Product Category Rules

ENERGY STORAGE SYSTEMS FOR INDUSTRIAL AND STATIONARY APPLICATIONS

UN CPC code: 464

PCR-2021-0006
Valid until: 2027-02-23
Date: 2022-02-24
Version 1.00

Developed in collaboration with EPD ITALY

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PRODUCT CATEGORY

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1. Product category definition

This document provides Product Category Rules (PCR) for the assessment of the impact on climate change of **energy storage systems for industrial and stationary applications** and the declaration of this performance through a CFP. The product category corresponds to UN CPC 464 Accumulators, primary cells and primary batteries, and parts thereof.

The product category is defined under UNSD-CPC Ver 2.1 classification:
Division 46: Electrical machinery and apparatus.

464: Accumulators, primary cells and primary batteries, and parts thereof

The present PCR is to be intended as an integration to the existing PCR *EPDItaly021 "Energy storage systems"*, published by the Programme Operator EPDItaly.

The scope of the present PCR encompasses energy storage systems for industrial and stationary applications (e.g. e-mobility), that are excluded from the mentioned existing PCR.

Within the present PCR, the following terminology is adopted:

- The term "shall" is used to indicate what is obligatory.
- The term "should" is used to indicate a recommendation, rather than a requirement.
- The term "may" or "can" is used to indicate an option that is permissible.

For the definition of terms used in the document, see the normative standards.

2. Product category description

The products covered by this PCR are assemblies of electric and electronic components, usually in form of cabinets, boards and consoles, with the main function of storing electric energy (usually, but non mandatorily, with Lithium-ion technology) and delivering it with appropriate timing. These products are classified hereinafter as "Storage" according to CPC 464.
This product family includes all the systems used to store electricity (produced by a renewable or non-renewable power source) for a certain time period, ensuring proper delivery of the electric power when needed by the battery user. This PCR covers all the energy storage systems for industrial and stationary applications, with any available technology, in the form of battery cell packs.
This PCR is applicable only to energy storage systems for industrial and stationary applications (e.g. e-mobility).
The energy storage systems considered in this PCR are assemblies of battery cell packs, connected in series or in parallel according to design and operational requirements. These

objects are usually composed by cell pack (which is the combination of anode, cathode and electrolyte), control systems and external case. The overall weight of such components may vary from some kilograms up to several tons in case of very large systems for industrial applications.

3. Functional Unit

To ensure full comparability between the environmental results, as the battery capacity is scaling according to the gross weight (i.e. number of connected cells), in this PCR the functional unit is defined as 1 kWh stored by a single energy storage module. In case of configurations connecting multiple modules[1], environmental impacts shall be declared for a single module and reported to a unit kWh stored.

4. Product lifetime

RSL is the service life of the product, assumed to be 10 years.
This value is considered as representative after a technology review to screen the declared lifetime of major energy storage systems currently available in the market with sufficient maturity and penetration.

[1] One module is defined as a unit battery pack as sold to the market.

SYSTEM BOUNDARIES

1. Diagram
2. Upstream
3. Core
4. Downstream

Carbon Footprint Italy follows an approach that include all attributional processes from "cradle to grave", using the "limited loss of information at the final product" principle. This is especially important in the case of business-to-consumer communication.

The scope of this PCR and of CFPs based on this document is **cradle to grave**.

For the purpose of different data quality rules and for the presentation of results, the life cycle of products is split into three different life cycle stages:

- Upstream processes (from cradle-to-gate);
- Core processes (from gate-to-gate);
- Downstream (from gate-to-grave).

In the CFP, the impact on climate change associated to each of the three life-cycle stages mentioned above shall be reported separately.

1. Diagram

<table>
<tr><td colspan="2">MANUFACTURING STAGE</td><td>DISTRIBUTION STAGE</td><td>INSTALLATION STAGE</td><td>USE & Maintenance STAGE</td><td>END-OF-LIFE STAGE

De-installation</td></tr>
<tr><td>UPSTREAM MODULE</td><td>CORE MODULE</td><td colspan="4">DOWNSTREAM MODULE</td></tr>
<tr><td>extraction of raw materials, including waste recycling processes and the production of semi-finished and ancillary products</td><td>manufacturing of the product constituents, including all the stages</td><td colspan="4" rowspan="4">IN ACCORDANCE WITH EN 50693</td></tr>
<tr><td>transportation of raw materials to the manufacturing company</td><td>product assembly</td></tr>
<tr><td></td><td>packaging</td></tr>
<tr><td></td><td>waste handling processes</td></tr>
</table>

Figure 1 - System diagram illustrating the processes that are included in the product system, divided into upstream, core and downstream processes.

