



# Environmental product declaration

in accordance with ISO 14025 and EN 15804+A2

# Uldal Toppsving Tre/Alu





The Norwegian EPD Foundation

## Owner of the declaration:

Uldal AS

#### Product:

Uldal Toppsving Tre/Alu

#### **Declared unit:**

1 pcs

## This declaration is based on Product Category Rules:

CEN Standard EN 15804:2012+A2:2019 serves as core PCR

NPCR 014:2019 Part B for Windows and doors

## Program operator:

The Norwegian EPD Foundation

#### **Declaration number:**

NEPD-12324-12380

## Registration number:

NEPD-12324-12380

## Issue date:

12.09.2025

## Valid to:

12.09.2030

#### **EPD** software:

LCAno EPD generator ID: 1119455



### **General information**

#### Product

Uldal Toppsving Tre/Alu

#### **Program operator:**

The Norwegian EPD Foundation
Post Box 5250 Majorstuen, 0303 Oslo, Norway

Phone: +47 977 22 020 web: www.epd-norge.no

#### **Declaration number:**

NEPD-12324-12380

#### This declaration is based on Product Category Rules:

CEN Standard EN 15804:2012+A2:2019 serves as core PCR NPCR 014:2019 Part B for Windows and doors

## 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 information, life cycle assessment data and evidences.

#### **Declared unit:**

1 pcs Uldal Toppsving Tre/Alu

#### **Declared unit with option:**

A1-A3, A4, A5, B2, B4, C1, C2, C3, C4, D

#### **Functional unit:**

1 top swing sash window measuring 1.23 m x 1.48 m (ref. EN 14351-1) with an expected service life of 60 yrs. With alu clad. U-value = 0.79W/m2K.

#### General information on verification of EPD from EPD tools:

Independent verification of data, other environmental information and the declaration according to ISO 14025:2010, § 8.1.3 and § 8.1.4. Verification of each EPD is made according to EPD-Norway's guidelines for verification and approval requiring that tools are i) integrated into the company's environmental management system, ii) the procedures for use of the EPD tool are approved by EPD-Norway, and iii) the process is reviewed annually by an independent third party verifier. See Appendix G of EPD-Norway's General Programme Instructions for further information on EPD tools

#### **Verification of EPD tool:**

Independent third party verification of the EPD tool, background data and test-EPD in accordance with EPDNorway's procedures and guidelines for verification and approval of EPD tools.

Third party verifier:

Gaylord K. Booto, Norwegian Institute for Air Research (NILU)

(no signature required)

#### Owner of the declaration:

Uldal AS

Contact person: Jonas Heilberg Phone: +47 38 13 71 00 e-mail: uldal@byggma.no

#### Manufacturer:

Uldal AS

#### Place of production:

Uldal AS Mosfjellveien 15 4760 Birkeland, Norway

## Management system:

#### Organisation no:

947895788

#### Issue date:

12.09.2025

#### Valid to:

12.09.2030

## Year of study:

2023

## **Comparability:**

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

#### **Development and verification of EPD:**

The declaration is created using EPD tool lca.tools ver EPD2022.03, developed by LCA.no. The EPD tool is integrated in the company's management system, and has been approved by EPD Norway. NEPDT138

Developer of EPD: Jonas Heilberg

Reviewer of company-specific input data and EPD: Bente J Birkenes

## Approved:

Håkon Hauan, CEO EPD-Norge



### **Product**

#### **Product description:**

Uldal window for exterior walls of buildings for domestic and commercial use

#### **Product specification**

Top swing sash window Made by finger-jointed, laminated pine Exterior is cladded with aluminium

#### Made in Norway

Materials	kg	%
Adhesive and sealant	0,04	0,05707
Metal - Aluminium	3,20	4,57
Metal - Galvanized Steel	3,80	5,42
Paint, water-based	0,45	0,642
Powder coating	0,039	0,05564
Rubber, synthetic	0,466	0,6648
Triple glazing	41,10	58,63
Wood - Laminated wood	21,00	29,96
Total	70,10	100,00

