

# Environmental Product Declaration

In accordance with ISO 14025:2006, EN 15804:2012+A2:2019 / AC:2021 and c-PCR-018 Ventilation components (Adopted from NPCR 030:2021) for:

## Cylindrical Cased Axial Flow Fans: TGT & THGT SERIES



EPD of multiple products, based on a representative product.

Products included:

**All models of the TGT & THGT series.**

The directly represented products in the EPD are:

THGT/4-400-6/8 BC 0,25KW  
(230/400V50HZ) F400 IE2 V5

THGT/4-1000-9/24 BC 15KW  
(400V50HZ) F300/F200 IE3 V5

TGT/4-1609G-12/20 BLPK 200kW  
(400V50HZ) IE3 V5

\*See annexes for the list of all included products.

From:

**S&P Sistemas de Ventilación, S.L**

<b>Programme:</b>	The International EPD® System, <a href="http://www.environdec.com">www.environdec.com</a>
<b>Programme operator:</b>	EPD International AB
<b>Type of EPD</b>	EPD of multiple products, from a company
<b>EPD registration number:</b>	EPD-IES-0029634
<b>Version date:</b>	2026-03-20
<b>Valid until:</b>	2031-03-20

An EPD may be updated or depublished if conditions change. To find the latest version of the EPD and to confirm its validity, see

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



## General information

Programme information	
<b>Programme:</b>	The International EPD® System
<b>Address:</b>	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
<b>Website:</b>	<a href="http://www.environdec.com">www.environdec.com</a>
<b>E-mail:</b>	<a href="mailto:info@environdec.com">info@environdec.com</a>

### Product Category Rules (PCR)

CEN standard EN 15804 serves as the Core Product Category Rules (PCR)

Product Category Rules (PCR): PCR 2019:14 Construction products, version 2.0.1 published on 2025.06.05 and c-PCR-018 Ventilation components (Adopted from NPCR 030:2021).

PCR review was conducted by: The Technical Committee of the International EPD System. See [www.environdec.com](http://www.environdec.com) for a list of members. Review chair: Rob Rouwette (chair), Noa Meron (co-chair). The review panel may be contacted via the Secretariat [www.environdec.com/contact](http://www.environdec.com/contact)

### Third-party Verification

Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:

Individual EPD verification without a pre-verified LCA/EPD tool.

Third-party verifier: Elisabet Amat Guasch (Greenize Projects) ([eamat@greenize.es](mailto:eamat@greenize.es))

Approved by: The International EPD® System

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.

EPDs within the same product category but published in different EPD programmes, may not be comparable. For two EPDs to be comparable, they shall be based on the same PCR (including the same first-digit 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 identical scope in terms of included life-cycle stages (unless the excluded life-cycle stage is demonstrated to be insignificant); apply identical impact assessment methods (including the same version of characterisation factors); and be valid at the time of comparison.

For further information about comparability, see EN 15804 and ISO 14025.

## Information about EPD owner

- **Owner of the EPD:** S&P SISTEMAS DE VENTILACIÓN, SL.
- **Address:** Calle Llevant, 4 - Polígono Industrial Llevant; 08150 Parets del Vallès (Barcelona).
- **Contact and LCA practitioner:** Martí Roig Rabadà ([mroig@solerpalau.com](mailto:mroig@solerpalau.com)), Product Sustainability Manager.
- **Description of the organisation:** Committed to improving indoor air quality and making it accessible to everyone, S&P develops highly energy-efficient, reliable, and durable ventilation solutions that benefit both our customers and the planet. Easy installation is a key pillar of our innovation, ensuring our products meet the needs of both users and installers. We also prioritize human well-being, which is why we are dedicated to designing exceptionally quiet equipment.



- **Product-related or management system-related certifications:** ISO 9001 (ES-257/2001) and ISO 14001 (ES-2001/0052).



## Product information

- **Product name:** TGT & THGT SERIES.
- **Product identification:** The TGT and THGT series are axial flow fans. TGT units are designed for conventional ventilation, while THGT units have a dual purpose and are also designed for smoke extraction, being certified according to EN 12101-3 to operate immersed at 400°C/2h or 300°C/2h.
- **UN CPC code:** Ventilation and air-conditioning equipment installation services (CPC 54632, version 2.1 dated 2015).
- **Product description:** The TGT and THGT series are axial flow fans. Casings are formed from rolled sheet steel with a hot-dip galvanized finish to EN 1461, corrosion category C4. Equipped with variable pitch angle impellers, dynamically balanced to ISO 14694: G6.3, made from high-grade aluminium. Hubs are either aluminium or pressed steel, depending on size and mechanical requirements.
- **Name and location of production site(s):** The product is manufactured in one site of the S&P SISTEMAS DE VENTILACIÓN, SL group, located in the province of Barcelona.
- **Included products:** This EPD covers multiple products and is based on the THGT/4-1000-9/24 BC 15KW (400V50HZ) F300/F200 IE3 V5 chosen as the representative model due to its status as the best-selling in the range.  
All models of the TGT and THGT series are included in this EPD. The variability analysis covers the product with the lowest and the highest impact in module A1–A3 across the entire range. A complete list of included products can be found in the annexes.

