COL GROUP **COL GIOVANNI PAOLO S.p.A.**

EPD ITALY

ENVIRONMENTAL PRODUCT DECLARATION

PRODUCT NAME:

Prefabricated 24kV equipment with internal arc tight metal enclosure with switch (ICS) DY800/316

PRODUCTION SITE:

SP14, 93-95, 95032 Piano Tavola, Belpasso (CT)

in compliance with ISO 14025 and EN 50693

Program operator	EPDItaly
Publisher	EPDItaly

Declaration number	COL-CT-162460
Registration number	EPDITALY0829

Issue date	10/02/2025
Valid to	10/02/2030

1. GENERAL INFORMATION

EPD owner	Col Giovanni Paolo S.p.A. (www.colgp.it) Via Antonio Chiribiri, 1, 10028 Trofarello (TO)
Reference production site	SP14, 93-95, 95032 Piano Tavola, Belpasso (CT)
Scope of application	This is a product-specific EPD referring to the SF_6 gas insulated prefabricated equipment with internal arc tight metal enclosure with switch (ICS), with a rated voltage of 24kV and type DY800/316, manufactured at the COL GROUP production site in Catania (COL-CATANIA) for installation and use as indoor equipment in secondary substations within the Italian territory in the reference year 2021
Programme operator	EPDItaly – info@epditaly.it Via Gaetano De Castillia, 10, 20124 Milano (MI)
Independent verification	This declaration has been developed in accordance with the regulations of EPDItaly; further information and the same regulations are available at: www.epditaly.it Independent verification of the declaration and data carried out in accordance with ISO 14025: 2010 ☐ Internal ☑ External Third party verification done by: ICMQ S.p.A. (www.icmq.it), Via Gaetano De Castillia, 10, 20124 Milano (MI) – Italia. Accredited by ACCREDIA, Accreditation number 0004VV REV. 000
CPC code	46214 “Boards, consoles, cabinets and other bases, equipped with electrical switching etc. apparatus, for electric control or the distribution of electricity, for a voltage exceeding 1000 V”
Company contact	Salvatore MAGGIO, Production Manager Catania Plant, COL Group e-mail: salvatore.maggio@colgp.it
Technical support	Emmanuel NYERO, Environmental Specialist, TW-TeamWare SRL e-mail: emmanuel.nyero@teamware.it
PCR – Product Category Rules	Core PCR: EPDItaly007 – PCR for Electronic and Electrical Products and Systems, REV 3.1, Issue date 12/11/2024 Sub-category PCR: EPDItaly015, Electronic and electrical products and systems – Switchboards, REV 2, Issue date 01/07/2024
Reference documents	EN ISO 14025:2010, Environmental labels and declarations – Type III environmental declarations – Principles and procedures EN 50693:2019 - Product category rules for life cycle assessments of electronic and electrical products and systems. Regulations of the EPDItaly Programme. Revision 6.0. Issue date 30/10/2023

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Comparability	EPDs published within the same product category though originating from different programs may not be comparable. Full conformance with a PCR allows EPD comparability only when all stages of a life cycle have been considered. However, variations and deviations are possible.
Liability	The EPD owner relieves EPDItaly from any non-compliance with the environmental legislations. The holder of the declaration will be liable for the supporting information and evidence. EPDItaly disclaims any liability regarding the manufacturer's information, data, and results of the life cycle assessment.

2. THE COMPANY

Col Giovanni Paolo S.p.A. (COL GROUP) is a leading Italian company owned by Oaktree Capital Management, L.P. in the fast-growing global energy transmission and distribution market. It specializes in the development and production of critical components and advanced solutions for smart grid applications in medium and high voltage electrical infrastructure with sustainability at the heart of all its activities. COL GROUP has been working to support the sustainable future of our planet and the long-term success of its customers as well as the company's own business. This is underpinned by the ambitions embodied in two of COL GROUP's Strategy 2030 goals i.e., to lead with low-carbon circular economy solutions, and to enhance sustainability across the value chain. The company possesses numerous certifications according to international standards, among which are UNI EN ISO 9001:2015, UNI EN ISO 14001:2015, UNI ISO 45001:2018, UNI EN ISO 50001:2018, and ISO 27001: 2013. Established in 1920, COL GROUP has accumulated valuable experience in the electro-technical and plant engineering fields for over a century, and it is among the few authorized suppliers for major utility companies in Europe, Middle East, South America, and Southeast Asia. The company has developed a highly innovative technology portfolio in medium voltage switchgear, substation automation, battery control systems and several other smart grid and high-voltage applications in collaboration with other dominant global utilities and industrial players. Over the years, COL GROUP has registered significant growth through the acquisition of several companies in the electronic, energy systems, railway, and electromechanical sectors. Hitherto, the company has production sites in Torino, Catania, Milano, and Cremona, with over 150 highly specialized and efficient employees led by a talented management team.

