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ADEME
AGENCE DE LA TRANSITION ÉCOLOGIQUE

General principles for the environmental labelling of consumer products

Methodological standard for the environmental assessment of digital services

FACTS AND

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1. Scope of the standard

1.1. Objective of the document

The Product Category Rules (PCR) provide the method to be followed to calculate the environmental labelling indicators for a product category. The objectives of environmental labelling are as follows:

- inform consumers about the environmental impacts of the products and services they buy
- orient consumer demand towards more environmentally friendly products
- thus encourage producers to improve the eco-design of their products to limit their impact on the environment.

The categorical standard is a variation of the BP X 30-323-0 good practice standard "General principles for environmental labelling of consumer products".
The categorical standard includes the items mentioned in Article A.1 paragraph 1 of the BP X 30-323-0 good practice standard. The BP X 30-323-0 good practice standard sets out as a guiding principle that the assessment of the environmental impacts of products must be developed in accordance with the life cycle approach and the multi-criteria approach.

The purpose of this document is to constitute "parent" sectoral rules, allowing the harmonisation of all sectoral rules (PCR) for digital services around common rules. It is therefore necessary to read this document in parallel with the "child" PCR relating to a digital service or infrastructure studied.

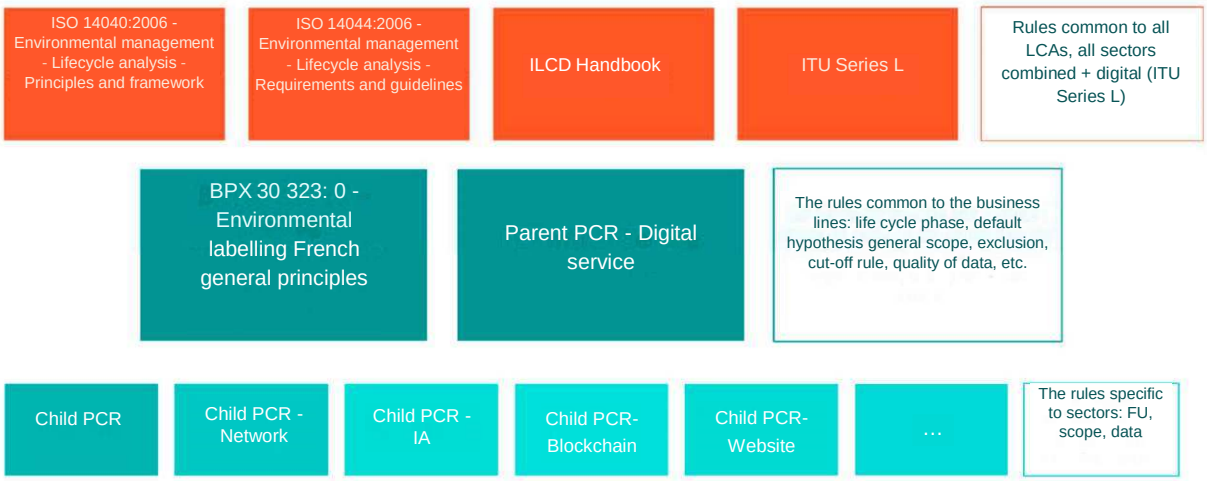


Figure 1 - Positioning of the standard in the global normative context

These PCR are built on the same methodological bases as the standards recognised in the digital sector, namely:

- PEF IT equipment
- ITU L Series and specifically L 1410

The ITU L.1410 standard indicates the different stages of a digital service LCA, and those covered by the standard. The figure below shows these steps and indicates those covered by this PCR.

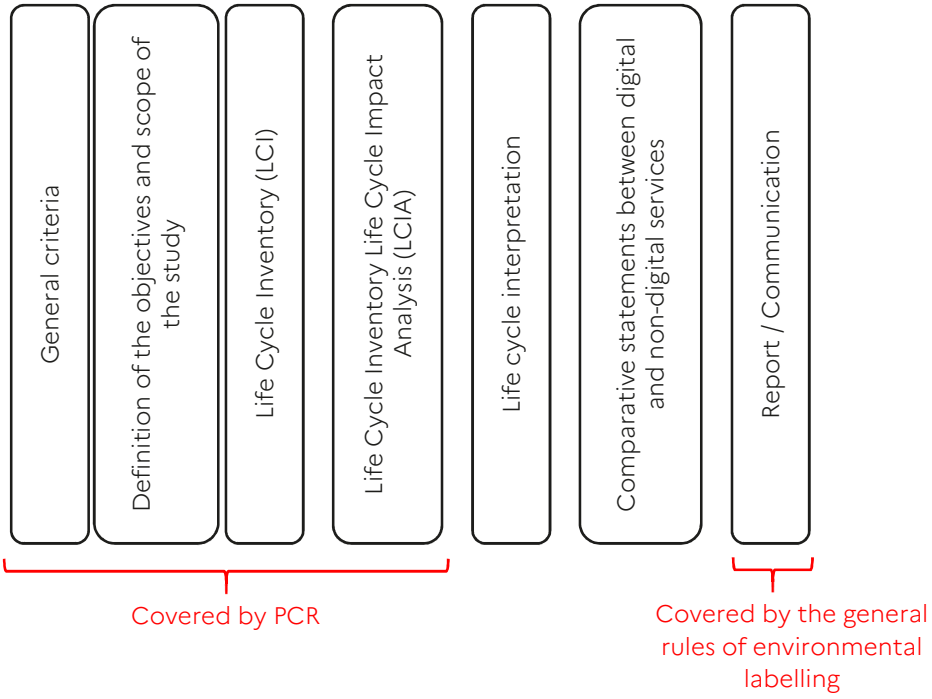


Figure 2 - Stages covered by the PCR, extracted and translated from the ITU L.1410 standard

1.2. Scope of application

This standard is specifically dedicated to the environmental assessment of digital services. It brings together the elements necessary to calculate the environmental impacts of digital services as defined below.

A digital service is an activity characterised by the performance of a service or the provision of information using a set of equipment, digital infrastructures and other digital services to capture, circulate, process, analyse, return and store data. This equipment and infrastructure being characterised in 3 tiers[1]: terminals, telecommunications networks and computer centres; a set of software being used at different levels to "orchestrate" the physical equipment and deliver the expected service. Although this activity is linked to one or more physical products (terminals, networks, servers), it is transitory, often intangible. Digital services can be delivered and used by businesses, individuals, administrations, communities and other entities without restriction.