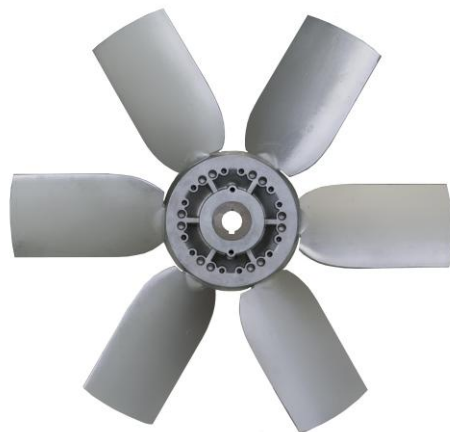
## Content declaration

None of the components present in the final product and included in the “Candidate List of Substances of Extreme Concern in the authorization procedure” of the REACH regulation has a percentage higher than 0,1%.

- **Product mass:** The mass of the products included is listed below.

Product Case	Product name	Weight (Kg)*
Best case	THGT/4-400-6/8 BC 0,25kW (230/400V50HZ) F400 IE2 V5	27,3
Ref. Product	THGT/4-1000-9/24 BC 15kW (400V50HZ) F300/F200 IE3 V5	239,0
Worst case	TGT/4-1609G-12/20 BLPK 200kW (400V50Hz) IE3 V5	1.807,8

\* Excluding packaging.



Product components	Reference Product Mass, kg	Best case Product Mass, kg	Worst case Product Mass, kg	Post-consumer material, Mass-%	Biogenic material, Mass, kg C/kg
<b>Steel</b>	73,4	9,8	541,2	0%	-
<b>Aluminium</b>	18,6	6,5	33,6	25%	-
<b>Motor</b>	147,0	11,0	1.233,0	0%	-
<b>TOTAL</b>	<b>239,0</b>	<b>27,3</b>	<b>1.807,8</b>	<b>0%</b>	-

Packaging materials	Reference Product Mass, kg	Best case Product Mass, kg	Worst case Product Mass, kg	Mass-% (versus the reference product)	Mass biogenic carbon, kg C/kg
<b>Cardboard</b>	5,8	2,5	0,0	2,4%	0,55
<b>Paper</b>	0,1	0,0	0,2	0,0%	0,55
<b>Wood</b>	26,7	12,4	81,5	11,2%	0,45
<b>Plastic</b>	0,0	0,1	0,6	0%	-
<b>TOTAL</b>	<b>32,6</b>	<b>15,0</b>	<b>82,3</b>	<b>13,5%</b>	<b>0,50</b>

## LCA information

- **Declared unit:** 1 unit of THGT/4-1000-9/24 BC 15KW (400V50HZ) F300/F200 IE3 V5 operating for 1 year. Conversion factor to 1 Kg = 0,00418.
- **Reference service life:** The Reference Service Life (RSL) of the products considered varies depending on their specific application. TGT units are intended exclusively for ventilation applications, while THGT units are suitable either for emergency smoke extraction only or for combined (dual-purpose) operation.

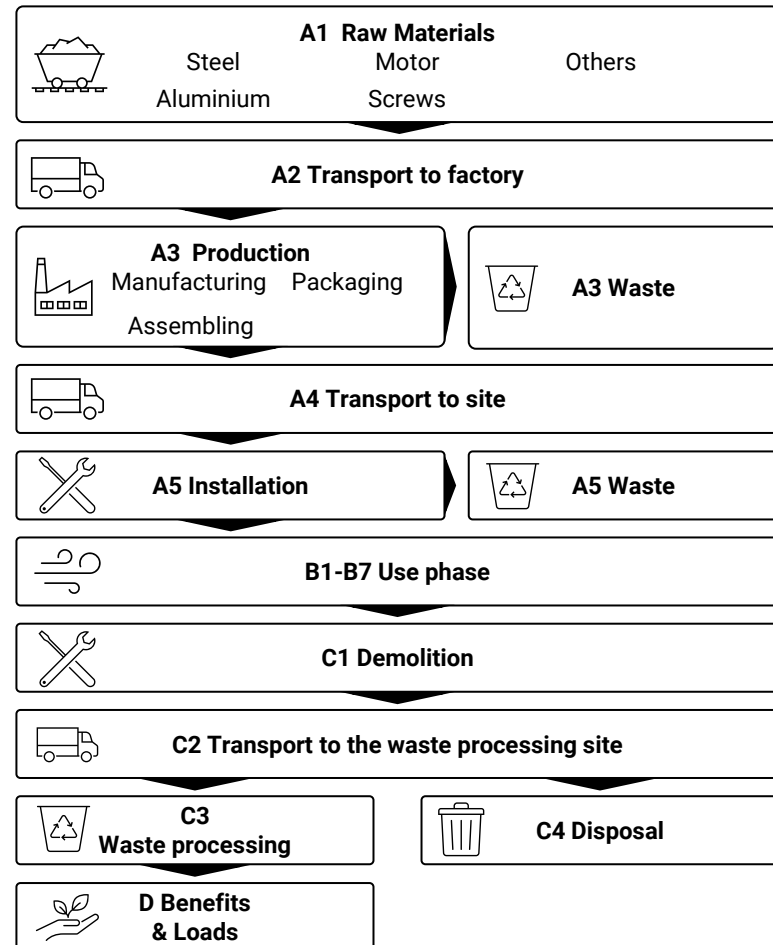
The RSL is significantly influenced by several factors, including daily operating hours, environmental conditions at the installation site, and the level and frequency of maintenance performed.

Given these variables, it is not feasible to define a single, fixed service life for the equipment. Therefore, for the purposes of this Life Cycle Assessment (LCA), and specifically for module B6, an operational period of one year has been assumed. The corresponding operational hours scenario is detailed on page 7.

**Time representativeness:** All specific data related to the production plants and use, used for the study date from 2024.

