PRODUCT CATEGORY RULES (PCR)
DATE 2024-06-05

PORT OPERATION SERVICES
PRODUCT CATEGORY CLASSIFICATION: UN CPC 675

PCR 2018:06
VERSION 2.0.0

VALID UNTIL: 2028-06-05

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1 INTRODUCTION

This document constitutes Product Category Rules (PCR) developed in the framework of the International EPD System: a programme for type III environmental declarations[1] according to ISO 14025:2006, ISO 14040:2006, ISO 14044:2006, and product-specific standards such as EN 15804 and ISO 21930 for construction products. Environmental Product Declarations (EPD) are voluntary documents for a company or organisation to present transparent, consistent and verifiable information about the environmental performance of their products (goods or services).

The rules for the overall administration and operation of the programme are the General Programme Instructions (GPI), publicly available at www.environdec.com. A PCR complements the GPI and the normative standards by providing specific rules, requirements and guidelines for developing an EPD for one or more specific product categories (see Figure 1). A PCR should enable different practitioners using the PCR to generate consistent results when assessing products of the same product category.

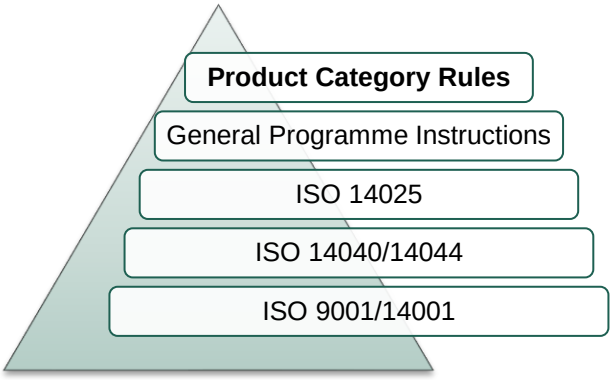

Figure 1 The hierarchy between PCRs, standards and other documents.

Within the present PCR, the following terminology is adopted:

- The term “shall” is used to indicate what is obligatory, i.e. a requirement.
- The term “should” is used to indicate a recommendation, rather than a requirement. Any deviation from a “should” requirement shall be justified in the PCR development process.
- The terms “may” or “can” is used to indicate an option that is permissible.

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

A PCR is valid for a pre-determined period of time to ensure that it is updated at regular intervals. The latest version of the PCR is available at www.environdec.com. Stakeholder feedback on PCRs is very much encouraged. Any comments on this PCR may be sent directly to the PCR Moderator and/or the Secretariat during its development or during its period of validity.

Any references to this document shall include the PCR registration number, name and version.

The programme operator maintains the copyright of the document to ensure that it is possible to publish, update, and make it available to all organisations to develop and register EPDs. Stakeholders participating in PCR development should be acknowledged in the final document and on the website.

[1] Type III environmental declarations in the International EPD System are referred to as EPDs, Environmental Product Declarations.

2 GENERAL INFORMATION

2.1 ADMINISTRATIVE INFORMATION

Name:	Port operation services
Registration number and version:	PCR 2018:06, version 2.0.0
Programme:	The International EPD System
Programme operator:	EPD International AB, Box 210 60, SE-100 31 Stockholm, Sweden. Website: www.environdec.com E-mail: support@environdec.com
PCR Moderator:	Raúl Ugarte, Fundación Tecnalia Research & Innovation, raul.ugarte@tecnalia.com
PCR Committee:	Fundación Tecnalia Research & Innovation, Bilbao Port Authority
Date of publication and last revision:	2024-06-05 (version 2.0.0) See Section 8 for a version history.
Valid until:	2028-06-05
Schedule for renewal:	A PCR is valid for a pre-determined time period 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 Secretariat how to proceed with updating the PCR and renewing its validity. A PCR may be also be updated without prolonging its period of validity, provided significant and well-justified proposals for changes or amendments are presented. See www.environdec.com for the latest version of the PCR. When there has been an update of the PCR, the new version should be used to develop EPDs. The old version may however be used for 90 days after the publication date of the new version, as long as the old version has not expired.
Standards and documents conformance:	General Programme Instructions of the International EPD System, version 4.0, based on ISO 14025 and ISO 14040/14044.
PCR language(s):	At the time of publication, this PCR was available in English. If the PCR is available in several languages, these are available at www.environdec.com. 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 port operation services and the declaration of this performance by an EPD.

The scope of this PCR applies only for commercial seaports, which correspond to the following UN CPC code: 675 Supporting services for water transport.

The PCR applies for the operations of port as a whole, to carry out its the main services, which may be cargo services, passenger services or a combination of these. EPDs based on this PCR shall consider the port operation activities that are carried out to support the main services. The complete list of such activities is presented in Table 1.

Table 1 Port operation activites included according to this PCR.

General activities	Organisation, coordination, and control of port traffic, both maritime and terrestrial	
	Coordination and control of operations associated with basic port services, commercial services, and other activities	
	Signalling, beaconing, and other aids to navigation that serve the approach and access of the ship to the port, as well as its internal beaconing.	
	Surveillance, security, and police in common areas	
	Lighting of the common areas	
	Cleaning of the common land and water areas	
	Emergency prevention and control	
Nautical activities	Pilotage and berthing services	Guidance service of a waterborne vessel by a pilot or a pilotage station in order to allow for safe entry or exit of the waterborne vessel in the waterway access to the port or safe navigation within the port
	Towage services	Assistance given to a waterborne vessel by means of a tug in order to allow for a safe entry or exit of the port or safe navigation within the port by providing assistance to the manoeuvring of the waterborne vessel
	Mooring services	Berthing and unberthing services, including shifting along the quayside, that are required for the safe operation of a waterborne vessel in the port or in the waterway access to the port
Passenger activities	Embarking and disembarking of passengers	Organisation and handling of passengers, their luggage and their vehicles between the carrying waterborne vessel and the shore, and also includes the processing of personal data and the transport of passengers inside the relevant passenger terminal
	Loading and unloading of luggage and vehicles	
Cargo handling and transport activities	Loading and unloading of cargo	Organisation and handling of cargo between the carrying waterborne vessel and the shore, whether it be for import, export or transit of the cargo, including the processing, lashing, stowing, transporting and temporary storage of the cargo on the relevant cargo handling terminal and directly related to the transporting of the cargo, but excluding, unless the Member State determines otherwise, warehousing, stripping, repackaging or any other value added services related to the cargo
	Storage and warehousing services	
Collection of ship-generated waste and cargo residue		Reception of ship-generated waste and cargo residues by any facility, which is fixed, floating or mobile and capable of receiving ship-generated waste or cargo residues as defined in Directive 2009/59/EC
Bunkering		Provision of solid, liquid, gaseous fuel or of any other energy source used for the propulsion of the waterborne vessel as well as for general and specific energy provision on board of the waterborne vessel whilst at berth
Dredging		Removal of sand, sediment or other substances from the bottom of the waterway access to the port, or within the port area that falls within the competence of the managing body of the port, including the disposal of the removed materials, in order to allow waterborne vessels to have access to the port; it comprises both the initial removal (capital dredging)

	and the maintenance dredging carried out in order to keep the waterway accessible, whilst not being a port service offered to the user.

