per declared unit
Total	-	-	-

Biogenic carbon content at the factory gate

Biogenic carbon content	Unit (expressed per declared unit)
Biogenic carbon content in product	734,8 kg CO_2 eq. / m³ = 200,4 kg C / m³
Biogenic carbon content in accompanying packaging	0 kg CO_2 eq. / m³ = < 0,1 kg C / m³
Please note: *1 kg biogenic carbon is equivalent to 44/12 kg of CO_2*	

Carbon sequestration and storage:

The sequestration of carbon dioxide (CO_2) is unique to renewable materials. Biogenic carbon content of a renewable material is an outcome of the CO_2 that has effectively been removed from the atmosphere by photosynthesis of growing trees and other plants and turned into sugars (carbon) and oxygen. The quantity of atmospheric CO_2 has thus been reduced. The longer the CO_2 is not in the atmosphere but stays stored in a material, the greater the environmental benefit.



Biogenic carbon of wood is calculated according to the EN 16485 and 16449 standards. Half of the dry mass of wood is carbon. Each kg of stored biogenic carbon is equal to ~3,67 kg of CO_2, which is effectively removed from the atmosphere. In the case of Classic Sawn by Stora Enso the biogenic carbon content is -734,8 kg CO_2 eq./m³. Biogenic carbon enters the product system in forest (module A1) and for calculation purpose it is assumed to leave latest from the product system in the end-of-life stage (module C). This assumption can be made when wood is sourced from sustainably managed forest.

Results of the environmental performance indicators

Below tables are describing the environmental indicator results of 1m³ Classic Sawn by Stora Enso along its life cycle. Incineration as the most representative end-of-life scenario in Europe is applied. The incineration scenario is describing the dismantling and chipping of Classic Sawn before incineration and is replacing average European heat produced with natural gas and average European market high voltage electricity. Other end-of-life scenarios have been made available also on page 14 & 15. The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks.

Environmental impact indicators											**A1-C4, variation**	
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B1-B7**	**C1**	**C2**	**C3**	**C4**	**D**	**min**	**max**
GWP-fossil	kg CO_2 eq.	**2,56E+1**	1,80E+1	5,33E+0	ND	4,37E+0	2,38E+0	1,01E+1	0,00E+0	-2,56E+2	-23 %	30 %
GWP-biogenic	kg CO_2 eq.	**-7,35E+2**	6,37E-3	3,51E-3	ND	3,49E-4	4,06E-4	7,35E+2	0,00E+0	-2,27E-1	-38 %	109 %
GWP luluc	kg CO_2 eq.	**5,58E-1**	1,37E-2	3,81E-4	ND	3,76E-4	8,44E-4	1,95E-3	0,00E+0	-3,01E-1	-61 %	48 %
GWP total	kg CO_2 eq.	**-7,09E+2**	1,80E+1	5,33E+0	ND	4,37E+0	2,38E+0	7,45E+2	0,00E+0	-2,57E+2	-23 %	30 %
ODP	kg CFC 11 eq.	**1,71E-6**	5,12E-7	6,65E-8	ND	6,63E-8	4,97E-8	2,99E-7	0,00E+0	-8,57E-6	-61 %	133 %
AP	mol H^+ eq.	**1,46E-1**	3,44E-1	1,80E-2	ND	1,78E-2	5,63E-3	1,95E-1	0,00E+0	-5,78E-1	-48 %	94 %
EP-freshwater	kg P eq.	**8,44E-3**	2,63E-4	1,54E-5	ND	1,52E-5	1,92E-5	1,04E-4	0,00E+0	-9,22E-3	-61 %	41 %
EP-marine	kg N eq.	**5,35E-2**	9,09E-2	7,66E-3	ND	7,58E-3	1,44E-3	9,14E-2	0,00E+0	-1,03E-1	-35 %	66 %
EP-terrestrial	mol N eq.	**6,10E-1**	1,01E+0	8,41E-2	ND	8,33E-2	1,60E-2	1,04E+0	0,00E+0	-1,14E+0	-36 %	70 %
POCP	kg NMVOC eq.	**3,20E-1**	3,11E-1	2,84E-2	ND	2,81E-2	9,77E-3	2,83E-1	0,00E+0	-5,25E-1	-39 %	41 %
ADP minerals&metals[3]	kg Sb eq.	**7,69E-5**	5,28E-5	1,59E-6	ND	1,55E-6	6,66E-6	1,23E-5	0,00E+0	-1,31E-4	-30 %	81 %
ADP-fossil[3]	MJ	**5,81E+2**	3,97E+2	5,68E+1	ND	5,66E+1	3,58E+1	1,19E+2	0,00E+0	-4,82E+3	-44 %	142 %
WDP[3]	m^3	**1,34E+1**	1,66E+0	1,04E-1	ND	1,23E-1	1,70E-1	1,35E+0	0,00E+0	-2,74E+1	-53 %	375 %
Acronyms	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 marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption											