3. THE PRODUCT

The product is an SF_6 gas insulated prefabricated equipment with internal arc tight metal enclosure with switch (ICS), of type DY800/316, with a rated voltage of 24kV, manufactured at the COL GROUP production plant in Catania (COL-CATANIA) according to the Enel Technical Specification "APPARECCHIATURE PREFABBRICATE 24 kV CON INVOLUCRO METALLICO A TENUTA D'ARCO INTERNO CON INTERRUTTORE (ICS)" DY800 ed. 4 of March 2015. Furthermore, it is made in compliance with Legislative Decree 9 April

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2008, n. 81 and subsequent amendments and additions and with the CEI EN 62271-200 regulation. This product is gas-insulated using sulphur hexafluoride (SF_6) that has an expected operating life regarding leakage performance more than 30 years. This prefabricated equipment is an indoor appliance intended to be installed in the secondary cabin to restore a normal condition, interrupting and re-establishing fault currents in selective coordination with the line switch installed in the primary substation, in both isolated neutral and a compensated neutral. The SF_6 gas insulated medium voltage (MV) prefabricated equipment includes a MV circuit breaker with lateral electrical control (INT), a MV line disconnector (SL) with manual control, an earthing switch with manual control (ST). The casing of the DY800/316 compartment conform dimensionally to the EU table DY411, compartment "I-TM-U-IM" and to the requirements of the DY1521 table with compartments filled with SF_6 gas meeting the requirements of CEI EN 60376, exclusively in the factory and they form a sealed pressure system as per IEC 62271-200. The image on the cover of this EPD document shows a fully assembled prefabricated 24kV equipment with internal arc tight metal enclosure with switch (ICS) DY800/316, on a wooden pallet, and **Table 1** summarizes some of the technical characteristics of the product and its packaging.

Table 1. Some of the technical characteristics of the product and the packaging materials

COL-CATANIA Product code		**N-ICS/G3**
Matricola ENEL		**162460**
Product type code		**DY800/316**
Rated voltage [kV]		24
Nominal frequency [Hz]		50
Rated withdrawal voltage at operating frequency [kV]		125
Rated normal current [A]		630
Rated power-frequency withstand voltage [kV]		50
Rated short-time withstand current [kA]		16
Rated peak withstand current [kAc]		40
Rated duration of short-circuit [s]		1
Internal arc classification		IAC
Type of accessibility		AF
Arc test current [kA]		16
Duration of the arc test current [s]		0,5
Product net weight [kg]		368,82
Packaging materials	**Paper [kg]**	0,32
	Wooden pallet [kg]	7,50

Material composition

The declaration on the content of materials for the fully assembled product was done by the manufacturer in accordance with EN IEC 62474. The material class name, unique ID, and percentage mass share of all the materials and declarable substances contained in the fully assembled product plus its packaging are shown in **table 2.**

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Table 2. Material composition for the fully assembled and packaged DY800/316 product

Material class name	ID	Mass share
Stainless steel	M-100	9,5980%
Other ferrous alloys, non-stainless steels	M-119	72,0290%
Aluminium and its alloys	M-120	0,2841%
Copper and its alloys	M-121	8,3077%
PolyVinylChloride (PVC)	M-200	0,0531%
PolyPropylene (PP)	M-202	0,0186%
PolyStyrene (PS)	M-203	0,4434%
Polycarbonate (PC)	M-204	0,0239%
Polyamide (PA)	M-208	0,9160%
Polyethylene Terephthalate (PET)	M-209	0,1540%
Unsaturated polyester (UP)	M-301	2,2887%
Silicone	M-321	0,0159%
Wood	M-340	1,9913%
Paper	M-341	0,0850%
Refrigerant gases and cryogens and other greenhouse gases	M-400	0,4407%
*Other	OTHER	3,3507%

*Miscellaneous electronic materials with no unique ID

Reference service life

The reference service life (RSL) of the product was set at 20 years according to PCR EPDItaly015 – Switchboards, based on the DY800/316 product characteristics.

