

Product Category Rules for type III environmental declaration

Waters not sweetened nor flavored

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1 INTRODUCTION

1.1. INTENDED APPLICATION

This Product Category Rules (PCR) document is developed by RDC Environment for the European Federation of Bottled Water (EFBW). It should be used in order to produce type III environmental declaration, in compliance with ISO 14025.

This PCR is developed with the basic consideration that each bottled water producer considers and respects the guidelines on best practices of the sector (e.g., Design For Recycling guidelines published by the European PET Bottle Platform).

1.2. AIM

This document aims to provide detailed technical guidance on how to conduct Environmental Footprint study for a specific product category.

This document is in line with the following documents :

- Product Environmental Footprint (PEF)¹ developed by the European Commission,
- ENVIFOOD Protocol² developed by the European Food Sustainable Consumption and Production Round Table

Attention: since the final ENVIFOOD Protocol document is not available, this version of PCR is based on the last draft version (version 0.1). It will be updated when the final ENVIFOOD Protocol is released.

A PCR includes a set of specific rules, guidelines and requirements that aim to develop "Type III environmental declaration" for a specific product category.

In addition, this document is compliant with:

- ISO 9001, Quality management systems
- ISO 14001, Environmental management systems
- ISO 14040, LCA - Principles and procedures
- ISO 14044, LCA - Requirements and guidelines

¹ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:124:FULL:EN:PDF>

² http://www.food-scp.eu/files/consultation4/ENVIFOOD_Protocol_November_2012.pdf

2 GENERAL INFORMATION

Date	15 December 2013
Version	Final version
Programme operator	European Federation of Bottled Water
Appointed PCR moderator	RDC Environment
Open consultation period	June 2013 – September 2013
Comments received during consultation period	See Annex
Product category covered	CPC 24410, Bottled waters, not sweetened or flavored
Valid within the following geographical representativeness	Europe
Valid until	December 2015
Website	http://efbw.eu/index.php

This document provides Product Category Rules (PCR) for the assessment of the environmental performance of UN CPC 24410, Bottled waters, not sweetened or flavored and the declaration of this performance by a "Type III environmental declaration".

The PCR document is a living document. If relevant changes in the PEF guide or ENVIFOOD protocol or in the technology for the product category occur, the document will be revised and any changes will be published.

3 SCOPE

3.1 PRODUCT GROUP CONSIDERED

This PCR specifies the requirements for the LCA study and for the format and content of the environmental declaration about Subclass 24410 - Waters (including mineral waters and aerated waters), not sweetened nor flavored, except natural water, ice and snow.

The product category is defined under ISIC – CPC’s classification:

- Section: 2 - Food products, beverages and tobacco; textiles, apparel and leather products
- Division: 24 - Beverages
- Group: 244 - Soft drinks; bottled mineral waters
- Class: 2441 - Waters (including mineral waters and aerated waters), not sweetened nor flavored, except natural water, ice and snow
- Subclass: 24410 - Waters (including mineral waters and aerated waters), not sweetened nor flavored, except natural water, ice and snow

3.2 PRODUCT DESCRIPTION

The product category includes packed natural mineral water, spring water and aerated waters not sweetened nor flavored.

Mineral water is water containing minerals or other dissolved substances that give it therapeutic value, generally obtained from a naturally occurring mineral spring or source. Dissolved substances in the water may include various salts and sulfur compounds. Mineral water can be sparkling (with effervescence or aerated water), or still (without effervescence).

3.3 FUNCTIONAL UNIT

The functional unit shall be:

“To bottle, supply and enjoy 100 ml of mineral water”.

The environmental impacts shall be calculated and displayed per functional unit.

3.4 SYSTEM BOUNDARIES

The environmental footprint study shall include the production, the use and the end of life of the product (i.e. water) and the packaging.

Specifically, the environmental footprint study shall include:

- Packaging material
 - Primary packaging production, including material losses (production and end-of-life), label, sleeve and cap.

