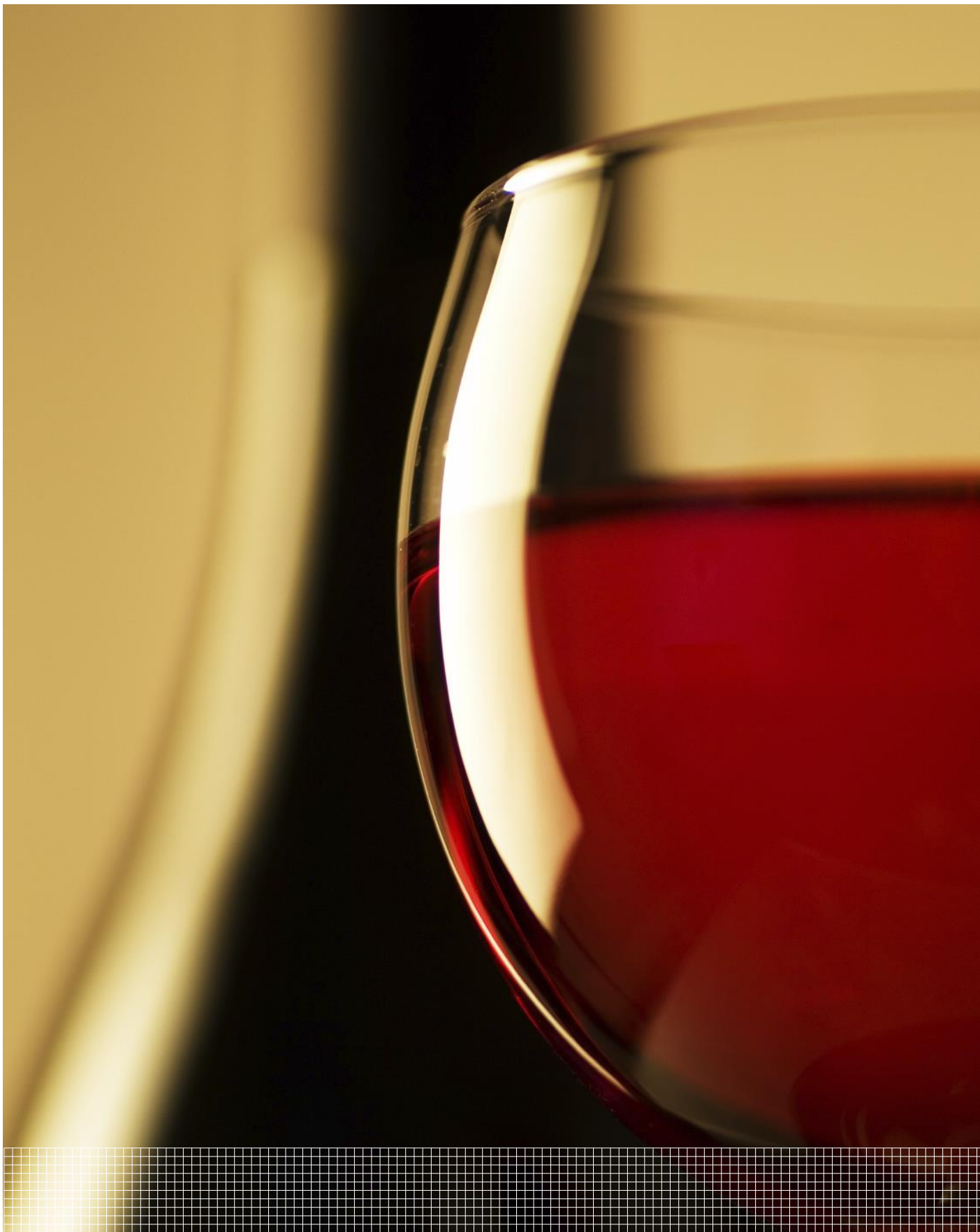
WINE

PRODUCT CATEGORY CLASSIFICATION: UN CPC 24211 AND 24212

PCR 2020:06
VERSION 1.0.1

VALID UNTIL 2025-05-10



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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. Environmental Product Declarations (EPD) are voluntary documents for a company or organisation to present transparent information about the life cycle environmental impact for their goods or services.

The rules for the overall administration and operation of the programme are the General Programme Instructions, publicly available at www.environdec.com. A PCR complements the General Programme Instructions and the 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.

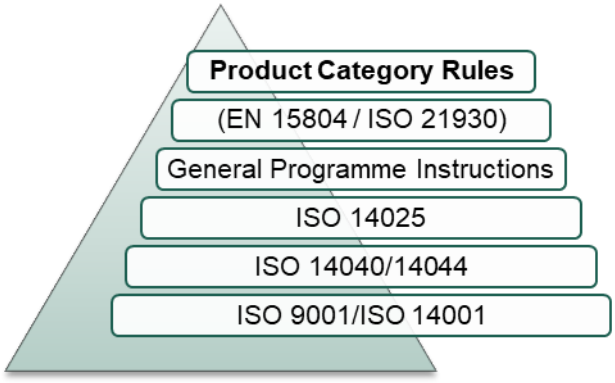

Figure 1 Illustration PCR in relation to the hierarchy of standards and other documents.

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.

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 via www.environdec.com. Stakeholder feedback on PCRs is very much encouraged. Any comments on this PCR document may be given via the PCR Forum at www.environdec.com or sent directly to the PCR moderator during its development or during the period of validity.