Packaging	kg	%
Packaging - Plastic straps	0,02	0,36
Packaging - Wood	5,00	90,58
Plastic - Polyethylene (LDPE)	0,50	9,06
Total incl. packaging	75,62	100,00

#### **Technical data:**

External measurements are 1230mm with and 1480mm height Dept of the wood frame is 115mm 1,82m² total product area (0,549 conversion factor to 1m²) With 3-layer glass and 2 energy coatings (4E+20G+4+20G+E4)

#### Market:

Made in Norway for the Norwegian market, but with the possibility for export

## Reference service life, product

60 Years

#### Reference service life, building or construction works

60 Years

## LCA: Calculation rules

#### **Declared unit:**

1 pcs Uldal Toppsving Tre/Alu

#### **Cut-off criteria:**

All major raw materials and all the essential energy is included. The production processes for raw materials and energy flows with very small amounts (less than 1%) are not included. These cut-off criteria do not apply for hazardous materials and substances.

### Allocation:

The allocation is made in accordance with the provisions of EN 15804. Effects of primary production of recycled materials is allocated to the main product in which the material was used. The recycling process and transportation of the material is allocated to this analysis. The PCR specific background data follow the allocation rules in the Ecoinvent v3.7.1 Cut-off database version. The allocation of water, energy and waste flows within the production facilities for windows and doors follows unit-based allocation adjusted with a point system to different product groups or products. This score system is regulated by a factor which increases with the resource intensity of each product. The unit-based allocation is adjusted by the weight of the product, excluding the weight of glass.

#### Data quality:

Specific data for the product composition are provided by the manufacturer. The data represent the production of the declared product and were collected for EPD development in the year of study. Background data is based on EPDs according to EN 15804 and different LCA databases. The data quality of the raw materials in A1 is presented in the table below.



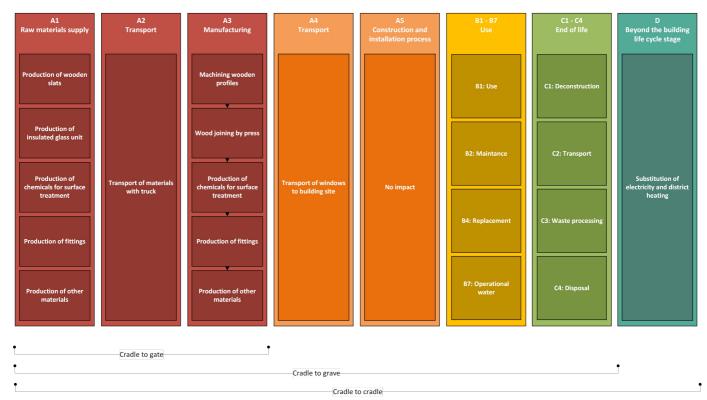
Materials	Source	Data quality	Year
Adhesive and sealant	EPD-FEI-20220021-IBG1-EN	EPD	2021
Metal - Aluminium	NEPD-4811-4063-NO	EPD	2021
Metal - Galvanized Steel	Ecoinvent 3.6	Database	2019
Packaging - Plastic straps	ecoinvent 3.6	Database	2019
Packaging - Wood	Modified ecoinvent 3.6	Database	2019
Paint, water-based	ecoinvent 3.6	Database	2019
Plastic - Polyethylene (LDPE)	ecoinvent 3.6	Database	2019
Powder coating	ecoinvent 3.6	Database	2019
Rubber, synthetic	ecoinvent 3.6	Database	2019
Triple glazing	Modified S-P-00933	EPD	2019
Wood - Laminated wood	S-P-02154	EPD	2018



# System boundaries (X=included, MND=module not declared, MNR=module not relevant)

Р	roduct stag	ge		uction on stage				Use stage			End of life stage			Beyond the system boundaries		
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De- construction demolition	Transport	Waste	Disposal	Reuse-Recovery- Recycling-potential
A1	A2	A3	A4	A5	B1	B2	В3	B4	B5	В6	В7	C1	C2	C3	C4	D
Χ	Χ	Χ	Χ	Χ	MND	Χ	MND	Χ	MND	MND	MND	Χ	Χ	Χ	Χ	X

## **System boundary:**



## Additional technical information:

Contains Biocides see "FDV document"



## LCA: Scenarios and additional technical information

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

**SCENARIO** 

A1:

Packaging is based on 5 products pr. pallet, it is possible to pack denser for projects.