Table 1 : Production steps of primary packaging

Glass	PET bottle	Cans (alu/steel)
Production of raw materials	Production of raw materials (PET or non-PET component ³)	Production of raw materials
Heating and molding for the glass making	PET injection in order to make preforms	Production and rolling of aluminium and steel sheets
Label	Blow molding of the preforms	Can manufacturing
	Label / sleeve	Coating

- Secondary and tertiary packaging production
 - Raw materials production, including material losses
 - Packaging manufacturing
- Production
 - Water extraction
 - Manufacturing (filling and grouping)
 - Energy consumption: electricity and heat
 - Water consumption

³ Non-PET component means barrier materials, colorant, additives.

- Gas production for sparkling water
 - Washing of bottles for PET and glass refill
- Logistic upstream and downstream
 - Raw material supply
 - From packagings producers to filling and grouping site
 - From filling and grouping site to plateforms (depot)
 - From plateforms to supermarkets
 - Rotation for PET and glass refill
- Storage (warehouse and store)
 - Storage lighting/heating
 - In-store refrigeration (electricity consumption)
 - In-store lighting/heating (electricity and gas consumption)
- Use phase
 - Domestic refrigeration (electricity consumption)
 - Glass / Cup used
 - Washing (with or without a dishwasher)
- End-of-life
 - Primary and secondary packaging house-hold waste
 - Recycling if collection at consumer
 - Incineration and landfill of non-recycled packagings
 - Secondary and tertiary packaging industrial waste
 - Recycling if collection at retailer
 - Incineration and landfill of non-recycled packagings

3.4.1 CUT-OFF RULES

If cut-offs are applied, they should be based on contributions to each environmental impact category. The threshold shall be 99% inclusiveness. Any cut-offs must be justified and their potential influence on final results assessed.

In the framework of this PCR, all the steps have to be taken into account except:

- Business travel
- Ink and glue

This approach is slightly different with the one recommended by PEF guide.

If the values mentioned below for each step are higher in your specific case, please take this step into account :

- For business travel, the threshold value is 0.001 km/l
- For ink and glue, the threshold value is 1g /l

3.5 METHODOLOGICAL RULES

3.5.1 WAREHOUSE STORAGE, COOLING IN STORES AND AT HOME

The modeling for warehouse storage, cooling in stores and at home is the one recommended by BIER (see appendix C of methodology guide).

3.5.2 RECYCLING ALLOCATION

The allocation rule must be the one described in the PEF guide (consult it for more information).

3.5.3 ACCOUNTING FOR TEMPORARY (CARBON) STORAGE AND DELAYED EMISSIONS

Credits associated with temporary (carbon) storage or delayed emissions shall not be considered in the calculation for the environmental declaration.

For more details, refer to Product Environmental Footprint standard guide.

3.5.4 LAND USE CHANGE

Greenhouse gas emissions that occur as a result of direct land use change shall be allocated to products for (i) 20 years after the land use change occurs or (ii) a single harvest period from the extraction of the evaluated product (even if longer than 20 years) and the longest period shall be chosen.

Indirect Land Use Change: shall not be included for the time being, as no accepted methodology is currently available.

For more details, refer to Product Environmental Footprint standard guide.

3.5.5 ELECTRICITY USE

Electricity from the grid consumed shall be modelled as precisely as possible giving preference to supplier-specific data. If (part of) the electricity is renewable it is important that no double counting occurs. Therefore the supplier shall guarantee that the electricity supplied to the organization to produce the product is effectively generated using renewable sources and is not put into the grid to be used by other consumers (e.g., Guarantee of Origin for production of renewable electricity)⁴.

If supplier-specific data is not available, country-specific consumption-mix data shall be used of the country in which the life cycle stages occur.

⁴ European Union 2009: DIRECTIVE 2009/28/EC OF THE EUROPEAN PARLIAMENT AND COUNCIL of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC, Official Journal of the European Union.

For electricity consumed during the use phase of product, the electricity consumption mix shall reflect ratios of sales between countries.

For more details, refer to Product Environmental Footprint guide.

3.5.6 PURCHASED OR NATURAL CO₂

The modelling of purchased CO₂ for various origin (from NH₃ production, from biogenic source, from co-generation, from fossil source) or natural CO₂ is the one recommended by BIER (see appendix I of methodology guide).

3.5.7 ALLOCATION RULE FOR SITE CONSUMPTION

The allocation rule must be the one described in the PEF guide (consult it for more information).