Any references to this document should 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 when necessary, and 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 EPD, Environmental Product Declarations.

2 GENERAL INFORMATION

2.1 ADMINISTRATIVE INFORMATION

Name:	Wine
Registration number and version:	2020:06 (Version 1.0.1)
Programme:	The International EPD® System
Programme operator:	EPD International AB, Box 210 60, SE-100 31 Stockholm, Sweden. Website: www.environdec.com E-mail: info@environdec.com
PCR moderator:	Elena Neri, INDACO$_2$ SRL, elena.neri@indaco2.it
PCR Committee:	INDACO$_2$ SRL, Bortolomiol SpA, Winecircus srl, Fattoria La Maliosa
Date of publication and last revision:	2024-06-24 (Version 1.0.1) A version history is available in Section 8.
Valid until:	2025-05-10
Schedule for renewal:	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 Secretariat how to proceed with updating the document and renewing its validity. A PCR document may be revised during its period of validity provided significant and well-justified proposals for changes or amendments are presented. See www.environdec.com for up-to-date information and the latest version.
Standards conformance:	▪ General Programme Instructions of the International EPD® System, version 3.01, based on ISO 14025 and ISO 14040/14044 ▪ PCR Basic Module, CPC Division 24 Beverages, version 3.02, dated 2018-11-06 *(CPC 24211 and 24212)* ▪ ISO 14067:2018 Greenhouse gases - Carbon footprint of products - Requirements and guidelines for quantification
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 Still and Sparkling Wine and the declaration of this performance by an EPD. The product category corresponds to UN CPC 24211 Sparkling wine of fresh grapes and 24212 Wine of fresh grapes, except sparkling wine; grape must.

According to the International Organisation of Vine and Wine basic definition 18/73 (OIV, 2017), wine is the beverage resulting exclusively from the partial or complete alcoholic fermentation of fresh grapes, whether crushed or not, or of grape must. Its actual alcohol content shall not be less than 8.5% vol. Nevertheless, taking into account climate, soil, vine variety, special qualitative factors or traditions specific to certain vineyards, the minimum alcohol content may be reduced to 7% vol. by legislation, depending on the region considered.

Wine can be white, rosè or red, depending of vine variety and processing.

The product category includes both still and sparkling wine defined as:

- Still wine is obtained exclusively from the (partial or total) alcoholic fermentation of fresh grapes or of grape must and when the carbon dioxide concentration is less than 4 g/l at 20°C (e.g. Brunello di Montalcino, Cannonau, Vernaccia di San Gimignano).

  The sweetness can range from very dry to sweet, depending on the glucose and fructose content (dry= maximum of either 4 g/l sugar or 9 g/l when the level of total acidity - grams of tartaric acid per litre - is no more than 2 g/l less than the sugar content; sweet = minimum sugar content of 45 g/l).

- Sparkling wine is made of processed fresh grape, must or wine characterized by effervescence resulting from the release of carbon dioxide when uncorked (e.g. Prosecco, Champagne). The carbon dioxide (more than 4g/l content at 20°C) derives from natural secondary fermentation (endogenous origin) either in bottle (i.e. Champenoise method) or in large closed tank (i.e. Charmat process), or from gas addition (exogenous origin, i.e. carbonated wines).

  The sweetness can range from brut to sweet, depending on the glucose and fructose content (brut= maximum of 12 g/l sugar with a tolerance of +3g/l; sweet = sugar content more than 30 g/l).

The EPD must specify the production method (e.g. natural fermentation, yeast added fermentation, or gas addition), the variety and mix of grapes, the alcohol content and sweetness, and other relevant information that characterize the final product.

The product category includes packed ad unpacked wine. For packed wine, containers of any size (e.g. 0.5L, 0.75L, 1.5L, 5L), format (e.g. glass bottle, bag-in-box), type of closure (i.e., cork, biodegradable synthetic, stoppers, aluminium closures) and packaging (i.e. box or bag) are considered. Results will refer to a declared unit.

These rules also apply to wine produced under special regulations or directives, for example, organic or biodynamic agriculture, vegetal-based closed cycle agriculture, integrated production systems, or Geographical Indications (GI) e.g. Protected Denomination of Origin (PDO), Protected Geographical Indication (PGI). In these cases, the EPD shall specify if the product belongs to any special distinction.

The classification in the UN CPC system is Subclass 24211 and 24212:

- Division 24 - "Beverages"
  - Group 242 "Wines"
    - Class 2421 " Wine of fresh grapes, whether or not flavoured; grape must "
      - **Subclass: 24211 " Sparkling wine of fresh grapes " (this PCR)**
      - **Subclass: 24212 " Wine of fresh grapes, except sparkling wine; grape must" (this PCR)**

More information is available at: *http://unstats.un.org/unsd/cr/registry/regcst.asp?Cl=25*

This PCR is not addressed to:

- - products made by grape without alcohol strength (e.g. grape juice CPC 21434)
- - Cider, perry, mead and other fermented beverages, except wine of fresh grapes and beer made from malt (CPC 24230)

2.2.2 GEOGRAPHICAL REGION

This PCR is applicable to be used globally.

Inventoried data shall be representative for the actual production processes and for the site/region where each process takes place.

In the case of processes performed in different countries, this should be clearly stated, and the method used for calculating the average environmental impacts shall be explained in the LCA.