- **Geographical scope:** The product is manufactured in Spain. LCA downstream scenario considered is Europe, however product can be used globally.
- **Database(s) and LCA software used:** The primary inventory data has been obtained from S&P, corresponding to the references listed above, produced in 2024 at S&P production site in Barcelona province, Spain. The secondary data has been extracted from the Ecoinvent version 3.10.1 database, included in the OneClick LCA software and internationally recognized. Whenever possible, inventory data related to Spain has been selected; otherwise, data from Europe in general has been used.

- **EPD/LCA Tool used:** OneClick LCA.
- **Description of system boundaries:** Cradle to gate with options, modules A4-A5, modules B1-B7, modules C1-C4, and module D.
- **System diagram:**



- **Hypothesis and considerations applied:**

**PRODUCT STAGE (A1-A3):** Encompasses the manufacturing of raw materials, their transportation to the production facility, and all stages of the product manufacturing process.

- **Raw materials supply (A1):** This stage includes the procurement of raw materials and components used in the product's manufacturing.

The motor is a purchased component. An Environmental Product Declaration (EPD) from the supplier has been directly integrated into the analysis to reflect its specific environmental impact.

- **Transport (A2):** This stage accounts for the transportation of raw materials and pre-assembled components from direct suppliers to S&P production site.
- **Manufacturing (A3):** The TGT and THGT range are manufactured and assembled in-house. This stage includes the manufacturing of the entire equipment structure, the assembly of all components, and the quality testing performed on each product.

The structural steel components are subjected to a hot-dip galvanizing process to enhance durability and provide corrosion protection. This treatment is carried out externally.

The aluminium blades are cast in-house and manufactured using 100% recycled aluminium (75% pre-consumer and 25% post-consumer content).

Mass allocation has been applied to accurately determine the share of resources.

Electricity used during the manufacturing process is backed by a certificate of origin issued by the National Commission on Markets and Competition (CNMC), ensuring that it is 100% sourced from renewable energy – specifically, wind (100%). The modelled energy mix for A3 module has an emission

factor of 0,025 kg CO<sub>2eq</sub>/kWh. The transformation losses have been included.

Natural gas is used as the thermal energy source during the aluminium casting process for the in-house production of the blades.

Water consumption during manufacturing is negligible, as the process uses a closed-loop system.

**CONSTRUCTION PROCESS STAGE (A4-A5):** The construction process stage includes the transportation of the product to the installation site and the processes required for its installation.

- **Transportation to site (A4):** Transportation to the installation site is calculated based on the product's sales distribution in 2024. The distance to the site is estimated according to the geographic location of sales. Since the product is sold globally, transportation is assumed to cover 750 km by lorries (16–32 metric tons, EURO5) and 2.814 km by freight sea container ship.
- **Installation (A5):** The installation process is assumed to involve the use of an electric forklift, and its environmental impact has been accounted for. In addition, the impact of the product packaging that is generated as a waste during this phase is accounted for. Recycling processes have been modelled based on EUROSTAT statistics.



**USE STAGE (B1- B7):** Includes all impacts associated with the operation, maintenance, and repair of the product throughout its lifespan.

- **Use, Maintenance, Repair, Replacement, and Refurbishment (B1-B5):** These submodules are considered negligible because the product does not generate additional impacts during its use, requires no maintenance, and is not expected to need repairs, replacements, or refurbishments during the specified operational life.
- **Operational Energy Use (B6):** Module B6 quantifies the operational energy consumption during the use phase of the TGT and THGT units, which are active ventilation products that require electricity for operation. The **operational period considered is 1 year.**

**Each product declared in this EPD has been modelled independently,** based on its most representative and realistic application. Only conventional ventilation scenarios have been considered. Three use scenarios have been defined for each included product:

- Reference product scenario:** Installation in a car park.
  - **Operating time:** 12 hours per day: 11 hours at 25 Hz (50% of nominal frequency) and 1 hours at full load (50 Hz).
  - **Power consumption:** 12.559,6 kWh/year.
- Best-case product scenario:** Installation in a room with constant ventilation demand.
  - **Operating time:** 24 hours per day: 12 hours at 25 Hz (50% of nominal frequency) and 12 hours at full load.
  - **Power consumption:** 540,2 kWh/year.
- Worst-case product scenario:** Operation within an industrial application.
  - **Operating time:** 24 hours per day: 20 hours at 25 Hz (50% of nominal frequency) and 4 hours at full load.
  - **Power consumption:** 422.670,0 kWh/year.

In all scenarios, the operating point of the unit has been modelled using a variable frequency drive (VFD), allowing the motor to operate across its full power range. The [EasyVent](#) fan selection tool from S&P has been used to determine energy consumption based on the defined operating points for each scenario.

Reference product use scenario (B6)			
Operating Mode	Operating Time (h/day)	Power Input (kW)	Power Consumption (kWh)
Switched off	12	0	0
Reduced Speed (25 Hz)	11,0	1,81	19,9
Maximum Speed (50 Hz)	1	14,5	14,5

As the product can be marketed and used across various regions, including Europe, an average European low-voltage electricity market dataset has been selected as a representative reference scenario. The associated emission factor for the selected electricity dataset is 0,33 kg CO<sub>2eq</sub>/kWh.

An additional analysis of the impact of Module B6 for the reference product under different national electricity mixes and geographic contexts is included in the Additional LCA Results section.

- **Operational Water Use (B7):** This submodule is negligible, as the product does not require water for its operation.