[3] Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.

Additional climate indicator, EPD International										
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B1-B7**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG[4]	kg CO_2 eq.	**2,57E+1**	1,80E+1	5,33E+0	ND	4,37E+0	2,38E+0	1,02E+1	0,00E+0	-2,57E+2

Resource use indicators										
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B1-B7**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	**2,15E+2**	1,02E+1	3,42E-1	ND	3,38E-1	5,50E-1	2,38E+0	0,00E+0	-5,34E+2
PERM	MJ	**7,59E+3**	0,00E+0	-6,06E-2	ND	0,00E+0	0,00E+0	-7,59E+3	0,00E+0	0,00E+0
PERT	MJ	**7,80E+3**	1,02E+1	2,81E-1	ND	3,38E-1	5,50E-1	-7,58E+3	0,00E+0	-5,34E+2
PENRE	MJ	**5,81E+2**	3,97E+2	5,68E+1	ND	5,66E+1	3,58E+1	1,19E+2	0,00E+0	-4,82E+3
PENRM	MJ	**2,73E+1**	0,00E+0	-2,47E+1	ND	0,00E+0	0,00E+0	-2,57E+0	0,00E+0	0,00E+0
PENRT	MJ	**6,09E+2**	3,97E+2	3,21E+1	ND	5,66E+1	3,58E+1	1,17E+2	0,00E+0	-4,82E+3
SM	kg	**0,00E+0**	0,00E+0	0,00E+0	ND	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0
RSF	MJ	**0,00E+0**	0,00E+0	0,00E+0	ND	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0
NRSF	MJ	**0,00E+0**	0,00E+0	0,00E+0	ND	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0
FW	m^3	**1,04E+0**	6,44E-2	3,67E-3	ND	4,05E-3	5,35E-3	2,26E-1	0,00E+0	-1,99E+0
Acronyms	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water									

Waste indicators										
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B1-B7**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	MJ	**1,21E-1**	8,93E-3	6,93E-3	ND	5,17E-4	1,00E-3	1,93E+0	0,00E+0	-8,05E-2
Non-hazardous waste disposed	MJ	**3,69E+0**	1,97E+1	7,36E-1	ND	3,46E-2	3,06E+0	3,12E+0	0,00E+0	-6,79E+0
Radioactive waste disposed	MJ	**3,65E-3**	2,65E-4	6,29E-6	ND	6,23E-6	1,07E-5	3,85E-5	0,00E+0	-1,63E-2

[4] This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO_2 is set to zero.

Output flow indicators										
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B1-B7**	**C1**	**C2**	**C3**	**C4**	**D**
Components for re-use	kg	**0,00E+0**	0,00E+0	0,00E+0	ND	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0
Material for recycling	kg	**0,00E+0**	0,00E+0	0,00E+0	ND	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0
Materials for energy recovery	kg	**0,00E+0**	0,00E+0	0,00E+0	ND	0,00E+0	0,00E+0	4,60E+2	0,00E+0	0,00E+0
Exported energy, electricity	MJ	**1,26E+0**	0,00E+0	2,99E+0	ND	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0
Exported energy, thermal	MJ	**1,23E+0**	0,00E+0	5,75E+0	ND	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0