2.2.3 EPD VALIDITY

An EPD based on this PCR shall be valid from its registration and publication at www.environdec.com and for a five 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 indicators listed in Section 5.4.5.1,
- errors in the declared information, or
- significant changes to the declared product information, content declaration, or additional environmental 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 process described in the General Programme Instructions of the International EPD® System, including PCR review and open consultation.

3.1 PCR REVIEW

3.1.1 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 info@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:	Maurizio Fieschi
Review dates:	2020-09-15 until 2020-10-21

3.2 OPEN CONSULTATION

3.2.1 VERSION 1.0

This PCR was available for open consultation from 2020-04-16 until 2020-06-16, 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, and agreed to be listed as contributors to the PCR and at www.environdec.com.

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.
- JEMAI EcoLeaf (http://www.ecoleaf-jemai.jp/eng/pcr.html)
- JEMAI CFP PROGRAM (https://www.cfp-japan.jp/calculate/authorize/pcr.php)
- Product Environmental Footprint (PEF) initiative, European Commission (https://ec.europa.eu/environment/eussd/smgp/)

The following PCRs were identified as references:

PCR NAME	PROGRAMME	REGISTRATION NUMBER	SCOPE
Wine of fresh grapes, except sparkling wine; wine must	The International EPD® System	2010:02	Still wine, must of grape
Sparkling wine of fresh grapes	The International EPD® System	2014:14	Sparkling wine either from natural fermentation or with gas addition
Product Environmental Footprint Category Rules	European Commission JRC	2018	Still and sparkling wine

(PEFCR) for still and sparkling wine			

Table 1 Existing PCRs of product category.

The PCR 2014:14 ”Sparkling wine of fresh grapes” expired 2017-09-23 and was de-registered.

The PCR 2010:02 ”Wine of fresh grapes, except sparkling wine; wine must” expired 2019-09-28 and was de-registered.

This PCR replaces and merges PCR 2014:14 and 2010:02 in one document and includes their scopes.

3.4 REASONING FOR DEVELOPMENT OF PCR

This PCR was developed in order to enable publication of Environmental Product Declarations (EPD) for this product category based on ISO 14025, ISO 14040/14044 and other relevant standards to be used in different applications and target audiences.

Since the existing PCRs 2010:02 and 2014:14 expired and were de-registered, it was considered worthwhile to update them in accordance to the new GPI, formats and general rules, and merge the two documents into one.

Furthermore, an increasing interest of wine producers in developing EPD, being aware of environmental implications of their activities and willing to communicate their environmental performances with transparency, emphasizes the need to develop this PCR.

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:

- Neri and Pulselli, INDACO$_2$, 2017. LCA report of Prosecco di Valdobbiadene DOCG Ius Naturae and Grande Couveè del Fondatore for Bortolomiol SpA
- Neri and Pulselli, INDACO$_2$, 2017. LCA report of wine production of different wines produced by Case Corini
- Neri and Pulselli, INDACO$_2$, 2017. LCA report of wine and oil for Fattoria la Maliosa
- Neri and Pulselli, INDACO$_2$, 2015. Carbon Footprint of the “Vernaccia di San Gimignano” for the “Consorzio del vino Vernaccia di San Gimignano”
- Scientific papers based on LCA of wine production e.g. Simoni et al., 2020, Chiriacò et al., 2019; Brunori et al., 2016; Notarnicola et al., 2015; Petti et al., 2015; Arzoumanidis et al., 2014; Fusi et al., 2014; Rugani et al., 2013; Vázquez-Rowe et al., 2013; Bosco et al., 2011; Gazulla et al., 2010; Ardente et al., 2006.

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 DECLARED UNIT

The declared unit shall be defined as 0.75 litres of beverage, including its packaging (primary and secondary). The reference flow in the Life Cycle Assessment shall be defined at the customer gate.

If the product is packaged in different volumes and types (e.g. 0.5L, 1.5L, 5L,10L), environmental assessment results related to different volumes may also be reported in the EPD.

The declared unit shall be stated in the EPD. The environmental impact shall be given per declared unit. A description of the function of the product should be included in the EPD®, if relevant.

4.2 REFERENCE SERVICE LIFE (RSL)

Not applicable for this product category.

4.3 SYSTEM BOUNDARY

The International EPD® System 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 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 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 EPD, the environmental 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 4.3.1.1–4.3.1.3.

4.3.1.1. Upstream processes

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

- Production of grapes in the vineyard (e.g. production and use of materials needed for field operation in the productive vineyard in the reference period, such as e.g. energy for soil management, fertilizers, pesticides, water).
- Production and use of electricity and fuels used in the upstream module.
- Maintenance activities (e.g. of the vineyard, machineries) more frequent than every 3 years.
- Production of other ingredients and materials used in the product (e.g. oenological products for wine making such as yeasts, clarifier agents, sulphites, filters)
- Production of auxiliary products used such as detergents for cleaning, etc.
- Manufacturing of primary and secondary packaging materials:

- Primary packaging is the material that first envelops the product and holds it (e.g. bottle, stoppers/closures, label, aluminium bag and wine box)
- Secondary packaging is outside the primary packaging (e.g. cardboard or wood box).

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 4.5.

Maintenance of machineries, field operations and related consumptions made occasionally (i.e. > 3 years frequency) or in emergency situations shall be excluded.

