

# ENVIRONMENTAL PRODUCT DECLARATION

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

## Vallox Exxeo 2000 Roof Fan

This EPD covers multiple products, based on worst-case results:



Vallox Exxeo 2000, Vallox Exxeo 2000 DPC and Vallox Exxeo 2000 DS



Programme	The International EPD® System, <a href="http://www.environdec.com">www.environdec.com</a>
Programme operator	EPD International AB
EPD registration number	EPD-IES-0017941
Publication date	2025-04-17
Valid until	2030-04-17
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 <a href="http://www.environdec.com">www.environdec.com</a>	

# GENERAL INFORMATION

## Programme information

ACCOUNTABILITIES FOR PCR, LCA AND INDEPENDENT, THIRD-PARTY VERIFICATION	
Product Category Rules (PCR)	<p>CEN standard EN 15804 serves as the Core Product Category Rules (PCR)</p> <p>Product Category Rules (PCR): <i>PCR 2019:14-c-PCR-018 c-PCR-018 Ventilation components (c-PCR under PCR 2019:14) (Adopted from EPD Norway)</i></p> <p>PCR review was conducted by: <i>Claudia A. Peña, ADDERE Research &amp; Technology</i></p>
Life Cycle Assessment (LCA)	<p>LCA accountability: <i>Aleksi Surakka, Comatec Mobility Oy</i></p> <p>www.comatec.fi</p> <p>e-mail: aleksi.surakka@comatec.fi</p> <p>phone: +358 40 184 2478</p> 
Third-party verification	<p>Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:</p> <p><input checked="" type="checkbox"/> EPD verification by individual verifier</p> <p>Third-party verifier: <i>Viktor Hakkarainen, CHM Analytics</i></p>  <p>Approved by: The International EPD® System</p>
	<p>Procedure for follow-up of data during EPD validity involves third party verifier:</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>

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

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

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 as-

essment 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

**Vallox Oy** is a Finnish company focused on designing and manufacturing ventilation products. For more than 50 years, it has been visionary in the development of indoor air technology, and today it serves customers widely across Europe.

Vallox is on a mission to take care of wellbeing of people and maintaining the value of the homes with smart ventilation. High-quality and energy-efficient Vallox ventilation products enable a healthy indoor climate and are designed with today's needs in mind. Vallox products are known for their simple, elegant design, ease of use and silence.

**Vallox is the Home of Fresh air.**



Owner of the EPD	Vallox Oy
Contact	Sari Ponkala sari.ponkala@vallox.com www.vallox.com
Product-related or management system-related certifications	ISO 9001 ISO 14001
Name and location of the production site	Vallox Oy Myllykyläntie 9-11 32200 Loimaa

# Product information

## Product name

Air handling unit: Vallox Exxeo 2000 roof fan



## Product identification

Air handling units (AHU) as referred in standards NS-EN 1886, NS-EN 13053 and EN 13141-7. Vallox roof fans consist mainly of steel, plastics and electronic which include circuit boards, aluminum, steel, plastics etc. Vallox Exxeo 2000 is wrapped in LDPE plastic and stacked on top of a wooden pallet for distribution.

EPD follows additional requirements for construction products considered as Electronic or Electric Equipment (EEE).

## Product description

Vallox Exxeo roof fans are intended as fans for extract air ventilation systems. The maximum temperature of air extracted by the roof fans is +40°C. The structure of Vallox Exxeo roof fans is designed so that water is led out without ending up in the duct system. Vallox Exxeo roof fans may be mounted on top of a Vallox Exxeo roof penetration part or a penetration made on site. When required, the mounting frame included in the standard delivery can be used. Vallox Exxeo roof fans come in seven different sizes 150...4100 (0.15...4.1 m<sup>3</sup>/s, ps= 150 Pa)

Three different models are available for each size:

1. Basic model, equipped with a control panel - model marking, e.g. Vallox Exxeo 4100 (air volume 4,100 dm<sup>3</sup>/s, ps = 150 Pa)
2. DPC model, equipped with a control panel + pressure control - model marking, e.g. Vallox Exxeo 4100 DPC (air volume 4,100 dm<sup>3</sup>/s, ps = 150 Pa)
3. DS model, equipped with a dual speed converter. The model can replace a 2-speed 3-phase AC roof fan. The control requires an existing cable with 7 poles (2x3-phase supply + PE). - model marking, e.g. Vallox Exxeo 4100 DS (air volume 4,100 dm<sup>3</sup>/s, ps = 150 Pa)

## Product variations covered in the EPD:

Product variation	Annual assessed energy consumption (kWh)	Airflow (m <sup>3</sup> /hr)
Vallox Exxeo 2000 (basic model)	4713	7848
Vallox Exxeo 2000 DPC		
Vallox Exxeo 2000 DS		

## Worst-case product: Vallox Exxeo 2000 DS

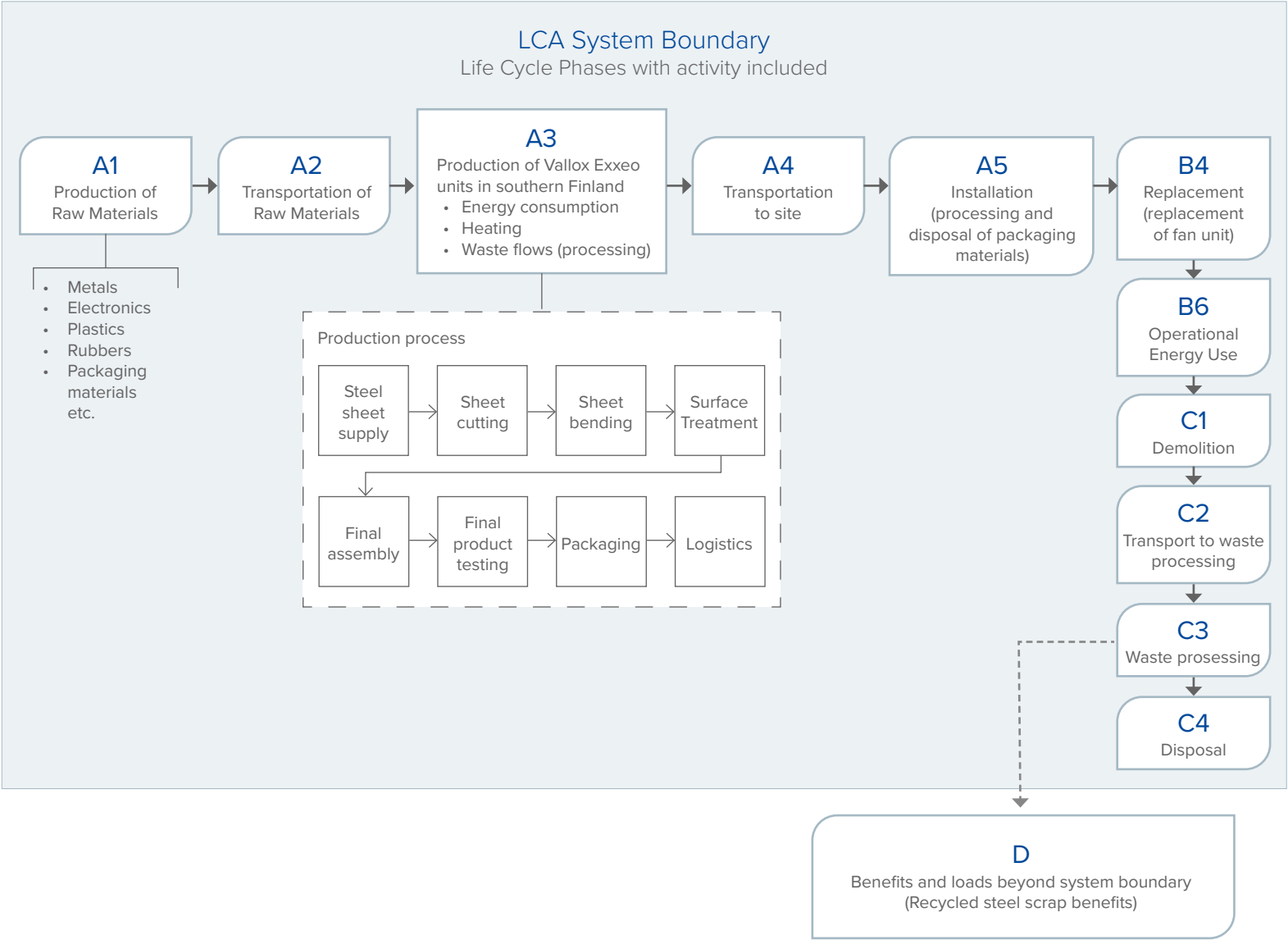
UN CPC code	The CPC code applied is CPC 54632 Ventilation and air-conditioning equipment installation services.	
Geographical scope	Production facility for the roof fan units is located in southern Finland. The intended market for the products are widely in different parts of Europe.	
	A1 Raw material supply:	Europe
	A2 Transport of raw materials:	Europe
	A3 Manufacturing (subcontracted):	Finland
	A4 Transport to supplier:	Europe
	B4 Replacement (replacement of fan unit):	Europe
	B6 Operational Energy Use	Europe
	C1-C4 End-of-life:	Europe
	D Resource recovery:	Europe



