

Exiobase v3.8.2 (year 2022) in openLCA

*A multi-regional Input-Output Database in openLCA
Industry by Industry and Product by Product database*

Software version:	openLCA 1.11
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Contents

1 About Exiobase3

2 Exiobase Implementation in openLCA.....3

3 What’s new? 6

4 Support7

Image via https://snl.no/Wassily_Leontief

About Exiobase

“EXIOBASE is a global, detailed Multi-Regional Environmentally Extended Supply-Use Table (MR-SUT) and Input-Output Table (MR-IOT). It was developed by harmonizing and detailing supply-use tables for a large number of countries, estimating emissions and resource extractions by industry. Subsequently the country supply-use tables were linked via trade creating an MR-SUT and producing a MR-IOTs from this. The MR-IOT that can be used for the analysis of the environmental impacts associated with the final consumption of product groups.”(source: <https://www.exiobase.eu>).

For this release of Exiobase3.8.2 in openLCA, two databases will be available for the year 2022. The product by product (pxp) database was derived from the product by product Input-Output table of the year 2022 and is in accordance with the industry technology assumption. The industry by industry (ixi) database was derived from the industry by industry Input-Output table for the year 2022 and is in accordance with the fixed product sales assumption. Both Input-Output tables are available at <https://zenodo.org/record/5589597>.

1 Exiobase Implementation in openLCA

Exiobase is an Input-Output-Database and was reformatted so that it can be used in openLCA. These are key aspects that should be noted.

- Since Exiobase is an Input-Output-Database, it should not be combined with other databases from nexus.openlca.org
- Each process data set represents one “country specific factor”
- Exchanges between processes are provided in monetary units (EUR)
- The zero-value input and output exchanges have been removed from the processes.

Exiobase is an “environmental extended” Input-Output-Database. Because of this each data set also contains emission flows. The elementary flows are not part of the openLCA reference flows (Figure 1).

The Exiobase database contains also its own set of Life Cycle Impact Assessment methods which fit to the elementary flows belonging to the database (Figure 2).

Since Exiobase is a very large database, it is recommended to allocate as much memory as possible to openLCA when working with this database. Alternatively, you can also apply a cut-off when creating a product system and consequently use a lower amount of memory (Figure 3).

P *Additives/Blending Components - AT

P Inputs/Outputs: Additives/Blending Components

▼ Inputs

Flow	Category	Amount	Unit
F Additives/Blending Compone...	Product flows/Additiv...	9.38233	EUR 2000
F Additives/Blending Compone...	Product flows/Additiv...	2.49061	EUR 2000
F Additives/Blending Compone...	Product flows/Additiv...	3.03442	EUR 2000
F Additives/Blending Compone...	Product flows/Additiv...	15.30611	EUR 2000
F Additives/Blending Compone...	Product flows/Additiv...	5.01440	EUR 2000
F Additives/Blending Compone...	Product flows/Additiv...	3.03726	EUR 2000
F Additives/Blending Compone...	Product flows/Additiv...	0.12405	EUR 2000
F Additives/Blending Compone...	Product flows/Additiv...	4.60508	EUR 2000
F Additives/Blending Compone...	Product flows/Additiv...	1.48861	EUR 2000
F Air transport services (62) - AT	Product flows/Air tran...	1622.47641	EUR 2000
F Air transport services (62) - BE	Product flows/Air tran...	16.94303	EUR 2000

▼ Outputs

Flow	Category	Amount	Unit
F Additives/Blending Compon...	Product flows/Additi...	1.00000E6	EUR 2000
F As - combustion - air	Elementary flows/Emis...	0.00065	kg
F As - non combustion - Agglo...	Elementary flows/Emis...	4.54140E-5	kg
F As - non combustion - Agglo...	Elementary flows/Emis...	2.22313E-5	kg
F As - non combustion - Glass ...	Elementary flows/Emis...	5.98247E-6	kg
F As - non combustion - Steel ...	Elementary flows/Emis...	0.00106	kg
F As - non combustion - Steel ...	Elementary flows/Emis...	7.76298E-5	kg
F As - non combustion - Steel ...	Elementary flows/Emis...	0.00306	kg
F Benzo(a)pyrene - combustion...	Elementary flows/Emis...	0.00602	kg
F Benzo(b)fluoranthene - comb...	Elementary flows/Emis...	0.00782	kg
F Benzo(k)fluoranthene - comb...	Elementary flows/Emis...	0.00336	kg

