



PRODUCT CATEGORY RULES

DATE 20XX-XX-XX

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## TRANSPORT SERVICES OF GENERAL CARGO

PRODUCT CATEGORY CLASSIFICATION: UN CPC 65

**VERSION 1.00**

XXXX-XX-XX

VALID UNTIL: XXXX-XX-XX

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## 1. INTRODUCTION

This document constitutes the Product Category Rules (PCR<sup>1</sup>) developed in the framework of Carbon Footprint Italy, that is aimed at the communication of the results of the quantification of greenhouse gas (GHG) emissions of products and organisations, and of their reduction.

The rules for the overall administration and operation of the programme are publicly available at [www.carbonfootprintitaly.it/en/](http://www.carbonfootprintitaly.it/en/).

The requirements described in the Product Category Rules (PCR) concerning the category of products under assessment are to be fulfilled during the calculation of the carbon footprint analysis, in addition to those indicated in the ISO 14067 standard.

PCRs are crucial to ensure consistency and uniformity of the methodological approach to be adopted while developing CFP studies. This allows comparability between CFP studies realised for products from the same category. The PCRs must be developed in accordance with ISO/TS 14027:2017 and shall be recognized by the CFI Programme Operator, with the support of the Scientific Technical Committee.

The PCR development process is described in the “PQ04 PCR development” procedure, which can be downloaded in the dedicated section of the website.

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.


The programme operator 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.

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<sup>1</sup> Product Category Rules (PCRs) are documents that provide the rules, requirements and guidelines for developing a CFP 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 PCRs follow the requirements of ISO/TS 14027 and ISO 14067.

## 2. GENERAL INFORMATION

### 2.1 ADMINISTRATIVE INFORMATION

Name:	Transport services of general cargo
Registration number and version:	<i>Added by the Technical Committee</i>
Programme:	 Carbon Footprint Italy
Programme operator:	Carbon Footprint Italy - P.le Martiri delle Foibe 5, 30175 Venezia Marghera, Venezia, Italy  Website: <a href="http://www.carbonfootprintitaly.it/en/">www.carbonfootprintitaly.it/en/</a> E-mail: <a href="mailto:info@carbonfootprintitaly.it">info@carbonfootprintitaly.it</a>
PCR moderator:	<i>Marta Mancin, Aequilibria Srl – SB, mmancin@aequilibria.com</i>
PCR Committee:	<i>OLG International SA; Aequilibria Srl - SB</i>
Date of publication and last revision:	<i>Added by the Secretariat</i>
Valid until:	<i>Added by the Secretariat</i>
Schedule for renewal:	<p>A PCR is valid for a pre-determined period of time to ensure that it is updated at regular intervals. When the PCR is about to expire the PCR moderator shall initiate a discussion with the <i>Secretariat</i> to launch a new open consultation for the document update and renewal.</p> <p>A PCR document may be revised during its period of validity provided significant and well-justified proposals for changes or amendments. See <a href="http://www.carbonfootprintitaly.it">www.carbonfootprintitaly.it</a> for up-to-date information and the latest version.</p>
PCR language(s):	This PCR was developed and is available in English. In case of translated versions, the English version takes precedence in case of any discrepancies.

## 2.2 SCOPE OF PCR

### 2.2.1 PRODUCT CATEGORY DEFINITION AND DESCRIPTION

This document provides Product Category Rules (PCR) for the assessment of the environmental performance of Transport services of general cargo and the declaration of this performance by a CFP. The product category corresponds to UN CPC 65 Freight transport services.

The product category includes the transport of any type of cargo product from the production site to the client by means of different type of transport means as trucks, freight trains, ships and planes.

The product category is defined under UNSD-CPC Ver 2.1 classification:

Division 65: **Freight transport services.**

The transport of food products or meal is excluded from the scope of the present PCR, since this service is covered by the specific PCR "Road transport services of freight of food products and meals".

### 2.2.2 GEOGRAPHICAL REGION

This PCR is applicable to be used globally.