# LCA information

Declared unit	1 manufactured roof fan unit maintained for 25 years.
Reference service life	Reference service life for the ventilation units is 25 years.
Time representativeness	2022–2024
Database(s) and LCA software used	<p>LCA software: SimaPro 9.6</p> <p>Majority of data from Ecoinvent 3.10, Steel LCI results from world-steel.</p>
Description of system boundaries	Cradle-to-Grave

System diagram:



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	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Modules declared	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Geography	EU	EU	FI	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU
Specific data used	7,87%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	<10%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-

X = Module declared, ND = Not declared



## Product life cycle – used data and assumptions

Infrastructure is included in the datasets.

### Product stage (A1-A3)

The product stage considers the manufacturing of raw materials, their transportation to the production facility and the stages of the product manufacturing process.

**A1:** Raw materials refer to materials and sub-assembled components used to manufacture the roof fan units.

**A2:** Transportation of the raw materials and sub-assembled components to the subcontractor. Details on the transportation scenarios can be found later in this EPD.

**A3:** Manufacturing and packaging of the roof fan units at the production facility. In this case, manufacturing means assembling and testing of the roof

fan units from sub-assembly parts. Stage A3 covers the energy (electricity) use during the production process and waste generated during manufacturing of the units.

Electricity was modeled based on an electricity producer's Guarantee of Origin with an GWP100 results of 0,0131 kgCO<sub>2</sub>eq/kWh.

Manufacturing waste streams include wood waste, cardboard, combustible waste, mixed waste and metal scrap (iron, aluminum, copper). Cardboard, metal scrap and combustible waste are reusable and recyclable waste, and they are sent for material recovery. The amount of waste was determined by the weight of the product.

### Construction process stage (A4)

**A4:** Transportation to use was calculated as a conservative scenario as indicated in c-PCR-018 Ventilation components. Transport distance used was 155 km from subcontractor site to capital of Finland, Helsinki and 300 km as the conservative distance to a distributor.

**A5:** The packaging of the product (cardboard or plastic depending on the model) was assumed to be collected via refusal truck, transported a distance of 100 km and disposed as per EU27 Average Municipal Waste treatment methods.