Activities not included in Table 1 are excluded from the scope, for example activities done within port boundaries that are not related to the main port operation services. Among others, the activities represented by the following UN CPC codes are not to be included in EPDs based on this PCR:

- 6753 – Vessel salvage and refloating services
  - 67531 – Vessel and refloating services on coastal and transoceanic waters
  - 67532 – Vessel salvage and refloating services in inland waters

For additional information, please check https://unstats.un.org/unsd/classifications/Econ/cpc.

2.2.2 GEOGRAPHICAL SCOPE

This PCR may be used globally.

2.2.3 EPD VALIDITY

An EPD based on this PCR shall be valid for a 5-year period starting from the date of the verification report (“approval date”), or until the EPD has been de-registered from the International EPD System.

An EPD shall be updated and re-verified during its validity if changes in technology or other circumstances have led to:

- an increase of 10% or more of any of the declared indicators of environmental impact,
- errors in the declared information, or
- significant changes to the declared service information, content declaration, or additional environmental, social or economic information.

If such changes have occurred, but the EPD is not updated, the EPD owner shall contact the Secretariat to de-register the EPD.

3 PCR REVIEW AND BACKGROUND INFORMATION

This PCR was developed in accordance with the PCR development process described in the GPI of the International EPD System, including open consultation and review.

3.1 OPEN CONSULTATION

3.1.1 VERSION 1.0

This PCR was available for open consultation from 2017-09-22 until 2017-11-22, during which any stakeholder was able to provide comments by posting on the PCR forum on www.environdec.com or by contacting the PCR moderator.

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. No stakeholders provided comments during the open consultation.

3.1.2 VERSION 2.0.0

This PCR is available for open consultation from 2023-10-19 until 2023-12-18, during which any stakeholder was able to provide comments by contacting the PCR Moderator and/or the Secretariat.

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. No comments were received during the open consultation.

3.2 PCR REVIEW

3.2.1 VERSION 1.0

PCR review panel:	The Technical Committee of the International EPD System. A full list of members available on www.environdec.com. The review panel may be contacted via support@environdec.com. Members of the Technical Committee were requested to state any potential conflict of interest with the PCR moderator or PCR committee, and were excused from the review.
Chair of the PCR review:	Adriana Del Borghi
Review dates:	2018-02-06 until 2018-03-27

3.2.2 VERSION 2.0.0

PCR review panel:	The Technical Committee of the International EPD System. A full list of members is available at www.environdec.com. The review panel may be contacted via support@environdec.com. Members of the Technical Committee were requested to state any potential conflict of interest with the PCR Committee, and if there were conflicts of interest they were excused from the review.
Chair of the PCR review:	Gorka Benito
Review dates:	2024-01-16 until 2024-02-20

3.3 EXISTING PCRS FOR THE PRODUCT CATEGORY

As part of the development of this PCR, existing PCRs and other internationally standardized methods that could potentially act as PCRs were considered to avoid unnecessary overlaps in scope and to ensure harmonisation with established methods of relevance

for the product category. The existence of such documents was checked among the following EPD programmes and international standardisation bodies:

- International EPD System. www.environdec.com.
- GlobalEPD. https://www.aenor.com/certificacion/certificacion-de-producto/declaraciones-ambientales-de-producto
- PEP ecopassport. http://www.pep-ecopassport.org/
- EDF. https://www.edf.org.tw/English/index.asp
- KEITI. https://www.keiti.re.kr/site/eng/main.do#
- JEMAI Ecoleaf. http://www.ecoleaf-jemai.jp/eng/
- UL Environment. https://www.ul.com/services/product-category-rules-pcrs
- ASTM International EPD Program. https://www.astm.org/products-services/certification/environmental-product-declarations/epd-pcr.html
- NSF International Center for Sustainability Standards EPD. https://www.nsf.org/standards-development/standards-portfolio/sustainability-standards-protocols
- Product Environmental Footprint. https://green-business.ec.europa.eu/environmental-footprint-methods_en

No existing PCRs or other relevant internationally standardized methods with overlapping scope were identified.

3.4 REASONING FOR DEVELOPMENT OF PCR

This PCR was developed to enable publication of EPDs for this product category based on ISO 14025 and ISO 14040/14044. The PCR enables different practitioners to generate consistent results when assessing the environmental impact of products of the same product category (e.g., services of different ports in different countries), and thereby it supports comparability of products within a product category.

3.5 UNDERLYING STUDIES USED FOR PCR DEVELOPMENT

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

- Stripple H, Fridell E, Winnes H (2016) Port Infrastructures in a System Perspective. IVL Swedish Environmental Research Institute report number C128.
- Capo d'Anzio S.p.A. (2013) Guidelines for the LCA approach for ports. LIFE10 ENV/IT/000369 Project.

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 an EPD for the product category as defined in Section 2.2.1.

4.1 FUNCTIONAL UNIT

The functional unit for cargo handling services is one tonne of cargo. This includes the handling and transport of cargo within port boundaries (land transport and water transport) as well as supporting services related to this activity and provided by the port to the ships, which have been included in Section 2.2.1. If there is no specific information available about the total weight of the cargo transported in containers, an average value of 8112 kg/TEU should be assumed (Stripple et al. 2016).

The functional unit for passenger services is one passenger. This includes boarding and unboarding of passengers, their transport within port boundaries (land transport and water transport) and supporting services related to this activity and provided to the ships by the port, which have been included in Section 2.2.1. An average of 80 kg per passenger should be used for calculations as reported in Stripple et al. (2016).

If the port provide both cargo handling services and passenger services, two different sets of results shall be provided in the EPD, one referred to one tonne of cargo (cargo handling services) and one referred to one passenger (passenger services). Allocation of port operation services that are common for both type of services shall be done in accordance with Section **Error! Reference source not found.**. Comparison of different EPD shall only be done based on the same functional unit.

The functional unit shall be stated in the EPD. The environmental impact shall be given per functional unit. A description of the function of the service shall be included in the EPD.

4.2 LIFESPAN/REFERENCE SERVICE LIFE

The infrastructure necessary to carry out any port operation service is out of the scope and therefore this chapter does not apply to any EPD developed following this PCR.

4.3 SYSTEM BOUNDARY

The scope of this PCR and EPDs 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 the service is divided into three life cycle stages:

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

In the EPD, the environmental performance associated with each of the three life-cycle stages above shall be reported separately and in aggregated form. The processes included in the scope of the PCR and belonging to each life cycle stage are described in Sections 4.3.1.1–4.3.1.3.

4.3.1.1. Upstream processes

The following unit processes are part of the product system and shall be classified as upstream processes (mandatory to include):

- Production of materials (such as lubricating oil, paint, pallets, etc.) used in the core module.

The following processes are excluded from the upstream module:

- Manufacturing:

- Vehicles
- Machinery
- IT equipment
- Port infrastructure (soil, buildings, lighthouses, etc.)