2. Upstream

The following attributional processes are part of the product system and classified as upstream processes:

– Raw material production, transformation and final assembly of the battery[2]; both impacts related to material and energy transformation (electricity, heat) shall be reported and accounted;

– Transportation of raw materials and semi-finished products along the entire supply chain; in the event that assembly is performed in multiple sites, transport between each site shall be considered.

3. Core

The following attributional processes are part of the product system and classified as core processes:

– Production of the finished product packaging, including packaging to distribute the battery in the reference market segment;

– Generation of process waste, including its transportation to the disposal site.

The technical system shall not include:

- Manufacturing of production equipment, buildings and other capital goods;
- Business travel of personnel;
- Travel to and from work by personnel;
- Research and development activities.

4. Downstream

4.1 Distribution stage

The module includes the impacts related to the distribution of the product at the installation site. In the absence of any primary data on logistics, an overland distribution scenario of 500 km may be adopted; in the absence of any primary data on the fleet of vehicles used, as a precautionary approach, a EURO 4 category vehicle should be considered. If a specific scenario is applied (preferrable option), hypotheses about distance, transport mean and emission class shall be reported in the CFP report.

[2] Primary information as number and weight of meter and Printed Card Board (PCB) components must be declared in the CFP report in order to know how electronic components and in particular PCB have been implemented. In the case of details of components PCB are not available, information coming from commercial database must be specified in the CFP report.

4.2 Installation stage

This module includes impacts arising from the installation of the storage in the operational site. The following items must be included in the CFP analysis:

- End of life of the packaging;
- Scrap generated during the installation stage;
- General waste arising from installation stage.

4.3 Use & maintenance stage

In this module, the impacts related to the energy consumed by the storage system to operate during its entire reference service life shall be considered. It must be noticed that impacts related to electricity delivered to the client circuit are out of the system boundaries of the storage.

Use phase considers:

- **in case the system is stationary and powered by the electricity grid to supply auxiliary equipment or related devices (e.g. fire protection systems):** only the energy absorbed by the equipment to keep operating (e.g. display, LEDs) and ready to transfer electric power to the battery user(s);
- **in case the system is made of batteries used for traction applied to mobility:** the E_{use} component is to be considered equal to zero.

Energy consumed during the use phase shall therefore be considered as a self-consumption and the origin of this energy shall be the same as the primary circuit which feeds the battery.

The following formula shall be used to calculate the electricity consumed during the product's service life:

$$E_{tot}\,[kWh] = E_{use} + E_{loss}$$

The total energy consumed by the battery is the result of two parameters: the former describes the energy required by the battery to operate, while the latter considers the energy loss due to charge/discharge cycles.

4.3.1 Calculation of E_{use}

E_{use} is the energy consumed by the battery electrical auxiliaries, not cycle related, namely the energy required to keep the control system active during its reference service life; it can be computed as follows:

$$E_{use}\,[kWh] = \frac{P_{use} * 8760 * RSL}{1000}$$

Where:

- P_{use} is the power absorbed by the storage equipment auxiliary services that are not cycle related, to operate (BMS, SCADA, fire protection system, etc). The CFP report shall provide information about measurements and power of the electric scheme of the system, including the accessory/auxiliary consumptions, in order to be able to calculate the P_{use} value from technical specifications of the product. It shall be expressed in W.
- RSL is the service life of the product, assumed to be 10 years;
- 8760 is the number of hours in a year;
- 1000 is the conversion factor that allows the energy consumed in kWh over the product's service life to be expressed.

4.3.2 Calculation of E_{loss}

E_{loss} considers the energy dissipation occurring whenever the battery is charged and discharged; it can be computed as follows:

$$E_{loss}\ [kWh] = \sum_{i=0}^{RSL} \frac{E_{useful\ i} * N_{cycles} * 365}{1000 * DC\ RTEi}$$

with **i** ranging from 1 to 10 (RSL=10) and assuming all parameters in the year **i** unvarying during the year besides charging efficiency.