### 2.2.3 CFP VALIDITY

A CFP based on this PCR shall be valid from its registration and publication at [www.carbonfootprintitaly.it/en/](http://www.carbonfootprintitaly.it/en/) and for a three year period starting from the date of the verification report ("approval date"), or until the CFP has been de-registered from Carbon Footprint Italy.

## 3 PCR REVIEW AND BACKGROUND INFORMATION

This PCR was developed in accordance with the process described in the "PQ 04 - PCR development" document of Carbon Footprint Italy, including PCR review and open consultation.

### 3.1 PCR REVIEW

#### 3.1.1 VERSION 1.0

PCR review panel:	The Technical Committee of Carbon Footprint Italy. The review panel may be contacted via <a href="mailto:info@carbonfootprintitaly.it">info@carbonfootprintitaly.it</a> .
Chair of the PCR review:	<i>Added by the Technical Committee</i>
Review dates:	<i>Added by the Secretariat</i>

### 3.2 OPEN CONSULTATION

#### 3.2.1 VERSION 1.0

This PCR was available for open consultation from *date* until *date*, during which any stakeholder was able to provide comments by sending an email to [info@carbonfootprintitaly.it](mailto:info@carbonfootprintitaly.it) or by contacting the PCR moderator.

*Add information about any physical or web-based meetings held during the open consultation phase, if applicable.*

Stakeholders were invited via e-mail or other means to take part in the open consultation, and were encouraged to forward the invitation to other relevant stakeholders. The following stakeholders provided comments during the open consultation, and agreed to be listed as contributors to the PCR and at [www.carbonfootprintitaly.it/en/](http://www.carbonfootprintitaly.it/en/):

- *List of stakeholder names and affiliation*

### 3.3 EXISTING PCRS FOR THE PRODUCT CATEGORY

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:

- International EPD® System. [www.environdec.com](http://www.environdec.com)

The following existing PCRs were identified:

PCR NAME	PROGRAMME	REGISTRATION NUMBER	SCOPE
ROAD TRANSPORT SERVICES OF FREIGHT OF FOOD: PRODUCTS AND MEALS	International EPD® System	2005:15	UN CPC 6511, transport of food products or meals

*Full references to existing PCRs shall be given in Section 6.*

The scope of the identified PCR is limited to the transport of food products and meals. The present PCR covers a broader scope, namely the transport of general cargo products. The scope does not include the transport of food products and meals, so that there is no overlapping between the scopes of the two PCRs.

### 3.4 REASONING FOR DEVELOPMENT OF PCR

This PCR was developed because the need of a guideline for the CFP of a logistic service for the distribution of general cargo products, in order to enable publication of Carbon Footprint of Products (CFP) for this product category based on ISO 14067 and other relevant standards to be used in different applications and target audiences.

### 3.5 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 the transport services offered by OLG International SA, Aequilibria Srl – SB*

## 4 GOAL AND SCOPE, LIFE CYCLE INVENTORY AND LIFE CYCLE IMPACT ASSESSMENT

The goal of this section is to provide specific rules, requirements and guidelines for developing a CFP for the product category as defined in Section 0.

### 4.1 FUNCTIONAL UNIT/DECLARED UNIT

The declared unit shall be the service of transportation of the whole shipping, considering the total weight transported.

The functional unit shall be 1 kg of delivered goods transported from the loading site(s) to the unloading site(s), including primary packaging but excluding the packaging for the loading.

### 4.2 REFERENCE SERVICE LIFE (RSL)

Not applicable for this product category.

### 4.3 SYSTEM BOUNDARY

Carbon Footprint Italy uses an approach where all attributional processes from “cradle to grave” should be included using the principle of “limited loss of information at the final product”. This is especially important in the case of business-to-consumer communication.

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

#### 4.3.1 LIFE CYCLE STAGES

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

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

In the CFP, the climate performance associated with each of the three life-cycle stages above shall be reported separately. The processes included in the scope of the PCR and belonging to each life cycle stage are described in Sections 0–0.