### Use (B)

**B4:** Blower fan is replaced once during the life cycle of the ventilation unit. Fan units are manufactured for use in Europe and Finland, used, transported for waste processing (100 km) and disposed as municipal solid waste after use in Europe. Transports of the fan units were also included and the transport scenario was similar to A4.

**B6:** Annual electricity consumption is based on calculations complying with Commission Delegated Regulation (EU) No 1254/2014 of 11 July 2014. Electricity consumption originates from the electric fan that is connected to a 230 / 50 Hz electrical outlet. As the roof fan units are used all over Europe, an average market dataset for European low voltage electricity was used. The GWP100 factor for the used dataset was 0,346kgCO<sub>2</sub>-eq/kWh.





## End of life cycle (C1-C4) .....

**C1:** De-construction/demolition is assumed to be close to zero as the ventilation units are manually removed from the buildings.

**C2:** Transport to waste processing was calculated with an distance assumption of 100 km.

**C3-C4:** Waste processing and disposal was modeled as a conservative scenario as indicated in c-PCR-018 and the share of materials entering different waste treatment was retrieved from Eurostat waste databases. An average of 27 EU countries was used. Additionally paper and board used for the product were assumed to be recycled. For aluminum and steel recycling processes an assumption of 100 km of transportation was used.

Material	C3 Waste Processing	C4 Waste Disposal
Plastic, rubber	Municipal incineration with energy recovery	Landfilling of ashes from incineration
Metal	Central sorting of mixed construction waste. Recycling of metals.	Landfilling of wasted product in sanitary landfill
Electronics	Waste of Electrical and Electronic Equipment (WEE) recycling. Incineration of non-recycled parts.	Landfilling of ashes from incineration and residuals from recycling/sorting.
Paper, board	Recycling	Incineration and landfilling
Other	-	Incineration and landfilling

*More details regarding the used assumptions for C3, C4 and D can be found from Annex 1.*

## Resource recovery stage (D)

The benefits of recycled steel parts in module C3 were considered to have a possible environmental benefit as substituted material. Packaging cardboard leaving module A5 could be seen to have potential if it would be recycled. However, EU27 average municipal waste treatment with cardboard has insignificant amount of recycling share according to SimaPro data.

Modules with no activity: B1, B2, B3, B5, B7

## Life Cycle Transport Scenarios

Life Cycle Phase/Module	Scenario assumptions	Road transport	Water transport
A2	Based on distances between supplier locations and Vallox subcontractor site	transport, freight, lorry 16-32 metric tons, EURO6	transport, freight, sea, container ship
A4	As in c-PCR-018: From Vallox Factory to Helsinki, Finland (~155km). 300km conservative distance to non-specified distributor	transport, freight, lorry 16-32 metric tons, EURO6	-
A5	100km to nearest waste processing center	Municipal waste collection service by 21 metric ton lorry {RoW}  municipal waste collection service by 21 metric ton lorry   Cut-off, S	-
B4	As in c-PCR-018: From Vallox Factory to Helsinki, Finland (~155km). 300km conservative distance to non-specified distributor	transport, freight, lorry 16-32 metric tons, EURO6	-
C2	100km to nearest waste processing center	transport, freight, lorry 16-32 metric tons, EURO6	-

# CONTENT INFORMATION

The products included in the EPD do not contain any REACH candidate list SVHC substances in amounts greater than 0,1 % (1000 ppm).

## Vallox Exxeo 2000

Product components	Weight, kg	Post-consumer material, weight-%	Biogenic material, weight-% and kg C/kg
Steel	59,10	0	0
Electronic	13,55	0	0
Plastic	1,55	0	0
Rubber	0,02	0	0
Packaging materials		Weight-% (versus the product)	Weight biogenic carbon, kg C/kg
Plastic wrapping (LDPE)	0,15	0,21	0
Wooden pallet*	1,20	1,59	0,47
TOTAL	74,37		

\* Wooden pallet excluded from total mass. Pallet share is calculated by dividing the pallet mass (24kg) by 20 use cycles.