Oenological products that are not covered by secondary database and fall under the cut-off rule in Section 4.5 should be excluded.

Any other exclusion of life cycle stages and unit processes shall be justified.

4.3.1.2. Core processes

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

- Internal/External transportation of grapes and wine to the winery (including refrigerated transport, when used)
- External transportation of other materials to the core processes
- Wine making, bottling and packaging. The wine making process differs depending on wine type (e.g. still or sparkling, white, rosè or red, conventional, organic or natural) and wine maker choices. The most common activities are:
  - destemming of grapes
  - crushing/pressing of grapes
  - must transport
  - primary fermentation of must
  - pressing of pomace
  - clarification
  - cold and heat stabilization of wine
  - secondary fermentation
  - ageing (e.g. in stainless steel containers or wooden barrels)
  - blending and fining
  - primary packaging: e.g. bottling, corking and labelling
  - storage
  - secondary packaging
- Production and use of electricity and fuels used in the core module
- Recharges (production and emissions) of all refrigerant gases, if used at the winery, on a yearly basis.
- Maintenance activities (e.g. of the machineries) and related consumptions more frequent than every 3 years
- Waste treatment of waste generated during manufacturing;

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 with a lifetime >3 years.
- Business travel of personnel.
- Travel to and from work by personnel.
- Research and development activities.

Any other exclusion of life cycle stages and unit processes shall be justified.

4.3.1.3. Downstream processes

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

- Transportation from packaging site to an average retailer/distribution platform
- End-of-life processes of packaging waste

The customer or consumer use of the product (e.g. cooling/refrigeration/additional ageing) is not included.

Any other exclusion of life cycle stages and unit processes shall be justified.

4.3.2 OTHER BOUNDARY SETTING

4.3.2.1. Boundary towards nature

Boundaries towards nature are defined as where flows of material and energy resources leaves nature and enters the technical system. Emissions to air, water and soil cross the system boundary when they are emitted from the product system.

4.3.2.2. Boundaries in the life cycle

See Section 4.3.1. The EPD may present the information divided into additional sub-divisions.

4.3.2.3. Boundaries towards other technical systems

See Section 4.6.2.

4.3.2.4. Boundaries in time

Primary data related to inputs and outputs occurring in the agricultural phase (i.e. vineyard maintenance and harvesting) shall be referred to one year of production (that can coincide or not with the year reported in the label). Due to seasonal differences that lead to fluctuation of chemical use and yield, data may be collected over a period of three years or one representative year (if choosing the last option, the representativeness shall be demonstrated in the LCA report). This can coincide with the last year, if not deviated from the average or atypical. The reference year/period for the agricultural phase shall be reported in the EPD document.

Primary data for the wine making and bottling phases must refer to wine derived from grapes whose production has been monitored in the agricultural phase. Alternatively, data may refer to the last year available.

If wine is aged (e.g. Brunello di Montalcino, Amarone della Valpolicella, Barolo), energy and material consumption for cellar/bottling operations shall be referred to the year of grape production, assuming that occurring future (or past) consumptions do not deviate from the current situation.

The life cycle inventory (LCI) data shall be representative for the time period for which the EPD is valid or otherwise specified and justified in the EPD report.