3.5.7 BIOPLASTIC

The modeling of bioplastic must follow PEF guide (consult it for more information).

3.5.8 CAPITAL GOODS

Capital goods shall be included. The way of inclusion and the type of depreciation to apply must follow PEF guide (consult it for more information).

3.6 ENVIRONMENTAL FOOTPRINT IMPACT CATEGORIES AND METHOD

PEF guide and ENVIFOOD Protocol provide a default list of impact categories and related assessment method to be used.

For more details, refer to Product Environmental Footprint guide and ENVIFOOD Protocol.

All indicators recommended by the PEF⁵ and ENVIFOOD Protocol have been evaluated regarding the product system and the intended application in order to finally select 8 impact categories.

The list of impact categories presents in these documents are a starting point for the assessment. The relevant impact categories for this product group have been identify using the following criteria:

⁵ For more information on environmental impact categories and assessment methods, reference is made to the ILCD Handbook "Framework and requirements for LCIA models and indicators", "Analysis of existing Environmental Assessment methodologies for use in LCA" and "Recommendation for life cycle impact assessment in the European context". These are available online at <http://ict.jrc.ec.europa.eu/>

- Relevance of the impact category for the product group
- Scientific robustness and applicability of methods and models
- Correlation between impact categories

The detailed criteria used for this selection are presented in Annex 1.

The impact categories selected are mentioned in the tables below.

Given the importance for the packed water sector, water consumption impact category shall be reported separately. Regarding water resource depletion PEF guide and ENVIFOOD Protocol recommends different assessment method.

3.6.1 USE OF RESOURCES

Impact category	LCIA method	Flow unit	Source	PEF	ENVIFOOD
Resource Depletion – water	Pfister et al (2009)	m ³	Pfister et al. (2009) Ridoutt and Pfister (2010)		x
Resource Depletion – mineral, fossil	CML2002 model	kg Sb equivalent	Van Oers et al., 2002	x	x

3.6.2 POTENTIAL ENVIRONMENTAL IMPACT

Impact category	LCIA method	Flow unit	Source	PEF	ENVIFOOD
Climate change	Bern model – Global Warming Potentials (GWP) over a 100 year time horizon.	kg CO ₂ -equivalents	Intergovernmental Panel on Climate Change, 2007	x	x
Ecotoxicity – fresh water ⁶	USEtox model	CTUe (Comparative Toxic Unit for ecosystems)	Rosenbaum et al., 2008	x	x
Human Toxicity ⁷	cancer effects	Comparative Toxic Unit for human (CTUh)	Rosenbaum et al., 2008	x	x
	non-cancer	Comparative Toxic Unit for	Rosenbaum et al., 2008	x	x

⁶ This indicators shall not be used for comparison purposes of metal-containing products

⁷ This indicators shall not be used for comparison purposes of metal-containing products

Impact category	LCIA method	Flow unit	Source	PEF	ENVIFOOD
effects		human (CTUh)			
Photochemical Ozone Formation	LOTOS-EUROS model	kg NMVOC - equivalents	Van Zelm et al., 2008 as applied in ReCiPe	x	x
Eutrophication – aquatic	EUTREND model	kg P- equivalents	Struijs et al., 2009 as implemented in ReCiPe	x	x
Particulate matter / Respiratory inorganics	RiskPoll	kg eq. PM2.5	Rabl and Spadaro, (2004) and Greco et al 2007	x	x

4 DATA QUALITY RULES

4.1 DATA DESCRIPTION

There are two types of data used in LCA studies:

- Activity factor: Modeling parameters expressing the relationships between processes (e.g: raw material has to transported over a distance of 100 km to the manufacturing site; or 57% of household waste is treated by incineration in France);
- Emission factor: Data corresponding to the resource use and emissions profile associated with each process, i.e. elementary flows gathered in the LCI (Life Cycle Inventory).

In accordance with PEF guide this PCR specifies which specific data shall be collected.