**END OF LIFE STAGE (C1-C4):** Includes all processes related to the product's disposal, such as deconstruction, transport, waste processing, and final disposal.

- **Deconstruction (C1):** The deconstruction scenario is defined in accordance with the PCR.
- **Transport (C2):** The default transport distance defined in the PCR has been assumed for the waste transported from the product deinstallation point to the waste management facility. Transport is assumed to be carried out using 16–32 metric ton EURO 5 freight lorries in Europe.
- **Waste processing and disposal (C3-C4):** Waste management has been modelled using a conservative and realistic scenario, although the recyclability potential of the equipment is higher than what is stated in the LCA. The percentages for recycling, incineration (with or without energy recovery), and landfill disposal have been defined based on the norm EN 50693. These are as follows for the entire product: 77% of the product is recycled, 0% of the equipment is incinerated (with or without energy recovery), and 23% of the equipment is landfilled.

Additionally, as stated in the PCR, exclusive waste management scenarios (100% landfilled, 100% recycled, and 100% incinerated) have been included as Additional LCA results.

**BENEFITS AND LOADS (D):** Accounts for the potential environmental benefits and loads associated with the reuse, recycling, or energy recovery of materials after the product's end-of-life. These benefits are reported beyond the system boundaries.

- **Benefits and loads (D):** To ensure a realistic and evidence-based approach in modelling the impacts of Module D, data points generated by OneClick LCA and based on ECOINVENT data have been used. The quantities imputed to the different datapoints correspond only to waste that does not go to

landfill.

Material	End of Life Stage (C1-C4) Scenario	Benefits and Loads (D) Scenario
Steel	80% is recycled 20% is landfilled	Generation of steel scrap
Aluminium	70% is recycled 30% is landfilled	Generation of aluminium scrap
Copper	60% is recycled 40% is landfilled	Generation of copper scrap
Other Plastics	50% is incinerated with energy recovery 25% is incinerated without energy recovery 25% is landfilled	Energy recovery
Electric Components	100% is landfilled	-
Cardboard Paper	83% is recycled 8% is incinerated 9% is landfilled	Generation of recycled cardboard Energy recovery
Wood	32% is recycled 30% is incinerated 38% is landfilled	Generation of recycled wood Energy recovery



Soler&Palau encourages the proper management of the equipment's waste and to increase the recyclability ratio at the end of its useful life, as the **product's recyclability potential is >98%**.

- Cut-off rules:** In accordance with the provisions of the PCR 2019:14 construction products, version 2.0.1 and the standard UNE-EN 15804:2012+A2:2020, at least 95% of total inflows and outflows (mass and energy) per module have been included. The "polluter pays" principle has been applied. Additionally, the following processes have been excluded from the study scope:
  - Manufacture of equipment used in production.
  - Business trips.
  - Maintenance activities at the production plants.
  - Transportation of personnel to and within the plants.
  - Diffuse particle emissions during the transport and storage of raw materials.
- Data Quality Assessment:** All process-specific data was collected for the 2024 operating year and is therefore up to date. Manufacturing-related data is based on factory averages, and mass allocation factors have been applied. Primary data accounts for 24% of the overall dataset. The credibility and consistency of the collected data were verified using primary records; where these were unavailable, secondary sources were used. Dataset selection considered geographic relevance, prioritizing regional and country-specific data where available to best reflect actual operational locations. From a technical perspective, when specific data was not available, the most representative proxy datasets were used, selected based on technological equivalence and process similarity. The overall data quality is good.

Process	Source type	Source	Reference year	Data category	Share of primary data, of GWP-GHG results for A1-A3
<b>Share of primary data, of GWP-GHG results for A1</b>					<b>13%</b>
Raw materials	Database + Collected data	Ecoinvent v3.10 & EPD Owner	2024	Primary data and secondary data	0%
Motor	EPD	Manufacturer	2024	Primary data	25%
<b>Share of primary data, of GWP-GHG results for A2</b>					<b>6%</b>
Transport of raw materials to manufacturing site	Database + Collected data	Ecoinvent v3.10 & EPD Owner	2024	Primary data	100%
<b>Share of primary data, of GWP-GHG results for A3</b>					<b>5%</b>
Manufacturing of the product	Database + Collected data	Ecoinvent v3.10 & EPD Owner	2024	Primary data and secondary data	74%
<b>Total share of primary data, of GWP-GHG results for A1-A3</b>					<b>24%</b>

## Modules Declared

A 679% increase in GWP-GHG is observed between the representative product and the highest-impact product in stages A1–A3. This increase correlates with a weight difference of approximately 596% (1.618,4 kg) as well as to the higher motor power. On page 16, you can find the extrapolation formula used to assess the A1–A3 module GHG-GWP for all products included in the EPD.

Module	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	
	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	
<b>Modules declared</b>	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<b>Geography</b>	GLO	GLO	ES	EU 27	EU 27	EU 27	EU 27	EU 27	EU 27	EU 27	EU 27	EU 27	EU 27	EU 27	EU 27	EU 27	EU 27	EU 27
<b>Share of primary data</b>	24% (GWP-GHG)			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Variation – products</b>	681% (GWP-GHG)			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Variation – sites</b>	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

## Environmental performance

### Mandatory impact category indicators according to EN 15804

A declared unit of one unit of THGT/4-1000-9/24 BC 15KW (400V50HZ) F300/F200 IE3 V5 with a mass of 239,0 Kg is considered (excluding packaging). The impact assessment is based on EF3.1. 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. The results of the end-of-life stage (modules C) should be considered when using the results of the product stage (modules A1-A3). When comparing results from different Environmental Product Declarations, exercise caution due to varying methodologies and inherent uncertainties across programs.

