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BASE IMPACTS® DATA DOCUMENTATION

GENERAL DOCUMENTATION

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1. Base Impacts® documentation

3 levels of documentation are available for the datasets in Base Impacts®:

	Availability
<ul style="list-style-type: none"> A general documentation explaining general information on the datasets and data general requirements 	<ul style="list-style-type: none"> ✓ Available (present document)
<ul style="list-style-type: none"> A sectorial documentation: one document per sector describing the available datasets and their characteristics (technological representativeness, geographical representativeness), and providing the information on the datasets in a common layout. Information comes from the consultation specifications, the dataset commissioner technical proposal and the metadata 	<ul style="list-style-type: none"> ✓ Available : leather, electronics, plastics ✓ End-2015 : textiles, electricity, glues, glass, wood, steel, transport, heat, finishing products, incineration and landfill
<ul style="list-style-type: none"> The datasets metadata can be viewed directly in the datasets sheets 	<ul style="list-style-type: none"> ✓ Available online

2. Information on the datasets

2.1. Datasets providers

The datasets available in Base Impacts® were provided by:

- PE International for the following categories: electricity, leather, plastics, glues, glass, wood, electronics, steel, transport, heat, finishing products, incineration and landfill
- Cycleco for the following categories: textiles

2.2. Datasets format

All datasets were built with existing life-cycle inventories (LCI) and specific data collection by the data providers, but they were imported as LCI aggregated datasets. The datasets are assessed in Base IMPACTS® with the LCIA¹ method recommended by the ILCD² Handbook.

Base Impacts® users have access to:

- LCIA results ;
- Greenhouse gas flows.

¹ Life-Cycle Impact Assessment

² The International Reference Life Cycle Data System

2.3. Scope for aggregation

There are different ways in which unit processes can be aggregated. The scope for aggregation of the datasets in Base IMPACTS® is indicated in the metadata of the datasets and in the categories documentation. Its definition is based on the classification established by UNEP³, which describes 12 scopes for aggregation.

The basis for each of the 12 examples in the following figure and paragraph is a cradle-to-grave LCA for PVC pipe.

“It shows three sites (site A has processes 1, 2, and 3; site B has processes 1’, 2’, and 3’; site C has processes 1”, 2”, and 3”) that all have upstream processes (background) that are needed to make the final product, and these are all connected to the upstream, elementary flows (database). The product is then connected to a use phase and end-of-life phase to complete the cradle-to-grave LCA.

The following are examples of each of the aggregated datasets:



Figure 1 : scope for aggregation of datasets [UNEP, 2011]

³ United Nations Environment Program, « Global guidance principles for life cycle assessment databases », 2011

- 1) plastic extrusion process in plastic pipe manufacture of company A;
- 2) plastic pipe manufacture of company A;
- 3) plastic pipe manufacture of company A including feedstock supply and storage;
- 4) plastic pipes of company A (all inputs and outputs being elementary flows except for the reference product and some upstream process [background]), e.g., the inputs of feedstock, electricity, and natural gas);
- 5) plastic pipes of company A (all inputs and outputs being elementary flows except for the reference product, i.e., cradle-to-gate LCI);
- 6) plastic pipes of company A used in a building's sewage system, including end-of-life recycling or disposal (i.e., cradle-to-grave LCI);
- 7) Asian average plastic extrusion process in plastic pipe manufacture;
- 8) Asian average plastic pipe manufacture;
- 9) Asian average plastic pipe manufacture including feedstock supply and storage;
- 10) Asian average plastic pipes (all inputs and outputs being elementary flows except for the reference product and, e.g., the inputs of feedstock, electricity, and natural gas);
- 11) Asian average plastic pipes (all inputs and outputs being elementary flows except for the reference product (i.e., cradle-to-gate LCI); and
- 12) Asian average plastic pipes used in a building's sewage system including end-of-life recycling or disposal (i.e., cradle-to-grave LCI). »

In Base Impacts®, the datasets can be found with different scopes for aggregation, depending on the category and the described process: **some are “partly terminated datasets” (10) and some are “partial vertical aggregation” (11), also called “LCI results” in the metadata:**

- All datasets are average datasets, provided for a given geographical and technological representativity;
- The datasets are linked to background databases. They are the databases available on the market, depending of the dataset provider: ecoinvent or GaBi. Unless otherwise specified, the datasets are also linked to the Base Impacts ® database as far as electrical mixes are concerned (see paragraph « datasets consistency »).
- Some datasets do not include all background datasets and must be linked to other Base Impacts ® datasets (“partly terminated datasets” – 10). With this scope for aggregation, several datasets must be aggregated to model a complete process. For instance,
 - the “plastic granulate” datasets refer to a raw material and must be linked to the downstream transformation process
 - the “leather painting” dataset does not include the input of leather and must be linked to the upstream leather production process.
 - the “textile transformation” processes do not include the electricity and heat. They must be plugged to the electricity and heat datasets available in Base Impacts®
- Some datasets include all background datasets and can be used independently (“partial vertical aggregation” - 11).