4.4 SYSTEM DIAGRAM

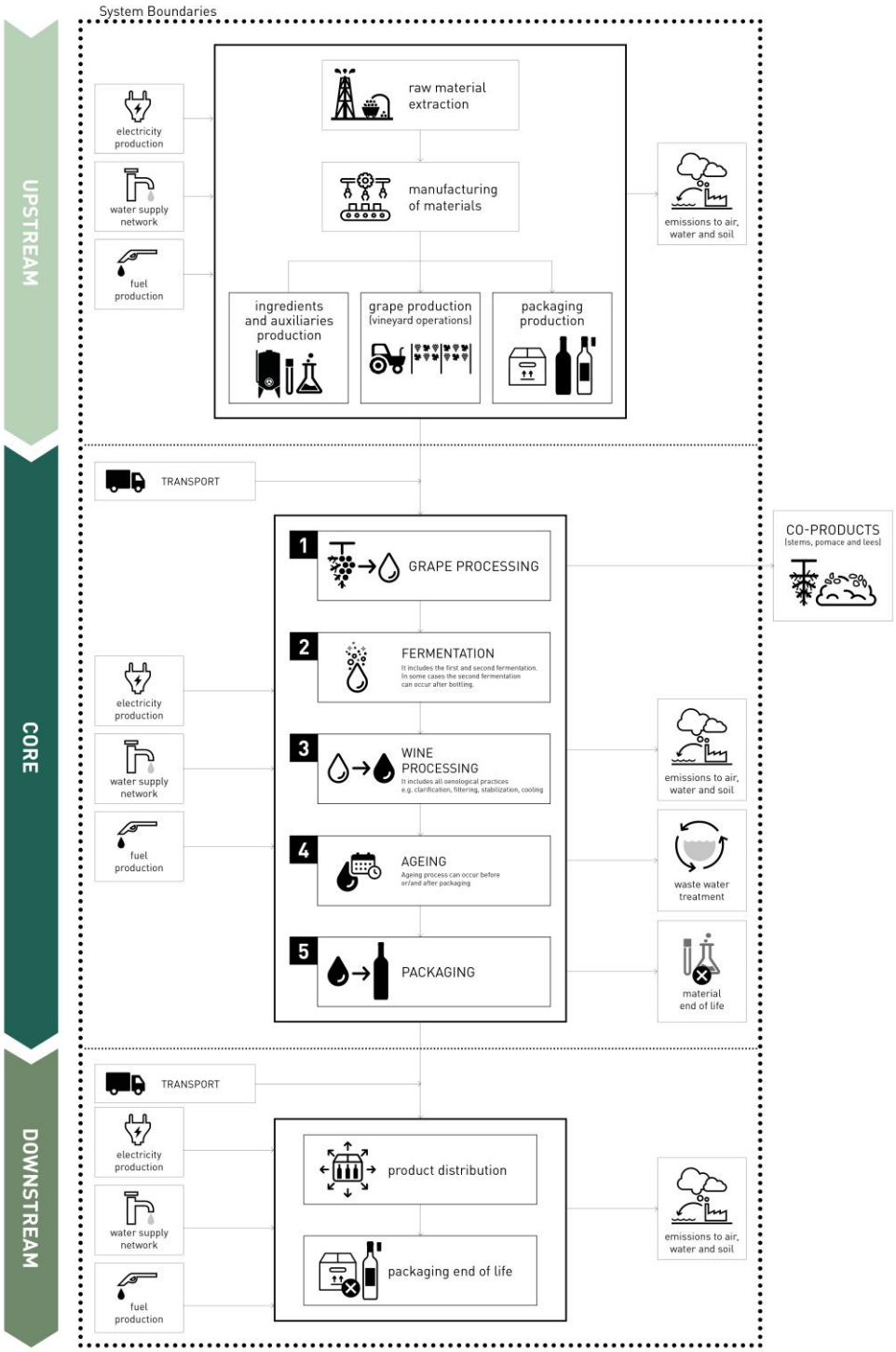

Figure 2 System diagram illustrating the processes that are included in the product system, divided into upstream, core and downstream processes.

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 4.3).

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 step-wise 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.

   Table 2 shall be consulted for key processes. For processes not listed, the most suitable allocation procedure shall be used, justified and documented.

PROCESS	MAIN PRODUCT AND CO-PRODUCTS	ALLOCATION INSTRUCTION
Grape production	Must, pomace and stems	Mass allocation: the mass of different outputs (i.e. stems, pomace and must) shall be used to allocate inputs until the separation of stems and pomace from must
Wine making	Wine and lees	Mass allocation: the mass of different outputs (i.e. lees and wine) shall be used to allocate all inputs from grape production until the separation of lees from wine

Table 2 Allocation procedure for key processes in the product system, if steps 1 and 2 are not possible. If the weight of the different co-products is not available, typical allocation values of 80% for wine, 15% for pomace, 4% of stems and 1% of lees should be used.

3. If appropriate, an economic allocation may be acceptable, provided that a sensitivity analysis shall be performed and presented in the LCA report. Reference values to take into account are represented by the selling prices of the products (average market price over three years), set by the producer.

If a co-product is re-used in the production chain in-house (e.g. pomace and lees not sent to distillery), as a feedback to the system (e.g. compost from stems and/or pomace), the portion allocated to the co-product should be attributed to the main product (i.e. wine).

4.6.2 REUSE, RECYCLING, AND RECOVERY

In the framework of the International EPD® System, 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 environmental 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 environmental impact from the processing and refinement of the waste but not the environmental impact caused in the "earlier" life cycles. See General Programme Instruction for further information and examples.

4.7 DATA QUALITY REQUIREMENTS

An LCA 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 LCA 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. It is mandatory to use specific data for the core processes as defined above. For the upstream processes, downstream processes, and infrastructure, generic data may also be used if specific data are not available.

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.

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 the International EPD® System 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 EPD,
- 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 the impact categories, and
- the representativeness of the resulting inventory in the given temporal, technological, and geographical reference should, as a general principle, be better than ±5% of the environmental impact of fully representative data.

Section 4.8 provides a list of recommended databases/data sets to be used for generic data.

If selected generic data that meets the requirements of the International EPD® System are not available as the necessary input data, proxy data may be used and documented. The environmental impacts associated with proxy data shall not exceed 10% of the overall environmental impact from the product system.

The EPD may include a data quality declaration to demonstrate the share of specific data, selected generic data and proxy data for the environmental impacts.

4.8 RECOMMENDED DATABASES FOR GENERIC DATA

No specific databases are recommended for generic data.

Selected generic data should meet the requirements of the International EPD® System for data quality, representativeness, review, scope of documentation. Unit processes should be in line with the geographical scope of the EPD.

The specifications and the version of the used database shall be reported in the EPD.

4.9 IMPACT CATEGORIES AND IMPACT ASSESSMENT

The EPD shall declare the default impact categories as described in the General Programme Instructions. The characterisation models and factors to use for the default impact categories are available on www.environdec.com/impact-categories and shall be updated on a regular basis based on the latest developments in LCA methodology and ensuring the market stability of EPDs. The source and version of the characterisation models and the factors used shall be reported in the EPD. Alternative regional life cycle impact assessment methods and characterisation factors are allowed to be calculated and displayed in addition to the default list. If so, the EPD shall contain an explanation of the difference between the different sets of indicators, as they may appear to the reader to display duplicate information.

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 on yearly basis (e.g. fertilizers, chemicals and energy use, vineyard yield, oenological products, packaging).
- 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.
- The transport of main parts and components along the supply chain to a distribution point (e.g. a stockroom or warehouse) where the final delivery to the manufacturer can take place 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.

