

Supplementary S1: List of OpenLCA free databases used

Agribalyse v3.0.1.

AGRIBALYSE is the French LCI database for the agriculture and food sector. This new version published in 2020, comprises LCIs for 2500 agricultural and food products produced and/or consumed in France, combining a production-based approach and a consumption-based approach. AGRIBALYSE is provided by the French Agency for Ecological Transition, as the outcome of the Agribalyse® program.

BioEnergieDat

This is the database created in the German BioEnergieDat project, www.biopenergiestat.de, on February 2013. Aim of the project was to develop supply chains for bioenergy options, with a specific German background. Altogether about 180 data sets have been created, for provision and conversion of the following bioenergy fuels:

- wood and waste-wood;
- wheat;
- biowaste.

ELCD

ELCD (European reference Life Cycle Database) of the Joint Research Center. comprises Life Cycle Inventory (LCI) data from EU-level business associations and other sources for key materials, energy carriers, transport, and waste management. The respective data sets are officially provided and approved by the named industry association.

Evah OzLCI2019

The Evah OzLCI2019 Free Database has been created by our Australian partner The Evah Institute. It covers Australasian regional supply including imports and has been developed by using OpenLCA.

Exiobase

EXIOBASE is a global, detailed Multi-Regional Environmentally Extended Supply and Use/Input Output (MR EE SUT/IOT) database. It was developed by harmonizing and detailing SUT for a large number of countries, estimating emissions and resource extractions by industry, linking the country EE SUT via trade to an MR EE SUT, and producing an MR EE IOT from this.

NEEDS

The NEEDS (New Energy Externalities Developments for Sustainability) database contains international industrial life cycle inventory data on:

- future electricity supply systems (advanced fossil, hydrogen, fuel cells, offshore wind, photovoltaics, solar thermal, biomass, advanced nuclear, wave energy);
- future material supply;
- future transport services.

OpenLCA LCIA methods 2.1.0

This is a comprehensive package of environmental impact assessment methods for use with different databases available in the Nexus system. It includes 43 different LCIA methods, normalization and weighting as far as this is foreseen by the method.

ProBas

ProBas is a German dataset library originally provided by the German Federal Environment Agency (Umweltbundesamt). It includes unit as well as aggregated processes, for the following topics: Energy, Materials & Products, Transportation services and Waste.