In short, a digital service requires all or part of a set of software, equipment, networks and infrastructures, and possibly other digital services. It makes it possible to create a functional unit such as "to reserve a seat in a train", "to make an appointment with a doctor", "send an e-mail to several recipients", "record energy consumption remotely", etc.

Its goal is:

- to provide a set of common rules for the preparation of "child" PCRs of digital services and infrastructures
- to frame the methodology for assessing the environmental impacts of these services;
- to simplify the calculation method in order to facilitate environmental labelling for the companies that market them.

Associated CPA (2008) codes: See Appendix A - List of affected CPA codes

[1] The three-tier architecture, also called three-level architecture or three-layer architecture, is the application of the more general model that is the multi-tier. The logical architecture of the system is divided into three levels or layers - presentation layer (operated by terminals); processing layer (operated by data centres); data access layer (operated by telecommunication networks). [Wikipedia]

Note: the list of CPA codes is not adequate to categorise digital services. It is indicated as a reminder, but does not constitute an exhaustive list.

The "child" PCR drawn up from this document must complete the CPA code(s), as well as a list of the digital services concerned by the PCR.

1.3. Positioning in relation to standard ITU L.1410 / ETSI 203 199[2]

The ITU L.1410 "Methodology for environmental life cycle assessments of information and communication technology goods, networks and services" standard developed jointly by the ITU and ETSI (ETSI numbering: 203 199) complements the ISO 14040 and ISO 14044 standards for the IT products, networks and services sector.
It is currently the only international standard on LCA of digital services.
Without binding scope, it indicates an ideal towards which LCA practitioners must strive without it being necessarily possible to respond to all the recommendations.

The positioning of this PCR in relation to this standard is:

- To respect the principles of the standard as soon as possible
- To complement the standard according to the specific needs related to French environmental labelling
- To provide rules, assumptions and secondary data likely to simplify the performance of LCAs of digital services intended for users less expert than those of the standard.

Overall, the PCR fits into the context of the standard and, although it specifies certain elements, does not conflict with it.

2. Labelling unit

2.1. Functional unit

The functional unit is the unit of measurement used to assess the service provided by the product. In particular, it makes it possible to compare the environmental impacts of two products, on the basis of a common unit. This unity reflects the function that the product brings to the consumer.

The functional unit (FU) selected depends on the service studied and must be defined when carrying out the life cycle analysis.

The definition of this functional unit is based on the following questioning:

- the function(s) provided / the service(s) provided: "What?";
- the scope of the function or service: "how much?";
- the desired level of quality: "What?";
- the (service life) of the product: "How long?";

Table1: Definition of the functional unit

For the "what": distinguish the main function from the secondary functions.
For the "how much": specify in particular the frequency, duration and / or quantity of use.

[2] https://www.itu.int/rec/T-REC-L.1410-201412-I/fr

The functional unit can be broken down into several scopes:

- Controlled scope: covers only the elements controlled by the digital service operator (ex: only the datacentre for a cloud operator)
- Global scope: covers all the elements used to deliver the digital service whether or not they are controlled by the digital service operator (terminals, networks, datacentre)

The functional unit can be broken down at several scales:

- Service scale: covers all the elements of the scope selected to deliver the service to all users
- User scale: scope reduced to a user or customer account
- Business act scale: scope reduced to a single business act

Example for an online ticket sales service:

	Controlled scope	Global scope
Service scale	Set up and operate the system allowing the management of an online ticket sales site for one year	Deliver an online sales service for one year used by XX users
User scale	Set up and operate the system allowing the management of a user account of an online ticket sales site for one year	Use an online ticket sales service account for one year
Business act scale	Set up and operate the system for purchasing a ticket online	Buy a ticket from an online ticket sales service

The "child" PCR drawn up from this document must complete the functional unit(s) covering the digital services concerned and specify the considered scope and scale.

Focus on service life

Like the equipment standards, the **service life** of a digital service must be characterised.
The service life represents the period of time during which the digital service can be delivered from its entry into production until its shutdown, including the various possible evolutions.
The **duration of use** of a digital service can range from a few minutes for a one-off service (participation in an online event) to several years (online tax declaration account), generally the duration of use corresponds to the duration of the subscription.
The time and frequency of use may also vary depending on the **usage scenarios**; for example "consult a social network a few minutes several times a day", "use business software 8 hours a day, 220 days a year", "complete your tax return for 1 hour once a year".
For any digital service studied according to this PCR or according to the "child" PCRs, the choices in terms of viewing time of the digital service, the duration of use and the service life of each of the elements and systems must be documented and justified.

The "child" PCRs must specify the service life, the duration of use and the use scenarios.

2.2. Functional diagram and data flow diagram

In order to understand the digital service, to identify the structural data and to establish the scope and the boundaries of the system to be considered, it is necessary to establish a functional diagram and a data flow diagram of the considered digital service.

- **The functional diagram** indicates the main sets of equipment or sites used for the production of the digital service.
- **The data flow diagram** indicates the connection and use of each of these sets through the use of the digital service.

For example:

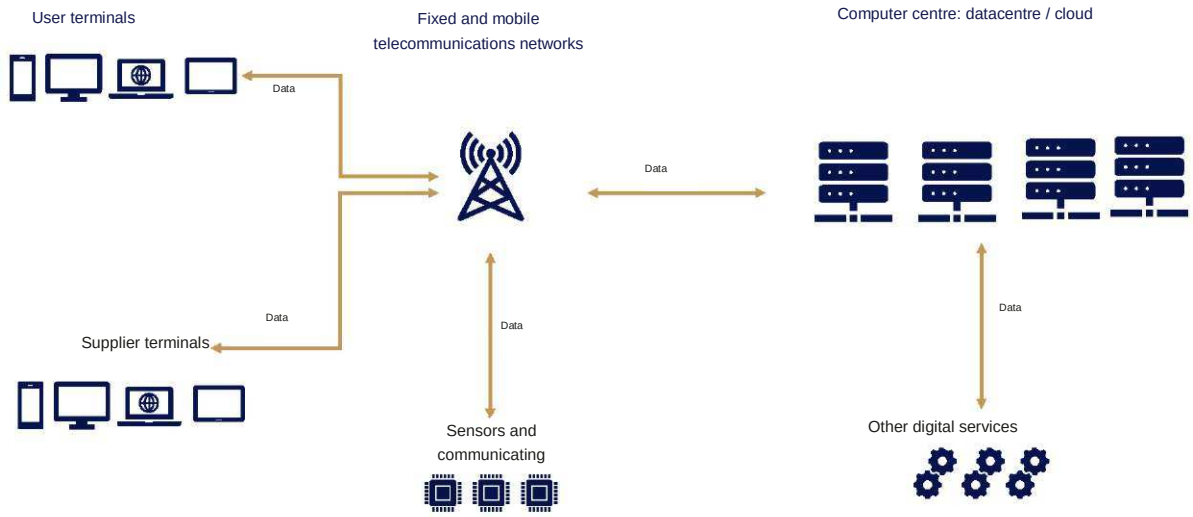
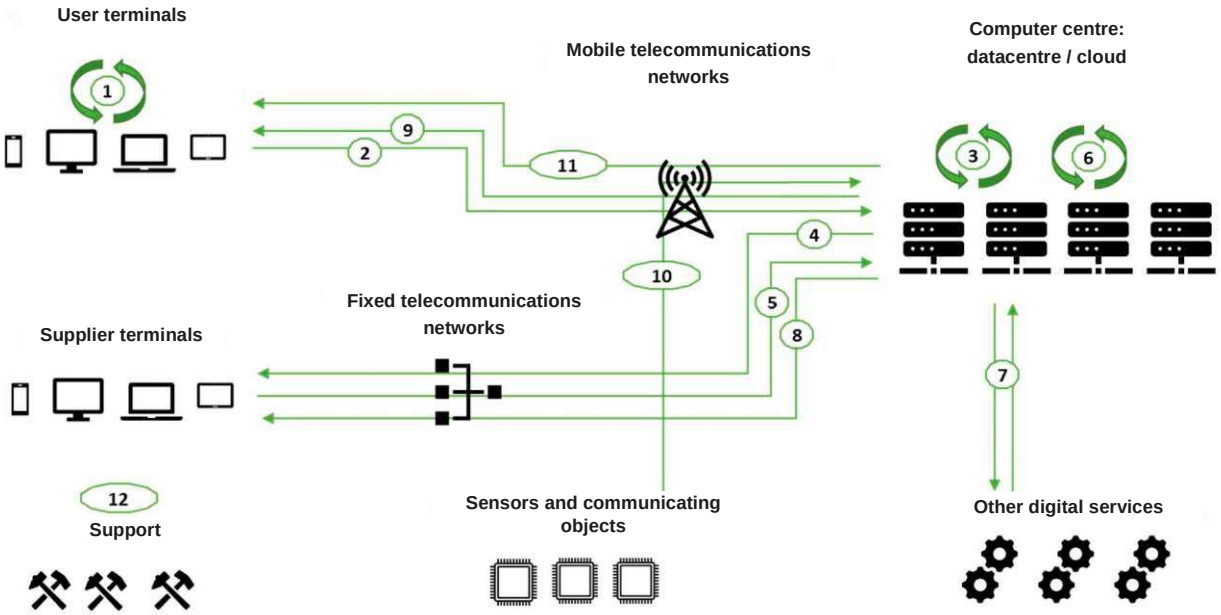


Figure 3 - Example of functional diagram

The "child" PCR drawn up from this document must complete the functional diagrams covering the digital services concerned.

This block diagram should be supplemented by a data flow diagram representing the "user journey" and the different stages of production of the digital service.

For example: Order and pay for a meal online



1. Login to the site and complete the order on the user terminal
2. Sending the order to the service operator via the fixed / mobile network
3. Order processing in the operator's data centre
4. Sending the order to the restaurant via the fixed network
5. Confirmation of the order by the restaurant via the fixed network
6. Data processing and display of the payment interface
7. Payment of the order via bank service
8. Confirmation of the order to the restaurant owner

9. Validation of the order to the customer by the operator and information on delivery times
10. Transmission of delivery information from the driver to the data centre
11. Transmission of delivery information to the customer
12. Maintenance support and maintenance in operational conditions of the digital service

Figure 4 - Example of a data flow diagram (online payment & ordering of meals)

The "child" PCR developed from this document should specify the data flow diagrams covering the relevant digital services.

If the functional diagram proposed in the "child" PCR is not suitable, it is possible to create a specific one, justifying its use.

When the LCA practitioner does not control one of the physical components, he/she must make hypotheses and justify them (*for example, in the case of ordering meals online: the type of consultation terminals*). Thus, when performing an LCA, it is necessary to indicate:

- The overall functional diagram of the digital service;
- The associated data flow diagram;
- The parts covered by a single-criterion or single-stage, screening, simplified, complete or not covered approach:
  - Not covered: part excluded from the calculation (to be justified)
  - Single-criteria or single-step approach: modelling that does not respect LCA principles, i.e. taking into account all phases of the life cycle of the tiers considered and / or taking into account all environmental indicators. This approach is not permitted within the scope of this document;
  - Screening approach: modelling carried out from impact data and / or non-homogeneous sources (environmental declarations from manufacturers, studies, etc.). Collection data is at a large level of granularity (tier, or large system);
  - Simplified approach: modelling carried out from homogeneous LCI data but mainly based on secondary data. Collection data is at an intermediate level of granularity (finer systems, equipment);
  - Complete approach: modelling carried out from homogeneous LCI data and based mainly on primary data. The collection data is at a level of fine granularity (specific equipment).

The following table summarises the different approaches and their characteristics:

Approach	Life cycle phases	Indicators	Collection data	Modelling data
Single-criteria or single-step approach	Incomplete	Incomplete	Impact data not covering all indicators	N/A
Screening approach	Full	Full	Impact data and / or non-homogeneous sources (environmental declarations from manufacturers, studies, etc.)	Large level of granularity (tier, or large system)
Simplified approach	Full	Full	Secondary homogeneous LCI data	Intermediate level of granularity (finer systems, equipment)
Comprehensive approach	Full	Full	Primary homogeneous LCI data	Level of fine granularity (specific equipment)

Table2: detail of approaches

Note 1: the approach of a part of the LCA depends on its weakest parameter.
Note 2: the overall approach of LCA is equal to the weakest approach of its parts.

