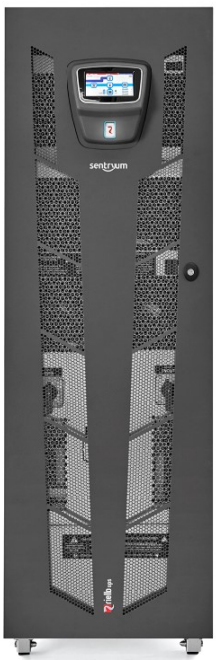
PRODUCT ENVIRONMENTAL PROFILE

Products family declaration

RPS S.p.A.

UNINTERRUPTIBLE POWER SUPPLIES (UPS)
S3T 120 DI



GENERAL INFORMATION

Program information	PEP-ecopassport®
Documents	www.pep-ecopassport.org
Referent company	RPS S.p.A. (www.riello-ups.it)
Product name	S3T 120 DI
Company contacts	RPS S.p.A. Viale Europa, 7 ZAI 37045 Legnago (VR), Italy Paolo Cavaliere p.cavaliere@riello-ups.com
Product final assembly site(s)	Via Napoli, 15, 37053 VR

COMPANY

RPS S.p.A., a company based in Italy and part of the Riello Elettronica Group, is one of the main companies in the world in technological research, production, sales, and assistance. Under Riello UPS brand, it designs and produces Uninterruptible Power Supplies for Data Centre, offices, electromedical applications, security and emergency equipment, industrial complexes, transport monitoring and control, and communication systems.

Riello UPS offers a vast range of products, organized into 24 ranges of uninterruptible power supplies (UPS), based on several different state-of-the-art technological architectures. Thanks to its two research centers in Legnago (Verona, Italy) and Cormano (Milan, Italy), world-class examples of excellence for the design, development and testing of uninterruptible power supplies, Riello UPS constantly innovates its product portfolio, keeping it at the top in terms of performance, overall efficiency reliability and last not least sustainability.

“Reliable power for a sustainable world” is the Riello UPS philosophy condensed into a few simple words: it is a global brand always searching for the most innovative, energy-efficient solutions.

Through intensive R&D and technological innovation, it is constantly developing uninterruptible power supplies that increase power quality whilst being more energy efficient, reducing the amount of power consumed and wasted.

As a company it adheres to robust management systems that are certified to the international standards ISO 14001:2015, ISO 9001:2015 and ISO 45001:2018.

PRODUCT INFORMATION

Product description

Sentryum is the very latest Riello UPS development resulting in a third-generation transformer-free UPS. This ultimate solution is rated at output power factor 1 (kVA=kW) and defined as ONLINE double conversion technology in accordance with VFI-SS-111 classification (as set out in standard IEC EN 62040-3). The Sentryum series is a transformer-free UPS available in 10-15-20 kVA/kW models with three-phase/single-phase input and single-phase output, and 10-15-20-30-40-60-80-100-120 kVA/kW models with three-phase input and output. Sentryum is designed and built using state-of-the-art technology and components. It applies the advanced technologies such as DSP (Digital Signal Processor), dual core microprocessor, three-level inverter circuits and resonant control to provide maximum protection to the critical loads with no impact on downstream systems, whilst maintaining optimised energy savings.

Sentryum applies a zero impact onto its power source, whether this is from the mains power supply or a generator: very low input current distortion <3%, near unity input power factor 0.99, power walk-in and power walk-in delay functions. Thanks to the three-level IGBT inverter topology (constructed using modules rather than discrete components) and innovative digital control, the Sentryum provides up to 96.6% overall efficiency. Riello UPS offers Sentryum in four different frame solutions to satisfy any critical power demand and application. Three different frame types are available for the Sentryum **10-60 kVA/kW** power ratings: **Compact (only 10-20kVA)**, **Active** and **Xtend**. A unique frame type is available for the Sentryum **80-120 kVA/kW** power ratings.