Data classification performs in this PCR is :

- Specific⁸, i.e. are significant on environmental impacts and that the user must indicate specifically to his product.
- Semi-specific, i.e. are less significant on environmental impacts and/or may be unknown by the user. In this case, generic data exist and may be used but the user can change them if he has better information.
- Generic⁹ data, i.e. are not significant on environmental impacts, and/or cannot be directly controlled by the producer. This is typically the case for example for the incineration rate.

This classification is a first step to fulfil data quality requirements mentioned in PEF guide. Further indication about data quality requirements will be added after receiving more guidelines in PEF implementation guide.

Emission factors are in this PCR generic data.

Default value for semi-specific and generic data can be found in annex for major primary packaging type and material as defined in the table below. Default value for others primary packaging type and material will be available in the next version of this PCR.

Table 2 : Product categories

Primary packaging type and material	Volume
PET bottle one-way	33 cl – 50 cl – 1 l – 1.5 l
PET bottle refill	33 cl – 50 cl – 1 l – 1.5 l
Aluminium can	33 cl
Steel can	33 cl
Glass bottle one-way	50 cl – 1 l – 1.5 l
Glass bottle refill	50 cl – 1 l – 1.5 l

⁸ Definition of primary/specific data from ISO TS 14067: quantified value originating from a direct measurement or a calculation based on direct measurements of a unit process of the product system at its original source.

⁹ Definition of secondary/generic data from ISO TS 14067: quantified value of an activity or life cycle process obtained from sources other than the direct measurement or calculation from direct measurements.

Classification of activity factors

Phase	Activity factors		
	Specific data	Semi-specific data	Generic data
Packaging material			
Primary packaging	Main material (PET, aluminium, steel or glass) Mass Volume Recycled content Number of rotations for refillable packaging (i.e. glass and PET bottle refill)		
Cap (not for cans)		Main material Mass	Recycled content
Label and Sleeve (not for cans)		Main material Mass	Recycled content
Secondary packaging	Number of primary packaging per secondary packaging	Material Mass End of life at consumer or at retailer Selective collection system (yes/no) Number of rotations for crates	Recycled content

Phase	Activity factors		
	Specific data	Semi-specific data	Generic data
Tertiary packaging	Number of primary packaging per tertiary packaging	Material Mass Number of rotations for pallet and crates	Recycled content
Production: manufacturing of primary packaging, filling and grouping (data may be distinct or aggregated for each step of production)			
Manufacturing of primary packaging (may be included in raw material production)		Country Electricity consumption Heat consumption Use of non-PET component ¹⁰ for PET bottles Use of coating for cans Fraction of lost material (not recycled)	
Water extraction		Country Electricity consumption Heat consumption Net water consumption (total water consumption - return water)	
Filling and grouping		Country Electricity consumption Heat consumption	Type and mass of washing product for packaging refill

¹⁰ Non-PET component means barrier materials, colorant, additives

Phase	Activity factors		
	Specific data	Semi-specific data	Generic data
Logistic upstream & downstream			
Supply of raw materials for primary packaging	Transport mode One-way distance (for each transport mode)		Effective payload Truck payload max Empty return rate
Supply of raw materials for secondary packaging, tertiary packaging, cap, label and sleeve			Transport mode One-way distance (for each transport mode) Empty return rate Effective payload Truck payload max
Approach transport (from filling and grouping site to platforms/warehouse)	Transport mode Effective payload for truck One-way distance (for each transport mode)	Empty return rate Truck payload max	
Final transport (from platforms/warehouse to retailer)		One way distance Payload max Effective payload Empty return rate	
Storage (warehouse & store)			
Warehouse lighting and heating		Storage duration Electricity and gas Intensity Surface needed for one product	

Phase	Activity factors		
	Specific data	Semi-specific data	Generic data
In-store refrigeration (BIER model)			Chill to temperature Storage duration Store/retail temperature Percent Product Cooled at Retail
In-store lighting/heating (BIER model)			Average Annual kWh use of Retailer Average Annual Natural Gas use of Retailer Surface needed for one product Residence Time
Use phase			
Cooling at home (BIER model)			Ambient temperature Chill to temperature Storage duration Percent product cooled at home
Consumption at home			Cup / Glass needed Dishwasher water and electricity consumption Dishwasher load
End of life			
Waste elimination/disposal (data may be different for household and industrial)			Distance for non-selective collection Incineration rate (country specific)