		Results per declared unit														
Indicator	Unit	A1 - A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
<b>GWP-fossil</b>	Kg CO <sub>2eq.</sub>	7,69E+02	4,28E+01	3,84E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,11E+03	0,00E+00	2,35E-01	3,98E+00	5,85E+00	1,14E+00	-2,06E+02
<b>GWP-biogenic</b>	Kg CO <sub>2eq.</sub>	-5,23E+01	8,19E-03	5,23E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,22E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
<b>GWP-luluc</b>	Kg CO <sub>2eq.</sub>	4,49E+00	1,65E-02	9,54E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,26E+01	0,00E+00	2,41E-05	1,89E-03	5,85E-03	8,49E-04	-1,05E-01
<b>GWP-total</b>	Kg CO <sub>2eq.</sub>	7,21E+02	4,28E+01	5,62E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,13E+03	0,00E+00	2,35E-01	3,98E+00	6,02E+00	1,14E+00	-2,06E+02
<b>ODP</b>	kg CFC11 <sub>eq.</sub>	8,42E-06	8,12E-07	6,55E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,58E-05	0,00E+00	3,60E-09	5,50E-08	5,38E-08	1,30E-08	-7,15E-07
<b>AP</b>	mol H <sup>+</sup> <sub>eq.</sub>	1,01E+01	3,20E-01	2,13E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,42E+01	0,00E+00	2,12E-03	1,47E-02	5,34E-02	4,35E-03	-1,56E+00
<b>EP-freshwater</b>	kg P <sub>eq.</sub>	1,74E-01	2,59E-03	2,73E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,83E+00	0,00E+00	6,79E-06	4,03E-04	2,69E-03	1,55E-04	-6,82E-01
<b>EP-marine</b>	kg N <sub>eq.</sub>	9,92E-01	8,96E-02	9,21E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,79E+00	0,00E+00	9,84E-04	4,32E-03	1,19E-02	1,87E-03	-3,58E-01
<b>EP-terrestrial</b>	mol N <sub>eq.</sub>	1,16E+01	9,86E-01	4,50E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,40E+01	0,00E+00	1,08E-02	4,69E-02	1,34E-01	1,51E-02	-5,38E+00
<b>POCP</b>	kg NMVOC <sub>eq.</sub>	5,96E+00	3,31E-01	1,49E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,12E+01	0,00E+00	3,21E-03	1,83E-02	3,95E-02	4,99E-03	-1,22E+00
<b>ADP-minerals&amp;metals*</b>	kg Sb <sub>eq.</sub>	1,05E-01	1,24E-04	3,92E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,55E-02	0,00E+00	8,43E-08	1,37E-05	2,93E-04	3,03E-06	-1,41E-02
<b>ADP-fossil*</b>	MJ	7,24E+03	5,88E+02	7,59E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,57E+04	0,00E+00	3,07E+00	5,58E+01	5,88E+01	1,28E+01	-1,84E+03
<b>WDP*</b>	m <sup>3</sup>	3,28E+02	2,71E+00	2,06E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,61E+03	0,00E+00	7,68E-03	2,75E-01	9,86E-01	1,80E-01	3,69E+00

**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

## Additional mandatory and voluntary impact category indicators

Results per declared unit																
Indicator	Unit	A1 - A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
<b>GWP-GHG (1)</b>	Kg CO <sub>2eq</sub>	7,73E+02	4,28E+01	3,85E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,12E+03	0,00E+00	2,35E-01	3,98E+00	5,85E+00	1,14E+00	-2,06E+02
<b>PM</b>	Disease inc.	7,62E-05	3,02E-06	1,56E-07	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,62E-05	0,00E+00	6,03E-08	2,96E-07	7,43E-07	7,59E-08	-2,16E-05
<b>IRP (2)</b>	kBq U-235 <sub>eq</sub>	2,92E+01	6,79E-01	1,73E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,64E+03	0,00E+00	1,36E-03	4,68E-02	2,11E-01	3,99E-02	-1,89E+00
<b>ETP-fw (3)</b>	CTUe	1,74E+04	7,22E+01	2,05E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,46E+04	0,00E+00	1,69E-01	8,55E+00	3,58E+01	1,30E+03	-6,69E+03
<b>HTP-c (3)</b>	CTUh	2,72E-05	7,59E-09	1,49E-09	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,39E-06	0,00E+00	2,42E-11	6,80E-10	4,05E-09	3,06E-10	4,72E-08
<b>HTP-nc (3)</b>	CTUh	1,09E-04	3,36E-07	7,85E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,20E-05	0,00E+00	3,83E-10	3,55E-08	2,57E-07	3,94E-08	1,03E-05
<b>SQP (3)</b>	Pt	1,09E+04	3,05E+02	2,71E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,13E+04	0,00E+00	2,15E-01	3,12E+01	1,11E+02	1,90E+01	-1,33E+03

**Acronyms:** **GWP-fossil = GWP-GHG:** Global warming potential-Greenhouse gas; **PM=** particulate matter; **IRP =** Ionizing radiation, human health; **ETP-fw=** Ecotoxicity tap water-organic; **HTP-c=** human health, carcinogenic effects; **HTP-nc=** human health, non-carcinogenic effects; **SQP =** Land use related impacts/ Soil quality.