A3:

Production data is weighted without TGU and packaging.

B2:

The maintenance scenario is based on washing with 4,5 I water and 45 ml detergent per year

Transport from production place to user (A4)	Capacity utilisation (incl. return) %	Distance (km)	Fuel/Energy Consumption	Unit	Value (Liter/tonne)
Truck, 16-32 tonnes, EURO 6 (km) - Europe	36,7 %	300,00	0,043	l/tkm	12,90
Assembly (A5)	Unit	Value			
Waste, packaging, PET straps, to average treatment (kg)	kg	0,02			
Waste, packaging, pallet, EUR wooden pallet, reusable, average treatment (kg)	kg	5,00			
Waste, packaging, plastic film (LDPE), to average treatment (kg)	kg	0,50			
Maintenance (B2)	Unit	Value			
Soap solution 5%, household detergent (kg) - pure soap	kg	2,73			
Treatment of wastewater (kg)	kg	272,73			
Water, tap water (kg)	kg	270,00			
Lubricant (kg)	kg	0,01			
Replacement (B4)	Unit	Value			
Uskiftning av vindu (stk)	Units	0,50			
Transport to waste processing (C2)	Capacity utilisation (incl. return) %	Distance (km)	Fuel/Energy Consumption	Unit	Value (Liter/tonne)
Truck, 16-32 tonnes, EURO 6 (km) - Europe	36,7 %	85,00	0,043	l/tkm	3,66
Waste processing (C3)	Unit	Value			
Waste treatment per kg Rubber, municipal incineration with fly ash extraction (kg)	kg	0,361			
Waste treatment per kg Rubber, municipal incineration with energy recovery (kg)	kg	0,038			
Waste treatment per kg Polyethylene (PE), incineration with energy recovery (kg)	kg	0,0817			
Materials to recycling (kg)	kg	18,98			
Waste treatment per kg Paint, hazardous waste incineration (kg)	kg	0,4646			
Waste treatment per kg Wood, incineration with energy recovery (kg)	kg	19,95			
Disposal (C4)	Unit	Value			
Landfilling of ashes from incineration of Rubber, process per kg ashes and residues (kg)	kg	0,01888			
Waste, rubber, to landfill (kg)	kg	0,021			
Landfilling of ashes from incineration of Rubber, process per kg ashes and residues (kg)	kg	0,001987			
Waste, polyethylene, to landfill (kg)	kg	0,0043			
Landfilling of ashes from incineration of Polyethylene (PE), process per kg ashes and residues (kg)	kg	0,002879			
Waste, scrap steel, to landfill (kg) - C4	kg	0,19			
Waste, paint, to landfill (kg)	kg	0,02445			
Landfilling of ashes from incineration of Paint, hazardous waste incineration, process of ashes and residues (kg)	kg	0,01374			
Waste, glass, to landfill (kg)	kg	28,77			
Waste, wood, untreated, to landfill (kg)	kg	1,05			
Landfilling of ashes from incineration of Wood, process per kg ashes and residues (kg)	kg	0,2295			
Waste, scrap aluminium, to landfill (kg)	kg	0,16			