Additional impact category indicators										
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B1-B7**	**C1**	**C2**	**C3**	**C4**	**D**
Particulate matter emissions	Disease incidence	**2,77E-6**	2,04E-6	3,22E-7	ND	3,21E-7	2,31E-7	2,66E-6	0,00E+0	-2,09E-6
Ionising radiation, human health[5]	kBq U235 eq.	**7,77E+0**	3,48E-1	9,96E-3	ND	9,86E-3	1,58E-2	6,02E-2	0,00E+0	-2,03E+1
Ecotoxicity (freshwater)[3]	CTUe	**1,56E+2**	8,57E+1	8,54E+0	ND	8,03E+0	8,47E+0	6,88E+1	0,00E+0	-3,70E+2
Human toxicity, cancer effects[3]	CTUh	**1,36E-7**	1,41E-7	1,95E-8	ND	1,93E-8	1,52E-8	1,59E-7	0,00E+0	-4,28E-7
Human toxicity, non-cancer effects[3]	CTUh	**3,45E-7**	1,84E-7	1,23E-8	ND	1,03E-8	2,29E-8	2,74E-7	0,00E+0	-7,98E-7
Land use related impacts / soil quality[3]	dimensionless	**4,72E+4**	2,43E+2	4,22E+0	ND	3,98E+0	3,60E+1	1,76E+1	0,00E+0	-4,12E+2

[3] Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.

[5] Disclaimer: 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.

Below tables are describing the environmental indicator results of 1m³ Classic Sawn by Stora Enso **alternative end-of-life scenarios** Re-use, Recycling & Landfill. The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks.

Environmental impact indicators – alternative end-of-life scenarios

		Re-use					Recycling					Landfill				
Indicator	**Unit**	**C1**	**C2**	**C3**	**C4**	**D**	**C1**	**C2**	**C3**	**C4**	**D**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-fossil	kg CO_2 eq.	4,37E+0	2,38E+0	0,00E+0	0,00E+0	-1,84E+1	4,37E+0	2,38E+0	5,89E+0	0,00E+0	-1,33E+1	4,37E+0	2,38E+0	0,00E+0	4,80E+0	-4,16E-2
GWP-biogenic	kg CO_2 eq.	3,49E-4	4,06E-4	7,35E+2	0,00E+0	-1,20E-1	3,49E-4	4,06E-4	7,35E+2	0,00E+0	-7,81E-2	3,49E-4	4,06E-4	0,00E+0	9,06E+2	-4,42E-5
GWP luluc	kg CO_2 eq.	3,76E-4	8,44E-4	0,00E+0	0,00E+0	-5,32E-1	3,76E-4	8,44E-4	5,11E-4	0,00E+0	-1,61E-1	3,76E-4	8,44E-4	0,00E+0	9,11E-4	-5,87E-5
GWP total	kg CO_2 eq.	4,37E+0	2,38E+0	7,35E+2	0,00E+0	-1,91E+1	4,37E+0	2,38E+0	7,41E+2	0,00E+0	-1,35E+1	4,37E+0	2,38E+0	0,00E+0	9,11E+2	-4,17E-2
ODP	kg CFC 11 eq.	6,63E-8	4,97E-8	0,00E+0	0,00E+0	-1,53E-6	6,63E-8	4,97E-8	9,01E-8	0,00E+0	-3,22E-7	6,63E-8	4,97E-8	0,00E+0	1,54E-7	-1,30E-9
AP	mol H^+ eq.	1,78E-2	5,63E-3	0,00E+0	0,00E+0	-8,61E-2	1,78E-2	5,63E-3	5,31E-2	0,00E+0	-1,13E-1	1,78E-2	5,63E-3	0,00E+0	3,01E-2	-1,08E-4
EP-freshwater	kg P eq.	1,52E-5	1,92E-5	0,00E+0	0,00E+0	-8,04E-3	1,52E-5	1,92E-5	2,07E-5	0,00E+0	-3,10E-3	1,52E-5	1,92E-5	0,00E+0	4,33E-5	-1,80E-6
EP-marine	kg N eq.	7,58E-3	1,44E-3	0,00E+0	0,00E+0	-2,64E-2	7,58E-3	1,44E-3	2,46E-2	0,00E+0	-3,16E-2	7,58E-3	1,44E-3	0,00E+0	2,10E-2	-1,81E-5
EP-terrestrial	mol N eq.	8,33E-2	1,60E-2	0,00E+0	0,00E+0	-3,11E-1	8,33E-2	1,60E-2	2,70E-1	0,00E+0	-3,65E-1	8,33E-2	1,60E-2	0,00E+0	1,37E-1	-2,02E-4
POCP	kg NMVOC eq.	2,81E-2	9,77E-3	0,00E+0	0,00E+0	-2,25E-1	2,81E-2	9,77E-3	8,04E-2	0,00E+0	-1,32E-1	2,81E-2	9,77E-3	0,00E+0	1,23E-1	-8,77E-5
ADP minerals&metals[3]	kg Sb eq.	1,55E-6	6,66E-6	0,00E+0	0,00E+0	-7,11E-5	1,55E-6	6,66E-6	2,10E-6	0,00E+0	-9,09E-5	1,55E-6	6,66E-6	0,00E+0	1,00E-5	-2,36E-8
ADP-fossil[3]	MJ	5,66E+1	3,58E+1	0,00E+0	0,00E+0	-4,76E+2	5,66E+1	3,58E+1	7,70E+1	0,00E+0	-2,94E+2	5,66E+1	3,58E+1	0,00E+0	1,07E+2	-8,10E-1
WDP[3]	m^3	1,23E-1	1,70E-1	0,00E+0	0,00E+0	-1,26E+1	1,23E-1	1,70E-1	1,67E-1	0,00E+0	-1,75E+1	1,23E-1	1,70E-1	0,00E+0	-2,40E+0	-5,28E-3
Acronyms	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 marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption															

