ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

Lo-Carbon Econiq
Volution Ventilation

EPD HUB, HUB-4128
Published on 10.10.2025, last updated on 10.10.2030

Life Cycle Assessment study has been performed in accordance with the requirements of EN 15804, EPD Hub PCR version 1.2 (24 Mar 2025) and JRC characterization factors EF 3.1.

Created with One Click LCA

volution
Healthy air, sustainably.

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Volution Ventilation
Address	Fleming Way, CRAWLEY, West Sussex, RH10 9YX
Contact details	EPD@volution-group.co.uk
Website	https://www.volutiongroupplc.com/

EPD STANDARDS, SCOPE AND VERIFICATION

Program operator	EPD Hub, hub@epdhub.com
Reference standard	EN 15804:2012+A2:2019/AC:2021 and ISO 14025
PCR	EPD Hub Core PCR Version 1.2, 24 Mar 2025
Sector	Manufactured product
Category of EPD	Third party verified EPD
Scope of the EPD	Cradle to gate with options, A4-B7, and modules C1-C4, D
EPD author	Andrew Jackson, Volution Ventilation.
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☑ External verification
EPD verifier	Imane Uald Lamkaddam as an authorized verifier for EPD Hub

This EPD is intended for business-to-business and/or business-to-consumer communication. The manufacturer has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programs may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804 and if they are not compared in a building context.

PRODUCT

Product name	Lo-Carbon Econiq
Additional labels	-
Product reference	See Annex 1
Place(s) of raw material origin	UK, China, Europe
Place of production	Dudley, United Kingdom
Place(s) of installation and use	UK, Europe
Period for data	01-09-2024 to 31-08-2025
Averaging in EPD	No grouping
Variation in GWP-fossil for A1-A3 (%)	-
GTIN (Global Trade Item Number)	See Annex 1
A1-A3 Specific data (%)	2.29

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 Unit
Declared unit mass	27.7 kg
GWP-fossil, A1-A3 ($kgCO_2e$)	2.90E+02
GWP-total, A1-A3 ($kgCO_2e$)	2.80E+02
Secondary material, inputs (%)	6.22
Secondary material, outputs (%)	20.3
Total energy use, A1-A3 (kWh)	1170
Net freshwater use, A1-A3 (m^3)	2.59

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Founded in 1936, Vent-Axia improves the indoor environment by providing ventilation solutions across the Residential and commercial New build, Repair and maintenance segments of the UK construction market with a focus in Private and Public housing, New Build developments and Commercial and Industrial buildings. In December 2002, Volution Group was formed through a buy-out. In June 2014 Volution Group PLC became a listed company on the London Stok Exchange (LSE: FAN).Volution have acquired many brands over the years in the UK, mainland Europe, Australia and New Zealand.

PRODUCT DESCRIPTION

The Lo-Carbon Sentinel Econiq is our flagship mechanical ventilation with heat recovery system. Designed and developed in the UK, it offers the highest level of comfort and functionality all year round. Introducing a full range of products, with air performance suitable for all types of homes, the new Sentinel-X wireless controls platform delivers complete control over the home environment, provided through a full range of wired/wireless sensors and a smartphone app. The highly sculpted interior surfaces, designed using the latest CFD techniques, ensure airflows are maximised through the unit, minimising noise and energy use. This feature alone provides an experience, that will delight homeowners, providing the most discrete and highly efficient ventilation available. The MVHR filter options offer numerous benefits, including improved indoor air quality by removing allergens and particulate matter. They maintain the system's energy efficiency, reduce heating and cooling costs, and enhance the overall longevity of the system. Additionally, they capture bacteria, viruses and VOCs, promoting a healthier living environment. Regular filter maintenance extends the system's lifespan and ensures uninterrupted operation. Whatever the outside environment, the system can help improve the indoor air quality by filtering out impurities, with ISO 60% Coarse (G4) supplied as standard, which can filter out sand, fine hair and particles larger than 10µm. Additional filtration can be achieved with a selection of optional filters, such as ISO ePM10 (M5), which can filter pollen, stone dust and particles smaller or equal to 10µm and ISO ePM2.5 (F7), which can filter out mould spores, bacteria and particles smaller or equal to 2.5µm. The various sensor options allow for flexible installation in individual rooms, supporting effective management of the air in the home.

Further information can be found at:
https://www.volutiongroupplc.com/

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	26	EU, Asia & UK
Minerals	24	EU & UK
Fossil materials	50	EU & UK
Bio-based materials	-	-

BIOGENIC CARBON CONTENT

Product’s biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	0
Biogenic carbon content in packaging, kg C	7.17

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 Unit
Mass per declared unit	27.7 kg
Functional unit	Econiq with a recommended maximum flow rate of 125 litres a second at 150 Pa
Reference service life	20

SUBSTANCES, REACH - VERY HIGH CONCERN

Substances of very high concern	EC	CAS
-		
-		
-		
-		

PRODUCT LIFE-CYCLE

SYSTEM BOUNDARY

This EPD covers the life-cycle modules listed in the following table.