Figure 1. Exchanges between processes are provided in monetary units (EUR)

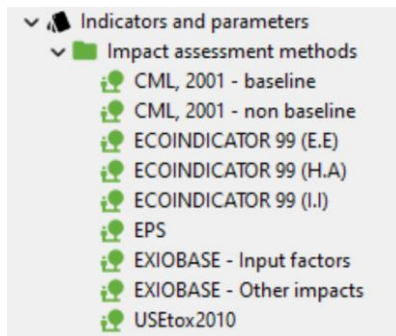


Figure 2. The Exiobase database contains its own set of Life Cycle Impact Assessment methods

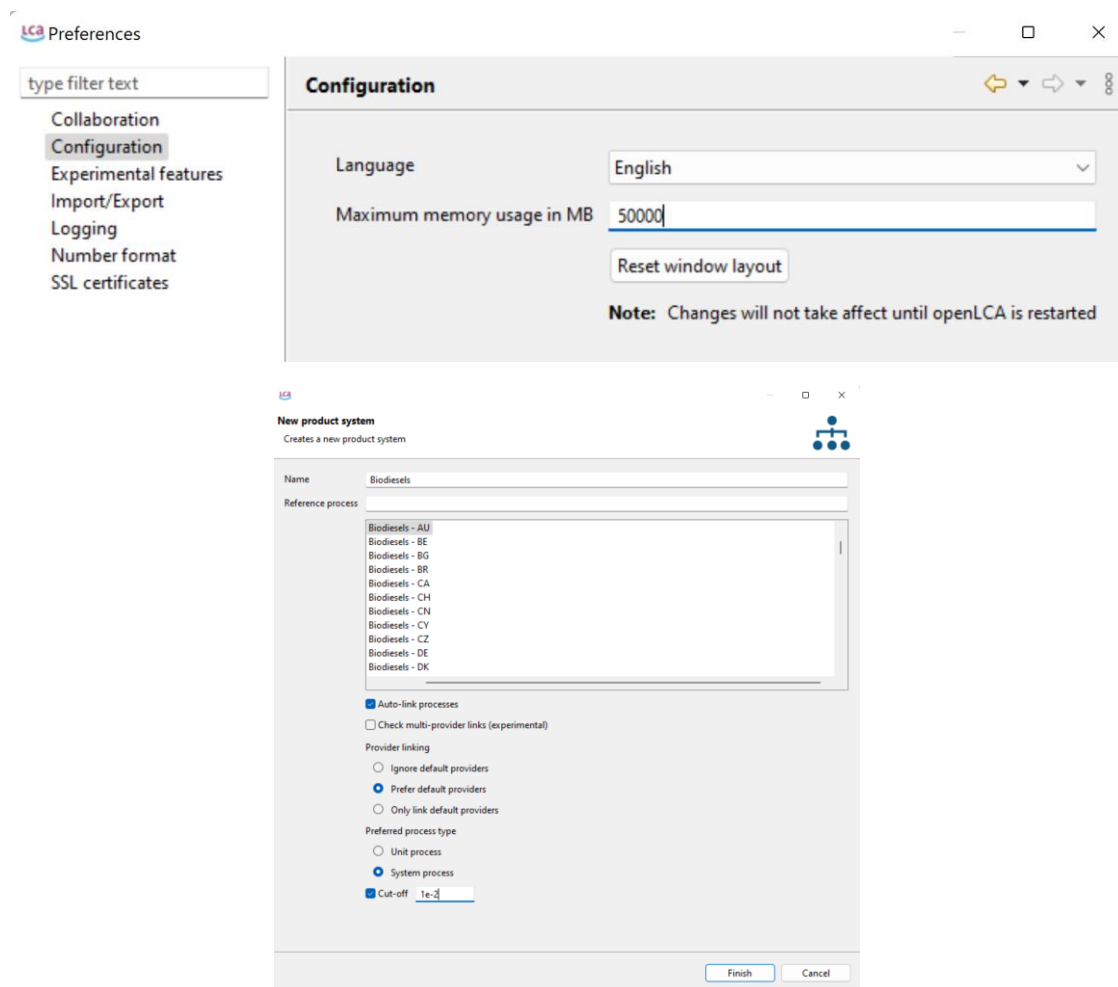


Figure 3. When working with Exiobase in openLCA, it is recommended to allocate as much memory as possible to OpenLCA or to apply *Cut-off*.