## RESULTS

Results are calculated according to E.F 3.1. The estimated impact results are only relative statements which do not indicate the end points of the impact categories, exceeding threshold values, safety margins or risks.

Usage of results of modules A1-A3 without considering the results of module C is not encouraged.

As infrastructure is included in the background datasets, the results of the impact categories abiotic depletion of minerals and metals, land use, human

toxicity (cancer), human toxicity, noncancer and ecotoxicity (freshwater) may be highly uncertain in LCAs that include capital goods/infrastructure in generic datasets, in case infrastructure/capital goods contribute greatly to the total results. This is because the LCI data of infrastructure/capital goods used to quantify these indicators in currently available generic datasets sometimes lack temporal, technological and geographical representativeness. Caution should be exercised when using the results of these indicators for decision-making purposes.

# RESULTS OF THE ENVIRONMENTAL PERFORMANCE INDICATORS

Vallox Exxeo 2000

Mandatory impact category indicators according to EN 15804, results per declared unit

Indicator	Unit	A1-A3	A4	A5	B1-B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-fossil	kg CO <sub>2</sub> eq.	4,34E+02	6,43E+00	3,71E-01	0	1,08E+02	0	3,86E+04	0	0	1,41E+00	4,92E+00	1,17E-01	-8,84E+01
GWP-biogenic	kg CO <sub>2</sub> eq.	4,81E-01	4,45E-03	3,75E-05	0	0	0	1,37E+03	0	0	9,79E-04	-1,44E-03	1,59E+00	3,85E-02
GWP-luluc	kg CO <sub>2</sub> eq.	8,66E-01	2,13E-03	2,17E-05	0	6,74E-01	0	1,18E+02	0	0	4,69E-04	1,15E-03	3,28E-05	-1,89E-03
GWP-total	kg CO <sub>2</sub> eq.	4,36E+02	6,44E+00	3,71E-01	0	1,08E+02	0	4,01E+04	0	0	1,41E+00	4,92E+00	1,71E+00	-8,84E+01
ODP	kg CFC 11 eq.	7,77E-06	1,28E-07	3,36E-09	0	2,46E-06	0	7,12E-04	0	0	2,81E-08	2,42E-08	7,86E-10	-2,01E-13
AP	mol H <sup>+</sup> eq.	2,96E+00	1,34E-02	1,16E-03	0	1,24E+00	0	2,27E+02	0	0	2,94E-03	7,09E-03	3,93E-04	-1,97E-01
EP-freshwater	kg P eq.	3,01E-01	4,36E-04	4,22E-06	0	1,05E-01	0	3,59E+01	0	0	9,57E-05	3,48E-04	1,75E-04	-1,66E-05
EP-marine	kg N eq.	1,09E+00	3,22E-03	5,15E-04	0	8,02E-01	0	3,56E+01	0	0	7,07E-04	1,84E-03	3,29E-03	-3,47E-02
EP-terrestrial	mol N eq.	4,72E+00	3,47E-02	5,53E-03	0	1,51E+00	0	3,19E+02	0	0	7,63E-03	1,99E-02	1,22E-03	-3,04E-01
POCP	kg NMVOC eq.	1,52E+00	2,23E-02	2,19E-03	0	5,04E-01	0	1,05E+02	0	0	4,89E-03	1,13E-02	7,73E-04	-1,41E-01
ADP-minerals & metals*	kg Sb eq.	6,89E-02	2,09E-05	1,44E-07	0	1,58E-02	0	5,18E-01	0	0	4,60E-06	8,80E-06	8,09E-08	-2,29E-04
ADP-fossil*	MJ	6,22E+03	9,04E+01	2,83E+00	0	1,53E+03	0	8,98E+05	0	0	1,99E+01	2,20E+01	7,40E-01	-8,43E+02
WDP*	m <sup>3</sup>	5,23E+02	3,75E-01	4,51E-03	0	3,80E+01	0	1,11E+04	0	0	8,25E-02	1,61E-01	-3,74E-01	1,10E+03
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													

\* Disclaimer: 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.