Phase	Activity factors		
	Specific data	Semi-specific data	Generic data
Energy recovery			PCI of materials Energy recovery rate of waste-to-energy plants : <ul style="list-style-type: none"> • incineration plant and • RDF using plant
Material recovery (data may be different for household and industrial)			Distance for selective collection Distance to recycler Selective collection rate (country specific) Yield of recycling process (European data) Quality of secondary material (Qs) means quality of the recycled material Quality of primary material (Qp) means quality of the virgin material

Resource Use and Emissions Profile data sources

Processes for which a LCI are required are:

- Production of raw material (bottle grade plastics, metals, glass...);
- Manufacturing of secondary packaging, tertiary packaging, caps, labels, and sleeves, glue&ink¹¹.
- Emissions of transport systems (truck, boat, train);
- Electricity production of each source (gas, nuclear...) or for each country;
- Heat production of each source (gas, coal, fuel);
- End of life treatments: incineration, landfill, and recycling processes(burden and benefit);
- Infrastructures for transport systems, and plants.

Generic data shall be sourced in the following hierarchy (i.e. order of priority):

- Data developed in line with the requirements for the relevant PEFCRs
- Data developed in line with the requirements for Product Environmental Footprint studies;
- International Reference Life Cycle Data System (ILCD) Data Network (giving preference to "ILCD-compliance" over "ILCD Data Network – entry level" data sets);
- European Reference Life Cycle Database (ELCD);
- Databases provided by international governmental organisations (for example FAO, UNEP);
- Country-specific national governmental LCI database projects (for data specific to the database host country);
- National governmental LCI database projects;
- Other third-party LCI databases;
- Peer-reviewed literature.

¹¹ LCI inventories are currently not enough developed to tackle this problem. This point needs to be reviewed if development occurred.

If the 'higher priority generic data' is not available as the necessary data, 'other generic data' may be used and documented. It is recommended the use of the latest version

Table 3 : Example of other generic data source for LCA study.

Material / Process	Database
Steel	APEAL (Association of European Producers of Steel for Packaging) based World Steel Association (worldsteel)
Aluminium	EAA (European Aluminium Association)
Plastics	PlasticsEurope
Glass	FEVE
Energy/Electricity/Fuels	Ecoinvent (The Swiss centre for Life Cycle Inventories)
Transports	Ecoinvent (The Swiss centre for Life Cycle Inventories) COPERT IV

4.2 DATA QUALITY ASSESSEMENT

PEF requires assessing the data quality with a semi-quantitative approach¹² (consult the guide for more information):

For the most environmentally significant processes or activities, accounting for at least 70% of contributions to each impact category, both directly collected ("specific") and generic data shall achieve at least an overall "good quality" level. A semi-quantitative assessment of data quality shall be performed and reported for these processes. For environmentally significant processes accounting for the subsequent 20% (i.e. from 70% to 90%) of contributions to environmental impacts, at least "fair quality" data shall be used, as assessed via qualitative expert judgment. Remaining data (used for approximation and filling identified gaps (beyond 90% contribution to environmental impacts)) shall be based on best available information.

Primary/specific parameters, by definition, should have a "very good" quality (i.e. score = 1) since they represent exactly the industry in hand. The data quality must however be assessed and will then mostly depend on the uncertainties related to the data collection, and the methodological appropriateness and consistency.

For semi-specific and generic parameters, some are supposed not to have a major impact on the results so their quality must not be assessed. Only use phase and end of life parameters quality should be assessed since they are not primary/specific because not controlled by industrial but still are environmentally significant.

LCI data quality should also be assessed when connected to primary/specific parameters and semi-primary/specific parameters related to use phase and end of life.

Data quality assessment must be reported in environmental declaration.

¹² Based on qualitative assertions, PEF requires a quantitative evaluation of data quality. This evaluation should be done for datasets related to 70% of all impact categories to be compliant with PEF.

5 CONTENT OF THE TYPE III ENVIRONMENTAL DECLARATION

All "Type III environmental declarations" in a product category must have the same format and include the same data as those identified in the PCR provided by the program developer.