All elementary flows at resource extraction shall be included, except for the flows that fall under the general cut-off rule in Section 4.5.

4.3.1.2. Core processes

The following unit processes are part of the product system and shall be classified as core processes (mandatory to include):

- Generation of electricity and production of fuels, steam and other energy carriers used in core processes.
- Operation and maintenance of machinery shall be included if they are related to the port operation activities listed in Section 2.2.1. Port activities in which machinery are needed are, for example and not limited to, loading and unloading containers using gantry cranes or reach stackers, pumps to load and unload liquid bulks, dredge to remove sediment during dredging maintenance operations, forklifts needed during cargo warehousing, etc. This includes fuel/electricity consumption and maintenance that is carried out every year, such as preventive maintenance, oil change, etc.
- Operation and maintenance of vehicles shall be included if they are related to the port operation activities listed in Section 2.2.1. Port activities in which vehicles are needed are, for example and not limited to, tugboats for towing, cars/vans to transport stevedores to the docks during cargo handling services, transport of maritime pilots to ships about to dock in the port during pilotage services, passenger transport to cruise and ferry terminals, ships/trains/lorry to transport cargo within port boundaries, etc. This includes fuel/electricity consumption and maintenance that is carried out every year, such as preventive maintenance, cleaning, etc.
- Collection of waste generated:
  - by ships docking in the port (waste covered by the MARPOL 73/78 convention[2]) or ships related to the port operation activities listed in Section 2.2.1.
  - in port operation (pallets, waste oil from machinery, etc.).
  - in offices related to the port operation services listed in Section 2.2.1 (paper, plastic).

Regarding cargo handling services, storage and warehousing services and transport of cargo, the following criteria needs to be taken into account. Within port boundaries there are also external companies, not related to the port operation services of the EPD owner, that carry out their own activities (e.g., refineries, manufacturing companies). These companies download their raw materials from ships directly into their manufacturing line or their own warehouses. The activities carried out by these companies after downloading the cargo and transporting it to their facilities shall be excluded from the system boundaries. Figure 2 shows how this should be addressed with cargo entering the port boundaries and cargo leaving the port boundaries. “The company” in the figure refers to one of these external companies, and not the EPD owner.

[2] https://www.imo.org/en/About/Conventions/Pages/International-Convention-for-the-Prevention-of-Pollution-from-Ships-(MARPOL).aspx

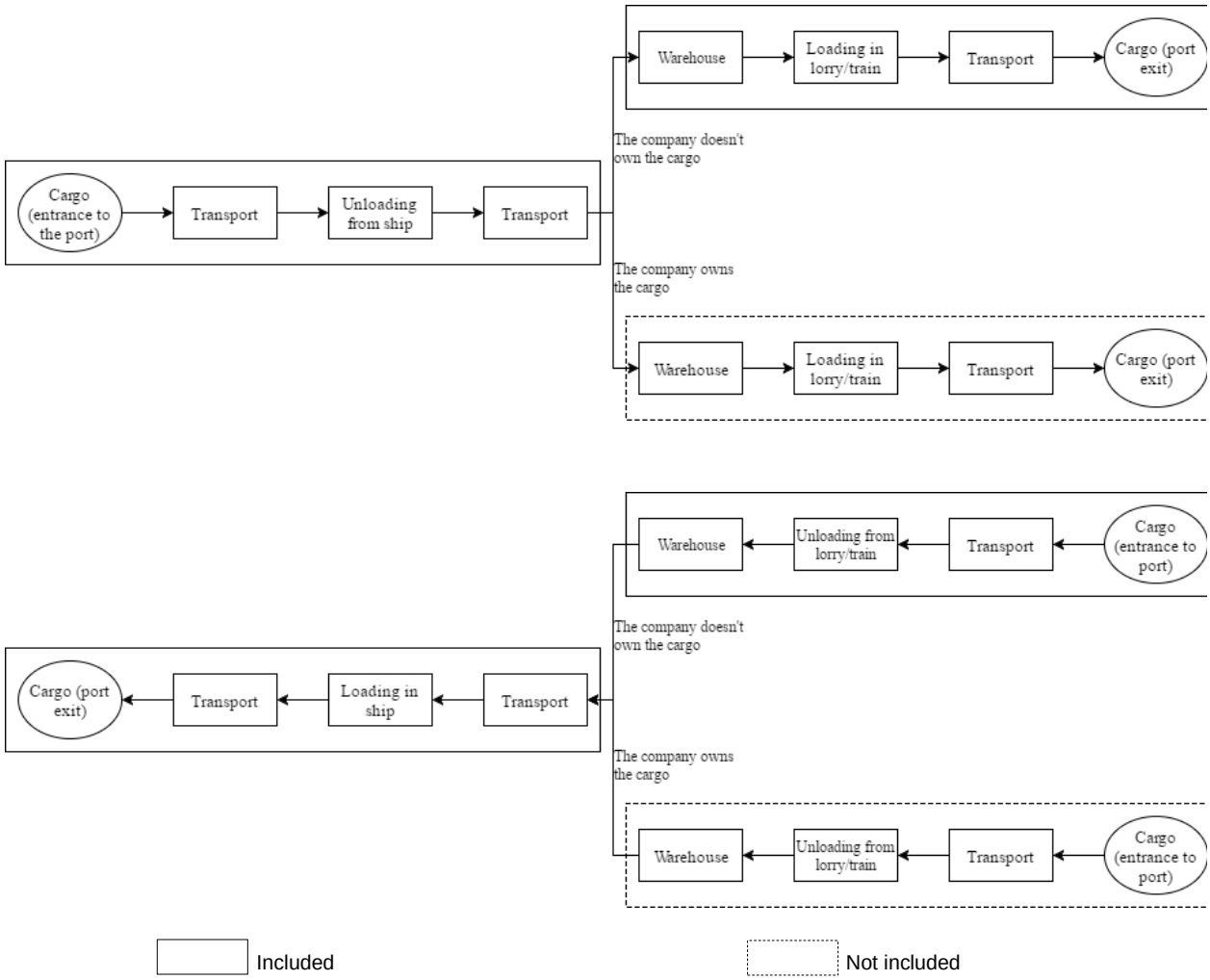

Figure 2 System boundaries for handling cargo operations. "The company" refers to an external company carrying out their own activities within the port boundaries.

The core module may include the following processes:

- Maintenance of:
  - Building (related to port operation services)
  - IT equipment (related to port operation services)
  - Others (related to port operation services)

4.3.1.3. Downstream processes

The following unit processes are part of the product system and shall be classified as downstream processes (mandatory to include):

- Treatment of waste generated:
  - by ships docking in the port (waste covered by the MARPOL 73/78 convention[2]) or ships related to the port operation services listed in section 2.2.1.
  - in port operation (pallets, waste oil from machinery, etc.)
  - in offices related to the port operation services listed in section 2.2.1 (paper, plastic).