Indicator	Unit	A1-A3	A4	A5	B1-B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	5,66E+02	1,20E+00	9,84E-03	0	2,20E+02	0	2,46E+05	0	0	2,64E-01	9,94E-01	1,86E-02	5,31E+01
PERM	MJ	1,10E+02	3,49E-01	2,91E-03	0	4,27E+01	0	0	0	0	7,68E-02	2,78E-01	4,32E-03	-3,34E-02
PERT	MJ	6,76E+02	1,55E+00	1,28E-02	0	2,63E+02	0	2,46E+05	0	0	3,41E-01	1,27E+00	2,30E-02	5,31E+01
PENRE	MJ	5,92E+03	9,62E+01	3,01E+00	0	1,63E+03	0	9,36E+05	0	0	2,11E+01	2,33E+01	7,88E-01	-8,92E+02
PENRM	MJ	6,57E+02	3,99E-03	2,74E-05	0	6,99E-01	0	6,87E+00	0	0	8,78E-04	7,47E-04	1,01E-04	0
PENRT	MJ	6,58E+03	9,62E+01	3,01E+00	0	1,63E+03	0	9,36E+05	0	0	2,11E+01	2,33E+01	7,88E-01	-8,92E+02
SM	kg	0	0	0	0	0	0	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0
FW	m³	4,22E+00	1,25E-02	-1,61E-05	0	1,56E+00	0	7,76E+02	0	0	2,75E-03	5,82E-03	-8,67E-03	-3,85E-01
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													

Based on different interpretations of EN 15804, there are three options for how to separate the use of primary energy into energy used as raw material and energy used as energy carrier. For this LCA and EPD option B is applied.

## Vallox Exxeo 2000

## Additional mandatory and voluntary impact category indicators, results per declared unit

Indicator	Unit	A1-A3	A4	A5	B1-B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG <sup>1</sup>	kg CO <sub>2</sub> eq.	4,36E+02	6,43E+00	3,71E-01	0	1,09E+02	0	3,88E+04	0	0	1,41E+00	4,92E+00	1,26E+00	-8,84E+01
Particulate matter	disease inc.	2,35E-05	4,73E-07	2,82E-08	0	7,91E-06	0	8,09E-04	0	0	1,04E-07	1,09E-07	5,29E-09	-3,31E-06
Ecotoxicity, freshwater*	CTUe	8,99E+03	2,46E+01	2,79E-01	0	4,50E+03	0	1,60E+05	0	0	5,41E+00	2,90E+01	2,30E+01	-4,24E+01
Human toxicity, cancer*	CTUh	2,61E-06	4,56E-08	3,41E-10	0	1,63E-06	0	9,05E-05	0	0	1,00E-08	1,07E-08	2,39E-10	-3,75E-08
Human toxicity, non-cancer*	CTUh	1,91E-05	5,68E-08	5,90E-10	0	8,85E-06	0	6,27E-04	0	0	1,25E-08	7,11E-08	1,09E-08	1,25E-07
Land use*	Pt	2,45E+03	5,46E+01	3,47E-01	0	1,21E+03	0	2,00E+05	0	0	1,20E+01	1,10E+01	1,38E+00	1,39E+01

\* Disclaimer: 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.

<sup>1</sup> 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<sub>2</sub> is set to zero.