Benefits and loads beyond the system boundaries (D)	Unit	Value		
Substitution of electricity, in Norway (MJ)	MJ	0,4941		
Substitution of thermal energy, district heating, in Norway (MJ)	MJ	7,47		
Substitution of thermal energy, district heating, in Norway (MJ)	МЈ	0,7868		
Substitution of electricity, in Norway (MJ)	MJ	0,05201		
Substitution of electricity (MJ)	MJ	0,1725		
Substitution of thermal energy, district heating (MJ)	МЈ	2,61		
Substitution of thermal energy, district heating, in Norway (MJ)	МЈ	2,40		
Substitution of electricity, in Norway (MJ)	MJ	0,1584		
Substitution of primary steel with net scrap (kg)	kg	3,61		
Substitution of electricity, in Norway (MJ)	MJ	0,0003499		
Substitution of thermal energy, district heating, in Norway (MJ)	МЈ	0,005294		
Substitution of primary glass with net scrap (kg)	kg	7,21		
Substitution of electricity, in Norway (MJ)	MJ	13,87		
Substitution of thermal energy, district heating, in Norway (MJ)	МЈ	209,90		
Substitution of primary aluminium with net scrap (kg)	kg	2,91		



#### **LCA: Results**

The LCA results are presented below for the declared unit defined on page 2 of the EPD document.

Envir	onmental imp	act										
	Indicator	Unit	A1-A3	A4	A5	B2	B4	C1	C2	C3	C4	D
	GWP-total	kg CO <sub>2</sub> - eq	9.31E+01	3.71E+00	7.63E+00	9.34E-01	7.21E+01	0	1.05E+00	3.82E+01	3.93E-01	-3.91E+01
	GWP-fossil	kg CO <sub>2</sub> - eq	1.33E+02	3.70E+00	4.79E-02	4.47E-01	7.06E+01	0	1.05E+00	3.26E+00	3.02E-01	-3.84E+01
	GWP-biogenic	kg CO <sub>2</sub> - eq	-4.08E+01	1.53E-03	7.58E+00	6.28E-02	9.41E-01	0	4.34E-04	3.50E+01	9.11E-02	-1.93E-01
	GWP-luluc	kg CO <sub>2</sub> - eq	9.96E-01	1.32E-03	4.88E-06	4.25E-01	4.99E-01	0	3.74E-04	1.85E-04	8.61E-05	-5.40E-01
٨	ODP	kg CFC11 - eq	7.94E-06	8.39E-07	3.55E-09	6.76E-08	4.62E-06	0	2.38E-07	1.14E-07	9.84E-08	-9.43E-02
	АР	mol H+ -eq	7.95E-01	1.06E-02	1.05E-04	5.27E-03	4.08E-01	0	3.02E-03	4.63E-03	2.60E-03	-2.82E-01
-	EP-FreshWater	kg P -eq	3.45E-03	2.96E-05	1.65E-07	2.44E-03	1.75E-03	0	8.39E-06	6.73E-06	3.69E-06	-1.49E-03
4	EP-Marine	kg N -eq	1.69E-01	2.11E-03	6.97E-05	9.18E-03	8.73E-02	0	5.97E-04	1.82E-03	9.60E-04	-4.17E-02
4	EP-Terrestial	mol N - eq	1.97E+00	2.36E-02	4.31E-04	1.65E-02	1.02E+00	0	6.68E-03	1.96E-02	9.98E-03	-4.71E-01
	POCP	kg NMVOC -eq	5.22E-01	9.03E-03	1.24E-04	2.93E-03	2.71E-01	0	2.56E-03	5.07E-03	2.89E-03	-1.48E-01
	ADP- minerals&metals <sup>1</sup>	kg Sb- eq	2.72E-03	1.02E-04	3.28E-07	2.56E-05	1.43E-03	0	2.90E-05	2.40E-06	3.17E-06	-6.62E-04
	ADP-fossil <sup>1</sup>	MJ	1.90E+03	5.60E+01	2.49E-01	5.76E+00	9.91E+02	0	1.59E+01	7.78E+00	7.13E+00	-4.58E+02
<u>%</u>	WDP <sup>1</sup>	$m^3$	2.37E+03	5.42E+01	7.22E-01	1.02E+02	1.24E+03	0	1.54E+01	3.03E+01	7.09E+00	-1.49E+04