The downstream module may include the following processes:

- Treatment of waste generated by other sources (related to port operation services)

The following processes are excluded from the downstream module:

- End-of-life of vehicles
- End-of-life of buildings
- End-of-life of machinery
- Other processes not specified before

4.3.2 OTHER BOUNDARY SETTING

4.3.2.1. Boundary towards nature

Boundaries to nature are defined as where the flows of material and energy resources leave nature and enter the technical system (i.e., the product system). Emissions cross the system boundary to nature when they are emitted to air, soil, or water.

4.3.2.2. Boundary towards other technical systems

Boundaries towards other technical systems define the flow of materials and components to/from the product system under study and from/to other product systems. If there is an inflow of recycled material to the product system in the production/manufacturing stage, the transport from the scrapyard/collection site to the recycling plant, the recycling process, and the transportation from the recycling plant to the site where the material is being used shall be included. If there is an outflow of material or component to recycling, the transportation of the material to the scrapyard/collection site shall be included. The material or component going to recycling is then an outflow from the product system.

See Section 4.6 for further guidance.

4.3.2.3. Temporal boundary

The temporal boundary defines the time period for which the life cycle inventory data is recorded, e.g. for how long emissions from waste deposits are accounted. As default, the time period over which inputs to and outputs from the product system is accounted for shall be 100 years from the year that the LCA model best represents, considering the representativeness of the inventory data. This year shall, as far as possible, represent the year of the publication of the EPD.

4.3.2.4. Geographical boundary

The geographical boundary defines the geographical coverage of the LCA. This shall reflect the physical reality of the product under study, accounting for the representativeness of technology, input materials and input energy.

4.4 SYSTEM DIAGRAM

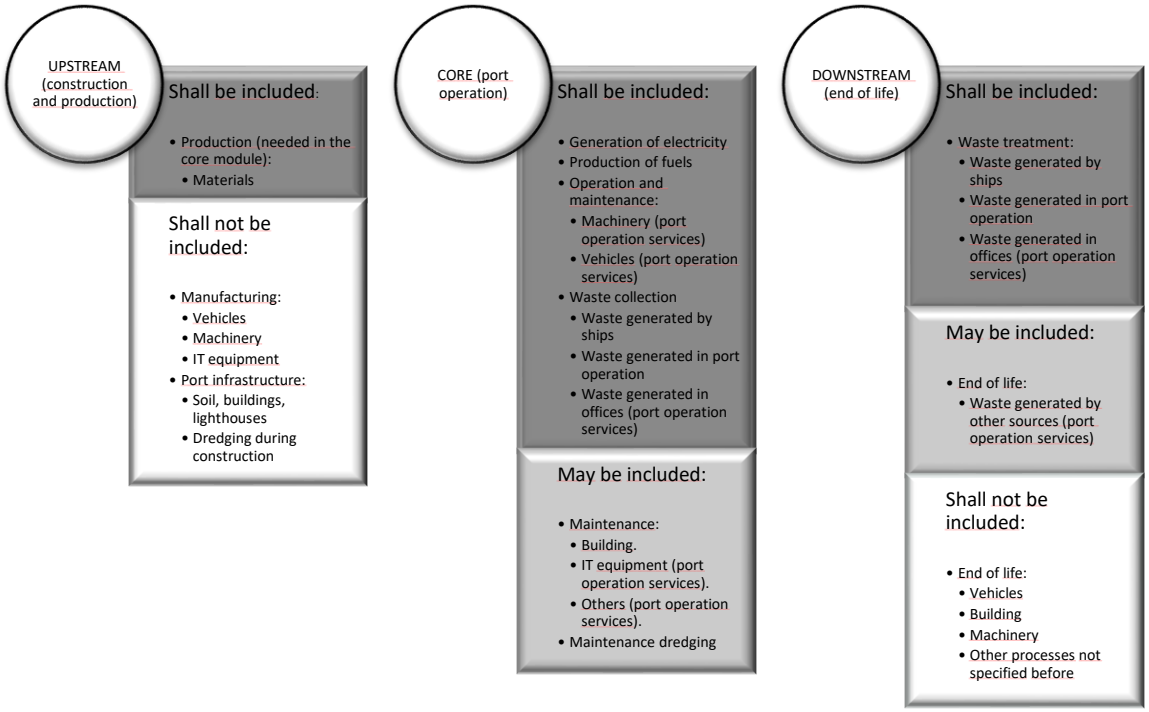

Figure 3 System diagram illustrating the processes that shall, may or shall not be included in the product system, divided into upstream, core and downstream processes. The illustration of processes to include may not be exhaustive.

4.5 CUT-OFF RULES

A cut-off rule of 1% shall be applied. In other words, the included inventory data (not including inventory data of processes that are explicitly outside the system boundary as described in Section 4.3) shall together give rise to at least 99% of the results of any of the environmental impact categories. The cut-off of inventory data should, however, be avoided, and all available inventory data shall be used.

The cut-off of inventory data, based on the above cut-off rule, should be an output of a sensitivity analysis, alone or in combination with expert judgment based on experience of similar product systems. Furthermore, the cut-off shall be possible to be verify in the verification process, hence the exclusion of inventory data based on the cut-off rule shall be documented in the LCA report, and the EPD developer shall provide the information the verifier considers necessary to verify the cut-off.

4.6 ALLOCATION RULES

Allocation can be divided into allocation of co-products, i.e. allocation of unit processes that generate several products, and allocation of waste, i.e. allocation of unit processes that generate materials that are, for example, landfilled recovered, recycled or reused, and which require further processing to cease being waste and become products (see criteria for end-of-waste state in Section 4.6.2).

The principles for allocation of co-products and allocation of waste are described separately in the following subsections.

4.6.1 CO-PRODUCT ALLOCATION

The following hierarchy of allocation methods shall be followed for multifunctional services allocation:

1. Allocation shall be avoided, if possible, by dividing the process to be allocated into sub-processes and collecting the inventory data for each sub-process.
2. If allocation cannot be avoided, the inventory data should be partitioned between the different services in a way that reflects the underlying physical relationships between them, i.e., allocation should reflect the way in which the inventory data changes if the quantities of delivered services change.
3. If a physical relationship between the inventory data and the delivery of co-products cannot be established, the inventory data should be allocated between the co-products in a way that reflects other relationships between them. For example, inventory data might be allocated between co-products in proportion to their economic values. If economic allocation is used, a sensitivity analysis exploring the influence of the choice of the economic value shall be included in the LCA report.

For key processes in the product system, Table 2 provides specific allocation guidance.

PROCESS	MAIN SERVICES AND CO-SERVICES	ALLOCATION METHOD
Machinery use and other activities	Cargo handling services and passenger services	When the same machinery, vehicles or other unit processes are used to provide services to ships that transport cargo and passengers at the same time, an economic approach based on port taxes shall be adopted to allocate the environmental impact. The ports have a tax for each tonne of cargo and for each passenger. To do the allocation, the tax for cargo must be multiplied by the total mass of cargo managed by the port and the tax for passengers must be multiplied by the total number of passengers in the port. These cargo and passenger numbers shall correspond to the year of the activity that is reported in the EPD. The contribution values (in percentage) of cargo taxes and passenger taxes to the total taxes (in euros) shall be the values used for allocation.

Table 2 Allocation method for key processes in the product system.