The following information must be included in all "Type III environmental declaration" according to PCR:

- Identification and description of the organization making the statement (cf. 4.1)
- Product description (cf. 4.2);
- Identification of the product (i.e. CPC number) (cf. 4.2);
- Declaration of product content that includes materials and substances to be reported (cf. 4.3);
- Identification of the Product Category Rules followed,
- Publication date and the period of validity;
- Data sources used for emission factor;
- The functional unit shall be declared in the "Type III environmental declaration".
- The environmental impact per declared unit for the following environmental impact categories shall be reported in the "Type III environmental declaration":
- The consumption of natural resources and resources shall be reported in the environmental declaration, for the following indicators and characterization methods:
- Additional environmental information;
- Information indicating the steps which are not taken into account;
- Statement that environmental declarations from different programs may be not comparable;
- Information on where explanatory information can be found.

The "Type III environmental declaration" shall also include information about the verification procedure practiced.

5.1 SPECIFICATION OF THE ORGANIZATION MAKING THE STATEMENT

In the "Type III environmental declaration" shall be specified the information on the manufacturing/producing company.

5.1.1 MANDATORY INFORMATION

- Name of the company
- Production site(s) considered
- Authors
- Information on Environmental Management System (if existing)

5.1.2 VOLUNTARY INFORMATION

- Specific aspects regard to the production
- Environmental policy
- Other system certifications obtained

5.2 PRODUCT DESCRIPTION

In the "Type III environmental declaration" shall be specified the following information:

- The product group and CPC code,
- The product weight, packaging size and format,
- The main technical data (e.g. mineral water properties) of the product and the function shall be included.

5.3. CONTENT OF MATERIALS AND CHEMICAL SUBSTANCES

The entire product's contents shall be declared in weight in the "Type III environmental declaration" (according to substances weight and functional unit).

6 UNITS AND QUANTITIES

For Environmental Footprint study and the "Type III environmental declaration document", International System (SI) units shall be used.

A maximum of three significant value numbers shall be used when reporting LCA results (e.g. 25.3, 1.98, 1.25 E+5).

7 VALIDITY OF THE ENVIRONMENTAL DECLARATION

Any change in the production chain generating an increase or decrease in environmental impacts over +-5% of any indicator requires a new environmental declaration. EPD shall be reviewed every 3 years.

8 CHANGES IN THIS DOCUMENT

Version 1.0, 2012-05-15: Draft, to be suggested to EFBW restrained group.

Version 1.1, 2012-06-25: Draft, to be suggested to EFBW general assembly.

Version 1.2, 2012-09-27: Draft.

Version 1.3, 2013-04-23: Final draft before consultation.

Version 1.4, 2013-05-10: Modification on chapter 6.3.3. – 6.3.4. – 6.3.5. – 7.1.

Version 1.5, 2013-12-15: Final version after consultation.

9 ANNEXES

Annex 1: Evaluation of impact categories relevance

All indicators recommended by the JRC¹³ have been evaluated in the table below to finally select 8 indicators.

Table 4 : Selection of impact categories

	Climate change	Mineral & fossil resources depletion	Acidification	Eutrophication, fresh water	Eutrophication, marine	Eutrophication, terrestrial	Photo-chemical ozone-formation	Ozone depletion	Water consumption	Human toxicity total	Ecotoxicity total	Particulate matter / Respiratory inorganics	Ionizing radiation, human health	Land use
Calculation method														
LCIA method	IPCC 2007, GWP ₁₀₀	CML 2002 (Guinée et al., 2002)	Accumulated Exceedance (Seppälä et al. 2006, Posch et al, 2008)	EUTREND model (Struijs et al, 2009b) as in ReCiPe	EUTREND model (Struijs et al, 2009b) as in ReCiPe	Accumulated Exceedance (Seppälä et al. 2006, Posch et al, 2008)	Lotus-Euros (Van Zelm et al, 2008) as applied in ReCiPe	Ozone Depletion Potential (ODP) as in WMO 1999	Swiss Ecosarcity (Frischknecht et al, 2008)	USEtox (Rosenbaum et al, 2008)	USEtox (Rosenbaum et al, 2008)	RiskPoll (Rabi and Spadaro, 2004 and Greco et al 2007)	Human health effect model as developed by Dreicer et al. 1995 (Frischknecht et al, 2000)	Soil Organic Matter (SOM) (Milià I Canals et al, 2007b)
Unit used	kg eq. CO ₂	kg eq. Sb	mole of H ⁺ eq.	kg eq. P	kg eq. N	mole of N eq.	kg eq. C ₂ H ₄	kg eq CFC-11	m ³	CTU _h	CTU _e	kg eq. PM2.5	kg eq.U ²³⁵	kg deficit of SOM
Relevance														
Importance of the issue based on normalization and monetization	++	+++	++	++	++	++	++	+	+++	++	+	N.D.	N.D.	N.D.