Product stage			Assembly stage		Use stage							End of life stage				Beyond the system boundaries		
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D		
x	x	x	x	x	ND	ND	ND	ND	ND	x	ND	x	x	x	x	x		
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction/ demolition	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling

Modules not declared = ND. Modules not relevant = MNR

MANUFACTURING AND PACKAGING (A1-A3)

The environmental impacts considered for the product stage cover the manufacturing of raw materials used in the production as well as packaging materials and other ancillary materials. Also, fuels used by machines, and handling of waste formed in the production processes at the manufacturing facilities are included in this stage. The study also considers the material losses occurring during the manufacturing processes as well as losses during electricity transmission.

A market-based approach is used in modelling the electricity mix utilized in the factory.
The reference product consists of one indoor unit that is made of metals, plastics and electronic components. The materials are transported to our production facility, where the main manufacturing processes include sheet metal pressing and plastic moulding before being assembled. The manufacturing process requires electricity and fuels for the different equipment as well as heating. The manufacturing energy is considered based on the electricity mix of the manufacturing site, energy source and country of electricity generation. Certain ancillary materials are also included. Each part manufacturing process is considered separately and process waste disposal is accounted based on allocation of factory level waste. The finished product is packaged in cardboard before being sent to the installation site on a wooden pallet.
A location based approach is used in the modelling of the electricity mix utilised in the factory for manufacturing.
The use of green energy in manufacturing is demonstrated through contractual instruments (GOs, RECs, etc.), and its use is ensured throughout the validity period of this EPD.

TRANSPORT AND INSTALLATION (A4-A5)

Transportation impacts occurred from final products delivery to construction site (A4) cover fuel direct exhaust emissions, environmental impacts of fuel production, as well as related infrastructure emissions.

A sales volume-based weighted average is considered for defining the distribution to the customer. Average distance of transportation from production plant to building site was calculated using our most common country of sale and using the capital city of this country as the destination. Where applicable, we have factored in a shipping leg for transportation into mainland Europe from the UK. Vehicle capacity utilisation volume factor is assumed to be 100% which means full load. In reality, it may vary but as role of transportation emissions in total results is small, the variety in load is assumed to be negligible. To be conservative, empty returns are considered as modelled in the ecoinvent database. Transportation does not cause losses as product are packaged properly. Also, volume capacity utilisation factor is assumed to be 100% for the nested packaged products. Transportation impacts that occur from delivery of the product cover direct exhaust emissions of fuel, environmental impacts of fuel production, as well as related infrastructure emissions. Environmental impacts from installation into the building include waste packaging materials (A5) and release of biogenic carbon dioxide from waste processing of cardboard and wood pallets. Electricity consumption, steel bolts and copper pipes are considered as part of the installation process. Quantities are assumed as it varies for different products.

PRODUCT USE AND MAINTENANCE (B1-B7)

The reference service life is 20 years and the total energy consumption during the use phase is also considered based on the sales volume-based weighted average data. No replacement of components or parts are included.

This EPD follows additional requirements for products using enegy in B6 (Use Stage) permanently installed into the building.
Air, soil, and water impacts during the use phase have not been studied.

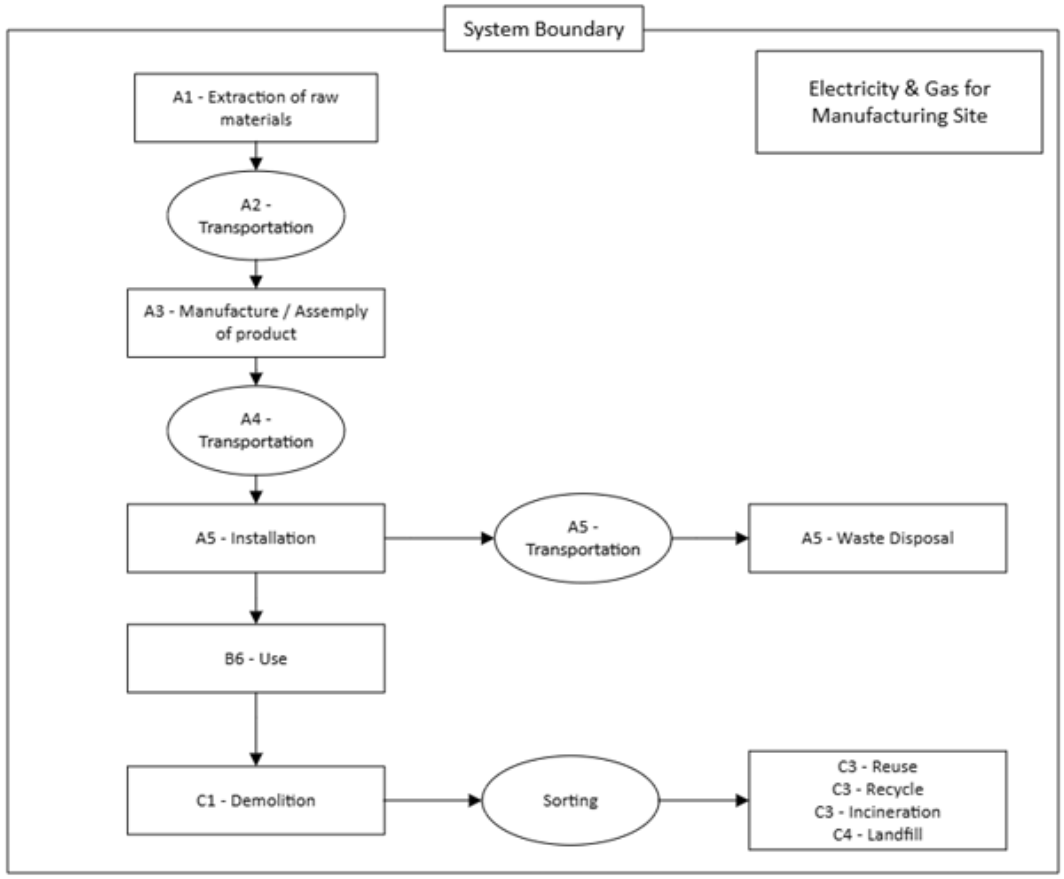
PRODUCT END OF LIFE (C1-C4, D)