Note 3: the external communication of environmental data or comparisons between several digital services must be based on comprehensive LCA approaches

The "child" PCRs must specify the minimum approach adopted for the evaluation of the digital service.

3. System boundaries

3.1. Stages and flows included

The environmental assessment of the products covered by this standard must take into account the stages and processes of the life cycle specified in this chapter.

The tiers of the digital services considered, as well as the possible levels of analysis are as follows:

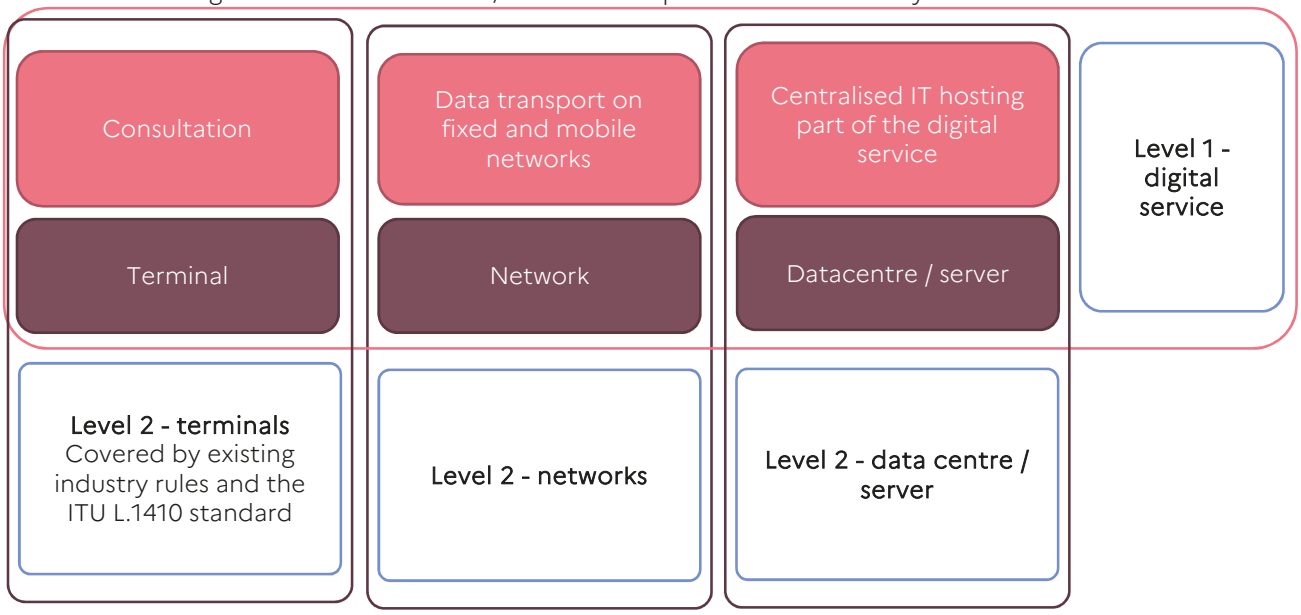


Figure 5 - Levels of analysis

As the service provider's offer does not systematically cover 3 tiers of a digital service, this "parent" PCR covers the following levels:

- Level 1 - digital service as a whole
- Level 2 - networks
- Level 2 - datacentre / Cloud at the borders of the datacentre

The "level 2 – terminals" are already taken into account by a certain number of existing sectoral rules defined within the framework of the French environmental labelling (http://www.base-impacts.ademe.fr/gestdoclist)

For each piece of equipment from each tier (terminal, network, datacentre / server), the following life cycle stages must be taken into account:

Environmental labelling	ITU L.1410		Coverage by "parent" PCR
Life cycle stage	Tag	Life cycle stage	
Manufacturing	A	Acquisition of raw materials	
	A1	Extraction of raw materials	Obligatory
	A2	Processing of raw materials	Obligatory
	B	Production	
	B1	IT equipment production	
	B1.1	Component production	Obligatory
	B1.2	Assembly	Obligatory
	B1.3	Support activities for IT equipment manufacturers	To be decided at the level of the "child" PCR
	B2	Production of support equipment	
	B2.1	Production of support equipment	To be decided at the level of the "child" PCR
	B3	Construction of the specific IT site	
	B3.1	Construction of the specific IT site	To be decided at the level of the "child" PCR
Distribution			To be decided at the level of the "child" PCR
Installation			To be decided at the level of the "child" PCR
Use	C	Use	
	C1	Use of IT equipment	Obligatory
	C2	Use of support equipment	Obligatory
	C3	Operator support activities	To be decided at the level of the "child" PCR
	C4	Support activities of the service provider	To be decided at the level of the "child" PCR
End of life	D	Equipment end-of-life treatment	
	D1	Preparing IT equipment for reuse	Obligatory
	D2	End of life of IT equipment End of life of support equipment?	
	D2.1	Storage / disassembly / dismantling / crushing	Obligatory

Table3: Lifecycle scope

Note: the tags do not come from the EN 15804 standard despite their similarity, but from the ITU L.1410 standard.

The "child" PCR drawn up from this document must use and complete the above table with regard to the digital service concerned.

3.2. Exclusion

In accordance with the ADEME standard on "General principles for environmental labelling of consumer products - Part 0: general principles and methodological framework", the following steps are excluded from the environmental assessment:

- R&D-related flows
- The flows related to the transport of employees from home to the workplace and business trips.
- Flows related to services associated with a product or system such as advertising, sales prospecting and marketing.

Specifically to these sectoral rules, the following steps are excluded from the environmental assessment:

- Flows linked to sales services (shops, after-sales service, etc.)
- Flows related to administrative services

The inclusion or exclusion of packaging for equipment and its end of life must be specified in the "child" PCRs.

The "child" PCR drawn up from this document must complete the specific exclusions covering the digital services concerned.

4. Allocation rules between products and co-products

The elements used for the evaluation of the digital service can be considered according to a:

- Equipment approach: each item of equipment used by the digital service constitutes primary or secondary data. The digital service is considered as a sum of usage of each device, each usage being defined through an allocation rule in relation to the total impacts of the device.