Where:

- DC RTEi (DC Round Trip efficiency in the year i) is the battery efficiency during a complete discharge/charge cycle defined as energy discharged divided by energy charged measured on DC power terminal in the charging/discharging cycle at the maximum power that the battery system is able to keep constantly without rest time and at Nominal Operating Temperature;
- $E_{useful\ i}$ is the max energy dischargeable from the battery system (DC side) during discharge at the maximum power that the battery system is able to keep constantly during discharging process without rest time and Nominal Operating Temperature. In the CFP report shall be provided information about assumptions and hypotheses adopted to calculate the value of $E_{useful\ i}$ starting from technical specifications of the product. It shall be expressed in kWh;
- Nominal Operating Temperature: Environmental temperature of battery room in which the battery system minimizes the degradation phenomena providing the electrical performance required. If it is not explicitly declared by battery manufacturer, Nominal Operation Temperature equal to 25°C ±5°C shall be assumed;
- N_{cycles} is the number of full charge/discharge cycles per day; in the reference scenario, 1 entire charge/discharge cycle per day shall be considered;

- 365 is the number of days in one year;
- 1000 is the conversion factor that allows the energy consumed in kWh over the product's service life to be expressed.

The total energy consumption value (expressed in kWh per RSL) obtained by the formula must be reported in the CFP report together with the emission factor adopted to model electricity (expressed in g CO_2eq/kWh).

The whole energy consumption in the use phase shall be then multiplied by the electricity emission factor and divided by the nominal capacity of the battery (C_{batt} – kWh) to obtain the inventory value for the environmental impact of the use phase. This action is required to scale the impacts of use phase to the refence flow and make the results of this phase coherent with the defined functional unit.

The impacts associated with electricity generation shall be included in the "Use & maintenance" module.

4.4 End-of-life stage

The module includes the operations from the decommissioning stage to the actual disposal of the battery at the end of its service life.

In order to better assess the product's sustainability from the point of view of its circularity, the following operations shall be considered instead:

- Transportation of the storage system to the collection site;
- Battery disassembly operations;
- Distribution and destination of the various material flows to be sent for recycling or disposal.

Final waste treatment processes (landfill and incineration), where waste production is linked to the product life cycle, must be included in the study. Where this is not possible due to a lack of information, it is necessary to declare the quantity of waste produced. Also waste recovery and recycling processes must be included in the system boundary together with the transportation of the waste itself to the treatment platform.

If the product could undergo a second life, proper technical documentation able to demonstrate the details of how the second life (e.g. compatibility with a photovoltaic inverter, etc) is to be implemented shall be presented.

4.5 Re-use, recycling and potential energy recovery

Battery recycling operations shall consider the recovery of any recyclable material, i.e. metal fraction, rare elements, electric components or plastic parts. Further operations starting from the recycled material (e.g. production of plastic parts made with recycled PVC or recycled copper stranding in new cables) are out of the system boundaries and therefore out of the scope of this PCR.

DATA AND RULES FOR THE CFP STUDIES

1. Specific data or calculation rules
2. Cut-off rules
3. Allocation rules

1. Specific data or calculation rules

1.1 Specific data

A CFP calculation requires two different kinds of information:

- data related to the environmental aspects of the considered system (such materials or energy flows that enter the production system). These data shall come from the company that is performing the CFP calculation.
- data related to the life cycle impacts of the material or energy flows that enter the production system. Generic data can be used if specific data are not available.

Data on environmental aspects shall be as specific as possible and shall be representative of the studied process.

Data on the life cycle of materials or energy inputs are classified into three categories – specific data, selected generic data, and proxy data, defined as follows:

- **primary data** (also referred to as "site-specific data") – data gathered from the actual manufacturing plant where product-specific processes are carried out, and data from other parts of the life cycle traced to the specific product system under study, e.g. materials or electricity provided by a contracted supplier that is able to provide data for the actual delivered services, transportation that takes place based on actual fuel consumption, and related emissions, etc.
- **secondary data** - data from commonly available data sources (e.g. commercial databases and free databases) that fulfill prescribed data quality characteristics for precision, completeness, and, proxy data from commonly available data sources (e.g. commercial databases and free databases) that do not fulfill all of the data quality characteristics of "selected generic data".