2.4. Data quality level

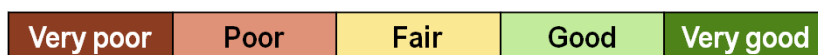
Data quality level is rated following the criteria defined by ILCD:

- Technological representativeness
- Time-related representativeness
- Geographical representativeness
- Precision / uncertainty
- Completeness
- Methodological appropriateness and consistency

The quality levels are defined as follows by ILCD Handbook:

Level	Definition for representativeness and consistency criteria	Definition for completeness	Definition for precision
Very good	Meets the criterion to a very high degree, having or no relevant need for improvement. This is to be judged in view of the criterion's contribution to the data set's potential overall environmental impact and in comparison to a hypothetical ideal data quality	> 95%	Standard deviation < 7%
Good	Meets the criterion to a high degree, having little yet significant need for improvement.	85% to 95%	7 to 10%
Fair	Meets the criterion to a still sufficient degree, while having the need for improvement.	75% to 85%	10 to 15%
Poor	Does not meet the criterion to a sufficient degree, having the need for relevant improvement.	50% to 75%	15 to 25%
Very poor	Does not at all meet the criterion, having the need for very substantial improvement.	< 50%	> 25%

Data quality level of the datasets can be found in the sectorial documentation with the following scale:



3. Data general requirements

3.1. Datasets review and quality

All datasets follow the ILCD Entry Level requirements:

- Minimum documentation extent specified
- ILCD format to be used
- Compliance with ILCD nomenclature document
- Technological, geographical and time-related representativeness to be documented
- ISO 14040 and 14044 compliant process-based LCA
- Qualified independent external review or qualified independent internal review with review report

The datasets also comply with the methodological rules defined for environmental labeling in France as detailed in BP X30-323-0 reference document.

3.2. Datasets consistency

Category consistency: Datasets of a given category were provided by the same commissioner and built with the same background modeling rules. Category documentation explains the modeling rules per category.

General consistency: All datasets are related to the same electrical mix inventories (national average mixes, available in Base Impacts®), ensuring a basic consistency level.

This consistency is achieved in two ways:

- **Most datasets are already plugged to the electric mix datasets.** They include the impact of electricity consumption in the process: the dataset providers used the electricity datasets provided in Base Impacts® for their modeling for general consistency.
This is the case of all datasets except textile processes.

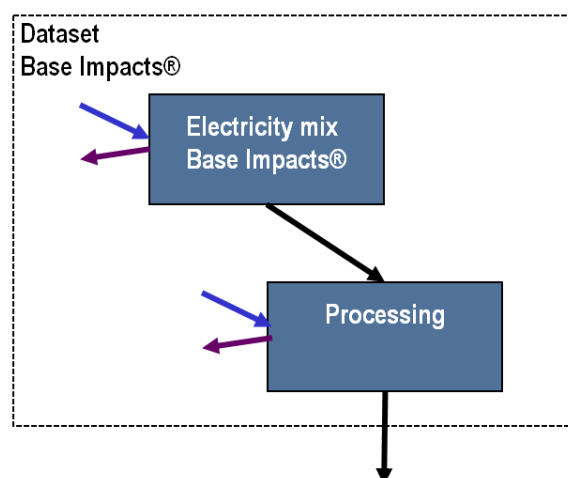


Figure 2: dataset plugged to the electric mix datasets

- **Some datasets do not include the impacts of electricity consumption and must be plugged to the electricity datasets provided in Base Impacts®.** This happens for datasets for which no geographical boundaries could be pre-defined and therefore no default electricity mix could be chosen. The necessary amount of electricity is indicated in the metadata. *This is the case for textile processing datasets.*

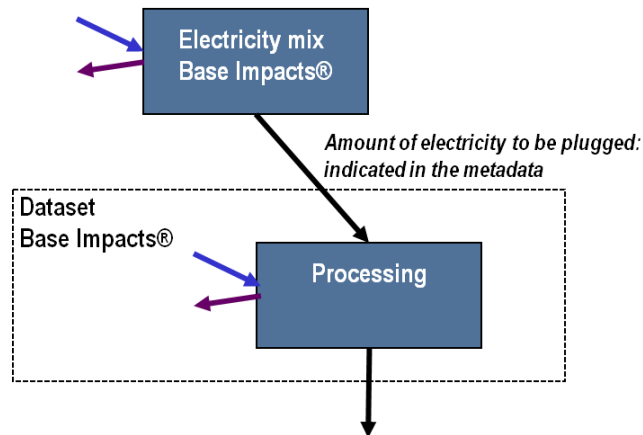


Figure 3: dataset which must be plugged to the electric mix datasets

3.3. Infrastructure

Infrastructure is generally included in the datasets. As they are not identified as a high contributor to the overall environmental impact, infrastructure can be the same for the different technological and geographical versions of a dataset

Please refer to the metadata of the datasets and the category documentation for more information.