Consumption of energy and natural resources in demolition process is assumed to be negligible. It is assumed that the waste is collected separately and transported to the waste treatment centre. Transportation distance to treatment is assumed as 250 km to recycling sites, 150 km to incineration and 50 km to landfill, and the transportation method is assumed to be lorry (C2). The used installation resources such as copper pipes and steel bolts are also dismantled and transported along with the product. According to EN

50693:2019, the sequence of treatment operations occurring to the product shall include de-pollution, fractions separation and preparation (dismantling, crushing, shredding, sorting), recycling, other material recovery, energy recovery and disposal. In this study, the default values from table G.4 of EN 50693 is used for treating materials in different waste treatment methods. 10% of the refrigerant is assumed to be discharged into air when the equipment is crushed, while the remaining is partly recovered and partly incinerated without energy recovery.

Benefits and loads beyond the system boundary were taken into consideration in this study. Specifically, the loads from recycling and incineration of the raw materials in the end of life, and the packaging in A5. Any recycled contents in the materials were discounted in Module D as per the EN 15804+A2.

MANUFACTURING PROCESS



LIFE-CYCLE ASSESSMENT

CUT-OFF CRITERIA

The study does not exclude any modules or processes which are stated mandatory in the reference standard and the applied PCR. The study does not exclude any hazardous materials or substances. The study includes all major raw material and energy consumption. All inputs and outputs of the unit processes, for which data is available for, are included in the calculation. There is no neglected unit process more than 1% of total mass or energy flows. The module specific total neglected input and output flows also do not exceed 5% of energy usage or mass.

The production of capital equipment, construction activities, and infrastructure, maintenance and operation of capital equipment, personnel-related activities, energy and water use related to company management and sales activities are excluded.

Stages B1-B5 (Use, Maintenance, Repair, Replacement & Refurbishment) are excluded from the EPD as they are dependant on the specific building and how the product is used.

B7 (Operational Water Use) is excluded as the unit does not require water.

As we injection mould our plastic products, the waste is negligible. Our metal components are pressed on site and the waste is negligible.

VALIDATION OF DATA

Data collection for production, transport, and packaging was conducted using time and site-specific information, as defined in the general information section on page 1 and 2. Upstream process calculations rely on generic data as defined in the Bibliography section. Manufacturer-provided specific and generic data were used for the product's manufacturing stage. The analysis was performed in One Click LCA EPD Generator, with the 'Cut-Off, EN 15804+A2' allocation method, and characterization factors according to EN 15804:2012+A2:2019/AC:2021 and JRC EF 3.1.

ALLOCATION, ESTIMATES AND ASSUMPTIONS

Allocation is required if some material, energy, and waste data cannot be measured separately for the product under investigation. All allocations are done as per the reference standards and the applied PCR. In this study, allocation has been done in the following ways:

Data type	Allocation
Raw materials	No allocation
Packaging material	Allocated by mass or volume
Ancillary materials	Not applicable
Manufacturing energy and waste	Allocated by mass or volume

PRODUCT & MANUFACTURING SITES GROUPING

Type of grouping	No grouping
Grouping method	Not applicable
Variation in GWP-fossil for A1-A3, %	

This EPD is product and factory specific.

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. The EPD Generator uses Ecoinvent v3.10.1/3.11 and One Click LCA databases as sources of environmental data. Allocation used in Ecoinvent 3.10.1/3.11 environmental data sources follow the methodology ‘allocation, Cut-off, EN 15804+A2‘.

ENVIRONMENTAL IMPACT DATA

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.