4.6.2 ALLOCATION OF WASTE TREATMENT PROCESSES

Allocation of waste shall follow the polluter pays principle and its interpretation in EN 15804: “processes of waste processing shall be assigned to the product system that generates the waste until the end-of-waste state is reached.” The end-of-waste state is reached when all the following criteria for the end-of-waste state are fulfilled (adapted from EN 15804):

- the recovered material, component or product is commonly used for specific purposes;
- a market or demand, identified e.g., by a positive economic value, exists for such a recovered material, component or product;
- the recovered material, component or product fulfils the technical requirements for the specific purposes and meets the existing legislation and standards applicable to products; and
- the use of the recovered material, product or construction element will not lead to overall adverse environmental or human health impacts.

The above outlined principle means that the generator of the waste shall carry the full environmental impact until the point in the product life cycle in which the end-of-waste criteria are fulfilled. Waste may have a negative economic market value, and then the end-of-waste stage is typically reached after (part of) the waste processing and further refinement, at the point at which the waste no longer has a negative market value. This allocation method is (in most cases) in line with a waste generator’s juridical and financial responsibilities. See the GPI for further information and examples.

4.7 DATA QUALITY REQUIREMENTS AND SELECTION OF DATA

Life cycle inventory data are classified into specific data and generic data, where the latter can be selected generic data or proxy data. The data categories are defined as follows:

- specific data (also referred to as “primary data” or “site-specific data”):
  - data gathered from the actual port where port operation specific processes are carried out;
  - actual data from other parts of the life cycle traced to the product under study, for example site-specific data on the production of materials or generation of electricity provided by contracted suppliers, and transportation data on distances, means of transportation, load factor, fuel consumption, etc., of contracted transportation providers; and
  - LCI data from databases on transportation and energyware that is combined with actual transportation and energy parameters as listed above.
- generic data (sometimes referred to as “secondary data”), divided into:
  - selected generic data: data (e.g. commercial databases and free databases) that fulfil prescribed data quality requirements for precision, completeness, and representativeness (see below Section 4.7.1),
  - proxy data: data (e.g. commercial databases and free databases) that do not fulfil all of the data quality requirements of “selected generic data”.

Specific data shall be used for the core processes. Specific data shall be used for upstream and downstream processes, when available, otherwise generic data may be used. Generic data should be used in cases in which they are representative for the purpose of the EPD, e.g. for bulk and raw materials on a spot market, if there is a lack of specific data on the final product or if a product consists of many components.

4.7.1 RULES FOR USING GENERIC DATA

For generic data to be classified as “selected generic data”, the following requirements apply:

- datasets shall be based on attributional LCA modelling (e.g., not be based on marginal data and not include credits from system expansion),
- the reference year shall be as current as possible and should be representative for the validity period of the EPD,
- the 1% cut-off rule (as described in Section A.3.3) shall be met on the level of the product system,
- datasets shall represent average values for a specific reference year; however, how data are generated could vary, e.g. over time, and then they should have the form of a representative annual average value for a specified reference period (such deviations shall be justified and declared in the EPD), and
- the representativeness of the data shall be assessed to be better than ±5%, in terms of the environmental impact calculated on the basis of the data, of data that is fully representative for the given temporal, technological and geographical context.

If selected generic data that meets the above data quality requirements are not available, proxy data may be used. The environmental impacts associated with proxy data shall not exceed 10% of the overall environmental impact of the product system.

The EPD may include a data quality declaration to demonstrate the share of specific data, selected generic data and proxy data contributing to the results of the environmental impact indicators.

4.7.2 EXAMPLES OF DATABASES FOR GENERIC DATA

Databases that could be used for developing LCA studies using this PCR are, for example:

- Ecoinvent, www.ecoinvent.org
- Managed LCA Content database, https://sphera.com/life-cycle-assessment-lca-database/
- European reference Life Cycle Database (ELCD), https://eplca.jrc.ec.europa.eu/ELCD3/

4.7.3 DATA QUALITY REQUIREMENTS AND OTHER MODELLING GUIDANCE PER LIFE-CYCLE STAGE

Below are further data quality requirement per life-cycle stage. Exceptions to the requirements may be accepted, if justified in the EPD; such exceptions are subject to the approval by the verifier on a case-to-case basis.

4.7.3.1. Upstream processes

- Data referring to processes upstream in a supply chain over which the EPD owner has direct management control shall be specific and collected on site.
- Data referring to contractors that supply fuels and materials should be requested from the contractor as specific data, as well as infrastructure, where relevant.
- The transport of fuels and materials along the supply chain to a distribution point (e.g. a stockroom or warehouse) where the final delivery to the port take place, should be based on the actual transportation mode, distance from the supplier, and vehicle load.
- In case specific data is lacking, selected generic data may be used. If this is also lacking, proxy data may be used (see Section 4.7).
- For upstream processes modelled with specific data, generation of electricity used 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 as provided by the electricity supplier.
    2. Residual electricity mix of the electricity supplier on the market.
    3. Residual electricity mix on the market[3].
    4. Electricity consumption mix on the market[4].

    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 consumption mix.

    "The market" in the above hierarchy shall be defined as being the (residual or consumption) grid mix of the country where the electricity is used, with exceptions for specified countries for which a sub-national electricity grid mix shall be used: Australia, Brazil, Canada, China, India, and USA.

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

4.7.3.2. Core processes

- Services: Specific data shall be used for the consumption of materials, chemicals, steam, heat, electricity, etc., necessary for the operation of the port.
- For electricity used in the core processes, generation of electricity used 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 as provided by the electricity supplier.
    2. Residual electricity mix of the electricity supplier on the market.
    3. Residual electricity mix on the market[5].
    4. Electricity consumption mix on the market[6]. This option shall not be used for electricity used in processes over which the manufacturer (EPD owner) has direct control.

[3] The composition of the residual grid mixes on the market are available for all EU countries and a few additional European countries through the Association for Issuing Bodies (AIB) at https://www.aib-net.org/facts/european-residual-mix. If the residual grid mix of the market is not publicly available, it can conservatively be assumed be the consumption mix of the market minus the renewable electricity of that mix.

[4] For electricity markets without trade of Guarantees of Origin (or similar), the residual mix will, however, be identical to the consumption mix.

[5] The composition of the residual grid mixes on the market are available for all EU countries and a few additional European countries through the Association for Issuing Bodies (AIB) at https://www.aib-net.org/facts/european-residual-mix. If the residual grid mix of the market is not publicly available, it can conservatively be assumed be the consumption mix of the market minus the renewable electricity of that mix.

[6] For electricity markets without trade of Guarantees of Origin (or similar), the residual mix will, however, be identical to the consumption mix.

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 consumption mix.

"The market" in the above hierarchy shall be defined as being the (residual or consumption) grid mix of the country where the electricity is used, with exceptions for specified countries for which a sub-national electricity grid mix shall be used: Australia, Brazil, Canada, China, India, and USA.

The mix of electricity used in the core processes shall be documented in the EPD, where relevant.