Example: for the terminal part, a digital "Send an email" service consists, for example, of a smartphone.

- System approach: a certain number of devices can be grouped together in a physical (example: datacentre) or virtual (example: virtual machine) system, at which the environmental impacts have been determined and which constitutes primary or secondary data. The digital service is considered as a sum of uses of each system, each use being defined through an allocation rule in relation to the total impacts of the system.

Example: for the network part, a digital "Send an email" service consists, for example, of all the equipment constituting the 4G network necessary for data transmission.

The equipment approach will be more precise but more complex than the system approach to be implemented.

It is recommended to use an equipment approach on the scope controlled by the digital service operator and a system approach on the uncontrolled scope.

In the case of the evaluation of a digital service, the two approaches could be used on different parts of the global scope.

Example:

- *In the event that the digital service operator controls the IT equipment hosted in a data centre and used to deliver the service, an equipment approach will be required*
- *In the event that the digital service operators do not control the IT equipment hosted in a datacentre used to deliver the service because it uses the services of a tier (for example cloud computing and / or data storage services), either they can use a system approach (use of a virtual server in the cloud) associated with generic data or specific data published by their virtual server provider*

Digital service modelling can choose either or both of these approaches. In the latter case, it is necessary to pay special attention to avoid double counting or omissions of equipment.
The "child" PCRs must specify the type of "system" or "equipment" approach to be considered depending on the type of operator and the scope controlled by it.
Following this document, the allocation rules or the connection between the data are presented.

For each element (equipment or system) considered in the scope, allocation rules must be defined for each stage of the element's life cycle in order to quantify the share allocated to the delivery of the digital service.

Allocations for the **manufacturing, distribution, installation and end-of-life phases** of the elements should be established, in order of priority and non-exhaustively:

On a physical criterion: volume of data consumed over total volume of data – "GB used / total GB during the lifetime of the service", "CPU usage (GHz used / total GHz during the service life)", " CPU usage (used GHz / total GHz during the service life)".

- Based on time criteria: usage time / period of use of the equipment over its entire service life
- On another criterion, in accordance with ISO 14044 (for example, the economic criterion)

The physical allocation must be preferred, except in case of impossibility. Economic allocations should only be used in the event that a physical allocation cannot be used.

By convention, the following allocations will be used, without justification:

Digital service tier	Type of allocation
Terminals	Usage time OR memory usage OR computing power
Network	Volume of data transported / bandwidth usage
Datacentre	Amount of data (storage) and / or Computing power (computation & storage)

Table4: Rules for allocation of the phases "manufacturing, distribution, installation and end of life" of the elements of the digital service

The "child" PCR drawn up from this document must set the allocation rules related to the manufacture, distribution, installation and end of life of the equipment covering the digital services concerned. This list must be established in relation to the functional diagram indicated in 2.2 Functional diagram and data flow.

On the use phase, the calculation of energy consumption and other consumption and direct emissions of the digital service in question must be considered as a priority. If this is not possible, the allocation rules used are conventionally as follows, without justification:

Digital service tier	Type of allocation
Terminals	Usage time OR memory / computing power usage
Network	Volume of data transported / bandwidth usage
Datacentre	Quantity of data (storage) and / or Computing power (computation, storage)

Table5: Allocation rules for the "use" phase of the elements of the digital service

The "child" PCR drawn up from this document must complete the allocation rules related to the use of equipment covering the digital services concerned. This list must be established in relation to the functional diagram indicated in 2.2 Functional diagram and data flow.

Regarding **the end of life phase**, please refer to the rules of environmental labelling in "GENERAL PRINCIPLES FOR THE ENVIRONMENTAL LABELLING OF CONSUMER PRODUCTS - PART 0: GENERAL PRINCIPLES AND METHODOLOGICAL FRAMEWORK", March 2016, chapter B.2.3.
http://www.base-impacts.ademe.fr/gestdoclist

Special case variable part and constant part:
Some elements have impacts that are not directly proportional to a single variable (flow, load, etc.). This is particularly the case for elements which have a part of their consumption constant, whatever the use that is made of it, and a variable part.
Example: A network is constantly supplied with power, even if it is not actively in use.

In this case, it is necessary to specify the mathematical model of calculation relating to the impacts and to differentiate the constant part and the variable part. An allocation key must then be determined for each part.

Example: the constant and variable consumption of an item of equipment can be described according to the following curve:

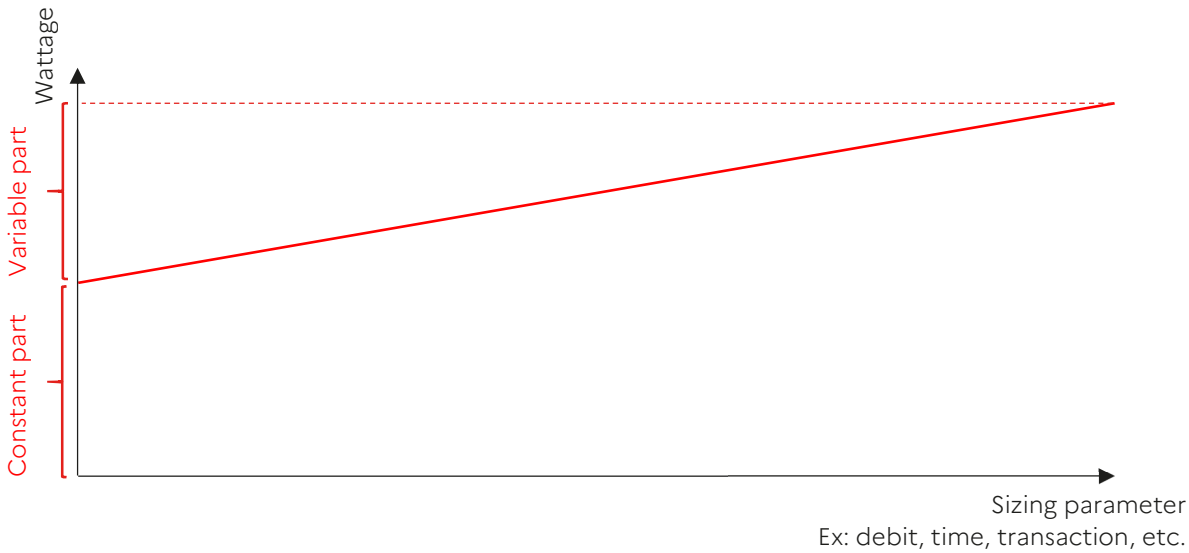


Figure 6 - Constant load and variable load, based on the ITU L.1410 standard

Note: the function used to determine the variable part is not necessarily refined

5. Connection between data

Primary activity data (or specific data) is a quantified value resulting from a direct measurement or a calculation from direct measurements of an activity or a process of the life cycle of the product. This value makes it possible, after multiplication by an emission or characterisation factor, to calculate an impact category indicator.