## Vallox Exxeo 2000

## Waste and output flow indicators, results per declared unit

Indicator	Unit	A1-A3	A4	A5	B1-B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	0	0	0	0	0	0	0	0	0	0	0	0	0
Non-hazardous waste disposed	kg	0	0	0	0	0	0	0	0	0	0	0	0	0
Radioactive waste disposed	kg	0	0	0	0	0	0	0	0	0	0	0	0	0
Components for re-use	kg	0	0	0	0	0	0	0	0	0	0	0	0	0
Material for recycling	kg	2,41E+01	0	0	0	0	0	0	0	0	0	5,89E+01	0	0
Materials for energy recovery	kg	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported energy, thermal	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0

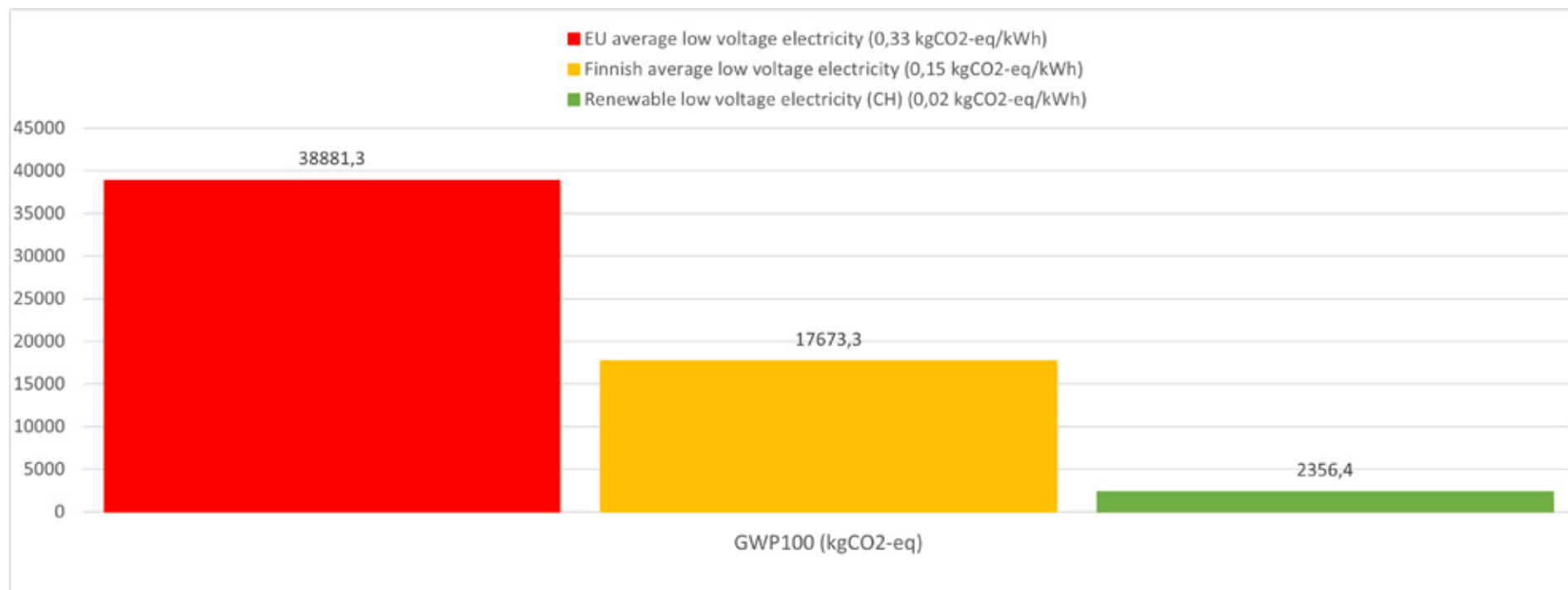
# ADDITIONAL ENVIRONMENTAL INFORMATION

## Energy use during use-phase

Energy consumption during product use refers to the daily estimated electricity consumption of the air handling unit: The energy consumption during the product use is determined with annual efficien-

cy. The annual efficiency is defined in accordance with the instructions of the Ministry of the Environment. To get a better understanding of environmental impacts regarding different electricity mod-

els, a relative investigation was conducted. Based on these assessment results Vallox recommends its' clients to use energy sources with certified lower environmental impacts when possible.