GWP-total = Global Warming Potential total; 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

## Remarks to environmental impacts

<sup>&</sup>quot;Reading example: 9,0 E-03 = 9,0\*10-3 = 0,009"

<sup>\*</sup>INA Indicator Not Assessed

<sup>1.</sup> 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



Addi	dditional environmental impact indicators											
Ind	licator	Unit	A1-A3	A4	A5	B2	B4	C1	C2	C3	C4	D
	PM	Disease incidence	7.53E-06	2.27E-07	1.57E-09	7.14E-08	3.97E-06	0	6.43E-08	6.48E-08	5.13E-08	-3.55E-06
(**) B	IRP <sup>2</sup>	kgBq U235 -eq	4.29E+00	2.45E-01	1.05E-03	3.13E-02	2.33E+00	0	6.94E-02	3.14E-02	2.83E-02	-1.72E+00
	ETP-fw <sup>1</sup>	CTUe	1.91E+03	4.15E+01	2.52E-01	1.20E+02	1.04E+03	0	1.18E+01	1.25E+01	1.04E+02	-8.68E+02
44.	HTP-c <sup>1</sup>	CTUh	1.77E-07	0.00E+00	1.40E-11	1.79E-09	9.08E-08	0	0.00E+00	3.97E-09	1.95E-10	-8.81E-08
48° D	HTP-nc <sup>1</sup>	CTUh	1.91E-06	4.54E-08	6.33E-10	4.52E-08	1.01E-06	0	1.29E-08	4.14E-08	3.75E-09	-4.97E-07
	SQP <sup>1</sup>	dimensionless	1.15E+03	3.92E+01	3.41E-01	1.91E+01	6.12E+02	0	1.11E+01	3.28E+00	1.86E+01	-1.66E+02

PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Potential Soil Quality Index (dimensionless)

<sup>&</sup>quot;Reading example: 9,0 E-03 = 9,0\*10-3 = 0,009" \*INA Indicator Not Assessed

<sup>1.</sup> 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

<sup>2.</sup> 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.



Resource	e use											
Ind	licator	Unit	A1-A3	A4	A5	B2	B4	C1	C2	C3	C4	D
- F	PERE	MJ	9.95E+02	8.02E-01	5.91E-03	4.60E+00	4.98E+02	0	2.27E-01	1.36E+00	9.93E-02	-2.40E+02
2	PERM	MJ	3.90E+02	0.00E+00	-6.94E+01	0.00E+00	0.00E+00	0	0.00E+00	-3.20E+02	0.00E+00	0.00E+00
₽,	PERT	MJ	1.38E+03	8.02E-01	-6.94E+01	4.60E+00	4.98E+02	0	2.27E-01	-3.19E+02	9.93E-02	-2.40E+02
	PENRE	MJ	1.86E+03	5.60E+01	2.49E-01	6.32E+00	9.75E+02	0	1.59E+01	7.78E+00	7.13E+00	-4.58E+02
Å	PENRM	MJ	6.15E+01	0.00E+00	-2.17E+01	0.00E+00	6.84E-09	0	0.00E+00	-3.98E+01	0.00E+00	0.00E+00
IA	PENRT	MJ	1.93E+03	5.60E+01	-2.14E+01	6.32E+00	9.75E+02	0	1.59E+01	-3.21E+01	7.13E+00	-4.58E+02
	SM	kg	5.42E+00	0.00E+00	0.00E+00	0.00E+00	2.71E+00	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	RSF	MJ	1.74E+00	2.87E-02	1.60E-04	2.23E-02	9.06E-01	0	8.13E-03	2.83E-02	2.02E-03	7.48E-02
	NRSF	МЈ	9.77E+00	1.03E-01	8.34E-04	2.75E-02	4.99E+00	0	2.91E-02	0.00E+00	9.14E-02	-2.42E+00
<b>&amp;</b>	FW	m <sup>3</sup>	5.21E+00	5.99E-03	1.47E-04	7.44E-02	2.62E+00	0	1.70E-03	6.40E-03	7.75E-03	-8.37E-01