  In particular, if grapes are partially or totally acquired from other farms, the following step-wise procedure should be applied:

  1. Collect specific data from the producer/s
  2. If not applicable, and if grapes are partially acquired/purchased (a quantity <40% of the total grapes used), impacts should be assumed the same of the main producer, given that grape production practices do not diverge substantially (e.g. same regulation, standard, type of products and quantity, production yield)
  3. If not applicable, or in case grapes are mostly acquired/purchased and no information are available, generic data should be used by selecting reviewed studies in the same geographical context or nearby, choosing the worst range as a precautionary measure. The selection of the reference study/es shall be justified.

  The same approach should be applied for must or wine acquired and partially processed by other wineries.
- Direct emissions to air, water and soil related to the pesticide applications shall be modelled as specific active ingredient, according to Berthoud et al., 2011. As default approach, direct emissions of active substances should be modelled as 90% to soil, 9% to air and 1% to water compartments (according to PEFCR, 2018).
- Direct emissions by the use of fertilizers should refer to the following default parameters (according to PEFCR, 2018 and IPCC, 2019), if site-specific data are not available:
  - N_2O to air: 0.041 kg N_2O/ kg N synthetic fertilizer and manure applied
  - NH_3 to air: 0.12kg NH_3/ kg N synthetic fertilizer applied; 0.24 kg NH_3/ kg N manure applied
  - NO_3^- to water: 1.33 kg NO_3^-/ kg N synthetic fertilizer and manure applied
  - P to water: 0.05 kg P/ kg P fertilizer applied
- Manure related impacts shall take into account its transport to the vineyard and direct emission in field only (i.e. impacts due to the livestock lifecycle shall be excluded)

- 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.[2]
    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 EPD, where relevant.

- Packaging: specific data shall be used for the consumer packaging production if it is under the direct control of the organization or if the environmental impact related to the consumer packaging production is more than 10% of the total product environmental indicators. In other cases, generic data may be used. When consumer packaging shows the organization's logo, the LCA report should report the exerted/non exerted direct control on the production of consumer packaging by the organization.

4.10.2 CORE PROCESSES

The following requirements apply to the core processes:

- Specific data shall be used for the assembly of the product and for the manufacture of main parts as well as for on-site generation of steam, heat, electricity, etc., where relevant.
- 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.[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 the core processes shall be documented in the EPD, where relevant.

- Transport from the final delivery point of raw materials, grapes, must, wine, 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.
- Winery consumptions (e.g. energy, water, refrigerants and waste) should be as much specific as possible for the assessed product. If not possible, aggregated consumption data for the winery as a whole shall be divided by the total volume of wine produced in the reference year.
- Default electricity consumption of 0.0056 kWh/kg pressed grape should be used as proxy (PEFCR, 2018), if the pressing process is not internally performed by the winery
- Default electricity consumption of 0.0224 kWh/1L packaged wine should be used as proxy (PECR, 2018), if the packaging process is not internally performed by the winery

4.10.3 DOWNSTREAM PROCESSES

The following requirements apply to the downstream processes:

- The transport of the product to the customer shall be described, which should reflect the actual situation to the best extent possible. The following priority should be used:

[2] 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.

[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.

1. Actual transportation distances and types to areas in which wine is mainly distributed and consumed.
2. Calculated as the average distance of a product of that product type transported by different means of transport modes.
3. Calculated as a fixed long transport, such as 1 000 km transport by lorry for local supply, 10 000 km by airplane or 18000 km by ship for transoceanic supply, according to most frequent shipments of the product.

- 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. Impacts should be calculated taking into account a typical scenario of the area in which wine is mainly distributed and consumed.
- Transport of waste to the waste plant should be also considered. If specific data regarding the distance to waste collection plant are not available, 50 km as average distance should be used.

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 via www.environdec.com

As a general rule the EPD content:

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

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

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 subject to the same verification procedure.

5.2 UNITS AND QUANTITIES

The following requirements apply for units and quantities:

- The International System of Units (SI units) shall be used, 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.
- Three significant figures[4] should be adopted for all results. The number of significant digits shall be appropriate and consistent.
- 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:
  - Only contain values or the letters “INA” (Indicator Not Assessed). It is not possible to specify INA for mandatory indicators. INA shall only be used for voluntary parameters that are not quantified because no data is available.[5]
  - Contain no blank cells, hyphens, less than or greater than signs or letters (except “INA”).

[4] 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 $1.2*10^{-2}$.

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

- 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 product should 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)
- Product information (see Section 5.4.3)
- Content declaration (see Section 5.4.4)
- Environmental performance (see Section 5.4.5)
- Additional environmental information (see Section 5.4.6)
- References (see Section 5.4.9)

The following information shall be included, when applicable:

- Information related to Sector EPDs (see Section 5.4.7)
- Differences versus previous versions (see Section 5.4.8)
- Executive summary in English (see Section 5.4.10)

5.4.1 COVER PAGE

The cover page shall include:

- Product 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[6],
- *Date of publication (issue): 20XX-YY-ZZ,*
- *Date of revision: 20XX-YY-ZZ*, when applicable,
- *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,

[6] 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.