Secondary data (or generic data) is a quantified value of an activity or a product life cycle process obtained from sources other than direct measurement or calculation from direct measurements.

Semi-specific data is:

- a primary (or specific) data to be filled in by the operator but for which a default value is proposed;
- data specified by default but which can be specified by the operator in order to improve the environmental assessment.

These semi-specific values, which are deliberately conservative, aim to encourage the players in the sector to substitute their own value in order to improve the results of the environmental assessment. The conservative values thus proposed are not average values and must be strictly used within the framework of this methodological standard.

5.1. Primary data collection mode

Primary data should be collected over a period of one year to avoid seasonal variations.
In the event that the digital service in question has a total duration of less than one year, the collection period must include the entire duration of the digital service.

The impacts of digital services have the particularity of being generally dependent on the maturity of the service, particularly in terms of sizing in relation to the number of users: a service can be oversized in certain parts of its life. Thus, it is necessary to assess the variations in impacts linked to the maturity and sizing of the service.
The different stages of maturity generally observed are:

- Design, development and acceptance
- Placing on the market, putting into production
- Maturity and deployment
- Changes and different versions of the service
- End of life, decommissioning

Generally, the digital service is dimensioned in order to be able to deliver a maximum quantity of functional units (by design).
At commissioning, the number of functional units actually delivered is much lower than the quantity dimensioned by design, this variable defines the load rate.

$$Load\ rate\ (\%) = \frac{functional\ units\ actually\ delivered}{maximum\ quantity\ of\ functional\ units\ deliverable}$$

The load rate varies according to the tier and the element considered (network load rate, equipment load rate, storage load rate, etc.).

The two approaches used to do this are as follows:

1. Actual approach: the load rate is determined based on the data collection carried out. It must be indicated;
2. Hypothesis approach: the load rate is determined by hypothesis. In this case, it must be specified and several usage rate assumptions must be calculated in a sensitivity analysis in order to present the variation in impact linked to this assumption. Especially:
   - "By design" hypothesis: it corresponds to the forecast made during the dimensioning of the service, with a maximum level and a minimum level

In the case of the second approach, the limit values conventionally used for the usage rate, for various digital services, must be listed in the table below:

Digital service	Minimum usage rate by design	Actual usage rate	Maximum usage rate by design

Table6: Limit values for load rates

The "child" PCR drawn up from this document must complete the table above relating to usage rates, covering the digital services concerned.
Communication on environmental impacts must specify the load rate considered and whether it is a real load rate or by design.

5.2. Completeness & connection between primary, secondary and semi-specific data

The principle of mass, energy or impact cut-off rules can hardly be applied in the case of digital services. The approach favoured here is therefore that of the **representativeness (completeness) of the equipment or systems** depending on the approach chosen.

The measurement and modelling of the digital service must cover a defined percentage (greater than or equal to 90%) of the equipment or systems, in terms of the energy consumption of the modelled elements compared to the energy consumption of all the elements associated with the digital service considered, for each tier (terminals, network, datacentre).

The "child" PCR drawn up from this document must indicate the percentage (s) of completeness covering the digital services concerned.

The following table lists the primary, semi-specific, and secondary data to use. It must be adapted to each "child" PCR.

		PCR						LCI DATABASE		
Tier	Functional diagram element	Primary data		Semi-specific data		Secondary data				
		Activity data	Elementary flows and data	Activity data	Elementary flows and data	Activity data	Elementary flows and data	Generic inventory data		
								Processes	Technical representativeness	Geographical representativeness
Terminals		*Terminal type, configuration*	*Service life, power consumption, use for the service considered*			*Components of the terminals*		*Component data of the Impacts Base terminals*		
Network			*Data consumption*			*Type of network*		*Network type data from the Impacts Database*		
Datacentre				*Data centre configuration*	*Volume of data processed for the service in question*	*Equipment constituting the datacentre*		*Data centre data from the Impacts Database OR data from equipment constituting the Impacts Database*		

Table 7 - Connection of primary, semi-specific, secondary data

The "child" PCR drawn up from this document must fill in the table above concerning the primary, semi-specific and secondary data covering the digital services concerned.

The level of granularity depends on the precision of the collection as well as the data available.

5.3. Data quality

To determine the quality of the data, refer to the document "GENERAL PRINCIPLES FOR THE ENVIRONMENTAL LABELLING OF CONSUMER PRODUCTS - PART 0: GENERAL PRINCIPLES AND METHODOLOGICAL FRAMEWORK", March 2016, chapter 7. http://www.base-impacts.ademe.fr/gestdoclist

The data quality criteria can also be based on the approaches developed in chapter 2.2. (screening, simplified, comprehensive approaches)

The "child" PCR developed from this document may add additional quality criteria specific to the digital services concerned.

6. Specificities related to the use phase

Case of carbon offsetting and green certificates:
The purchase of carbon credits via a carbon offset system and / or the purchase of green certificates are not taken into account and do not allow valuing an impact reduction at the level of the digital service.

Case of self-consumption of energy:
Self-consumption of energy is taken into account if and only if no contractual instrument has been sold to a third party. For example, in the case of the installation of photovoltaic panels on the roof for the direct supply of electricity to a building. In this case, all the stages of manufacture, transport, production and end of life of the self-consumption equipment must be considered.

7. Environmental indicators

7.1. Data at the origin of the environmental impacts

The bibliographic analysis made it possible to identify the following stages at the origin of the environmental impacts.