##### 4.3.1.1 Upstream processes

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

- Production of the fuel used by the vehicles
- Production of electricity used by electric vehicles
- Production of auxiliary materials for maintenance and sanitation activities (appropriate hygienic detergents)
- Production of refrigerant gas topped up during the logistic service



- Production of loading packaging. This is to be intended as the packaging that is used by the transportation organization for the transportation service, in addition to the primary packaging that is provided together with the goods to be transported (that shall not be accounted)

The construction of the vehicle shall not be considered.

Upstream processes not listed may also be included. All elementary flows at resource extraction shall be included, except for the flows that fall under the general cut-off rule in Section 0.

#### 4.3.1.2 Core processes

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

- Vehicle use:
  - emissions from fuel combustion during the transport of the products
  - emissions from the release of refrigerant gas topped up during the logistic service
- Vehicle Maintenance
  - ordinary maintenance related to tyre substitution, oil change, filter substitution, brake fluid and pad substitution, topping up of heat transferring fluid and gear oil substitution
  - maintenance of insulation of the loading space used to create thermal insulation from outside (if applied within the service).

Manufacturing processes not listed may also be included. The production of the raw materials used for production of all product parts shall be included. A minimum of 99% of the total weight of the declared product including packaging shall be included.

The technical system shall not include:

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

#### 4.3.1.3 Downstream processes

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

- The treatment of the packaging for the loading of the products, once the products are delivered. As previously specified, the loading packaging does not include the primary packaging of the goods, but only the additional packaging introduced by the transportation organization.

The treatment of the vehicle at end of life shall not be included due the complexity of the treatments.

### 4.3.2 OTHER BOUNDARY SETTING

#### 4.3.2.1 Boundary towards nature

Boundaries to nature are defined as flows of material and energy resources from nature into the system. Emissions to air, water and soil cross the system boundary when they are emitted from or leaving the product system.

#### 4.3.2.2 Boundaries in the life cycle

See Section 0. The EPD may present the information divided into additional sub-divisions.

#### 4.3.2.3 Boundaries towards other technical systems

See Section 0.

### 4.4 SYSTEM DIAGRAM

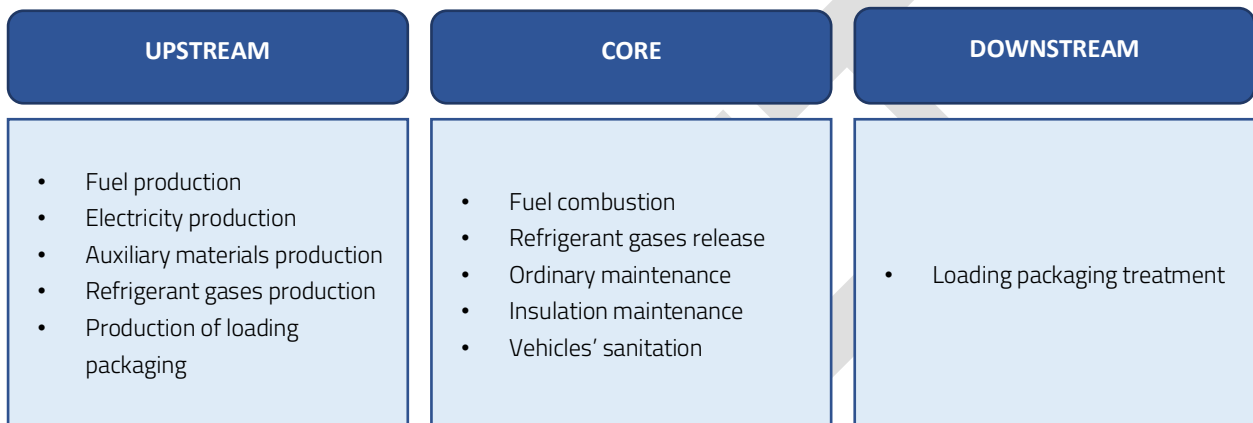


Figure 1 System diagram illustrating the processes that are included in the product system, divided into upstream, core and downstream processes.