4.7.3.3. Downstream processes

- The use of electricity in the region/country where the product is used (as specified in the geographical scope of the EPD) shall be accounted for in the following priority:
    1. Residual electricity mix on the market[7].
    2. Electricity consumption mix on the market[8].

  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.

  "The market" in the above hierarchy shall be defined as being the (residual or consumption) grid mix of the country where the electricity is used, with exceptions for specified countries for which a sub-national electricity grid mix shall be used: Australia, Brazil, Canada, China, India, and USA.

  The mix of electricity used in the downstream processes shall be documented in the EPD, 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 EPD. Key assumptions regarding the end-of-life stage scenario shall be documented in the LCA report.

4.7.4 DATA QUALITY DECLARATION

EPDs may include a declaration of the quality of data used in the LCA calculations.

4.8 ENVIRONMENTAL PERFORMANCE INDICATORS

The EPD shall declare the default environmental performance indicators and their methods as described at the website (www.environdec.com/indicators), which includes both inventory indicators and indicators of potential environmental impact. The source and version of the impact assessment methods and characterisations factors used shall be reported in the EPD. Also other indicators may be declared, if justified, see Section 5.4.4.

If the default list of environmental performance indicators and methods at the www.environdec.com/indicators is updated, the previous version of the list is valid in parallel to the new version during a transition period of at least 90 days, as described at the website.

Apart from inventory indicators (such as the required and optional inventory indicators listed at www.environdec.com/indicators), other inventory data may also be declared in the EPD, if relevant and useful for EPD users. Such data shall not be declared in the main body of the EPD, but in an annex.

In addition to the aforementioned indicators, the following indicators shall be included in the EPD:

- Emission of toxic substances to marine ecosystems (expressed as the sum of marine aquatic ecotoxicity potential in mass of 1,4-DB equivalents). as characterisation factors, expressed as Human Toxicity Potentials. This indicator must be calculated using the characterisation model USES-LCA, implemented in the evaluation method CML-IA baseline.

[7] The composition of the residual grid mixes on the market are available for all EU countries and a few additional European countries through the Association for Issuing Bodies (AIB) at https://www.aib-net.org/facts/european-residual-mix.

[8] For electricity markets without trade of Guarantees of Origin (or similar), the residual mix will, however, be identical to the consumption mix.

4.9 INCLUDING MULTIPLE PRODUCTS IN THE SAME EPD

4.9.1 SECTOR EPDS

The International EPD System allows for an industry association to develop an EPD in the form of a Sector EPD. A Sector EPD declares the average service of multiple companies in a clearly defined sector in a clearly defined geographical area. Services covered in a sector EPD shall follow the same PCR and the same functional unit shall be applied.

Any communication of the results from a Sector EPD should contain the information that the results are based on averages obtained from the sector as defined in the EPD. The communication shall not claim that the sector EPD results are representative for a certain port or its services.

The following information shall also be included a Sector EPD:

- a list of the contributing manufacturers that the Sector EPD covers,
- a description of how the selection of the ports has been done and how the average has been determined, and
- a statement that the document covers average values for an entire or partial product category (specifying the percentage of representativeness) and, hence, the declared service is an average that is not available for purchase on the market.

5 CONTENT AND FORMAT OF EPD

EPDs based on this PCR shall contain the information described in this section. Flexibility is allowed in the formatting and layout provided that the EPD still includes the prescribed information. A generic template for EPDs is available at www.environdec.com.

The EPD content shall:

- be in line with the requirements and guidelines in ISO 14020 (Environmental labels and declarations – General principles),
- be verifiable, accurate, relevant and not misleading, and
- not include rating, judgements or direct comparison with other services[9].

An EPD should be made with a reasonable number of pages for the intended audience and use.

The content of EPDs published in machine-readable format shall correspond with the content of the underlying EPD.

5.1 EPD LANGUAGES

EPDs should be published in English but may also be published in additional languages. If the EPD is not available in English, it shall contain an executive summary in English including the main content of the EPD. This summary is part of the EPD and, thus, also subject to the verification process.

5.2 UNITS AND QUANTITIES

The following requirements apply for units and quantities:

- The International System of Units (SI units) shall be used where available, e.g., kilograms (kg), Joules (J) and metres (m). Reasonable multiples of SI units may be decided in the PCR to improve readability, e.g., grams (g) or megajoules (MJ). The following exceptions apply:
  - Resources used for energy input (primary energy) should be expressed as kilowatt-hours (kWh) or megajoules (MJ), including renewable energy sources, e.g., hydropower, wind power and geothermal power.
  - Water use should be expressed in cubic metres (m^3)
  - Temperature should be expressed in degrees Celsius (°C),
  - Time should be expressed in the units most practical, e.g., seconds, minutes, hours, days or years.
  - Results of the environmental performance indicators shall be expressed in the units prescribed by the impact assessment methods, e.g. kg CO_2 equivalents.
- Three significant figures[10] should be adopted for all results. The number of significant digits shall be appropriate and consistent.
- Scientific notation may be used, e.g. 1.2E+2 for 120, or 1.2E-2 for 0.012.
- The thousand separator and decimal mark in the EPD shall follow one of the following styles (a number with six significant figures shown for illustration):
  - SI style (French version): 1 234,56
  - SI style (English version): 1 234.56

  In case of potential confusion or intended use of the EPD in markets where different symbols are used, the EPD shall state what symbols are used for thousand separator and decimal mark.
- Dates and times presented in the EPD should follow the format in ISO 8601. For years, the prescribed format is YYYY-MM-DD, e.g., 2017-03-26 for March 26th, 2017.
- The result tables shall:

[9] Therefore, results of normalization are not allowed to be reported in the EPD.

[10] Significant figures are those digits that carry meaning contributing to its precision. For example with two significant digits, the result of 123.45 shall be displayed as 120, and 0.12345 shall be displayed as 0.12. In scientific notation, these two examples would be displayed as $1.2*10^2$ and $1.2*10^{-2}$.

- Only contain values or the letters “ND” (Not Declared). It is not possible to specify ND for mandatory indicators. ND shall only be used for voluntary parameters that are not quantified because no data is available.[11]
- Contain no blank cells, hyphens, less than or greater than signs or letters (except “ND”).
- Use the value “0” only for parameters that have been calculated to be zero.
- Footnotes shall be used to explain any limitation to the result value.

5.3 USE OF IMAGES IN EPD

Images used in the EPD, especially pictures featured on the cover page, may in themselves be interpreted as an environmental claim. Images such as trees, mountains, wildlife that are not related to the declared service shall therefore be used with caution and in compliance with national legislation and best available practices in the markets in which the EPD is intended to be used.