- 1) 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.
- 2) This impact category refers to the eventual impacts of low amounts of ionizing radiation on human health from the nuclear fuel cycle. It does not consider the effects due to possible nuclear accidents or occupational exposure due to possible nuclear accidents or occupational exposure due to radon or from some construction materials.
- 3) The results of this environmental impact category must be used wisely, as the uncertainties in the results are elevated and the results are elevated and the experience with this parameter is limited.

## Resource use indicators

Results per declared unit																
Indicator	Unit	A1 - A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	2,18E+03	9,33E+00	-4,68E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,62E+04	0,00E+00	1,95E-02	1,20E+00	9,12E+00	5,73E-01	-3,84E+02
PERM	MJ	4,58E+02	0,00E+00	-4,56E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-1,72E+00	0,00E+00	0,00E+00
PERT	MJ	2,64E+03	9,33E+00	-9,25E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,62E+04	0,00E+00	1,95E-02	1,20E+00	7,40E+00	5,73E-01	-3,84E+02
PENRE	MJ	7,15E+03	5,88E+02	7,26E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,57E+04	0,00E+00	3,07E+00	5,58E+01	4,54E+01	-6,38E-01	-1,84E+03
PENRM	MJ	2,81E+01	0,00E+00	-2,81E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-1,76E-02	0,00E+00	0,00E+00
PENRT	MJ	7,18E+03	5,88E+02	4,46E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,57E+04	0,00E+00	3,07E+00	5,58E+01	4,53E+01	-6,38E-01	-1,84E+03
SM	kg	3,27E+01	2,71E-01	2,20E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,58E+01	0,00E+00	1,28E-03	2,37E-02	6,81E-02	3,81E-03	1,07E+02
RSF	MJ	1,87E+01	2,99E-03	1,87E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,26E-01	0,00E+00	3,34E-06	2,97E-04	3,09E-03	1,82E-04	-4,05E-02
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m <sup>3</sup>	5,57E+03	7,34E-02	1,77E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,27E+01	0,00E+00	2,03E-04	7,69E-03	2,66E-02	-1,97E-02	-5,53E+00

**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

		Results per declared unit														
Indicator	Unit	A1 - A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1,10E+02	8,34E-01	2,70E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,42E+02	0,00E+00	3,42E-03	1,15E-01	4,73E-01	5,92E-02	-9,82E+01
Non-hazardous waste disposed	kg	7,67E+02	1,67E+01	7,51E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,87E+04	0,00E+00	4,66E-02	2,24E+00	1,33E+01	4,20E+01	2,17E+03
Radioactive waste disposed	kg	9,48E-03	1,68E-04	4,44E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,79E-01	0,00E+00	3,34E-07	1,14E-05	5,19E-05	9,75E-06	-5,05E-04

## Output flow indicators

		Results per declared unit														
Indicator	Unit	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	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Material for recycling	kg	3,90E+00	0,00E+00	1,34E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,83E+02	0,00E+00	0,00E+00
Materials for energy recovery	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy, electricity	MJ	0,00E+00	0,00E+00	1,90E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,82E+00	0,00E+00	0,00E+00
Exported energy, thermal	MJ	0,00E+00	0,00E+00	2,62E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,51E+00	0,00E+00	0,00E+00

## Additional LCA results

### Variability analysis

The table below shows the variation in results for the specific products included in the EPD relative to the reference product. Percentage differences are presented for the combined impacts of modules A1–A3 and A–C. The EPD includes both the model with the lowest and the highest manufacturing impact, thus covering the worst-case scenario.

Differences in module A1–A3 are mainly due to equipment mass, and the type of motor as it can be seen in page 10. Over the full life cycle (A–C), module B6 accounts for the highest impact.

Variation (%) of Results per Declared Unit					
Indicator	Unit	THGT/4-400-6/8 BC 0,25KW (230/400V50HZ) F400 IE2 V5		THGT/4-1609G-12/20 BLPK 200kW (400V50Hz) F300/F200 IE4 V5	
		A1-A3	A-C	A1-A3	A-C
		<b>GWP-fossil</b>	Kg CO <sub>2eq.</sub>	-87%	-90%
<b>GWP-biogenic</b>	Kg CO <sub>2eq.</sub>	-58%	-97%	153%	2826%
<b>GWP-luluc</b>	Kg CO <sub>2eq.</sub>	-77%	-90%	951%	3276%
<b>GWP-total</b>	Kg CO <sub>2eq.</sub>	-89%	-90%	720%	2659%
<b>ODP</b>	kg CFC11 <sub>eq.</sub>	-85%	-84%	728%	718%
<b>AP</b>	mol H <sup>+</sup> <sub>eq.</sub>	-89%	-90%	781%	2507%
<b>EP-freshwater</b>	kg P <sub>eq.</sub>	-84%	-99%	636%	3148%
<b>EP-marine</b>	kg N <sub>eq.</sub>	-87%	-95%	706%	2693%
<b>EP-terrestrial</b>	mol N <sub>eq.</sub>	-88%	-90%	719%	2557%
<b>POCP</b>	kg NMVOC <sub>eq.</sub>	-92%	-96%	425%	2241%
<b>ADP-minerals&amp;metals*</b>	kg Sb <sub>eq.</sub>	-89%	-89%	783%	2555%
<b>ADP-fossil*</b>	MJ	-86%	-91%	632%	3061%
<b>WDP*</b>	m <sup>3</sup>	-83%	-90%	626%	2964%

**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.

\* EPD International 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 LCA results

### Variability analysis GWP-GHG A1-A3

This Environmental Product Declaration (EPD) covers a **broad product range comprising multiple configurations**. The differences among configurations are mainly due to the number of blades, the fan diameter and length and the motor power. These parameters affect the unit's weight but do not alter its intended use, or manufacturing process. Therefore, the manufacturing approach and production structure remain consistent across the entire product range.