4. SCOPE AND TYPE OF EPD

This is a product-specific EPD in compliance with ISO 14025 and EN 50693 under the EPDItaly regulations for an SF_6 gas insulated prefabricated equipment with internal arc tight metal enclosure with switch (ICS), with a rated voltage of 24kV and type DY800/316, manufactured at COL-CATANIA for installation as an indoor equipment in secondary distribution substations of the Enel Group within the Italian territory. It is based on a cradle to grave life cycle assessment (LCA) methodology in accordance with the ISO 14040 and 14044 standards considering the current technological level worldwide. The geographical and temporal scope for the data considered in this study are summarized in **table 3.** The environmental performance results from the LCA were automatically generated using the excel-based LCA tool "LCA-COL GROUP Tool 2.2" of 07/11/2024., and they were intended for internal R&D, as well as B2B and B2C communication.

Table 3. The geographical and temporal scope considered at the current global level of technology

Representativeness	Scope
Geographical	Italy
Timeframe	2021

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Functional unit

The functional unit (FU) for this LCA was a fully assembled, tested, and packaged SF_6 gas insulated prefabricated equipment with internal arc tight metal enclosure with switch (ICS), with a rated voltage of 24kV and type DY800/316, with the technical specifications stated in **table 1**, manufactured at COL-CATANIA as *SC."N-ICS/G3" 630A-16KA DY800/316 COD. ENEL 162460*, distributed and installed for use as indoor equipment in secondary distribution substations of the Enel Group in various sites within the Italian territory, functioning nonstop during a RSL of 20 years.

System boundary

The system boundary adopted in this LCA followed the cradle-to-grave perspective i.e., covering the entire lifecycle of the final product as shown in **table 4** with the life cycle stages for all the major activities involved, grouped into three distinct modules i.e., upstream, core, and downstream with reference to EN 50693. The product life cycle and inventory analysis describing all the activities conducted at each of the lifecycle stages, simplifying assumptions, and modelling scenarios used in the LCA has been thoroughly performed in **section 5** of this document.

Table 4. The life cycle stages and modules declared in the system boundary

Manufacturing		Distribution	Installation	Use	End of life
Upstream	Core	Downstream			
✓	✓	✓	✓	✓	✓

✓ = Lifecycle stages and modules declared in the LCA

Cut-off criteria

The mandatory cut-off for mass and energy flows in this LCA study was set at 1% as defined and modelled in the LCA TOOL "LCA-COL GROUP Tool 2.2" of 07/11/2024. All the material and energy flows within the system boundary known to have potential to cause significant impacts on the LCA results have been accounted for. However, cut-off was applied to the potential impacts that could have resulted from production and disposal of the packaging materials of all the semi-finished products included in the BOMs (e.g., sheets, electronics, screws, metal carpentry, etc.) transported to COL-CATANIA for processing and later assembling of the final product as it was assumed that such impacts were negligible. On top of that, a cut-off was similarly applied to the impacts associated with the skilled labour required during installation and dismantling of the product at its end-of-life. Potential impacts that could have arisen from any maintenance scheduled after the first 36 months from delivery date were ignored since the product was assumed to be maintenance free for the entire expected service life.

Allocation rules

The allocation criteria adopted for the LCA model was guided by the reference PCR of the product being studied. Since many other products are produced at the reference site, the "multi-output" allocation rule was applied to distribute the environmental burden among these multiple products. The primary data relating to waste generation, water consumption, and energy consumption (petrol and electricity) used was provided for the reference year, and these were allocated based on economic aspects (revenue

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generated in millions of euros) to obtain the allocation factor for the product under study, computed using the total annual revenue of the company production site (COL-CATANIA), annual revenue from selling DY800/316 products being studied, and the number of the studied product sold in the reference year.