5.4 EPD REPORTING FORMAT

The reporting format of the EPD shall include the following sections:

- Cover page (see Section 5.4.1)
- Programme information (see Section 5.4.2)
- Service information (see Section 5.4.3)
- Environmental performance (see Section 5.4.4)
- References (see Section 5.4.8)

The following sections may be included:

- Additional environmental information (see Section 5.4.5)
- Additional social and economic information (see Section 5.4.6)

The following sections shall be included, if relevant:

- Differences versus previous versions (see Section 5.4.7)
- Executive summary in English (see Section 5.4.9)

5.4.1 COVER PAGE

The cover page shall include:

- Service name and image
- Name and logotype of EPD owner
- The text “Environmental Product Declaration” and/or “EPD”
- Programme: The International EPD System, www.environdec.com
- Programme operator: EPD International AB
- Logotype of the International EPD System
- EPD registration number as issued by the programme operator[12]
- Date of publication (issue): 20XX-YY-ZZ
- Date of revision: 20XX-YY-ZZ, when applicable

[11] This requirement does not intend to give guidance on what indicators are mandated (“shall”) or voluntary.

[12] The EPD shall not include a “registration number” if such is provided by the certification body, as this may be confused with the registration number issued by the programme operator.

- Date of validity; 20XX-YY-ZZ
- A note that *"An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com."*
- A statement of conformity with ISO 14025.
- For Sector EPDs: a statement that the EPD is a Sector EPD.

In the case of EPDs registered through a regional hub (a regional or national programme based on and fully aligned with the International EPD System through an agreement with the programme operator), "Programme", "Programme operator", and "Logotype" shall be expanded to include a reference to the regional programme and the organisation responsible for it.

Where applicable, the cover page shall also include the following information:

- Information about dual registration of EPD in another programme, such as registration number and logotype.
- A statement of conformity with other standards and methodological guides.

5.4.2 PROGRAMME INFORMATION

The programme information section of the EPD shall include:

- Address of programme operator: *EPD International AB, Box 210 60, SE-100 31 Stockholm, Sweden, E-mail: support@environdec.com*
- The following statement on the requirements for comparability of EPDs, adapted from ISO 14025: *"EPDs within the same product category but from different programmes may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison."*
- A statement that the EPD owner has the sole ownership, liability and responsibility of the EPD
- Information about verification[13] and the PCR in a table with the following format and contents:

Accountabilities for PCR, LCA and independent, third-party verification
Product Category Rules (PCR)
PCR: *<name, registration number, version and UN CPC code(s)>*
PCR review was conducted by: *<name and organisation of the review chair, and information on how to contact the chair through the programme operator>*
Life cycle assessment (LCA)
LCA accountability: *<name, organization>*
Third-party verification

[13] If the EPD has been verified by an approved individual verifier who has received contractual assistance from a certification body that is not accredited, this certification body shall not be included in this table.

Independent third-party verification of the declaration and data, according to ISO 14025:2006, via: ☐ EPD verification by individual verifier Third-party verifier: <*name, organisation, and signature of the third-party verifier*> Approved by: The International EPD System
OR
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via: ☐ EPD verification by accredited certification body Third-party verification: <*name, organisation*> is an approved certification body accountable for the third-party verification The certification body is accredited by: <*name of accreditation body & accreditation number, where applicable*>
OR
Independent third-party verification of the declaration and data, according to ISO 14025:2006 via: ☐ EPD verification by EPD Process Certification* Internal auditor: <*name, organisation*> Third-party verification: <*name, organisation*> is an approved certification body accountable for third-party verification Third-party verifier is accredited by: <*name of accreditation body & accreditation number, where applicable*> *For EPD Process Certification, an accredited certification body certifies and reviews the management process and verifies EPDs published on a regular basis. For details about third-party verification procedure of the EPDs, see GPI v4, Section 7.5.
Procedure for follow-up of data during EPD validity involves third-party verifier[14]: ☐ Yes ☐ No

5.4.3 SERVICE INFORMATION

The service information section of the EPD shall include:

- address and contact information of the EPD owner,
- description of the organisation. This may include information on services- or management system-related certifications (e.g. ISO 14024 Type I environmental labels, ISO 9001- and 14001-certificates and EMAS-registrations) and other relevant work the organisation wants to communicate (e.g. SA 8000, supply-chain management and social responsibility),
- name and location of the port,

[14] Procedure for follow-up the validity of the EPD is at minimum required once a year with the aim of confirming whether the information in the EPD remains valid or if the EPD needs to be updated during its validity period (see Sections 7.3.2 and 7.4.9 of the GPI). The follow-up can be organized entirely by the EPD owner or together with the original verifier via an agreement between the two parties. In both approaches, the EPD owner is responsible for the procedure being carried out. If a change that requires an update (see Section 6.5 of the GPI) is identified, the EPD shall be re-verified by a verifier.

- Service identification by name, and an unambiguous identification of the product by standards, concessions or other means,
- identification of the services according to the UN CPC scheme system. Other relevant codes for product classification may also be included, e.g.
  - Common Procurement Vocabulary (CPV),
  - United Nations Standard Products and Services Code® (UNSPSC),
  - Classification of Products by Activity (NACE/CPA),
  - Australian and New Zealand Standard Industrial Classification (ANZSIC), or
  - Global Trade Item Number (GTIN).
- a description of the service,
- a description of the technical purpose of the service, including its application/intended use,
- a description of the background system, including the main technological aspects,
- geographical scope of the EPD, i.e., for which geographical location(s) the provided service has been calculated,
- functional unit,
- declaration of the year(s) covered by the data used for the LCA calculation and other relevant reference years,
- reference to the main database(s) for generic data and LCA software used, if relevant,
- system diagram of the processes included in the LCA, divided into the life cycle stages,
- description that the EPD system boundary is “cradle-to-grave”,
- information on which life-cycle stages are not considered (if any), with a justification of the omission, and
- references to any relevant websites for more information or explanatory materials.

This section may also include:

- name and contact information of organisation carrying out the underlying LCA study,
- any additional information about the underlying LCA-based information, such as cut-off rules, data quality, allocation methods, and other methodological choices and assumptions,
- a description of the material properties of the product with a declaration of relevant physical or chemical product properties, such as density, etc., and
- if end-of-life treatment is not included, the EPD shall contain a statement that it shall not be used for communicating environmental information to consumers/end users of the product.

5.4.4 ENVIRONMENTAL PERFORMANCE

Below subsections list the mandatory environmental performance indicators to declare in the EPD. LCA results based on additional indicators may be declared, if they are relevant for the product category, their inclusion is justified in the EPD, appropriate methods are used, and the results are verifiable. If the additional indicators appear to the reader to display duplicate information, the EPD shall contain an explanation of the differences between the declared indicators.

5.4.4.1. Environmental impacts

The EPD shall declare the environmental impact indicators, per functional unit, per life-cycle stage and in aggregated form, using the default impact categories, impact assessments methods and characterisation factors available at www.environdec.com/indicators and the impact assessment method for toxicity listed in Section 4.8. The source and version of the impact assessment methods and characterisation factors used shall be reported in the EPD.

In addition to the indicators listed above, the indicators included in Section 4.8 shall also be reported per life-cycle stage (except for “emission of particulates due to solid bulk manipulation” and “noise emissions”, which shall be declared for the core module).

5.4.4.2. Use of resources

The EPD shall declare the mandatory, and may declare the optional, indicators for resource use listed at www.environdec.com/indicators per functional unit, per life-cycle stage and in aggregated form.