Additional climate indicator, EPD International – alternative end-of-life scenarios

		Re-use					Recycling					Landfill				
GWP-GHG[7]	kg CO_2 eq.	4,37E+0	2,38E+0	0,00E+0	0,00E+0	-1,86E+1	4,37E+0	2,38E+0	5,89E+0	0,00E+0	-1,34E+1	4,37E+0	2,38E+0	0,00E+0	1,93E+2	-4,17E-2

Resource use indicators – alternative end-of-life scenarios

		Re-use					Recycling					Landfill				
PERE	MJ	3,38E-1	5,50E-1	0,00E+0	0,00E+0	-2,04E+2	3,38E-1	5,50E-1	4,59E-1	0,00E+0	-2,45E+3	3,38E-1	5,50E-1	0,00E+0	2,86E+0	-1,05E-1
PERM	MJ	0,00E+0	0,00E+0	-7,59E+3	0,00E+0	-7,21E+3	0,00E+0	0,00E+0	-7,59E+3	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	-7,59E+3	0,00E+0
PERT	MJ	3,38E-1	5,50E-1	-7,59E+3	0,00E+0	-7,41E+3	3,38E-1	5,50E-1	-7,59E+3	0,00E+0	-2,45E+3	3,38E-1	5,50E-1	0,00E+0	-7,58E+3	-1,05E-1
PENRE	MJ	5,66E+1	3,58E+1	0,00E+0	0,00E+0	-4,76E+2	5,66E+1	3,58E+1	7,70E+1	0,00E+0	-2,94E+2	5,66E+1	3,58E+1	0,00E+0	1,07E+2	-8,10E-1
PENRM	MJ	0,00E+0	0,00E+0	-2,57E+0	0,00E+0	-2,59E+1	0,00E+0	0,00E+0	-2,57E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	-2,57E+0	0,00E+0
PENRT	MJ	5,66E+1	3,58E+1	-2,57E+0	0,00E+0	-5,02E+2	5,66E+1	3,58E+1	7,44E+1	0,00E+0	-2,94E+2	5,66E+1	3,58E+1	0,00E+0	1,05E+2	-8,10E-1
SM	kg	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0
RSF	MJ	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0
NRSF	MJ	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0
FW	m^3	4,05E-3	5,35E-3	0,00E+0	0,00E+0	-9,82E-1	4,05E-3	5,35E-3	5,51E-3	0,00E+0	-5,32E-1	4,05E-3	5,35E-3	0,00E+0	-2,07E+0	-3,88E-4
Acronyms	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water															

[3] Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.

[4] This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO_2 is set to zero.