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, EF 3.1

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total[1)]	kg CO_2e	2.78E+02	6.12E+00	-1.80E+01	2.66E+02	1.50E+00	2.75E+01	ND	ND	ND	ND	ND	2.98E-04	ND	0.00E+00	6.39E-01	2.62E+01	1.09E+01	-1.89E+01
GWP – fossil	kg CO_2e	2.77E+02	6.12E+00	8.66E+00	2.92E+02	1.50E+00	5.58E-01	ND	ND	ND	ND	ND	2.98E-04	ND	0.00E+00	6.39E-01	2.62E+01	1.09E+01	-1.89E+01
GWP – biogenic	kg CO_2e	3.68E-01	1.28E-03	-2.70E+01	-2.66E+01	3.15E-04	2.70E+01	ND	ND	ND	ND	ND	3.78E-08	ND	0.00E+00	1.40E-04	-2.32E-02	-9.75E-04	0.00E+00
GWP – LULUC	kg CO_2e	6.53E-01	2.50E-03	2.65E-01	9.20E-01	5.68E-04	6.38E-04	ND	ND	ND	ND	ND	3.16E-08	ND	0.00E+00	2.83E-04	5.80E-04	1.47E-04	1.60E-02
Ozone depletion pot.	kg $CFC\text{-}_{11}$e	1.19E-05	1.17E-07	2.50E-07	1.23E-05	3.00E-08	7.82E-09	ND	ND	ND	ND	ND	1.52E-11	ND	0.00E+00	9.01E-09	1.79E-08	9.51E-09	3.00E-08
Acidification potential	mol H^+e	1.77E+00	1.62E-02	4.16E-02	1.83E+00	5.47E-03	2.77E-03	ND	ND	ND	ND	ND	7.92E-07	ND	0.00E+00	2.14E-03	1.59E-02	7.32E-03	-1.23E-01
EP-freshwater[2)]	kg Pe	2.96E-01	4.78E-04	4.16E-03	3.01E-01	1.00E-04	1.39E-04	ND	ND	ND	ND	ND	3.08E-08	ND	0.00E+00	4.97E-05	1.88E-04	5.70E-05	-1.58E-02
EP-marine	kg Ne	3.23E-01	3.95E-03	1.86E-02	3.45E-01	1.80E-03	3.44E-03	ND	ND	ND	ND	ND	1.74E-07	ND	0.00E+00	6.94E-04	1.13E-02	9.64E-03	-2.62E-02
EP-terrestrial	mol Ne	3.41E+00	4.30E-02	1.43E-01	3.60E+00	1.96E-02	1.05E-02	ND	ND	ND	ND	ND	1.80E-06	ND	0.00E+00	7.55E-03	8.01E-02	3.82E-02	-2.81E-01
POCP ("smog")[3)]	kg NMVOCe	1.16E+00	2.30E-02	4.58E-02	1.23E+00	8.30E-03	3.59E-03	ND	ND	ND	ND	ND	5.98E-07	ND	0.00E+00	3.00E-03	1.99E-02	9.67E-03	-7.61E-02
ADP-minerals & metals[4)]	kg Sbe	6.28E-02	2.55E-05	3.91E-05	6.29E-02	4.10E-06	2.32E-06	ND	ND	ND	ND	ND	2.73E-09	ND	0.00E+00	2.05E-06	8.78E-06	1.18E-06	-1.76E-03
ADP-fossil resources	MJ	4.38E+03	8.55E+01	1.40E+02	4.61E+03	2.17E+01	6.84E+00	ND	ND	ND	ND	ND	6.79E-03	ND	0.00E+00	9.01E+00	1.20E+01	6.25E+00	-2.13E+02
Water use[5)]	m^3e depr.	9.48E+01	4.76E-01	5.25E+00	1.01E+02	1.10E-01	1.85E-01	ND	ND	ND	ND	ND	4.88E-05	ND	0.00E+00	4.22E-02	1.65E+00	7.40E-01	-4.14E+00

1) GWP = Global Warming Potential; 2) EP = Eutrophication potential. Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO4e; 3) POCP = Photochemical ozone formation; 4) ADP = Abiotic depletion potential; 5) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

ADDITIONAL (OPTIONAL) ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, EF 3.1

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Particulate matter	Incidence	1.34E-05	3.58E-07	5.18E-07	1.43E-05	1.48E-07	4.54E-08	ND	ND	ND	ND	ND	3.35E-12	ND	0.00E+00	5.28E-08	8.43E-08	3.59E-08	-1.53E-06
Ionizing radiation[6]	kBq U235e	2.68E+01	1.48E-01	1.20E+00	2.81E+01	2.59E-02	2.56E-02	ND	ND	ND	ND	ND	1.87E-04	ND	0.00E+00	7.38E-03	2.18E-02	6.25E-03	-5.54E-01
Ecotoxicity (freshwater)	CTUe	6.17E+03	1.46E+01	6.55E+01	6.25E+03	2.54E+00	8.67E+00	ND	ND	ND	ND	ND	4.49E-04	ND	0.00E+00	1.40E+00	4.98E+01	3.07E+01	-5.37E+02
Human toxicity, cancer	CTUh	2.10E-07	1.09E-09	1.88E-08	2.29E-07	2.48E-10	3.23E-10	ND	ND	ND	ND	ND	5.82E-14	ND	0.00E+00	1.08E-10	2.30E-09	9.36E-10	-1.24E-08
Human tox. non-cancer	CTUh	7.77E-06	5.15E-08	7.43E-08	7.89E-06	1.40E-08	1.75E-08	ND	ND	ND	ND	ND	2.62E-12	ND	0.00E+00	5.67E-09	7.71E-08	3.74E-08	-2.37E-07
SQP[7]	-	1.11E+03	4.22E+01	1.67E+03	2.82E+03	2.16E+01	5.99E+00	ND	ND	ND	ND	ND	6.33E-04	ND	0.00E+00	5.99E+00	5.87E+00	4.13E+00	-6.87E+02

6) EN 15804+A2 disclaimer for Ionizing radiation, human health. 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; 7) SQP = Land use related impacts/soil quality.

USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy[8]	MJ	3.86E+02	1.93E+00	7.66E+01	4.65E+02	3.50E-01	-2.33E+02	ND	ND	ND	ND	ND	2.22E-04	ND	0.00E+00	1.24E-01	5.44E-01	1.34E-01	-1.01E+02
Renew. PER as material	MJ	0.00E+00	0.00E+00	2.34E+02	2.34E+02	0.00E+00	-2.34E+02	ND	ND	ND	ND	ND	0.00E+00	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total use of renew. PER	MJ	3.86E+02	1.93E+00	3.11E+02	6.99E+02	3.50E-01	-4.67E+02	ND	ND	ND	ND	ND	2.22E-04	ND	0.00E+00	1.24E-01	5.44E-01	1.34E-01	-1.01E+02
Non-re. PER as energy	MJ	3.54E+03	8.55E+01	1.31E+02	3.76E+03	2.17E+01	6.84E+00	ND	ND	ND	ND	ND	6.79E-03	ND	0.00E+00	9.01E+00	-4.28E+02	-3.48E+02	-2.15E+02
Non-re. PER as material	MJ	8.39E+02	0.00E+00	1.06E+01	8.50E+02	0.00E+00	-1.06E+01	ND	ND	ND	ND	ND	0.00E+00	ND	0.00E+00	0.00E+00	-4.87E+02	-3.52E+02	0.00E+00
Total use of non-re. PER	MJ	4.38E+03	8.55E+01	1.41E+02	4.61E+03	2.17E+01	-3.78E+00	ND	ND	ND	ND	ND	6.79E-03	ND	0.00E+00	9.01E+00	-9.14E+02	-7.01E+02	-2.15E+02
Secondary materials	kg	1.72E+00	4.53E-02	6.50E+00	8.27E+00	9.39E-03	6.49E-03	ND	ND	ND	ND	ND	6.90E-07	ND	0.00E+00	4.01E-03	1.41E-02	2.81E-03	6.75E+00
Renew. secondary fuels	MJ	2.67E-01	4.94E-04	5.86E+00	6.13E+00	1.17E-04	5.11E-05	ND	ND	ND	ND	ND	3.80E-09	ND	0.00E+00	5.11E-05	2.69E-04	8.51E-05	-3.61E-03
Non-ren. secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	ND	ND	ND	0.00E+00	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of net fresh water	m^3	2.46E+00	1.33E-02	1.25E-01	2.59E+00	3.18E-03	-1.38E-02	ND	ND	ND	ND	ND	1.17E-06	ND	0.00E+00	1.22E-03	3.02E-02	6.27E-04	-1.67E-01

8) PER = Primary energy resources.

END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	2.64E+01	1.34E-01	5.41E-01	2.71E+01	3.13E-02	6.41E-02	ND	ND	ND	ND	ND	7.87E-06	ND	0.00E+00	1.56E-02	4.44E-01	1.89E-01	-1.91E+00
Non-hazardous waste	kg	1.19E+03	3.12E+00	1.39E+01	1.21E+03	6.25E-01	2.60E+01	ND	ND	ND	ND	ND	1.66E-04	ND	0.00E+00	2.93E-01	1.21E+01	2.44E+01	1.64E+01
Radioactive waste	kg	6.69E-03	3.69E-05	2.94E-04	7.02E-03	6.41E-06	6.45E-06	ND	ND	ND	ND	ND	3.93E-08	ND	0.00E+00	1.81E-06	5.51E-06	1.56E-06	-1.33E-04

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	ND	ND	ND	0.00E+00	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.18E+00	ND	ND	ND	ND	ND	0.00E+00	ND	0.00E+00	0.00E+00	5.63E+00	0.00E+00	0.00E+00
Materials for energy rec	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	ND	ND	ND	0.00E+00	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.85E+01	ND	ND	ND	ND	ND	0.00E+00	ND	0.00E+00	0.00E+00	1.23E+02	0.00E+00	0.00E+00
Exported energy – Electricity	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.78E+00	ND	ND	ND	ND	ND	0.00E+00	ND	0.00E+00	0.00E+00	5.18E+01	0.00E+00	0.00E+00
Exported energy –	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.07E+01	ND	ND	ND	ND	ND	0.00E+00	ND	0.00E+00	0.00E+00	7.12E+01	0.00E+00	0.00E+00