As a general rule, specific data shall always be used, if available, after performing a data quality assessment.

The attributional LCA approach in Carbon Footprint Italy forms the basic prerequisites for selecting generic data. To allow the classification of generic data as "selected generic data", they shall fulfill selected prescribed characteristics for precision, completeness, and representativeness (temporal, geographical, and technological), such as:

- the reference year must be as current as possible and preferably assessed to be representative for at least the validity period of the CFP,
- the cut-off criteria to be met on the level of the modelled product system are the qualitative coverage of at least 99% of energy, mass, and overall environmental relevance of the flows,

- completeness in which the inventory data set should, in principle, cover all elementary flows that contribute to a relevant degree of GHG emissions.

1.2 Calculation rules

The following requirements apply to the study:

- Data referring to processes and activities upstream in a supply chain over which an organisation has direct management control shall be specific and collected on site.

- Data referring to contractors that supply main parts, packaging, or main auxiliaries should be requested from the contractor as specific data, as well as infrastructure, where relevant.

- In case specific data is lacking, selected generic data may be used. If this is also lacking, proxy data may be used.

- For the electricity used in the processes, electricity production impacts shall be accounted for in this priority when specific data are used in the processes:
    1. Specific electricity mix as generated, or purchased, from an electricity supplier, demonstrated by a Guarantee of Origin (or similar, where reliability, traceability, and the avoidance of double-counting are ensured) as provided by the electricity supplier. If no specific mix is purchased, the residual electricity mix from the electricity supplier shall be used[3].
    2. National residual electricity mix or residual electricity mix on the market
    3. National electricity production mix or electricity mix on the market.

    The mix of electricity used in upstream processes shall be documented in the CFP study report, where relevant.

- Transport from the final delivery point of raw materials, chemicals, main parts, and components (see above regarding upstream processes) to the manufacturing plant/place of service provision should be based on the actual transportation mode, distance from the supplier, and vehicle load, if available.

- Waste treatment processes of manufacturing waste should be based on specific data, if available.

[3] The residual electricity mix is the mix when all contract-specific electricity that has been sold to other customers has been subtracted from the total production mix of the electricity supplier.

2. Cut-off rules

What defined in chapter 4.2.3.2 of PCR EPDItaly007 applies.

Flows must not be omitted to avoid hiding significant impacts.

The following flows and operations may be cut-off:

- Production, use and disposal of the packaging of components and semi-finished intermediates.
- Materials making up the storage system itself whose total mass does not exceed 1% of the total weight of the device.
- Material and energy flows related to the installation stage.
- Material and energy flows related to dismantling phase, whenever it is reasonable to assume that dismantling is performed by adopting manual tools (e.g. screwdrivers, hammers, etc.).
- Devices external to the product itself required for installation.
- Additionally, what defined in 4.2.3.3 of EN50693 applies.

3. Allocation rules

The following stepwise procedure shall be applied for multifunctional products and multiproduct processes:

1. Allocation shall be avoided, if possible, by dividing the unit process into two or more sub-processes and collecting the environmental data related to these sub-processes.
2. If allocation cannot be avoided, the inputs and outputs of the system shall be partitioned between its different products or functions in a way that reflects the underlying physical relationships between them; i.e. they should reflect the way in which the inputs and outputs are changed by quantitative changes in the products or functions delivered by the system.
3. Where physical relationships alone cannot be established or used as the basis for allocation (or they are too time consuming), the most suitable allocation procedure shall be used and documented.

In accordance with other existing programme operators, the methodological choices for allocation for reuse, recycling and recovery have been set according to the polluter pays principle (PPP). This means that the generator of the waste shall carry the full climate impact until the point in the product's life cycle at which the waste is transported to a scrapyard or gate of a waste processing plant (collection site). The subsequent user of the waste shall carry the climate impact from the processing and refinement of the waste but not the impact caused in the "earlier" life cycles.

PCR APPLICABILITY

1. Impact category indicator results
2. PCR use for EPD purpose

This document constitutes the Product Category Rules (PCR[4]) developed by Carbon Footprint Italy with a technical collaboration with EPDItaly (www.epditaly.it/en) for the additional EPD impact categories.