2 What's new?

These data were taken from <https://zenodo.org/record/5589597> and contain data for the year 2022. Thus, this is a more up to date version of the previous dataset. For this release of Exiobase3.8.2, two databases were published. The data were either taken from an industry by industry Input-Output table or a product by product Input-Output table and loaded into respective databases.

In the previous version of Exiobase in openLCA the quantitative reference for each process was set to be one Euro. However, in this version of the database the quantitative reference for each process was set at **one million Euros**. All associated exchanges were therefore also set accordingly.

All zero-value exchanges were eliminated from the database. Additionally, those processes where all input values were zero were eliminated entirely from the database. As not all countries produce every product or harbor every industry, not every country will thereafter have an associated process.

The database layout has also changed. Processes and flows for each product or industry are no longer subdivided by country. Instead all products or industries for all countries are assembled in a respective product/industry-specific folder. What process/flow is associated with which country is indicated by the country code of at the end of each process/flow (Figure 4).

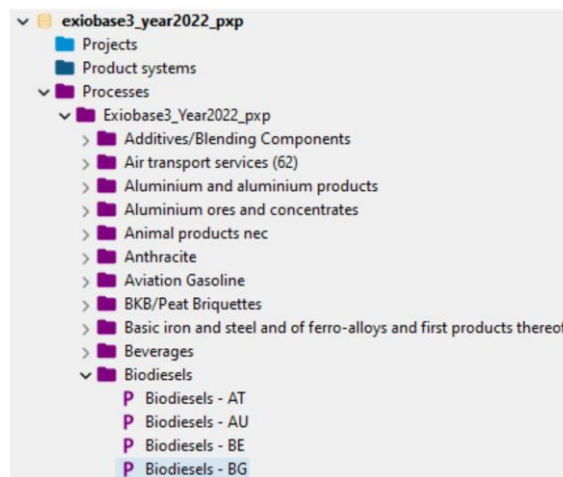


Figure 4. The country/region is associated with each process/flow is indicated at the end of each process/flow.

With this release, country/region-specific polygons are available, allowing for regionalized visualization of impacts. Countries contained within each 'Rest of World' region were joined (Figure 5).

📍 General information: Rest of World, Middle East

▼ General information

Name: Rest of World, Middle East

Description: source: Exiobase3
This group includes the following countries: Bahrain, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Palestine, Qatar, Saudi Arabia, Syria, United Arab Emirates and Yemen

Version: 00.00.002

UUID: 3276be93-6d94-4e97-8fe5-22d49c0ab24b

Last change: 2022-09-15T10:21:30+0200

Tags:

▼ Additional information

Code: WM

Longitude: 23.29552195454543

Latitude: 28.62916646153846

▼ KML Editor

Polygon

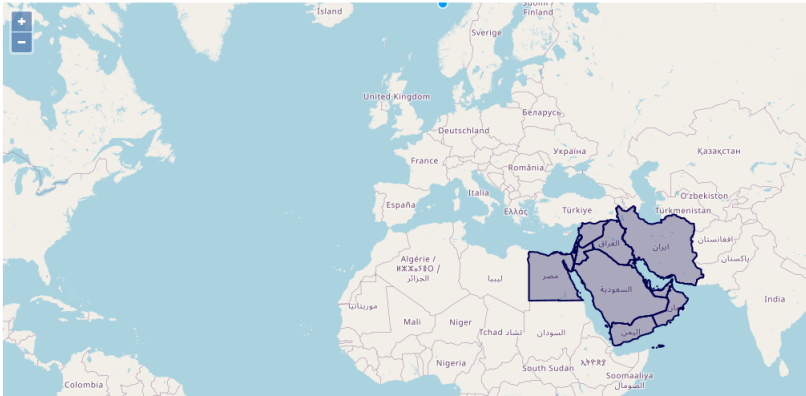


Figure 5. Country/region-specific polygons are included in the database.

3 Support

GreenDelta GmbH, developer of openLCA, offers openLCA users prioritised and guaranteed professional openLCA support via the GreenDelta helpdesk: <https://www.openlca.org/helpdesk/>. Public (User2User) support for openLCA is available via <https://ask.openlca.org/>.

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