### 4.5 CUT-OFF RULES

Data for elementary flows to and from the product system contributing to a minimum of 99% of the declared environmental impacts shall be included (not including processes that are explicitly outside the system boundary as described in Section 0).

The check for cut-off rules in a satisfactory way is through the combination of expert judgment based on experience of similar product systems and a sensitivity analysis in which it is possible to understand how the un-investigated input or output could affect the final results.

### 4.6 ALLOCATION RULES

#### 4.6.1 CO-PRODUCT ALLOCATION

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.

#### 4.6.2 REUSE, RECYCLING, AND RECOVERY

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 the 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.

#### 4.7 DATA QUALITY REQUIREMENTS

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 usually 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. These data usually come from databases.

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:

- **specific data** (also referred to as "primary data" or "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.,
- **generic data** (sometimes referred to as "secondary data"), divided into:
  - **selected generic data** – data from commonly available data sources (e.g. commercial databases and free databases) that fulfil prescribed data quality characteristics for precision, completeness, and,
  - **proxy data** – data from commonly available data sources (e.g. commercial databases and free databases) that do not fulfil 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.

In case the data to be collected for the upstream and core stages are under direct control of the transportation company offering the service (for example, if the company owns the means of transportations used), specific data shall be used.

If the company offering the transportation service has no control on the required data, it is possible to use data from database, that cover all the required aspects (e.g. datasets from Ecoinvent database).

Any data used should preferably represent average values for a specific reference year. However, the way these data are generated could vary, e.g. over time, and in such cases they should have the form of a representative annual average value for a specified reference period. Such deviations should be declared.

#### 4.7.1 RULES FOR USING GENERIC DATA

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 fulfil 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.

#### 4.8 RECOMMENDED DATABASES FOR GENERIC DATA

The recommended database for all processes generic data is Ecoinvent. Please note that this listing does not imply that other data that fulfil the data quality requirements may not be used and that data quality assessment shall also be performed for the data sets in the recommended database by an LCA practitioner.

#### 4.9 IMPACT CATEGORIES AND IMPACT ASSESSMENT

The CFP is focused 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.

#### 4.10 OTHER CALCULATION RULES AND SCENARIOS

##### 4.10.1 UPSTREAM PROCESSES

The following requirements apply to the upstream processes:

- 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 upstream processes, electricity production impacts shall be accounted for in this priority when specific data are used in the upstream 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.<sup>2</sup>

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.

#### 4.10.2 CORE PROCESSES

The following requirements apply to the core processes:

- For the electricity used in the core processes, electricity production impacts shall be accounted for in this priority:
  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.<sup>3</sup>
  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 the core 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.

##### 4.10.2.1 Courier transportation

In case some transportation routes are covered by means of an external courier, it could happen that no information is available on the type of transportation means used.

In this case a separate scenario shall be assumed: the intra-continental routes should be considered as realised by truck, while the transcontinental ones by airplane. The distances shall be calculated by means of reliable tools.

#### 4.10.3 DOWNSTREAM PROCESSES

The following requirements apply to the downstream processes:

- The use of electricity in the region/country where the service is provided (as specified in the geographical scope of the study) shall be accounted for in the following priority:

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<sup>2</sup> 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.

<sup>3</sup> 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.

1. National residual electricity mix or residual mix on the market
2. National electricity production mix or electricity mix on the market

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

- Scenarios for the end-of-life stage shall be technically and economically practicable and compliant with current regulations in the relevant geographical region based on the geographical scope of the CFP. Key assumptions regarding the end-of-life stage scenario shall be documented.

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## 5 GLOSSARY

CO <sub>2</sub>	Carbon dioxide
CPC	Central product classification
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

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## 6 REFERENCES

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 Basic Module for "Transport Equipment", UN CPC 49, v.3.02, published on 2019-07-26

PCR 2005:15 for "Road Transport Service of freight of food products and meals", UN CPC 6511, v.4.11, valid until 2022-02-15.

PQ 04 PCR Development, Carbon Footprint Italy



## 7 VERSION HISTORY OF PCR

VERSION 1.0, 2021-XX-YY

Original version of this PCR.

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