The requirements described in this Product Category Rules (PCR) are specified in addition to the ones indicated in the ISO standard 14067. Therefore, both the PCR and the ISO 14067 requirements shall be fulfilled in order to register to Carbon Footprint Italy.

In fact, this PCR was conceived and developed for CFP studies. Anyway, it can also be used for EPD (Environmental Product Declaration); to do this, the additional specific regulations required by the programme operator selected for the EPD registration should be followed as well (see Section 2).

So, in this PCR only the parameter reported in Section "Impact category indicator results" shall be included.

1. Impact category indicator results

The present PCR is aimed at the development of CFP. Therefore, a special focus is on the "Global Warming Potential" indicator.

The specific GHG emissions and removals treatment in the CFP or partial CFP that shall be quantified and documented separately in the CFP study report are reported in the ISO 14067:2018, Table 1 of chapter 6.4.9.8.

Four GWP indicators shall be declared, which differentiates greenhouse gases depending on their origin: GWP-fossil, GWP-biogenic emissions, GWP-land use and land use change (dLUC), and GWP-biogenic removals, in accordance with the mentioned ISO 14067:2018 standard.

It should be noted that other impact categories can be relevant for the product category under assessment, other than the "Global Warming Potential" category. Therefore, in order to integrate the CFP results and to provide a broader view of the product environmental impacts, more impact categories shall be evaluated. The detail of this option are outlined In the following sections.

[4] Product Category Rules (PCRs) are documents that provide the rules, requirements and guidelines for developing a CFP study for a specific product category. PCRs are necessary to ensure uniformity of methodological approach to studies and to allow comparability between CFP studies related to products of the same category. The PCR development process is described in the "PQ04 PCR development" procedure, which can be downloaded in the dedicated section of the website.
This PCR follows the requirements of ISO/TS 14027, ISO 14067 and ISO 14025.

2. PCR use for EPD purpose

This PCR was conceived and developed for CFP studies. Anyway, it can also be used for EPD (Environmental Product Declaration); to do this, other predetermined parameters required by the programme operator selected for the EPD registration shall be followed. These parameters are:

- other impact category indicator results (see table 1 and following);
- inventory results that are elementary flows;
- data that do not represent elementary flows;
- additional environmental information.

More information could be found from EN 50693 or general PCR into EPDItaly System.

Impact category	Impact indicator	Unit of measurement
Climate change - total	Global Warming Potential total (GWP-total)	kg of CO_2 equivalent
Ozone Depletion	Depletion potential of the stratospheric ozone layer (ODP)	kg of CFC-11 equivalents
Acidification	Acidification potential, Accumulated Exceedance (AP)	moles of H+ equivalents
Eutrophication of water	Eutrophication potential, fraction of nutrients reaching freshwater end compartment (EP-freshwater)	kg of P equivalent
Eutrophication aquatic marine	Eutrophication potential, fraction of nutrients reaching marine end compartment (EP-marine)	kg of N equivalent
Eutrophication terrestrial	Eutrophication potential, accumulated exceedance (EP-terrestrial)	mol of N equivalent
Photochemical ozone formation	Formation potential of tropospheric ozone (POCP)	kg of NMVOC equivalents
Depletion of abiotic resources - minerals and materials	Abiotic Depletion for non-fossil resources potential (ADP-minerals&metals)	kg of Sb equivalents
Depletion of abiotic resources - fossil resources	Abiotic Depletion for fossil resources potential (ADP-fossil)	MJ, calculated using net calorific values
Water use	Water deprivation potential, deprivation-weighted water consumption (WDP)	m^3 equivalents

TABLE 1: OTHER IMPACT CATEGORY

The environmental impact indicators must be determined using the characterisation factors and impact assessment methods specified in EN 15804:2012+A2:2019.