The main features of the UPS are:

- Product type: Single UPS with bypass
- Model: Sentryum UPS S3T 120 DI
- Product category: VFI > 10kW (Online double conversion)
- Power UPS nominal power: 120 kVA/kW
- Solution nominal power: 120 kVA/kW
- Power factor: 0.99
- Output power factor: 1
- Number phases: 3 + N
- Operating temperature: 0 °C - + 40 °C
- Input phases: 3
- Output phases: 3

Technical specification

S3T 120 DI	
Representative product name	Sentryum S3T 120 DI
Commercial reference	ES3TM12ANBDIRUA
Dimensions (mm)	1600 mm (height) / 500 mm (width) / 830 mm (depth)
Gross Weight (kg)	216.00
Net Weight (kg)	199.26
Rated Power (kVA)	120
Active Power (kW)	120
Input Dependency Characteristics	Multimode UPS (VFI, VFD, VI)
Performance classification	VFI SS 111
Reference Service Life (Years)	15

The UPS model S3T 120 ACT A0 DI the following modules.

Product code	Assembly	Sub-assembly	N°	Total mass (kg)
ES3TM12ANBDIRUA	AT5RM1201A	Asm Telaio T5R	1	50.19
		ASM T5R 120k DI	1	1.00
		Asm Connessioni Sez.T5R	1	6.08
		Asm Dual Input T5R	1	1.29
		Asm TL+Fuse T5R 120k	1	1.58
		Asm Schede Comuni T5R	1	3.49
		Asm Potenza T5R 120k	3	32.84
		Asm Cabl.Potenza T5R 120k	1	13.00
		Asm Cabl.Segnale+Flat T5R	1	2.12
		Asm Chisura Sez.+Comunicazione	1	1.74
		Asm CB 30A T5R	1	3.93
	AT5R0020A	ASM Display NTx Flex Riello	1	0.18
		AT Generico	1	26.35
	AT5R0021A	Asm Chius-Imbl T5R	1	6.33
	///	Not in assembly	1	49.16
	///	Packaging of UPS	1	16.74
TOTAL				**216.00**

Other references covered by the product family

Type	Product included	Reference product
S3T 120 DI product family	UPS S3T 80 DI UPS S3T 100 DI UPS S3T 120 DI	**UPS S3T 120 DI**

Declaration of homogenous family

Model	Power [W]	Backup Time [min]	UPS Efficiency [%]	Packaging mass [kg]	Product mass [kg]
UPS S3T 120 DI	**120**	**-**	**96.01**	**16.74**	**199.26**
UPS S3T 80 DI	80	-	95.29	17.00	172.00
UPS S3T 100 DI	100	-	95.66	17.00	180.00

Life cycle impacts for all products covered have been calculated by applying the extrapolation rules. Extrapolation rules have been obtained with following the specific rules in PCR-ed4-EN-2021 09 06 and PSR0010-ed2-EN-2023 02 08.

FUNCTIONAL UNIT

The functional and declared units of both UPS products object of this study are defined as follows:

- Functional unit: to ensure the supply of power to remain within specified characteristics to equipment with load of 100 watts for a RSL of 1 year.
- Declared unit: To ensure the supply of power to remain within specified characteristics to equipment with load of 120,000 watts for a RSL of 15 years.

The reference flow is represented by the whole mass of UPS S3T 120 DI: equal to 199.26 kg, the total mass of packaging needed for its distribution, equal to 16.74 kg and the components needed for the maintenance during the use phase of the UPS object of the study. No installation materials are required different than an electrical forklift and connecting cables.

For a declared unit of 120 kW and 15 years RSL, the functional unit environmental impacts will be equal to declared unit data divided by 18,000.

Product category: UPS with P > 10,000 W.

CONSTITUENT MATERIALS

UPS S3T 120 DI and its packaging weight 216.00 kg.

Material	Incidence
Plastics	**0.2%**
Nylon PA66	<0.1%
Polyesthere / Mylar	<0.1%
Polycarbonate / Lexan	<0.1%
Metals	**75.2%**
Zinc coating steel	65.4%
Aluminium	9.8%
Others	**16.9%**
PCB	8.6%
Cables	8.3%
Packaging	**7.7%**
Cardboard	5.2%
Wood	2.3%
Eps	0.2%

LIFE CYCLE ASSESSMENT

The system boundaries include all the stages with an approach “from cradle to grave”. According to the PCR adopted for this study, sub-modules according to EN 15804:2012+A2:2019 (A1-A3, A4, A5, B1-B7, C1-C4) have been also adopted as reference for results reporting.

B1 (Use or application of the product installed), B3 (Repair), B4 (Replacement), B5 (Restoration), B6 (Energy requirements during the use stage), B7 (Water requirements during the use stage) are considered with null contribution since they are not applicable.