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: info@environdec.com*
- The following mandatory statement from ISO 14025: "*EPDs within the same product category but from different programmes may not be comparable*."
- A statement that the EPD owner has the sole ownership, liability and responsibility of the EPD
- Information about verification[7] and reference PCR in a table with the following format and contents:

Product category rules (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>*
Independent third-party verification of the declaration and data, according to ISO 14025:2006: ☐ EPD process certification ☐ EPD verification
Third party verifier: *<name, organisation and signature of the third party verifier>* *In case of certification bodies:* Accredited by: *<name of the accreditation body and accreditation number, if applicable>.* *In case of individual verifiers:* Approved by: The International EPD® System Technical Committee, supported by the Secretariat
Procedure for follow-up of data during EPD validity involves third party verifier: ☐ Yes ☐ No

5.4.3 PRODUCT INFORMATION

The product information section of the EPD shall include:

- Address and contact information to EPD owner,
- Description of the organisation. This may include information on products- 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 production site,
- Product identification by name, and an unambiguous identification of the product by standards, concessions or other means,
- Identification of the product 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) or
  - Australian and New Zealand Standard Industrial Classification (ANZSIC),

[7] 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.

- Description of the product, its application/intended use and technical functions, e.g. expected service life time,
- Geographical scope of the EPD, i.e., for which geographical location(s) of use and end-of-life the product's performance has been calculated,
- Declared unit,
- Reference service life (RSL), if applicable,
- 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 if the EPD system boundary is "cradle-to-gate", "cradle-to-gate with options" or "cradle-to-grave",
- Information on which life cycle stages are not considered (if any), with a justification of the omission,
- 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,
- Additional information about the underlying LCA-based information, such as assumptions, cut-off rules, data quality and allocation.

5.4.4 CONTENT DECLARATION

The content declaration shall have the form of a list of materials and chemical substances including information on their environmental and hazardous properties. The gross weight of material shall be declared in the EPD at a minimum of 99 % of one unit of product.

Information on the hazardous properties of materials and chemical substances should follow the requirements given in the latest revision of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS)[8], issued by United Nations or national or regional applications of the GHS.

As an example, the following regulations should be used for EPDs intended to be used in the European Union:

- Regulation (EC) No 1907/2006 of the European parliament and of the council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)
- Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures

The list can be compiled according to the concentration level or to the amount of material/substance contained in a product unit.

The following components contained per Functional Unit should be included: wine or must, packaging (e.g., glass, paper-paperboard, cork, caps, cardboard/ wood box), list of additives used, content of sugar (g/L), content of sulphites (g/L).

5.4.4.1. Information about recycled materials

Not relevant for this product category.

5.4.4.2. Information about packaging

As packaging is strongly connected with the product, the producer shall provide information about packaging in the EPD, when applicable. Packaging may be classified as:

- Distribution Packaging: packaging designed to contain one or more articles or packages, or bulk materials, for the purposes of transport, handling and/or distribution (ISO 21067-1:2016, Par. 2.2.6)

[8] The GHS document is available on www.unece.org.

- Consumer Packaging: packaging constituting, with its content, a sales unit for the final user or consumer at the point of retail (ISO 21067-1:2016, Par. 2.2.7).

Consumer packaging is generally the outcome of eco-design processes, or other activities, under direct control of the organisation. Many critical categories with strict legal requirements belong to consumer packaging category like food contact packaging and pharmaceutical packaging.

The type and function of packaging shall be reported in the EPD.

A statement of the source of the materials (pre-consumer or post-consumer) shall be presented in the EPD when the packaging is made in whole or in part by recycled materials.

5.4.5 ENVIRONMENTAL PERFORMANCE

5.4.5.1. Environmental impacts

The EPD shall declare the environmental impact indicators, per declared unit and per life cycle stage, using the default impact categories, characterisation models and factors available on www.environdec.com/impact-categories. The source and version of the characterisation models and the factors used shall be reported in the EPD. Alternative regional life cycle impact assessment methods and characterisation factors are allowed to be calculated and displayed in addition to the default list. If so, the EPD shall contain an explanation of the difference between the different sets of indicators, as they may appear to the reader to display duplicate information.

5.4.5.2. Use of resources

The indicators for resource use based on the life cycle inventory (LCI) listed in Table 1 shall be declared per functional unit or declared unit, and per life cycle stage.

PARAMETER		UNIT	UPSTREAM	CORE	DOWNSTREAM	TOTAL
Primary energy resources – Renewable	Use as energy carrier	MJ, net calorific value				
	Used as raw materials	MJ, net calorific value				
	TOTAL	MJ, net calorific value				
Primary energy resources – Non-renewable	Use as energy carrier	MJ, net calorific value				
	Used as raw materials	MJ, net calorific value				
	TOTAL	MJ, net calorific value				
Secondary material		kg				
Renewable secondary fuels		MJ, net calorific value				
Non-renewable secondary fuels		MJ, net calorific value				
Net use of fresh water		m^3				

Table 1 Indicators describing use of primary and secondary resources.