Parameters	Unit of measurement
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw material (PENRE)	MJ, net calorific value
Use of renewable primary energy excluding renewable primary energy resources used as raw material (PERE)	MJ, net calorific value
Use of non-renewable primary energy resources used as raw material (PENRM)	MJ, net calorific value
Use of renewable primary energy resources used as raw material (PERM)	MJ, net calorific value
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials) (PENRT)	MJ, net calorific value
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials) (PERT)	MJ, net calorific value
Net use of fresh water (FW)	m^3
Use of secondary raw materials (MS)	kg
Use of renewable secondary fuels (RSF)	MJ
Use of non-renewable secondary fuels (NRSF)	MJ

TABLE 2: PARAMETERS DESCRIBING RESOURCE USE

Impact category	Unit of measurement
Hazardous landfill waste (HWD)	kg
Non-hazardous waste disposed (NHWD)	kg
Radioactive waste disposed (RWD)	kg
Materials for energy recovery (MER)	kg
Material for recycling (MFR)	kg
Components for reuse (CRU)	kg
Exported thermal energy (ETE)	MJ, net calorific value
Exported electricity energy (EEE)	MJ, net calorific value

TABLE 3: WASTE PRODUCTION DESCRIPTIVE PARAMETERS

COMPLEMENTARY INFORMATION

1. PCR use within other programme operators
2. Glossary
3. BIbliography
4. Underlying studies
5. Other existing PCR

1. PCR use within other programme operators

Carbon Footprint Italy believes in the importance of sharing different existing experiences, and considers the different Programme Operators as organizations that cooperate for a global climate transition.

CFI maintains the copyright of the document to ensure that it is possible to publish, update when necessary, and available to all organisations to develop and register CFPs. Stakeholders participating in PCR development should be acknowledged in the final document and on the website.

This PCR can be openly used by each CFP or EPD Programme Operator, if the original source of the know-how is mentioned (namely, the "PCR 2021-0006", developed by Carbon Footprint Italy).

2. Glossary

CO_2	Carbon dioxide
CPC	Central product classification
CFI	Carbon Footprint Italy
CFP	Carbon Footprint of Products
GHG	Greenhouse gases
ISO	International Organization for Standardization
kg	kilogram
LCA	Life cycle assessment
PCR	Product Category Rules
UN	United Nations

3. Bibliography

ISO (2000), ISO 14020:2000, Environmental labels and declarations – General principles

ISO (2017), ISO 14026:2017, Environmental labels and declarations – Principles, requirements and guidelines for communication of footprint information

ISO (2006b), ISO 14040:2006, Environmental management – Life cycle assessment – Principles and framework

ISO (2006c), ISO 14044: 2006, Environmental management – Life cycle assessment – Requirements and guidelines

ISO (2018), ISO 14067:2018, Greenhouse gases – Carbon footprint of products – Requirements and guidelines for quantification

PCR EPDItaly 007 – Electronic and electrical products and systems, EPDItaly

PCR EPDItaly 021 – Energy storage systems, EPDItaly

PQ 04 PCR Development, Carbon Footprint Italy

4. Underlying studies

The methodological choices made during the development of this PCR (functional unit/declared unit, system boundary, allocation methods, impact categories, data quality rules, etc.) in this PCR were primarily based on the following underlying studies:

- *CFP Systematic Approach of ELSA Solutions products,* Aequilibria Srl – SB, 2021