MANUFACTURING STAGE (A1 - A3)

The manufacturing stage consists of the production and transport of raw materials, production of product with its packaging and the transport of the product to the last logistics platform (warehouse) located in Cerea (Italy).

Assembly and testing of UPS S3T 120 DI are outsourced, with all components produced by third-party suppliers. Assembling plant consumptions (electricity and gas) and waste production for the year 2023 have been allocated for one piece of UPS for each reference products.

DISTRIBUTION STAGE (A4)

The distribution stage includes the transport from subcontractor to warehouse (Italy) and from warehouse to the end customer located in Europe. An intracontinental transport scenario of 3,500 km was considered.

INSTALLATION STAGE (A5)

Installation stage (A5) involves handling of the UPS modules by an electrical forklift and connecting the cables. For modellization of this stage 1-hour operation of an electrical forklift has been considered. This phase also includes the disposal of the packaging of the S3T 120 DI product. For its disposal, the statistical average data from Eurostat databases were considered [2020], relating to landfill, incineration and recycling rates, by type of waste treated.

USE STAGE (B1 - B7)

The use stage considers the product operation during 15 years of reference lifetime and includes energy consumption and production, distribution, installation and end-of-life of the components required to maintain the UPS over the reference lifetime.

Energy consumptions are calculated by following the reference PSR, considering a weighted average efficiency of 96.01%. The energy model used in this phase is a specific energy mix, based on European scenario, from ecoinvent v 3.10.

The maintenance operations include the substitution of the components. For maintenance the RPS’s technical specification have been followed.

END-OF-LIFE STAGE (C1 - C4)

The default end-of-life scenario provided by the IEC/TR 62635 document has been adopted, considering the product transport by lorry over 1,000 km and its disposal, since the distance to the disposal site is not known as it is stated in the PSR. The IEC/TR 62635 document has been chosen for the LCA analysis because it is a sector-specific guideline with end-of-life data for electric and electronic equipment.

Stage	Amount	Scenario
Deinstallation - C1	48 kWh / F.U.	Assumed an electrical forklift operating for 1-hour for the handling of the UPS modules.
Transport to EoL - C2	1,000 km	Assumed a distance from the treatment plant according to the local default distribution scenario of the PCR
Recycling/Recovery/Reuse EoL - C3	S3T 120 DI: 177.49 kg	Recycling and incineration rates materials from IEC/TR 62635 (Annex C)
		Assumed a distance from the recycling and incineration plant according to the local default distribution scenario of the PCR.
Disposal EoL - C4	S3T 120 DI: 21.77 kg	Landfill rates materials from IEC/TR 62635
		Assumed a distance from the landfill according to the local default distribution scenario of the PCR.

ENERGY MODEL USED

Life cycle stages	Energy models
Manufacturing stage	Electricity, low voltage voltage {IT}| electricity, low voltage, residual mix | Cut-off, U The energy-related processes used for the remaining inputs of the manufacturing stage are those included in the ecoinvent 3.10 datasets selected for the analysis
Use	Electricity, low voltage {RER}| market group for electricity, low voltage | Cut-off, U
End-of-life	Electricity, medium voltage {RER}| market group for electricity, medium voltage | Cut-off, U

MAIN METHODOLOGICAL ASPECTS

Software: SimaPro v. 10.1.0.4
Database: Ecoinvent v. 3.10.

Primary data: In this study, both primary and secondary data are used. The following primary data are provided by RPS: Bill of Materials (BoM) of the product, components materials, weights and suppliers, company consumption related to the product assembly, and average power loss of the product during the use phase of the product. For all processes for which primary data are not available, generic data originating from the ecoinvent v3.10 database, allocation cut-off by classification, are used. The ecoinvent database is available in the SimaPro 10.1.0.4 software used for the calculations.

Time representativeness: All primary data collected from RPS are from 2024, which is a reference year. Secondary data refers to the ecoinvent database v3.10. published in 2024.

Geographical representativeness: The final assembly of the product occurs at outsourcer's plant located in Verona, Italy. For the use and end-of-life stages of the product, the product is sold in Europe.

When the origin of the components is unknown, the selected ecoinvent processes in the LCA model have global representativeness. In this way, a conservative approach has been adopted.

Technological representativeness: Technological representativeness refers to the specific production process for primary data. For secondary data, it refers to the ecoinvent database v3.10. published in 2024.