For all the indicators mentioned in the table below, the EC-JRC characterisation factors should be applied. The characterisation factors are accessible via the following link:
http://eplca.jrc.ec.europa.eu/LCDN/developerEF.xhtml

The version and date of the characterisation factors used must be specified.

Environmental indicator	Main sources of impacts
Climate change	Manufacturing & Use & End of life
Depletion of natural resources (minerals and metals)	Manufacturing
Depletion of natural resources (fossils)	Manufacturing
Depletion of water resources	Manufacturing & Use
Acidification	Manufacturing
Freshwater eutrophication	Manufacturing
Marine eutrophication	Manufacturing
Terrestrial eutrophication	Manufacturing
Photochemical pollution	Manufacturing
Human toxicity - cancer	Manufacturing
Human toxicity - non cancer	Manufacturing

Aquatic ecotoxicity	Manufacturing
Ozone layer depletion	Manufacturing
Fine particle emissions	Manufacturing & Use & End of life
Land use	Manufacturing
Ionizing radiation	Use

** For use in France, interpretation highly dependent on the electrical mix. Note that transport can cause significant environmental impacts in the case of air transport, not identified here.*

Table8: Stages at the origin of the impacts

7.2. Selected environmental indicators

The following indicators should be reported:

- Depletion of natural resources (minerals and metals)
- Climate change
- Acidification
- Fine particle emissions
- Ionizing radiation

These indicators are mandatory.

In addition, flow indicators can be calculated, and in particular:

- Primary energy consumption

The "child" PCR developed from this document may list additional impact categories covering the digital services concerned.

7.3. Other relevant environmental indicators

The so-called relevant indicators are indicators for which it is recognised that the underlying environmental issue is relevant concerning digital services, but whose method or data are not sufficiently mature to be adopted to date. They can be calculated for information. These indicators are:

- Depletion of water resources
- Human toxicity - cancer
- Human toxicity - non cancer
- Aquatic ecotoxicity

These indicators are recommended.

The "child" PCR developed from this document may list additional impact categories covering the digital services concerned.

8. Temporary data validation and update frequency

Refer to the procedures specified in the general principles for the environmental labelling of consumer products (part 0). http://www.base-impacts.ademe.fr/gestdoclist

9. Data and results validation mode

The method of validating the data and results of the envisioned environmental labelling is as follows. Manufacturers keep a file per product reference containing primary (or specific) data. Validation consists of the following:

- ensure the reproducibility of indicator calculations based on the content of the dossier;
- seek evidence of the information contained in the file, on a sampling basis.

Information relating to the development of the labelling must be accessible to all, in a transparent and free manner under appropriate conditions (report, website, etc.). This information relates to the assumptions, the data acquisition methods, the link between primary (or specific) and secondary (or generic) data, the characterisation factors and the limits of the assessment.

There is no obligation to communicate to the consumer the data necessary to calculate the impact indicators. However, this data must be kept for the bodies in charge of market surveillance by specifying and keeping (within the limits of confidentiality of its processes):

- primary (or specific) data;
- sources of secondary (or generic) data;
- the default values adopted.

10. Method of taking into account the time lag of GHG (Greenhouse Gas) emissions

The products covered by this standard are not considered to be products with a long service life (service life <15 years).

Taking into account the time lag of greenhouse gas emissions is therefore not relevant for this category of products.

11. Limits

A certain number of limits were identified during the drafting of these sectoral rules, depending in particular on the current limits in terms of accessibility to data. This chapter lists these limitations.

The "child" PCR drawn up from this document must identify any additional limits specific to the digital services concerned.

11.1. Impacts on change and land use

The environmental issue of change and land use is an important issue for digital services, in particular due to the extraction of raw materials which has strong impacts. However, the databases of the sector do not fully provide information on the flows contributing to this impact at the present time, and it is therefore impossible to have a relevant vision of the subject.

11.2. Data uncertainty

The data collected and modelled necessarily present an uncertainty linked to their variability. Constraints, particularly temporal and linked to the multitude of actors in the value chain, make it difficult to collect information on these uncertainties. This leads to interpretation difficulties, especially for the comparison of two digital services.

11.3. Equipment end of life

Today, still a lot of waste electrical and electronic equipment (WEEE) is not managed in dedicated channels and therefore induces significant pollution. These are not detected in a classic LCA, and thus not taken into account here, which leads to an underestimation of the impacts of the end of life.

11.4. Involvement of multi-actor channels

The complexity of digital services very generally leads to the consideration of many systems, equipment, and players. It is therefore difficult to have a precise vision of the entire value chain that constitutes the digital service. The use of secondary or semi-specific data is therefore more important than for product LCAs.

12. Appendices

12.1. Appendix A - List of affected CPA codes

CPA code	Description
J	INFORMATION AND COMMUNICATION SERVICES
58	Publishing services
58.1	Publishing services of books, periodicals and other publishing services
58.11	Book publishing services
58.11.3	On-line books
58.11.30	On-line books
58.11.4	Advertising space in books
58.11.42	Advertising space in books, electronic
58.12	Publishing services of directories and mailing lists
58.12.2	On-line directories and mailing lists
58.12.20	On-line directories and mailing lists
58.13	Publishing services of newspapers
58.13.2	On-line newspapers
58.13.20	On-line newspapers
58.13.3	Advertising space in newspapers
58.13.32	Advertising space in newspapers, electronic
58.14	Publishing services of journals and periodicals
58.14.2	On-line journals and periodicals
58.14.20	On-line journals and periodicals
58.14.3	Advertising space in journals and periodicals
58.14.32	Advertising space in journals and periodicals, electronic
58.19	Other publishing services
58.19.2	Other on-line content
58.19.21	Online adult content
58.19.29	Other on-line content n.e.c.
58.2	Software publishing services
58.21	Publishing services of computer games
58.21.2	Computer games downloads