ENVIRONMENTAL IMPACTS – EN 15804+A1, CML / ISO 21930

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Global Warming Pot.	kg CO_2e	2.76E+02	6.08E+00	9.01E+00	2.91E+02	1.49E+00	1.38E+00	ND	ND	ND	ND	ND	2.97E-04	ND	0.00E+00	6.35E-01	2.62E+01	1.08E+01	-1.88E+01
Ozone depletion Pot.	kg CFC_{-11}e	1.24E-05	9.37E-08	2.03E-07	1.27E-05	2.39E-08	6.32E-09	ND	ND	ND	ND	ND	1.21E-11	ND	0.00E+00	7.20E-09	1.52E-08	7.99E-09	1.85E-08
Acidification	kg SO_2e	1.45E+00	1.30E-02	3.04E-02	1.49E+00	4.18E-03	2.07E-03	ND	ND	ND	ND	ND	6.47E-07	ND	0.00E+00	1.64E-03	1.11E-02	5.08E-03	-9.96E-02
Eutrophication	kg PO_4^3e	7.60E-01	3.00E-03	1.45E-01	9.08E-01	9.75E-04	1.51E-03	ND	ND	ND	ND	ND	8.65E-08	ND	0.00E+00	3.98E-04	4.63E-03	2.43E-03	-1.05E-02
POCP (“smog”)	kg C_2H_4e	1.00E-01	1.19E-03	3.81E-03	1.05E-01	3.68E-04	3.57E-04	ND	ND	ND	ND	ND	4.42E-08	ND	0.00E+00	1.46E-04	7.28E-04	3.77E-04	-6.90E-03
ADP-elements	kg Sbe	6.28E-02	2.48E-05	3.90E-05	6.28E-02	4.00E-06	2.26E-06	ND	ND	ND	ND	ND	2.71E-09	ND	0.00E+00	2.00E-06	8.25E-06	9.37E-07	-1.76E-03
ADP-fossil	MJ	3.94E+03	8.30E+01	1.20E+02	4.14E+03	2.12E+01	6.41E+00	ND	ND	ND	ND	ND	4.47E-03	ND	0.00E+00	8.89E+00	1.17E+01	6.15E+00	-2.01E+02

ADDITIONAL INDICATOR – GWP-GHG

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG[9)]	kg CO_2e	2.78E+02	6.12E+00	8.93E+00	2.93E+02	1.50E+00	5.59E-01	ND	ND	ND	ND	ND	2.98E-04	ND	0.00E+00	6.39E-01	2.62E+01	1.09E+01	-1.89E+01

9) This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. In addition, the characterisation factors for the flows – CH4 fossil, CH4 biogenic and Dinitrogen monoxide – were updated. This indicator is identical to the GWP-total of EN 15804:2012+A2:2019 except that the characterisation factor for biogenic CO2 is set to zero.

SCENARIO DOCUMENTATION

Manufacturing energy scenario documentation

Scenario parameter	Value
Electricity data source and quality	Electricity, medium voltage, residual mix (Reference product: electricity, medium voltage)
Electricity CO2e / kWh	0.44
District heating data source and quality	
District heating CO2e / kWh	

Transport scenario documentation A4

Scenario parameter	Value
Fuel and vehicle type. Eg, electric truck, diesel powered truck	Transport, freight, lorry 16-32 metric ton, EURO5, Europe
Average transport distance, km	318
Capacity utilization (including empty return) %	50
Bulk density of transported products	
Volume capacity utilization factor	1

Installation scenario documentation A5

Scenario information	Value
Ancillary materials for installation (specified by material) / kg or other units as appropriate	-
Water use / m^3	-
Other resource use / kg	-
Quantitative description of energy type (regional mix) and consumption during the installation process / kWh or MJ	0
Waste materials on the building site before waste processing, generated by the product's installation (specified by type) / kg	Wood: 10Kg Cardboard: 6Kg
Output materials (specified by type) as result of waste processing at the building site e.g. collection for recycling, for energy recovery, disposal (specified by route) / kg	% are for recycling, incineration w. energy recovery, landfill respectively using EuroStat data. Wood: 32%, 30%, 38% Cardboard: 83%, 8%, 9%
Direct emissions to ambient air, soil and water / kg	-

Use stages scenario documentation - B6-B7 Use of energy and use of water

Scenario information	Value
Ancillary materials specified by material / kg or units as appropriate	-
Net fresh water consumption / m^3	-
Type of energy carrier, e.g., electricity, natural gas, district heating / kWh	-
Power output of equipment / kW	-
Characteristic performance, e.g., energy efficiency, emissions, variation of performance with capacity utilization, etc.	thermal efficiencies up to 93% SFP (W/l/s) as low as 0.39
Further assumptions for scenario development, e.g., frequency and period of use, number of occupants	-

End of life scenario documentation

Scenario information	Value
Collection process – kg collected separately	-
Collection process – kg collected with mixed construction waste	27.7
Recovery process – kg for re-use	-
Recovery process – kg for recycling	10.84
Recovery process – kg for energy recovery	7.37
Disposal (total) – kg for final deposition	9.49
Scenario assumptions e.g. transportation	250km recycling, 150km incineration, 50km landfill.

THIRD-PARTY VERIFICATION STATEMENT

EPD Hub declares that this EPD is verified in accordance with ISO 14025 by an independent, third-party verifier. The project report on the Life Cycle Assessment and the report(s) on features of environmental relevance are filed at EPD Hub. EPD Hub PCR and ECO Platform verification checklist are used.

EPD Hub is not able to identify any unjustified deviations from the PCR and EN 15802+A2 in the Environmental Product Declaration and its project report.

EPD Hub maintains its independence as a third-party body; it was not involved in the execution of the LCA or in the development of the declaration and has no conflicts of interest regarding this verification.

The company-specific data and upstream and downstream data have been examined as regards plausibility and consistency. The publisher is responsible for ensuring the factual integrity and legal compliance of this declaration.

The software used in creation of this LCA and EPD is verified by EPD Hub to conform to the procedural and methodological requirements outlined in ISO 14025:2010, ISO 14040/14044, EN 15804+A2, and EPD Hub Core Product Category Rules and General Program Instructions.