Data quality

The most recent and verifiable site-specific data collected in the reference year 2021 was used in this study, and the International System of Units (SI) was adopted while recording the data. The initial primary data forming the basis for the LCA were the production specifications i.e., BOMs (having both net and gross weights), mechanical drawings, and technical standards from ENEL provided by COL-CATANIA to its external suppliers for each sub-assembly of the final product, and these were analysed using Microsoft excel. The weights of the structural and electronic components were manually weighed on the weighing scale, photographs taken, and recorded in an excel spreadsheet. Additional primary data used included the water and energy (petrol, and electricity) consumption for the core activities at COL-CATANIA premises during the reference year, and these were downloaded from the company's reference production site account on the website of the service providers. A similar approach was applied to download annual data for fuel consumption by company vehicles that use electronic fuel cards. In addition to that, the distances from external suppliers to COL-CATANIA were evaluated with the aid of Google Maps. The same technique was applied to determine the distributing distance across the various reference installation sites within Italy, and justification was provided for all the simplifying assumptions stated. It must also be stated that natural gas is not used for heating at the COL-CATANIA production site hence the justification for no data. In terms of secondary data, databases from legitimate sources already embedded in the LCA TOOL "LCA-COL GROUP Tool 2.2" of 07/11/2024 were used to obtain generic data for some up- and down-stream processes in the life cycle of the product.

5. PRODUCT LIFE CYCLE AND INVENTORY ANALYSIS

The life cycle inventory (LCI) lists and quantifies all the flows entering and leaving all the declared life cycle stages of the product within the system boundary considered in relation to the scope of the study. The reference flow for the LCI is 1 piece of a fully assembled DY800/316 product **(368,82 kg)** and its packaging materials **(7,82 kg).**

Manufacturing

This first life cycle stage covers all the activities categorized under the upstream and core modules. The supply chain processes commence with the extraction of raw materials to produce sub-assemblies comprising of electronic and structural components which are constituents of the final DY800/316 product, and the packaging materials for the final product. The electronic components are ordinarily comprised of cables in compartments, connectors, capacitors, inductors, and resistors, whereas the structural component consists of plastics, resins, metallic sheets (which produce scrap after processing), bolts, and screws. The preparation of raw materials for making these components was done by external suppliers on their manufacturing sites within Italy except for the SF_6 gas with excellent dielectric properties which was procured from Germany. All these components were produced in accordance with

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the specifications stated in the DY800 ed.4 Enel Technical Specification, and they were assumed to be transported by road in a 16 - 32 tonne EURO5 lorry to COL-CATANIA where the core activities of assembling, testing, and final packaging of the DY800/316 product were done. The fully assembled product was packaged by mounting it on a wooden pallet and then covering it with a plastic bag on which the product identification details printed on paper is attached. All but packaging wastes generated from all activities on-site (not limited to only the production phase) are documented by category i.e., code in the production site register and declared annually in the MUD "*Modello Unico di Dichiarazione ambientale*" following the applicable regulations and deadlines. Furthermore, these wastes were assumed to be transported in a 16 - 32 tonne ACI mix lorry to a waste treatment plant **50 km** away.

Distribution

From this point forth, all the activities are classified under the downstream module. The fully assembled and packaged product is loaded onto a 16 - 32 tonne EURO5 lorry for final delivery to the various installation sites throughout the Italian territory. For purposes of simplification, the distribution process was assumed to be solely done by road despite the ferry routes connecting mainland Italy to the islands. All the sites where the product was distributed and installed during the reference year were used and their distances (in kilometres) from COL-CATANIA considering the fastest route were obtained from Google Maps. However, since the distribution of the product was not homogeneous across the entire Italian territory, these distances were weighted against the quantity of the product distributed in each of the installation sites, and the sum of the various weighted distances **(618,5 km)** was taken as the distribution distance.

Installation

Upon arrival at any of the installation sites, the DY800/316 product is unloaded, carefully removed from its packaging, and installed by skilled technicians for use as indoor equipment in secondary distribution substations of the Enel Group within the Italian territory. It is exactly after installation of the product that the wooden pallets previously used for packaging are returned for reuse i.e., subsequent deliveries. At the end of life of the packaging materials, they are assumed to be transported in a 7 - 16 tonne EURO5 lorry to a waste treatment plant **50 km** away.