58.21.20	Computer games downloads
58.21.3	On-line games
58.21.30	On-line games
58.29	Other software publishing services
58.29.3	Software downloads
58.29.31	System software downloads
58.29.32	Application software downloads
58.29.4	On-line software
58.29.40	On-line software
59	Motion picture, video and television program production services, sound recording and music publishing
59.1	Motion picture, video and television program services
59.11	Motion picture, video and television program production services
59.11.2	Motion picture, video and television program products
59.11.24	Films and other video downloads
59.11.25	Streamed video content
59.2	Sound recording and music publishing services
59.20	Sound recording and music publishing services
59.20.3	Music publishing services
59.20.32	Electronic scores
59.20.35	Music downloads
59.20.36	Streamed audio content
60	Programming and broadcasting services
60.1	Radio broadcasting services
60.10	Radio broadcasting services
60.10.1	Radio broadcasting services; broadcast originals
60.10.11	Radio programming and broadcasting services
60.2	Television programming and broadcasting services; broadcasting originals
60.20	Television programming and broadcasting services; broadcasting originals
60.20.1	Television programming and broadcasting services
60.20.11	Linear television programming and broadcasting services
60.20.12	On-line video-on-demand services
60.20.13	Other video-on-demand services
61	Telecommunications services
61.1	Wired telecommunications services
61.10	Wired telecommunications services
61.10.1	Data and message transmitting services
61.10.11	Fixed telephony services - access and use
61.10.12	Fixed telephony services - calling features
61.10.13	Private network services for wired telecommunications systems
61.10.2	Carrier services for wired telecommunications
61.10.20	Carrier services for wired telecommunications
61.10.3	Data transmission services over wired telecommunications networks
61.10.30	Data transmission services over wired telecommunications networks
61.10.4	Wired Internet telecommunications services
61.10.41	Internet backbone services

61.10.42	Narrow-band Internet access services over wired networks
61.10.43	Broad-band Internet access services over wired networks
61.10.49	Other wired Internet telecommunications services
61.10.5	Home programme distribution services over wired infrastructure
61.10.51	Home programme distribution services over wired infrastructure, basic programming package
61.10.52	Home programme distribution services over wired infrastructure, discretionary programming package
61.10.53	Home programme distribution services over wired infrastructure, pay-per-view
61.2	Wireless telecommunications services
61.20	Wireless telecommunications services
61.20.1	Mobile telecommunications services and private network services for wireless telecommunications systems
61.20.11	Private network services for wireless telecommunications systems
61.20.12	Mobile voice services
61.20.13	Mobile text services
61.20.14	Mobile data services, except text services
61.20.2	Carrier services for wireless telecommunications
61.20.20	Carrier services for wireless telecommunications
61.20.3	Data transmission services over wireless telecommunications networks
61.20.30	Data transmission services over wireless telecommunications networks
61.20.4	Wireless Internet telecommunications services
61.20.41	Narrow-band Internet access services over wireless networks
61.20.42	Broad-band Internet access services over wireless networks
61.20.49	Other wireless Internet telecommunications services
61.20.5	Home programme distribution services over wireless networks
61.20.50	Home programme distribution services over wireless networks
61.3	Satellite telecommunications services
61.30	Satellite telecommunications services
61.30.1	Satellite telecommunications services, except home programme distribution services via satellite
61.30.10	Satellite telecommunications services, except home programme distribution services via satellite
61.30.2	Home programme distribution services via satellite
61.30.20	Home programme distribution services via satellite
61.9	Other telecommunications services
61.90	Other telecommunications services
61.90.1	Other telecommunications services
61.90.10	Other telecommunications services
62	Computer programming, consultancy and related services
62.0	Computer programming, consultancy and related services
62.01	Computer programming services
62.01.1	IT design and development services
62.01.11	IT design and development services for applications
62.01.12	IT design and development services for networks and systems
62.03	Computer facilities management services
62.03.1	Computer facilities management services
62.03.11	Network management services

62.03.12	Computer systems management services
63	Information services
63.1	Data processing, hosting and related services; web portals
63.11	Data processing, hosting and related services
63.11.1	Data processing, hosting, application services and other IT infrastructure provisioning services
63.11.11	Data processing services
63.11.12	Web hosting services
63.11.13	Application service provisioning
63.11.19	Other hosting and IT infrastructure provisioning services
63.11.2	Advertising space or time in Internet
63.11.20	Advertising space or time in Internet
63.12	Web portal services
63.12.1	Web portal content
63.12.10	Web portal content
63.12.2	Internet advertising space in web portals
63.12.20	Internet advertising space in web portals

Table9: CPA codes

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ABBREVIATIONS AND ACRONYMS

ADEME	Environment and Energy Management Agency
PCR	Product Category Rules

ADEME IN BRIEF

At ADEME - the Ecological Transition Agency - we are resolutely committed to the fight against global warming and the degradation of resources.

On all fronts, we are mobilising citizens, economic players and regions, giving them the means to progress towards a resource-efficient, lower-carbon, fairer and more harmonious society.

In all areas - energy, air, circular economy, food, waste, soil, etc., we advise, facilitate and help finance many projects, from research to the sharing of solutions.

At all levels, we put our expertise and foresight abilities at the service of public policies.

ADEME is a public establishment under the supervision of the Ministry of Ecological Transition and the Ministry of Higher Education, Research and Innovation.

THE COLLECTIONS OF THE **ADEME**

FACTS AND FIGURES
ADEME specialist: He/she provides objective analyses based on regularly updated quantified indicators.

KEYS TO ACT
ADEME facilitator: He/she develops practical guides to help stakeholders implement their projects methodically and / or in accordance with regulations.

THEY DID IT
ADEME catalyst: The stakeholders testify to their experiences and share their know-how.

EXPERTISE
ADEME expert: He/she reports on the results of research, studies and collective achievements carried out under his/her supervision

HORIZONS
ADEME looking to the future: It offers a forward-looking and realistic vision of the challenges of energy and ecological transition, for a desirable future to be built together.

RÉPUBLIQUE FRANÇAISE
Liberté
Égalité
Fraternité

ADEME
AGENCE DE LA TRANSITION ÉCOLOGIQUE

FACTS AND

GENERAL PRINCIPLES FOR THE ENVIRONMENTAL LABELLING OF CONSUMER PRODUCTS

This methodological standard for the environmental assessment of a digital service provides the method to be followed to calculate the environmental labelling indicators for this product category.

The purpose of this document is to constitute "parent" sectoral rules, allowing the harmonisation of all sectoral rules (PCR) for digital services around common rules. It is therefore necessary to read this document in parallel with the "child" PCR relating to a digital service or infrastructure studied.