Used datasets (Ecoinvent 3.10):

EU: Electricity, low voltage {Europe without Switzerland} | market group for electricity, low voltage | Cut-off, S

FI: Electricity, low voltage {FI} | market for electricity, low voltage | Cut-off, S

Renewable: Electricity, low voltage, renewable energy products {CH} | market for electricity, low voltage, renewable energy products | Cut-off, S\*

In order for the roof fan unit to sustain its efficiency during its life cycle Vallox recommends maintaining the unit according to the instruction manual. Always follow local regulations on the cleaning of ventilation equipment.

Vallox is a ISO 14001 certified company aiming to improve it's overall sustainability. Making LCA's and EPD's for Vallox products is one of the many efforts Vallox is developing in order to reduce the environmental burden of Vallox products and the organization.

More information on Vallox, product manuals and recycling instructions for the roof fan units can be found from Vallox website: [www.vallox.com](http://www.vallox.com)





# REFERENCES

Ecoinvent database version 3.10

General Programme Instructions of the International EPD® System. Version 4.0.

EPD International (2022): Product Category Rules (PCR) Construction products 2019:14, version 1.3.4

PCR 2019:14-c-PCR-018 c-PCR-018 Ventilation components (c-PCR under PCR 2019:14) (Adopted from EPD Norway)

EN 15804:2012+A2:2019/AC:2021 Sustainability of construction works - Environmental Product Declarations — Core rules for the product category of construction products

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

ISO 14040:2006 Environmental management. Life cycle assessment. Principles and frameworks.

ISO 14044:2006 Environmental management. Life cycle assessment. Requirements and guidelines.

Eurostat. (n.d.). Waste Database. Retrieved June 2, 2024, from European Commission website: [https://doi.org/10.2908/ENV\\_WASTRT](https://doi.org/10.2908/ENV_WASTRT)

# ANNEX 1.

Treatment of waste by waste category, hazardousness and waste management operations  
[env\_wastrt\_\_custom\_15908311]

TIME		2020													
WASTE (Labels)		Metal wastes, ferrous		Metal wastes, non-ferrous		Glass wastes		Paper and cardboard wastes		Plastic wastes		Wood wastes		Discarded equipment (except discarded vehi- cles and batteries and accumulators waste) (W08 except W081, W0841)	
GEO (Labels)	WST_OPER (Labels)	tons	%	tons	%	tons	%	tons	%	tons	%	tons	%	tons	%
European Union - 27 countries (from 2020)	Waste treatment	60 630 000	100,00 %	7 730 000	100,00 %	15 790 000	100,00 %	31 110 000	100,00 %	11 390 000	100,00 %	40 180 000	100,00 %	2 830 000	100,00 %
	Disposal - landfill (D1, D5, D12)	40 000	0,07 %	30 000	0,39 %	160 000	1,01 %	50 000	0,16 %	590 000	5,18 %	130 000	0,32 %	50 000	1,77 %
	Disposal - incineration (D10)	0	0,00 %	0	0,00 %	0	0,00 %	0	0,00 %	40 000	0,35 %	110 000	0,27 %	10 000	0,35 %
	Recovery - energy recovery (R1)	100 000	0,16 %	0	0,00 %	10 000	0,06 %	470 000	1,51 %	2 640 000	23,18 %	21 450 000	53,38 %	10 000	0,35 %
	Recovery - recycling	60 470 000	99,7 %	7 700 000	99,6 %	15 550 000	98,48 %	30 590 000	98,3 %	8 110 000	71,2 %	18 490 000	46,02 %	2 770 000	97,9 %
			Used for steel		Used for aluminium				"Used for paper and cardboard"		Used for plastic and rubber				Used for WEEE
	Corresponding EN 15804+A2 R2 value		90,00 %		90,00 %				0,75 %		0,70 %				

**VALLOX**

[www.vallox.com](http://www.vallox.com)



[www.environdec.com](http://www.environdec.com)