Use

The perfectly installed product operates continuously during its RSL consuming **29205,490 kWh** of electricity, and it is assumed to be maintenance free for the entire expected service life (30 years). The electricity consumed by the product during its RSL, $\mathbf{E_{use}}$ is computed using the parameters as in LCA-TOOL "LCA-COL GROUP Tool 2.2" of 07/11/2024, and the formula shown below in **Equation 1**, where; $\mathbf{P_{use}}$ is the power consumed by the product (170 Watts); **RSL** is the service life of the product, assumed to be 20 years; **8760** is the number of hours in a year; and **1000** is the conversion factor that allows the energy consumed in kWh over the product's service life to be expressed.

$$\boldsymbol{E_{use}}[\mathbf{kWh}] = \frac{\boldsymbol{P_{use}} * \mathbf{8760} * \mathbf{RSL}}{\mathbf{1000}} \qquad (\mathbf{1})$$

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P_{use} (in Watts) considering a three **(3)** phase system was computed using formula in **Equation 2**, where **R** is the electrical resistance (ohms) and **i** is the nominal current (amps).

$$\boldsymbol{P_{use}[W] = 3 * R * i^2} \qquad (2)$$

An additional environmental information is that during the use phase, the DY800/316 product emits SF_6 gas to the environment, and it must be noted that SF_6 gas is chemically neutral, non-toxic, odourless, and colourless. The SF_6 gas leakage rate for the product from the gas tightness test was computed to be **0,19** grams per year.

End of life

At the end of the RSL of the product, the dismantling process and separation of the product components is done following guidelines in the manual given by the manufacturer, and the resulting wastes were assumed to be transported using a 7,5 - 16 tonne EURO5 lorry to a waste treatment plant located **50 km** away from the installation site.

6. LCA RESULTS

The environmental performance results of the product for the different lifecycle stages per FU accounting for all the mandatory environmental impact indicators **(Table 5)**, descriptive parameters for resource use **(Table 6),** and waste production **(Table 7)** calculated as per Core PCR: EPDItaly007 and EN 50693 were automatically generated using the LCA TOOL "LCA-COL GROUP Tool 2.2" of 07/11/2024.

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Environmental impacts for DY800/316

Table 5. LCA results for the environmental impact indicators

Impact indicators	Unit of measurement	Manufacturing	Distribution	Installation	Use	End of life	TOTAL
GWP-total	kg CO_2 eq.	2,25E+03	3,62E+01	3,30E-01	1,05E+04	3,74E+02	1,32E+04
GWP-fossil	kg CO_2 eq.	2,24E+03	3,62E+01	1,17E-01	1,05E+04	3,73E+02	1,31E+04
GWP-biogenic	kg CO_2 eq.	4,00E+00	1,23E-03	2,13E-01	4,48E+01	1,76E-02	4,90E+01
GWP-luluc	kg CO_2 eq.	1,99E+00	8,88E-04	1,88E-05	6,55E-01	3,32E-02	2,68E+00
ODP	kg CFC-11 eq.	3,91E-05	7,38E-07	2,36E-09	2,18E-04	3,03E-07	2,58E-04
AP	mol H^+ eq.	3,08E+01	9,00E-02	8,34E-04	3,39E+01	1,87E-01	6,50E+01
EP-freshwater	kg P eq.	2,45E-01	3,03E-05	7,60E-07	1,77E-01	8,91E-04	4,23E-01
EP-marine	kg N eq.	2,89E+00	3,45E-02	4,86E-04	5,23E+00	6,83E-02	8,22E+00
EP-terrestrial	mol N eq.	3,63E+01	3,78E-01	4,08E-03	5,98E+01	7,05E-01	9,71E+01
POCP	kg NMVOC eq.	1,22E+01	1,57E-01	1,28E-03	2,76E+01	1,91E-01	4,02E+01
ADP-min & met	kg Sb eq.	5,64E-01	1,19E-06	2,31E-08	1,51E-04	4,32E-06	5,64E-01
ADP-fossil	MJ	2,53E+04	4,78E+02	1,69E+00	1,72E+05	3,57E+02	1,98E+05
WDP	m^3 eq. deprived	9,05E+02	2,03E-01	-4,46E-01	7,67E+03	7,90E+00	8,58E+03