Notes:

- In order to identify the primary energy used as an energy carrier (and not used as raw materials), the parameter may be calculated as the difference between the total input of primary energy and the input of energy resources used as raw materials.
- Energy content of biomass used for feed or food purposes shall not be considered.
- The net use of fresh water does not constitute a “water footprint” as potential environmental impacts due to the water use in different geographical locations is not captured. For this indicator:
  - Evaporation, transpiration, product integration, release into different drainage basins or the sea, displacement of water from one water resource type to another water resource type within a drainage basin (e.g. from groundwater to surface water) is included.
  - In-stream water use is not included[9].
  - For water used in closed loop processes (such as cooling system) and in power generation only the net water consumption (such as reintegration of water losses) should be considered.
  - Seawater shall not be included
  - Tap water or treated water (e.g. from a water treatment plant), or wastewater that is not directly released in the environment (e.g. sent to a wastewater treatment plant) are not elementary water flows, but intermediate flows from a process within the technosphere.
  - Additional transparency in terms of geographical location, type of water resource (e.g. groundwater, surface water), water quality and temporal aspects may be included as additional information.

5.4.5.3. Waste production and output flows

Waste generated along the whole life cycle production chains shall be treated following the technical specifications described in the General Programme Instructions. When the amount of waste or the output flows is from the life cycle inventory (LCI) are declared, the indicators in Table 2 and Table 3 shall be reported per functional unit or declared unit, and per life cycle stage.

PARAMETER	UNIT	UPSTREAM	CORE	DOWNSTREAM	TOTAL
Hazardous waste disposed	kg				
Non-hazardous waste disposed	kg				
Radioactive waste disposed	kg				

Table 2 Indicators describing waste production.

PARAMETER	UNIT	UPSTREAM	CORE	DOWNSTREAM	TOTAL
Components for reuse	kg				
Material for recycling	kg				
Materials for energy recovery	kg				
Exported energy, electricity	MJ				
Exported energy, thermal	MJ				

Table 3 Indicators describing output flows.

Notes:

- The parameters are calculated on the gross amounts leaving the system boundary of the product system in the LCI. If e.g. there is no gross amount of “exported energy, electricity” leaving the system boundary, this indicator is set to zero,
- The parameter “Materials for energy recovery” does not include materials for waste incineration. Waste incineration is a method of waste processing, when R1<60% (European Guideline on R1 energy interpretation), and is allocated within the system boundary.

[9] It may be relevant to include seawater if it is used to obtain energy from it, or it is the only source of water in a definite site. This may be displayed separately, e.g. as “seawater for desalinization”.

5.4.5.4. Other environmental indicators

The following indicators per declared unit shall be reported in the EPD, divided into core, upstream and downstream module:

- The amount of natural land transformed and occupied, “Natural land transformation” (expressed as m^2 per year, method for the indicator calculation: ReCiPe v.1.11 Goedkoop et al., 2009).

5.4.5.5. Specification for GWP calculations and carbon storage/removal modelling

The GWP calculation shall follow the specifications included in the GPI v. 3.01, section A.9.1 Global Warming Potential (Carbon Footprint). Characterization factors should be updated to the latest available version.

5.4.6 ADDITIONAL INFORMATION

Additional environmental information may be included in the EPD even if not directly derived from LCA, LCI or information modules e.g. impact on biodiversity, impact on health, technical life length, final use, hazard and risk assessment, preferred end-of-life management etc.

In this section, information regarding recommended internal polices and behaviours (e.g. activities of employees) to mitigate environmental impacts may be added.

Additional information may include standard qualities and certification programmes, waste management options, activities addressed to Social Responsibility, offsetting programs.

The EPD may also contain information regarding the technology utilized, the production site, the characteristics of production territory, in addition to information about the product e.g. methods of production (in the vineyard and cellar).

5.4.7 INFORMATION RELATED TO SECTOR EPDS

For sector EPDs, the following information shall also be included:

- a list of the contributing manufacturers that the Sector EPD covers,
- a description of how the selection of the sites/products 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 product is an average that is not available for purchase on the market.

5.4.8 DIFFERENCES VERSUS PREVIOUS VERSIONS

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

- a description of the differences versus previously published versions, e.g. a description of the percentage change in results and the main reason for the change;
- a revision date on the cover page

5.4.9 REFERENCES

A reference section shall include a list of references, including for example references to:

- Underlying LCA studies
- Name, CPC code, version and number of the PCR used
- Other documents that verify and complement the EPD
- Instruction for recycling, if relevant
- The General Programme Instructions of the International EPD® System
- The source and version of the characterisation models and the factors used shall be reported in the EPD.

5.4.10 EXECUTIVE SUMMARY IN ENGLISH

For EPDs published in another language than English, an executive summary in English shall be included.

The executive summary should contain relevant summarised information related to the programme, product, environmental performance, additional information, information related to sector EPDs, references and differences versus previous versions.

6 GLOSSARY

CO_2	Carbon dioxide
CPC	Central product classification
DU	Declared Unit
EPD	Environmental product declaration
GHS	Globally Harmonized System of Classification and Labelling of Chemicals
GI	Geographical Indication
GPI	General Programme Instruction
ISO	International Organization for Standardization
kg	kilogram
LCA	Life cycle assessment
PCR	Product Category Rules
PDO	Protected Denomination of Origin
PEF	Product Environmental Footprint
PEFCR	Product Environmental Footprint Category Rules
PGI	Protected Geographical Indication
RSL	Reference service life
SI	The International System of Units
SO_2	Sulphur dioxide
UN	United Nations

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8 VERSION HISTORY OF PCR

VERSION 1.0, 2020-11-10

Original version of the PCR.

VERSION 1.0.1, 2024-06-24

- The validity period of the PCR was extended by 6 months, until 2025-05-10, due to the new PCR development for food and beverage products.