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; SM = Use of secondary materials; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Net use of fresh water

<sup>&</sup>quot;Reading example: 9,0 E-03 = 9,0\*10-3 = 0,009" \*INA Indicator Not Assessed



End of lif	e - Waste											
Ind	icator	Unit	A1-A3	A4	A5	B2	B4	C1	C2	C3	C4	D
	HWD	kg	3.16E+00	2.89E-03	0.00E+00	4.81E-02	1.67E+00	0	8.19E-04	0.00E+00	1.83E-01	6.08E-02
Ū	NHWD	kg	3.31E+01	2.72E+00	7.70E-01	2.45E-01	3.38E+01	0	7.72E-01	0.00E+00	3.03E+01	-1.01E+01
8	RWD	kg	4.31E-02	3.82E-04	0.00E+00	2.74E-05	2.18E-02	0	1.08E-04	0.00E+00	2.26E-06	-1.69E-03

HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed

"Reading example: 9,0 E-03 = 9,0\*10-3 = 0,009" \*INA Indicator Not Assessed

End of life	- Outpu	t flow										
Indica	ator	Unit	A1-A3	A4	A5	B2	B4	C1	C2	C3	C4	D
<b>@</b> D	CRU	kg	0.00E+00	0.00E+00	4.75E+00	0.00E+00	2.38E+00	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
€\	MFR	kg	7.02E+00	0.00E+00	2.65E-01	0.00E+00	1.31E+01	0	0.00E+00	1.90E+01	9.41E-05	0.00E+00
DØ	MER	kg	2.76E+00	0.00E+00	2.48E-01	0.00E+00	1.17E+01	0	0.00E+00	2.04E+01	1.95E-06	0.00E+00
<b>7</b> D	EEE	MJ	1.78E+00	0.00E+00	1.73E-01	0.00E+00	8.27E+00	0	0.00E+00	1.46E+01	1.48E-04	0.00E+00
DII.	EET	MJ	2.69E+01	0.00E+00	2.61E+00	0.00E+00	1.25E+02	0	0.00E+00	2.21E+02	2.23E-03	0.00E+00

CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported energy electrical; EET = Exported energy thermal

"Reading example: 9,0 E-03 = 9,0\*10-3 = 0,009" \*INA Indicator Not Assessed

Biogenic Carbon Content									
Unit	At the factory gate								
kg C	9.54E+00								
kg C	2.07E+00								
	kg C								

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO2



## **Additional requirements**

## Greenhouse gas emissions from the use of electricity in the manufacturing phase

National production mix from import, low voltage (production of transmission lines, in addition to direct emissions and losses in grid) of applied electricity for the manufacturing process (A3).

Electricity mix	Source	Amount	Unit
Electricity, Norway (kWh)	ecoinvent 3.6	24,33	g CO2-eq/kWh

#### **Dangerous substances**

The product contains no substances given by the REACH Candidate list.

#### **Indoor environment**

No emissions

## **Additional Environmental Information**

Additional environmental impact indicators required in NPCR Part A for construction products											
Indicator	Unit	A1-A3	A4	A5	B2	B4	C1	C2	C3	C4	D
GWPIOBC	kg CO <sub>2</sub> -eq	1.35E+02	3.71E+00	4.79E-02	9.30E-01	7.16E+01	0	1.05E+00	3.26E+00	3.93E-01	-3.79E+01

GWP-IOBC: Global warming potential calculated according to the principle of instantaneous oxidation. In order to increase the transparency of biogenic carbon contribution to climate impact, the indicator GWP-IOBC is required as it declares climate impacts calculated according to the principle of instantaneous oxidation. GWP-IOBC is also referred to as GWP-GHG in context to Swedish public procurement legislation.



## **Bibliography**

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