¹³ See JRC document "Recommendations for Life Cycle Impact Assessment in the European context", page 5 <http://lct.jrc.ec.europa.eu/pdf-directory/ILCD%20Handbook%20Recommendations%20for%20Life%20Cycle%20Impact%20Assessment%20in%20the%20European%20context.pdf>

PRODUCT CATEGORY RULES - WATERS NOT SWEETENED NOR FLAVORED

	Climate change	Mineral & fossil resources depletion	Acidification	Eutrophication, fresh water	Eutrophication, marine	Eutrophication, terrestrial	Photo-chemical ozone-formation	Ozone depletion	Water consumption	Human toxicity total	Ecotoxicity total	Particulate matter / Respiratory inorganics	Ionizing radiation, human health	Land use
Redundancy with other indicators for the most contributing phases		Climate change (partially)	Climate change and fossil resources depletion											
Implementation, feasibility														
Possibility / ease of implementation for the database	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Implementation is possible but reliability problems with flows available in databases ¹⁴	Does not cover well all substances (eg. metals).	Yes	Yes	Yes	Yes
Reliability														
Scientific robustness & certainty	+++	++	++	++	++	++	+ / ++	+++	-	++	++	++	++	+++
Documentation transparency & reproducibility	+++	+++	++	++	++	+ / ++	++	+++	-	+++	+++	++	+++	+++
Stakeholder acceptance	+++	++	++	+ / ++	+ / ++	++	+ / ++	+++	+	++ / +++	++ / +++	+	+	+
ILCD classification reliability¹⁵	I	II	II	II	II	II	II	I	II	II / III	II / III	I	I	III
Conclusions														

¹⁴ There are limits to the impact category "water consumption", namely that it is uncertain that available flows refer to net water consumption, that chemical/ thermal pollution is not taken into account and that consumption country is not inventoried.

¹⁵ Three classifications: Level I = recommended and satisfactory / Level II = recommended but in need of some improvements / Level III = recommended, but to be applied with caution

PRODUCT CATEGORY RULES - WATERS NOT SWEETENED NOR FLAVORED

	Climate change	Mineral & fossil resources depletion	Acidification	Eutrophication, fresh water	Eutrophication, marine	Eutrophication, terrestrial	Photo-chemical ozone-formation	Ozone depletion	Water consumption	Human toxicity total	Ecotoxicity total	Particulate matter / Respiratory inorganics	Ionizing radiation, human health	Land use
Indicators retained for the evaluation	RETAINED	RETAINED	Not retained as redundant with climate change	RETAINED	Not retained as most waterborne emissions occur in freshwater ¹⁶	Not retained as terrestrial eutrophication is an issue less important	RETAINED	Not retained as issue not attributable to packaging	RETAINED	RETAINED	RETAINED	RETAINED	Not retained	Not retained as low environmental relevance

¹⁶ ILCD, <http://lct.jrc.ec.europa.eu/assessment/LCIA-CF-09-02-2012-def.pdf>, p.13

Annex 2: Values for semi-specific data and generic data

For semi-specific data, values are proposed in order to improve product environmental declaration coherence. Those default values can be replaced by specific data directly related to the product studied.

For generic data, values are proposed in order to have coherence environmental declaration between studies.

Default values are listed in an Excel file and available upon request (info@efbw.eu)

Annex 3: Stakeholders consultation list

The stakeholders consultation process was :

- A specific consultation via a short mailing list
- An open consultation via publication on EFBW web site

The involved stakeholders list is available upon request (info@efbw.eu)