To support customers in calculating the greenhouse gas emissions (GHG-GWP) associated with the equipment manufacturing (modules A1–A3), a **calculation formula based on the product weight available in [EasyVent](#)\*** has been established.

The [EasyVent](#) weight\* is used as the input parameter because it is the most accessible mass-related information for customers and reflects the different equipment configurations. This approach enables a practical estimation of the GWP associated with product manufacturing.

The calculation formula is based on a **linear regression model** that correlates product weight with associated GWP emissions. While this method does not provide fully accurate results, it offers a **reasonable estimation of manufacturing-related impacts** across different configurations.

The GWP associated with modules A1–A3 for each product configuration can be calculated using the following formula:

$$A1-A3\ GHG-GWP\ (kg) = 2,78 \times Weight\ (kg) + 64,28$$

In this formula, the **product weight (in kilograms)** is the main input parameter.

Once the required fan type is defined, the product weight can be found in the S&P fan selection tool [EasyVent](#). To do so, follow these steps:

1. Visit S&P catalogue in the fan selection tool [EasyVent](#).
2. Select your product: TGT or THGT.
3. Select the product configuration according to diameter, length, number of blades, and motor.
4. Locate the mass under *Technical Data – Construction*.

See the example below.

Construction	
Discharge diameter	1.120 mm
Blades	9
Angle	22°
Product Code	5156949300
General Code	G64119220U0
Certification	F400
Weight	294,00 kg

\*The product weights reported in the EPD do not match exactly those displayed in EasyVent. The EPD is based on a higher-resolution dataset with detailed information, while EasyVent provides a simplified mass value for each configuration. Minor discrepancies may occur, but the use of EasyVent weights ensures consistency with the calculation formula and accessibility for the customer.

## End of Life scenarios

Below, as indicated by the PCR, are the impacts associated with different waste management scenarios: 100% landfilling, 100% recycling, and 100% incineration. None of these scenarios is realistic, as the waste management of EEE equipment is typically carried out through a combination of methods, and some components cannot be feasibly recycled.

End of Life scenarios (Module C) results							
Indicator	Unit	100% Landfilled		100% Recycled		100% Incinerated	
		C3	C4	C3	C4	C3	C4
GWP-fossil	Kg CO <sub>2eq.</sub>	0,00E+00	2,04E+00	1,49E+01	0,00E+00	1,68E+01	0,00E+00
GWP-biogenic	Kg CO <sub>2eq.</sub>	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
GWP-luluc	Kg CO <sub>2eq.</sub>	0,00E+00	1,30E-03	8,82E-03	0,00E+00	3,94E-03	0,00E+00
GWP-total	Kg CO <sub>2eq.</sub>	0,00E+00	2,05E+00	1,50E+01	0,00E+00	1,70E+01	0,00E+00
ODP	kg CFC11 <sub>eq.</sub>	0,00E+00	5,15E-08	1,16E-07	0,00E+00	1,95E-07	0,00E+00
AP	mol H <sup>+</sup> <sub>eq.</sub>	0,00E+00	1,28E-02	7,66E-02	0,00E+00	3,78E-02	0,00E+00
EP-freshwater	kg P <sub>eq.</sub>	0,00E+00	2,53E-04	4,49E-03	0,00E+00	5,72E-03	0,00E+00
EP-marine	kg N <sub>eq.</sub>	0,00E+00	6,30E-03	1,58E-02	0,00E+00	1,31E-02	0,00E+00
EP-terrestrial	mol N <sub>eq.</sub>	0,00E+00	5,10E-02	1,75E-01	0,00E+00	1,39E-01	0,00E+00
POCP	kg NMVOC <sub>eq.</sub>	0,00E+00	1,81E-02	5,29E-02	0,00E+00	4,91E-02	0,00E+00
ADP-minerals&metals*	kg Sb <sub>eq.</sub>	0,00E+00	5,50E-06	4,68E-04	0,00E+00	4,39E-05	0,00E+00
ADP-fossil*	MJ	0,00E+00	4,36E+01	1,00E+02	0,00E+00	1,23E+02	0,00E+00
WDP*	m <sup>3</sup>	0,00E+00	4,04E-01	2,26E+00	0,00E+00	1,38E+00	0,00E+00

**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

## Geographical variability analysis

Below are the impacts of the THGT/4-1000-9/24 BC 15KW (400V50HZ) F300/F200 IE3 V5 module B6 when the product operates under the defined scenario across various countries and geographies. The dataset used corresponds to low-voltage electricity (market activity).