Environmental impact indicators: The environmental impacts have been calculated according to the PCR-ed4-EN-2021 09 06 using the method EN 15804: 2012 + A2: 2019 reference package based on EF 3.1.

ALLOCATION RULES

There are no co-products in this product system, so no multi-output allocation of inputs and outputs is necessary.

Concerning the end-of-life allocation, the "polluter pay" principle is adopted as required by the PCR-ed4-EN-2021 09 06. This means that waste treatment processes are allocated to the product system that generates the waste until the point of substitution is reached. However, the potential benefits and avoided loads from recovery and recycling processes beyond the system boundaries are not considered.

ENVIRONMENTAL IMPACT RESULTS

The environmental impact for functional unit of UPS S3T 120 DI (VFI mode) is calculated for the mandatory and optional impact categories required by the PCR.

These indicators are derived from EN 15804:2012+A2:2019.

Indicator	Unit	Manufacturing (A1-A3)	Distribution (A4)	Installation (A5)	Use (B1-B7) *	End of life (C1-C4)	TOTAL
GWP-total	kg CO_2 eq	4.44E-01	4.53E-03	1.44E-03	6.52E+00	1.39E-02	**6.98E+00**
GWP-fossil	kg CO_2 eq	4.41E-01	4.53E-03	9.62E-04	6.29E+00	1.36E-02	**6.75E+00**
GWP-biogenic	kg CO_2 eq	2.87E-03	2.45E-07	4.77E-04	2.09E-01	3.75E-04	**2.12E-01**
GWP-luluc	kg CO_2 eq	6.06E-04	1.83E-06	2.72E-06	1.83E-02	1.16E-05	**1.90E-02**
ODP	kg CFC-11 eq	1.88E-08	6.67E-11	1.57E-11	1.31E-07	1.09E-10	**1.50E-07**
AP	mol H+ eq	3.82E-03	1.54E-05	4.68E-06	3.75E-02	6.82E-05	**4.14E-02**
EP-freshwater	kg P eq	5.46E-04	3.56E-07	7.80E-07	6.06E-03	6.32E-06	**6.61E-03**
EP-marine	kg N eq	6.15E-04	5.07E-06	9.42E-07	6.02E-03	1.29E-05	**6.65E-03**
EP-terrestrial	mol N eq	8.84E-03	5.52E-05	7.75E-06	5.53E-02	1.06E-04	**6.43E-02**
POCP	kg NMVOC eq	1.86E-03	2.27E-05	2.58E-06	1.78E-02	3.91E-05	**1.98E-02**
ADP-minerals & metals	kg Sb eq	1.43E-04	1.23E-08	2.06E-09	2.58E-04	3.49E-07	**4.02E-04**
ADP-fossil	MJ	5.46E+00	6.57E-02	2.10E-02	1.41E+02	1.39E-01	**1.47E+02**
WDP	m^3 depriv.	1.01E-01	3.37E-04	2.17E-04	1.78E+00	5.25E-03	**1.89E+00**

* **Note:** B2 (Maintenance) and B6 (energy requirements during the use stage) are considered. Other sub modules in the use stage (B1, B3, B4, B5 and B7) are equal to zero.