Verified tools

Tool verifier: Magaly Gonzalez Vazquez
Tool verification validity: 27 March 2025 - 26 March 2028

Imane Uald Lamkaddam as an authorized verifier for EPD Hub Limited
10.10.2025

ANNEX 1 PART NUMBERS

Brand	Part Number	Part Description	GTIN	Weight
Vent-Axia	411077	Vent-Axia Sentinel Econiq SC	5015135110772	26
Vent-Axia	412465	Vent-Axia Sentinel Econiq SE	5015135124656	26
Vent-Axia	499883	Vent-Axia Sentinel Econiq S	5015135998837	26
Vent-Axia	499956	Vent-Axia Econiq Sd	5015135999568	26
Vent-Axia	499957	Vent-Axia Econiq SCd	5015135999575	26
Vent-Axia	499958	Vent-Axia Econiq Se	5015135999582	26
Vent-Axia	1004000258	Vent-Axia Econiq 300 CO2	5015135996543	26
Vent-Axia	413625	Vent-Axia Econiq Si	5015135136253	27
Vent-Axia	499890	Vent-Axia Sentinel Econiq SCP RH	5015135998905	27
Vent-Axia	499891	Vent-Axia Sentinel Econiq SCP LH	5015135998912	27
Vent-Axia	1004000257	Vent-Axia Econiq 300	5015135996536	27
Vent-Axia	8000000527	Vent-Axia Sentinel Kinetic Advance 250SX TR	5015135786137	27
Vent-Axia	8000000528	Vent-Axia Sentinel Kinetic Advance 250SX TL	5015135786144	27
Vent-Axia	8000000529	Vent-Axia Sentinel Kinetic Advance 350SX TR	5015135786151	27
Vent-Axia	8000000530	Vent-Axia Sentinel Kinetic Advance 350SX TL	5015135786168	27
Vent-Axia	476808B	Vent-Axia Sentinel Econiq SiP LH	5015135122720	27
Vent-Axia	476809B	Vent-Axia Sentinel Econiq SiP RH	5015135122713	27
Fresh	841671	Fresh Econiq 97 TV	7318118416716	27
Fresh	841672	Fresh Econiq 97 TV	7318118416723	27
Reclaim	413723	Reclaim IM-S	5015135137236	27
Comair	1004000292	Comair HRUC-Plus 2 RENO	8718087102792	27
Comair	1004000293	Comair HRUC-Plus 3 RENO	8718087102785	27
Comair	1004000140	Comair HRUC-Plus 2 VR	8718087083992	27
Comair	1004000139	Comair HRUC-Plus 2 VL	8718087083985	27
Comair	1004000142	Comair HRUC-Plus 3 VR	8718087084012	27

Brand	Part Number	Part Description	GTIN	Weight
Comair	1004000141	Comair HRUC-Plus 3 VL	8718087084005	27
Vent-Axia	413626	Vent-Axia Econiq Mi	5015135136260	50
Vent-Axia	499632	Vent-Axia Sentinel Econiq M	5015135996321	50
Vent-Axia	499633	Vent-Axia Sentinel Econiq MiP RH	5015135996338	50
Vent-Axia	499634	Vent-Axia Sentinel Econiq MiP LH	5015135996345	50
Vent-Axia	499638	Vent-Axia Sentinel Econiq MC	5015135996383	50
Vent-Axia	499639	Vent-Axia Sentinel Econiq MCP RH	5015135996390	50
Vent-Axia	499640	Vent-Axia Sentinel Econiq MCP LH	5015135996406	50
Vent-Axia	499641	Vent-Axia Sentinel Econiq L	5015135996413	50
Vent-Axia	499642	Vent-Axia Sentinel Econiq LiP RH	5015135996420	50
Vent-Axia	499643	Vent-Axia Sentinel Econiq LiP LH	5015135996437	50
Vent-Axia	499647	Vent-Axia Sentinel Econiq LC	5015135996475	50
Vent-Axia	499648	Vent-Axia Sentinel Econiq LCP RH	5015135996482	50
Vent-Axia	499649	Vent-Axia Sentinel Econiq LCP LH	5015135996499	50
Vent-Axia	499963	Econiq MXe	5015135999636	50
Vent-Axia	499968	Econiq LXe	5015135999681	50
Vent-Axia	1004000259	Vent-Axia Econiq 450	5015135996550	50
Vent-Axia	1004000260	Vent-Axia Econiq 450 CO2	5015135996567	50
Vent-Axia	1004000261	Vent-Axia Econiq 600	5015135996574	50
Vent-Axia	1004000262	Vent-Axia Econiq 600 CO2	5015135996581	50
Vent-Axia	1004000304	Vent-Axia Econiq 375	5015135135799	50
Vent-Axia	1004000305	Vent-Axia Econiq 375 CO2	5015135135805	50
Vent-Axia	8000001417	Vent-Axia Econiq 350 R	5015135996611	50
Vent-Axia	8000001418	Vent-Axia Econiq 350 L	5015135996628	50
Vent-Axia	8000001419	Vent-Axia Econiq 450 R	5015135996635	50
Vent-Axia	8000001420	Vent-Axia Econiq 450 L	5015135996642	50
Vent-Axia	8000001421	Vent-Axia Econiq 600 R	5015135996659	50
Vent-Axia	8000001422	Vent-Axia Econiq 600 L	5015135996666	50