Results per declared unit - B6								
Indicator	Unit	SPAIN	FRANCE	GERMANY	BELGIUM	NORWAY	ITALY	GREAT BRITAIN
<b>GWP-fossil</b>	Kg CO <sub>2eq.</sub>	2,57E+03	1,10E+03	4,89E+03	2,57E+03	3,01E+02	4,43E+03	3,27E+03
<b>GWP-biogenic</b>	Kg CO <sub>2eq.</sub>	6,38E+00	1,96E+00	2,46E+01	3,77E+00	5,21E+00	1,82E+01	1,91E+00
<b>GWP-luluc</b>	Kg CO <sub>2eq.</sub>	3,37E+01	1,09E+00	1,00E+01	6,88E+00	1,40E+00	9,57E-01	4,05E+00
<b>GWP-total</b>	Kg CO <sub>2eq.</sub>	2,61E+03	1,10E+03	4,92E+03	2,58E+03	3,08E+02	4,45E+03	3,27E+03
<b>ODP</b>	kg CFC11 <sub>eq.</sub>	5,25E-05	3,88E-05	6,29E-05	1,10E-04	8,11E-06	1,02E-04	1,66E-04
<b>AP</b>	mol H <sup>+</sup> <sub>eq.</sub>	1,42E+01	7,67E+00	1,42E+01	8,20E+00	4,17E+00	1,88E+01	1,21E+01
<b>EP-freshwater</b>	kg P <sub>eq.</sub>	6,11E-01	4,59E-01	6,70E+00	5,69E-01	3,18E-01	9,93E-01	5,88E-01
<b>EP-marine</b>	kg N <sub>eq.</sub>	2,52E+00	1,46E+00	3,63E+00	1,70E+00	3,61E-01	2,79E+00	2,63E+00
<b>EP-terrestrial</b>	mol N <sub>eq.</sub>	2,65E+01	1,21E+01	2,69E+01	1,74E+01	4,40E+00	3,04E+01	3,04E+01
<b>POCP</b>	kg NMVOC <sub>eq.</sub>	9,52E+00	4,15E+00	8,67E+00	5,53E+00	1,34E+00	1,31E+01	8,50E+00
<b>ADP-minerals&amp;metals*</b>	kg Sb <sub>eq.</sub>	5,60E-02	5,27E-02	6,23E-02	5,90E-02	4,77E-02	5,58E-02	5,52E-02
<b>ADP-fossil*</b>	MJ	8,48E+04	1,42E+05	7,65E+04	1,02E+05	3,64E+03	7,12E+04	8,88E+04
<b>WDP*</b>	m <sup>3</sup>	1,67E+03	1,80E+03	1,27E+03	1,20E+03	1,58E+04	2,74E+03	8,76E+02

**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.

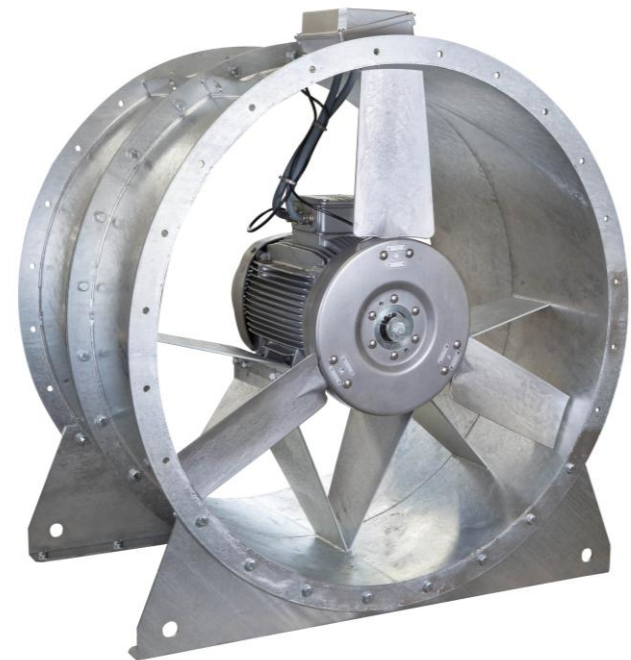
\* Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator



## Abbreviations

All abbreviations used in the EPD are described below:

Abbreviation	Definition
<b>CEN</b>	European Committee for Standardization
<b>CNMC</b>	Comisión Nacional de los Mercados y la Competencia
<b>CPC</b>	Central Product Classification
<b>EEE</b>	Electrical and Electronic Equipment
<b>EF</b>	Environmental Footprint
<b>EN</b>	European Norm (Standard)
<b>EPD</b>	Environmental Product Declaration
<b>GPI</b>	General Programme Instructions
<b>ISO</b>	International Organization for Standardization
<b>LCA</b>	Life-Cycle Assessment
<b>PCR</b>	Product Category Rules
<b>PEP</b>	Product Environmental Profile
<b>REACH</b>	Registration, Evaluation, Authorisation and Restriction of Chemicals



## References

- PCR 2019:14. Construction products. Version 2.0.1. Valid until 07/04/2030.
- c-PCR-018 Ventilation components (Adopted from NPCR 030:2021).
- ISO 14025:2010: Environmental labels and declarations-Type III Environmental Declarations-Principles and procedures.
- ISO 14040: Environmental management-Life Cycle Assessment-Principles and framework (2006).
- ISO 14044: Environmental management-Life Cycle Assessment-Requirements and guidelines (2006).
- EN 15804:2012+A2:2019/AC:2021: Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products.
- General Programme Instructions for international EPD System version 5.0.1 (2025-02-27).
- LCA Report Memoria Cylindrical Cased Axial Flow Fans: TGT & THGT SERIES. March 2026
- Product Environmental Footprint report. Representative product study for: Unidirectional Residential Ventilation Units (URVU), Bidirectional Residential Ventilation Units (BRVU), Non-residential Ventilation Units (NRVU), Fans (>125W); EVIA.
- Packaging waste by waste management operations; EUROSTAT; 2025.
- EN 50693:2020 - Product category rules for life cycle assessments of electronic and electrical products and systems

## Version History

- A. **Original Version of the EPD**, 2026-03-20.



**Soler&Palau**   
Ventilation Group



 **EPD**®  
THE INTERNATIONAL EPD® SYSTEM



[solerpalau.com](http://solerpalau.com)