INVENTORY FLOWS INDICATORS

Indicator	Unit	Manufacturing (A1-A3)	Distribution (A4)	Installation (A5)	Use (B1-B7) *	End of life (C1-C4)	TOTAL
RESOURCE USE							
Use of renewable primary energy resources used as energy carrier (PERE)	MJ	5.92E-01	8.63E-04	4.80E-03	3.78E+01	1.56E-02	**3.84E+01**
Use of renewable primary energy resources used as raw materials (PERM)	MJ	1.31E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	**1.31E-02**
Total use of renewable primary energy resources (PERT)	MJ	6.05E-01	8.63E-04	4.80E-03	3.78E+01	1.56E-02	**3.84E+01**
Use of non-renewable primary energy resources used as energy carrier (PENRE)	MJ	5.82E+00	6.99E-02	2.19E-02	1.48E+02	1.47E-01	**1.54E+02**
Use of non-renewable primary energy resources used as raw materials (PENRM)	MJ	6.77E-03	0.00E+00	0.00E+00	1.02E-02	0.00E+00	**1.70E-02**
Total use of non-renewable primary energy resources (PENRT)	MJ	5.83E+00	6.99E-02	2.19E-02	1.48E+02	1.47E-01	**1.54E+02**
Use of secondary material (SM)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	**0.00E+00**
Use of renewable secondary fuels (RSF)	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	**0.00E+00**
Use of non-renewable secondary fuels (NRSF)	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	**0.00E+00**
Use of net fresh water (FW)	m^3	3.67E-03	9.76E-06	1.68E-05	1.21E-01	1.84E-04	**1.25E-01**
WASTE CATEGORIES							
Hazardous waste disposed (HWD)	kg	5.56E-05	4.41E-07	3.42E-08	3.26E-04	1.09E-05	**3.93E-04**
Non-hazardous waste disposed (NHWD)	kg	2.14E-02	5.58E-03	1.99E-04	4.65E-01	4.07E-03	**4.97E-01**
Radioactive waste disposed (RWD)	kg	1.07E-05	1.42E-08	1.47E-07	9.74E-04	3.41E-07	**9.85E-04**
OUTPUT FLOWS							
Components for reuse (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	**0.00E+00**
Materials for recycling (MFR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	**0.00E+00**
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	**0.00E+00**
Exported energy (EE)	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	**0.00E+00**
OTHERS							
Biogenic carbon content of the product	kg of C	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	**0.00E+00**
Biogenic carbon content of the associated packaging	kg of C	4.93E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	**4.93E-04**

* **Note:** B2 (Maintenance) and B6 (energy requirements during the use stage) are considered. Other sub modules in the use stage (B1, B3, B4, B5 and B7) are equal to zero.

OPTIONAL INDICATORS

Indicator	Unit	Manufacturing (A1-A3)	Distribution (A4)	Installation (A5)	Use (B1-B7) *	End of life (C1-C4)	TOTAL
Total use of primary energy during the life cycle	MJ	3.94E+00	7.12E-03	1.96E-02	1.39E+02	8.50E-02	**1.43E+02**
Emission of fine particles	desease inc.	3.31E-08	4.53E-10	2.13E-11	1.48E-07	6.67E-10	**1.82E-07**
Ionizing radiation, human health	kBq of U235	4.34E-02	5.81E-05	5.73E-04	3.80E+00	1.35E-03	**3.84E+00**
Ecotoxicity (fresh water)	CTUe	9.54E+00	1.71E-02	1.12E-02	8.35E+01	5.11E-01	**9.35E+01**
Human toxicity, carcinogenic effects	CTUh	4.10E-09	2.22E-11	2.00E-12	1.40E-08	8.17E-11	**1.82E-08**
Human toxicity, non-carcinogenic effects	CTUh	9.06E-09	1.63E-11	2.29E-12	2.92E-08	1.34E-09	**3.96E-08**
Impacts related to land use/soil quality	-	2.11E+00	6.60E-02	3.95E-03	3.23E+01	6.19E-02	**3.45E+01**

* **Note:** B2 (Maintenance) and B6 (energy requirements during the use stage) are considered. Other sub modules in the use stage (B1, B3, B4, B5 and B7) are equal to zero.

EXTRAPOLATION RULES

The PEP can cover products different from the reference product if they belong to a homogeneous environmental family. This means that the group of products must satisfy the following characteristics:

- Same main function;
- Same product standard;
- Same manufacturing technology: the same type of materials and same manufacturing processes.

The Sentryum's product family satisfy these conditions, so extrapolation rules were applied to assess the environmental impact of the products belonging to the family, following the PCR indication.

After a documented sensitivity study, it has been proven that the environmental impacts of these systems on A1 to C4 stages are globally proportional to their mass. An extrapolation methodology applicable to all life cycle stages (A1-C4) has been established.

- For manufacturing stage and transportation stage indicators are proportional to product mass (including packaging);
- For installation stage indicators are proportional to packaging mass;
- For use stage indicators are proportional declared power in [W].
- For End-of-Life stage indicators are proportional to product mass (excluding packaging).

In the following tables, the reference product is identified by unit coefficients in all stages of its life cycle. The other products included in the family will have multiples or submultiples of it as coefficients.

Linear coefficients for the environmental impact calculation of the S3T 120 DI products

Type of Sentryum	Manufacturing (A1-A3)	Distribution (A4)	Installation (A5)	Use (B1-B7) *	End of life (C1-C4)
UPS S3T 120 DI	**1**	**1**	**1**	**1**	**1**
UPS S3T 80 DI	0.88	0.88	1.02	0.77	0.86
UPS S3T 100 DI	0.91	0.91	1.02	0.89	0.90

* **Note:** B2 (Maintenance) and B6 (energy requirements during the use stage) are considered. Other sub modules in the use stage (B1, B3, B4, B5 and B7) are equal to zero.