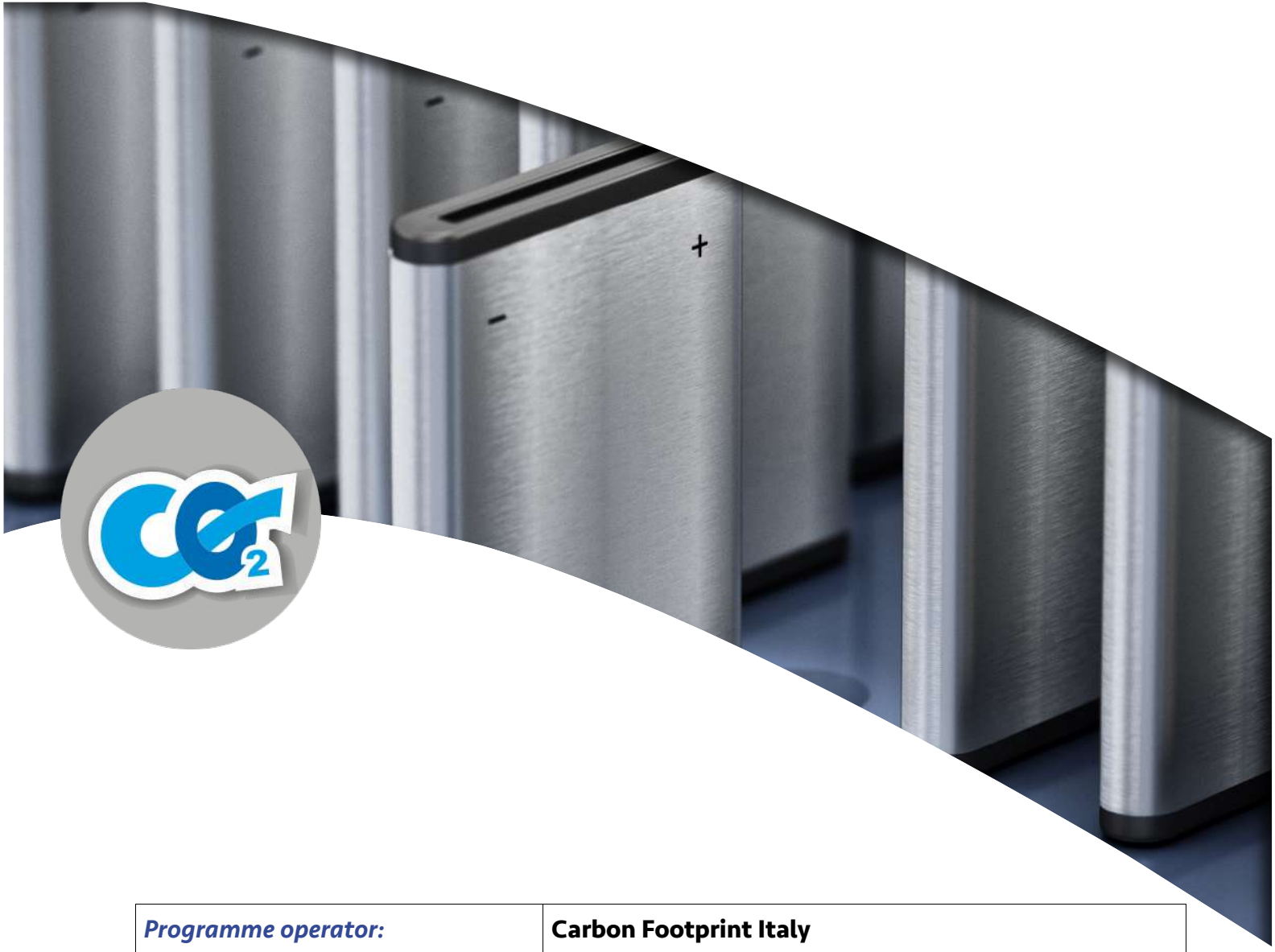
5. Other existing PCR

As part of the development of this PCR, existing PCRs were considered in order to avoid overlaps in scope. The existence of such documents was checked in the public PCR listings of the following programmes based on ISO 14025 or similar:

- EPDItaly

The following existing PCRs were identified:

PCR name	Programme	Registration number	Scope	Motivation for exclusion
Energy storage systems	EPDItaly	001-21 revision 1	This sub-PCR supplements the general PCR on "Electronic and electrical products and systems" for the category of products classified as "storage systems". This product family includes all the systems used to store electricity (produced by a renewable or non-renewable power source) for a certain time period, ensuring proper delivery of the electric power when needed by the battery user. This PCR covers all the energy storage systems for industrial and domestic purposes, with any available technology, in the form of battery cell packs.	This PCR does not address how to conduct LCA on batteries with different scope then scoring energy for static applications.



Programme operator:	**Carbon Footprint Italy** P.le Martiri delle Foibe 5, 30175 Venezia Marghera, Venezia, Italy Website: www.carbonfootprintitaly.it/en/ E-mail: info@carbonfootprintitaly.it
Product category:	Energy storage for static applications
Registration number and version:	2021-0006, version 1.0
CPC classification code:	464
Geographical scope:	Global
PCR moderator:	Marta Mancin, Aequilibria Srl – SB, mmancin@aequilibria.com
PCR Committee:	ELSA Solutions Srl; Aequilibria Srl – SB
PCR Review panel	The Technical-Scientific Committee of Carbon Footprint Italy and the technical support of EPDItaly. The review panel may be contacted via info@carbonfootprintitaly.it
PCR initiation phase:	2021-11-23
Open consultation:	2021-12-23 – 2022-01-23
Publication:	2022-02-24
Valid until:	2027-02-23