Waste indicators – alternative end-of-life scenarios

		Re-use					Recycling					Landfill				
Hazardous waste disposed	kg	5,17E-4	1,00E-3	0,00E+0	0,00E+0	-1,14E-1	5,17E-4	1,00E-3	7,02E-4	0,00E+0	-6,51E-2	5,17E-4	1,00E-3	0,00E+0	6,86E-3	-1,50E-5
Non-hazardous waste disposed	kg	3,46E-2	3,06E+0	0,00E+0	0,00E+0	-3,46E+0	3,46E-2	3,06E+0	4,71E-2	0,00E+0	-2,90E+0	3,46E-2	3,06E+0	0,00E+0	9,21E+2	-1,21E-3
Radioactive waste disposed	kg	6,23E-6	1,07E-5	0,00E+0	0,00E+0	-3,46E-3	6,23E-6	1,07E-5	8,46E-6	0,00E+0	-1,41E-3	6,23E-6	1,07E-5	0,00E+0	3,69E-5	-3,21E-6

Output flow indicators – alternative end-of-life scenarios

		Re-use					Recycling					Landfill				
Components for re-use	kg	0,00E+0	0,00E+0	4,60E+2	0,00E+0	5,00E-2	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0
Material for recycling	kg	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	4,60E+2	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0
Materials for energy recovery	kg	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0
Exported energy, electricity	MJ	0,00E+0	0,00E+0	0,00E+0	0,00E+0	-1,13E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	3,02E-1	0,00E+0
Exported energy, thermal	MJ	0,00E+0	0,00E+0	0,00E+0	0,00E+0	-1,10E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	0,00E+0	1,47E-1	0,00E+0

Additional impact category indicators – alternative end-of-life scenarios

		Re-use					Recycling					Landfill				
Particulate matter emissions	Disease inc.	3,21E-7	2,31E-7	0,00E+0	0,00E+0	-1,13E-6	3,21E-7	2,31E-7	1,51E-6	0,00E+0	-5,74E-6	3,21E-7	2,31E-7	0,00E+0	7,37E-7	-3,73E-10
Ionising radiation, human health[5]	kBq U235 eq.	9,86E-3	1,58E-2	0,00E+0	0,00E+0	-7,37E+0	9,86E-3	1,58E-2	1,34E-2	0,00E+0	-1,75E+0	9,86E-3	1,58E-2	0,00E+0	5,99E-2	-3,98E-3
Ecotoxicity (freshwater)[3]	CTUe	8,03E+0	8,47E+0	0,00E+0	0,00E+0	-1,38E+2	8,03E+0	8,47E+0	1,09E+1	0,00E+0	-1,39E+2	8,03E+0	8,47E+0	0,00E+0	2,15E+1	-6,59E-2
Human toxicity, cancer effects[3]	CTUh	1,93E-8	1,52E-8	0,00E+0	0,00E+0	-1,06E-7	1,93E-8	1,52E-8	2,30E-8	0,00E+0	-2,19E-7	1,93E-8	1,52E-8	0,00E+0	2,78E-8	-7,07E-11
Human toxicity, non-cancer effects[3]	CTUh	1,03E-8	2,29E-8	0,00E+0	0,00E+0	-3,19E-7	1,03E-8	2,29E-8	9,52E-9	0,00E+0	-2,67E-7	1,03E-8	2,29E-8	0,00E+0	3,74E-7	-1,48E-10
Land use related impacts / soil quality[3]	dimensionless	3,98E+0	3,60E+1	0,00E+0	0,00E+0	-4,53E+4	3,98E+0	3,60E+1	5,41E+0	0,00E+0	-1,56E+4	3,98E+0	3,60E+1	0,00E+0	2,62E+2	-7,94E-2

[3] Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.

[5] Disclaimer: 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.

References

EPD International (2021): General Programme Instructions for the International EPD® System. version 4.0 dated 2021-03-29.

EPD International (2018): PCR 2019:14 Construction products, version 1.3.4, dated 2024-04-30

EPD International (2021): C-PCR-006 (to PCR 2019:14). Wood and wood-based products for use in construction, version 2024-04-30

Standards

EN 15804:2012 + A2:2019 Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products

EN 16485:2014 Round and sawn timber. Environmental product declarations. Product category rules for wood and wood-based products for use in construction

EN 16449:2014 Wood and wood-based products. Calculation of the biogenic carbon content of wood and conversion to carbon dioxide

EN 15942:2012 Sustainability of construction works - Environmental product declarations - Communication format business-to-business

ISO 14025:2010 Environmental labels and declarations. Type III environmental declarations. Principles and procedures.

ISO 14044:2006 Environmental management. Life Cycle Assessment. Requirements and guidelines.

Differences versus the previous version

The variance columns have been modified in the environmental performance indicator tables.

Detailed product information

More about sawn wood on our website

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