Above extrapolation factor needs to be multiplied to declared unit environmental impacts.

Biogenic carbon content of UPS and its packaging per declared unit of UPS S3T 120 DI

The biogenic carbon content refers to the amount of biogenic carbon in a construction product leaving the factory gate, and it shall be separately declared for the product and for any accompanying packaging. The biogenic carbon content of wood is 0.588 kgC/kg while of cardboard 0.450 kgC/kg (Ecoinvent 3.10).

Parameter	Quantity (kg C/D.U.)
Biogenic carbon content in product (as C)	0.00E+00
Biogenic carbon content in accompanying packaging (as C)	8.88E+00

ADDITIONAL INFORMATION

In the following table information about the recoverable and recycling rate of S3T 120 ACT A0 DI is reported. The calculation has been made by following the IEC / TR 62635.

Variant description	Recyclable mass (kg)	Recoverable mass (kg)	Recycling rate (%)	Recovery rate (%)
S3T 120 DI	160.63	16.86	80.61	8.46

Environmental impact of UPS S3T 120 DI (VFD mode) with an average weighted efficiency of 99.22%

Indicator	Unit	Manufacturing (A1-A3)	Distribution (A4)	Installation (A5)	Use (B1-B7) *	End of life (C1-C4)	TOTAL
GWP-total	kg CO_2 eq	4.44E-01	4.53E-03	1.44E-03	4.66E-01	1.13E+00	**2.04E+00**
GWP-fossil	kg CO_2 eq	4.41E-01	4.53E-03	9.62E-04	4.64E-01	1.08E+00	**2.00E+00**
GWP-biogenic	kg CO_2 eq	2.87E-03	2.45E-07	4.77E-04	1.12E-03	3.86E-02	**4.31E-02**
GWP-luluc	kg CO_2 eq	6.06E-04	1.83E-06	2.72E-06	5.93E-04	3.30E-03	**4.51E-03**
ODP	kg CFC-11 eq	1.88E-08	6.67E-11	1.57E-11	2.40E-08	2.00E-08	**6.29E-08**
AP	mol H+ eq	3.82E-03	1.54E-05	4.68E-06	3.23E-03	6.38E-03	**1.34E-02**
EP-freshwater	kg P eq	5.46E-04	3.56E-07	7.80E-07	6.36E-04	1.01E-03	**2.19E-03**
EP-marine	kg N eq	6.15E-04	5.07E-06	9.42E-07	6.45E-04	1.00E-03	**2.27E-03**
EP-terrestrial	mol N eq	8.84E-03	5.52E-05	7.75E-06	7.10E-03	8.97E-03	**2.50E-02**
POCP	kg NMVOC eq	1.86E-03	2.27E-05	2.58E-06	1.98E-03	2.95E-03	**6.81E-03**
ADP-minerals & metals	kg Sb eq	1.43E-04	1.23E-08	2.06E-09	1.80E-04	1.46E-05	**3.38E-04**
ADP-fossil	MJ	5.46E+00	6.57E-02	2.10E-02	5.86E+00	2.52E+01	**3.66E+01**
WDP	m^3 depriv.	1.01E-01	3.37E-04	2.17E-04	9.92E-02	3.13E-01	**5.14E-01**

Results highlight a significant variation of impacts for all the considered categories with an average reduction of about -65.09%.

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Registration number: RPSE-00004-V01.01-EN	Drafting Rules “PCR-ed4-EN-2021 09 06” Supplemented by “PSR-0010-ed2.0-EN 2023 12 08”
Verifier accreditation number: VH50	Information and reference documents: www.pep-ecopassport.org
Date of issue: 04-2025	Validity period: 5 years
Independent verification of the declaration and data in compliance with ISO 14025:2006	
Internal □	External ✓
The PCR review was conducted by a panel of experts chaired by Julie Orgelet (DDemain)	
PEP is compliant with EN 50693:2019 The components of the present PEP may not be compared with components from any other program.	
Document in compliance with ISO 14025:2010 «Environmental labels and declarations. Type III environmental declarations»	