Caption: GWP-total = Global Warming Potential – total; **GWP-fossil** = Global Warming Potential – fossil; **GWP-biogenic** = Global Warming Potential – biogenic; **GWP-luluc** = Global Warming Potential – land use and land use change; **ODP** = Ozone Depletion Potential; **AP** = Acidification Potential; **EP-freshwater** = Eutrophication potential, aquatic freshwater; **EP-marine** = Eutrophication potential, marine; **EP-terrestrial** = Eutrophication potential, terrestrial; **POCP** = Photochemical ozone formation; **ADP-min & met** = Depletion of abiotic resources – minerals and metals; **ADP-fossil** = Depletion of abiotic resources – fossil fuels; **WDP** = Water deprivation potential

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Resource use for DY800/316

Table 6. LCA results for the environmental parameters describing resource use

Parameters	Unit of measurement	Manufacturing	Distribution	Installation	Use	End of life	TOTAL
PERE	MJ	3,92E+03	1,66E+00	1,22E-02	5,94E+04	2,67E+01	6,34E+04
PERM	MJ	1,32E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,32E+02
PERT	MJ	4,05E+03	1,66E+00	1,22E-02	5,94E+04	2,67E+01	6,35E+04
PENRE	MJ	2,45E+04	4,78E+02	1,69E+00	1,72E+05	3,57E+02	1,97E+05
PENRM	MJ	8,25E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,25E+02
PENRT	MJ	2,53E+04	4,78E+02	1,69E+00	1,72E+05	3,57E+02	1,98E+05
MS	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m^3	2,62E+01	1,22E-02	-1,02E-02	2,02E+02	2,85E-01	2,28E+02

Caption: PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw material; **PERM** = Use of renewable primary energy resources used as raw material; **PERT** = Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials); **PENRE** = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw material; **PENRM** = Use of non-renewable primary energy resources used as raw material; **PENRT** = Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials); **MS** = Use of secondary materials; **RSF** = Use of renewable secondary fuels; **NRSF** = Use of non-renewable secondary fuels; **FW** = Net use of fresh water

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Waste production for DY800/316

Table 7. LCA results for the environmental parameters describing waste production

Parameters	Unit of measurement	Manufacturing	Distribution	Installation	Use	End of life	TOTAL
HWD	kg	2,69E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,69E+00
NHWD	kg	2,21E+00	0,00E+00	2,88E+00	0,00E+00	9,10E+01	9,61E+01
RWD	kg	1,12E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,12E-03
CRU	kg	1,11E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,11E+00
MFR	kg	3,90E+01	0,00E+00	2,49E+00	0,00E+00	2,67E+02	3,08E+02
MER	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,20E+00	7,20E+00
ETE	MJ	0,00E+00	0,00E+00	3,78E+01	0,00E+00	0,00E+00	3,78E+01
EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Caption: HWD = Hazardous waste disposed; **NHWD** = Non-hazardous waste disposed; **RWD** = Radioactive waste disposed; **CRU** = Components for reuse; **MFR** = Material for recycling; **MER** = Materials for energy recovery; **ETE** = Exported thermal energy; **EEE** = Exported electricity energy

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7. REFERENCES

1. Col Giovanni Paolo S.p.A. website, accessed 21 June 2024, <https://colgp.it/en/>
2. Core-PCR: EPDItaly007 – PCR for Electronic and Electrical Products and Systems, REV 3.1, Issue date 12/11/2024
3. EN 50693:2019-08 Product category rules for life cycle assessments of electronic and electrical products and systems
4. EN IEC 62474:2019 Material declaration for products of and for the electrotechnical industry
5. ENEL, Technical Specification code: “APPARECCHIATURE PREFABBRICATE 24 kV CON INVOLUCRO METALLICO A TENUTA D’ARCO INTERNO CON INTERRUTTORE (ICS)” DY800 ed. 4 of March 2015.
6. ISO 14025:2010 Environmental labels and declarations – Type III environmental declarations – Principles and procedures
7. ISO 14040:2006 Environmental management - Life cycle assessment - Principles and framework
8. ISO 14044:2006 Environmental management - Life cycle assessment - Requirements and guidelines
9. Regulations of the EPDItaly Programme. Revision 6.0. Issue date 30/10/2023
10. Sub-category PCR: EPDItaly015, Electronic and electrical products and systems – Switchboards, REV 2, Issue date 01/07/2024

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