Brand	Part Number	Part Description	GTIN	Weight
Vent-Axia	8000001585	Vent-Axia Econiq 400 R	5015135123970	50
Vent-Axia	8000001586	Vent-Axia Econiq 400 L	5015135123987	50
Fresh	841673	Fresh Econiq FCX 125 TH	7318118416730	50
Fresh	841674	Fresh Econiq FCX 125 TV	7318118416747	50
Fresh	841675	Fresh Econiq FCX 167 TH	7318118416754	50
Fresh	841676	Fresh Econiq FCX 167 TV	7318118416761	50
Reclaim	413724	Reclaim IM-M	5015135137243	50
Comair	1004000289	Comair HRUC-PRO 3 R	8718087102563	50
Comair	1004000288	Comair HRUC-PRO 3 L	8718087102570	50
Comair	1004000303	Comair HRUC-PRO 4 R	8718087102778	50
Comair	1004000302	Comair HRUC-PRO 4 L	8718087102761	50
Comair	1004000264	Comair HRUC-PRO 5 R	8718087102587	50
Comair	1004000263	Comair HRUC-PRO 5 L	8718087102594	50
Comair	1004000266	Comair HRUC-PRO 6 R	8718087102600	50
Comair	1004000265	Comair HRUC-PRO 6 L	8718087102617	50

ANNEX 2 SCALING TABLE

Part Number	Mass (Kg)	A1-A3			
		EN 15804+A1	EN 15804+A2		
		GWP	GWP total	GWP total	GWP biogenic
Reference	1	10.499	0.308	0.308	0
411077	26	272.981	7.997	7.997	0
412465	26	272.981	7.997	7.997	0
499883	26	272.981	7.997	7.997	0
499956	26	272.981	7.997	7.997	0
499957	26	272.981	7.997	7.997	0
499958	26	272.981	7.997	7.997	0
1004000258	26	272.981	7.997	7.997	0
413625	27	283.481	8.305	8.305	0
499890	27	283.481	8.305	8.305	0
499891	27	283.481	8.305	8.305	0
1004000257	27	283.481	8.305	8.305	0
8000000527	27	283.481	8.305	8.305	0
8000000528	27	283.481	8.305	8.305	0
8000000529	27	283.481	8.305	8.305	0
8000000530	27	283.481	8.305	8.305	0
476808B	27	283.481	8.305	8.305	0
476809B	27	283.481	8.305	8.305	0
841671	27	283.481	8.305	8.305	0
841672	27	283.481	8.305	8.305	0
413723	27	283.481	8.305	8.305	0
1004000292	27	283.481	8.305	8.305	0

Part Number	Mass (Kg)	A1-A3			
		EN 15804+A1	EN 15804+A2		
		GWP	GWP total	GWP total	GWP biogenic
1004000293	27	283.481	8.305	8.305	0
1004000140	27	283.481	8.305	8.305	0
1004000139	27	283.481	8.305	8.305	0
1004000142	27	283.481	8.305	8.305	0
1004000141	27	283.481	8.305	8.305	0
413626	50	524.964	15.379	15.379	0
499632	50	524.964	15.379	15.379	0
499633	50	524.964	15.379	15.379	0
499634	50	524.964	15.379	15.379	0
499638	50	524.964	15.379	15.379	0
499639	50	524.964	15.379	15.379	0
499640	50	524.964	15.379	15.379	0
499641	50	524.964	15.379	15.379	0
499642	50	524.964	15.379	15.379	0
499643	50	524.964	15.379	15.379	0
499647	50	524.964	15.379	15.379	0
499648	50	524.964	15.379	15.379	0
499649	50	524.964	15.379	15.379	0
499963	50	524.964	15.379	15.379	0
499968	50	524.964	15.379	15.379	0
1004000259	50	524.964	15.379	15.379	0
1004000260	50	524.964	15.379	15.379	0
1004000261	50	524.964	15.379	15.379	0
1004000262	50	524.964	15.379	15.379	0
1004000304	50	524.964	15.379	15.379	0
1004000305	50	524.964	15.379	15.379	0

Part Number	Mass (Kg)	A1-A3			
		EN 15804+A1	EN 15804+A2		
		GWP	GWP total	GWP total	GWP biogenic
8000001417	50	524.964	15.379	15.379	0
8000001418	50	524.964	15.379	15.379	0
8000001419	50	524.964	15.379	15.379	0
8000001420	50	524.964	15.379	15.379	0
8000001421	50	524.964	15.379	15.379	0
8000001422	50	524.964	15.379	15.379	0
8000001585	50	524.964	15.379	15.379	0
8000001586	50	524.964	15.379	15.379	0
841673	50	524.964	15.379	15.379	0
841674	50	524.964	15.379	15.379	0
841675	50	524.964	15.379	15.379	0
841676	50	524.964	15.379	15.379	0
413724	50	524.964	15.379	15.379	0
1004000289	50	524.964	15.379	15.379	0
1004000288	50	524.964	15.379	15.379	0
1004000303	50	524.964	15.379	15.379	0
1004000302	50	524.964	15.379	15.379	0
1004000264	50	524.964	15.379	15.379	0
1004000263	50	524.964	15.379	15.379	0
1004000266	50	524.964	15.379	15.379	0
1004000265	50	524.964	15.379	15.379	0