5.4.4.3. Waste production and output flows

Waste generated along the whole life cycle production chains shall be treated following the technical specifications described in the GPI. The EPD may declare the optional, indicators for waste production and output flows as listed at www.environdec.com/indicators per functional unit, per life-cycle stage and in aggregated form.

5.4.5 ADDITIONAL ENVIRONMENTAL INFORMATION

To complement the indicators declared for the full life cycle (Section 4.8), the following indicators should be reported in the EPD, only for the core module:

- Emission of particulates due to solid bulk manipulation. The methodology to be used shall be consistent with the criteria recommended by the U.S. Environmental Protection Agency reports labelled as AP-42 available at https://www3.epa.gov/ttn/chief/ap42/ch13/final/c13s0204.pdf, and the improvements established in the Project: LIFE02 ENV/E/000274 HADA – Automatic Tool for environmental diagnosis (http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=2105)
- Noise emissions: noise emissions due to port operation services shall be declared in the EPD. The methodology to be used shall be consistent with the criteria recommended by the EU Directive for the assessment and management of environmental noise (2002/49/EC) (http://eur-lex.europa.eu/legal-content/ES/TXT/?uri=celex%3A32002L0049) and the good practice guidelines which aims to associate noise indicators to port operations, such as the "Good practice Guide to Port Area Noise Mapping and Management" (http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=home.showFile&rep=file&fil=NoMEports_GPG_PANMM1.pdf) resulting of Nome Ports project (NoMePorts – Noise Management in European Ports LIFE05 ENV/NL/000018) or the "Methodology of Implementation of a System of Follow-up, Assessment, and control of Noise in Port Surroundings" (http://www.puertos.es/es-es/medioambiente/Documents/pro21.pdf) resulting of HADA project (LIFE02 ENV/E/000274)

5.4.6 ADDITIONAL SOCIAL AND ECONOMIC INFORMATION

The EPD may also include other relevant social and economic information as additional and voluntary information. This may be product information or a description of an organisation's overall work on social or economic sustainability, such as activities related to supply chain management or social responsibility.

Any additional social and economic information declared shall be substantiated and verifiable, and be derived using appropriate methods and be specific, accurate, not misleading, and relevant to the specific product. Quantitative information is preferred over qualitative information.

5.4.7 DIFFERENCES VERSUS PREVIOUS VERSIONS

For EPDs that have been updated, the following information shall be included:

- a description of the differences versus previously published versions, and
- a revision date on the cover page.

5.4.8 REFERENCES

A reference section shall be included, including a list of all sources referred to in the EPD, including the GPI (including version number), and PCR (registration number, name, and version) used to develop the EPD.

5.4.9 EXECUTIVE SUMMARY IN ENGLISH

The executive summary, if included (see Section 5.1), shall contain relevant summarised information related to the programme, product, environmental performance, information related to pre-certified EPDs, and information related to sector EPDs. Besides this,

further information may be added such as additional environmental, social or economic information, references as well as differences versus previous EPD versions.

6 LIST OF ABBREVIATIONS

ANZSIC	Australian and New Zealand Standard Industrial Classification
CPC	Central product classification
CPV	Common procurement vocabulary
EPD	Environmental product declaration
GPI	General Programme Instructions
GTIN	Global trade item number
ISO	International Organization for Standardization
LCA	Life cycle assessment
LCI	Life cycle inventory
NACE/CPA	Classification of products by activity
ND	Not declared
PCR	Product category rules
REACH	Restriction of chemicals
RSL	Reference service life
SI	The International System of Units
UN	United Nations
UNSPSC	United Nations standard products and services code

7 REFERENCES

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Capo d'Anzio S.p.A. (2013) Guidelines for the LCA approach for ports. LIFE10 ENV/IT/000369 Project.

EPD International (2021) General Programme Instructions for the International EPD System. Version 4.0, dated 2021-03-29. www.environdec.com.

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

ISO (2004) ISO 8601:2004 Data elements and interchange formats – Information interchange – Representation of dates and times.

ISO (2006a) ISO 14025:2006, Environmental labels and declarations – Type III environmental declarations – Principles and procedures.

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 (2014) ISO 14046:2014, Environmental management – Water footprint – Principles, requirements and guidelines.

ISO (2015a) ISO 14001:2015, Environmental management systems – Requirements with guidance for use.

ISO (2015b) ISO 9001:2015, Quality management systems – Requirements.

ISO (2016a) ISO 21067-1:2016, Packaging – Vocabulary – Part 1: General terms.

ISO (2016b) ISO 14021:2016, Environmental labels and declarations - Self-declared environmental claim (Type II environmental labelling).

ISO (2017) ISO 21930:2017, Sustainability in buildings and civil engineering works – Core rules for environmental product declarations of construction products and services.

ISO (2018a) ISO 14024:2018, Environmental labels and declaration – Type I environmental labelling – Principles and procedures.

ISO (2018b) ISO/TS 14067:2018, Greenhouse gases – Carbon footprint of products – Requirements and guidelines for quantification and communication.

Stripple H, Fridell, E Winnes H (2016) Port Infrastructures in a System Perspective. IVL report number C128. https://www.ivl.se/english/ivl/publications/publications/port-infrastructures-in-a-system-perspective.html

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8 VERSION HISTORY OF PCR

VERSION 1.0, 2018-12-15

Original version published.

VERSION 1.0.1, 2019-04-15

- Clarification to Figure 2 on what processes are excluded.
- Update regarding RSL.

VERSION 1.0.2, 2019-09-06

- Clarified terms of use.
- Editorial changes.

VERSION 1.0.3, 2022-12-15

Validity period extended 1 year, until 2023-08-23, as an updating process has been initiated.

VERSION 2.0.0, 2024-06-05

- Update to comply with GPI 4.0.
- Scope of the PCR updated (Section 2.2.1), removing all CPC codes except for the one related to port operation services. A list of port operation activities that must be considered in the scope has been added.
- Explanations about the functional unit in Section 4.1 have been expanded. Reference mass values for cargo containers and passengers have been included. Criteria for comparability across different EPD have been further explained.
- Text in Section 4.2 has been removed since port infrastructure is no longer included in the scope of the PCR.
- Explanation in Section 4.3.1.1 of upstream processes to be considered has been expanded. Production of fuels and water needed in the core module have been moved to Section 4.3.1.2. Port infrastructure has been moved to “excluded processes”.
- Explanation in Section 4.3.1.2 of core processes to be considered has been expanded. Examples about port operation activities have been included and further explanations about Figure 2 are given.
- Explanation in Section 4.3.1.3 of downstream processes to be considered has been expanded.
- System diagram in Section 4.4 updated according to the changes made to the system boundaries.
- Explanation about economic allocation in Section 4.6.1 expanded.
- Examples pf datasets added in Section 4.7.2.
- Characterisation models for marine ecotoxicity and land use have been specified in Section 4.8.
- Land use impact category has been removed from Section 4.8.
- Particulate emissions and noise emissions indicators have been moved from Section 4.8 to Section 5.4.5.
- Editorial changes.

PORT OPERATION SERVICES
PRODUCT CATEGORY CLASSIFICATION: UN CPC 675