

Copernicus Life Cycle Assessment database project

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Project description

Life Cycle Assessment (LCA) is a methodology to assess the environmental impacts of product or services along their entire life cycle, and is considered by the European Commission as the best available tool to evaluate the impacts of products and services. The method requires high amounts of data to model the inputs and outputs of energy and materials that occur along the life cycle of the analysed products. For instance, the LCA of a new technology for solar power generation will require modelling all the inputs and outputs related to the solar panels' life cycle: extraction of raw materials, electricity for manufacturing and assembly (generated with a mix of technologies that also need to be modelled), extraction and supply of fuel for transportation, etc. In order to be able to model all those activities, the methodology makes use of databases where the life cycle of many materials and technologies is already modelled.

LCA is often used by researchers in the Copernicus Institute of Sustainable Development to evaluate the impacts of innovative technologies, materials, or products. Over the last years, many LCAs have been performed and stored within the LCA software Simapro. Although most of the knowledge created during those analyses has been published in the form of reports or scientific articles, the lack of an internal LCA database hinders the use of such models as inputs for future LCAs.

This project aims at creating an internal LCA database for the Copernicus Institute of Sustainable Development, so that the results and data inventories gathered by Copernicus researchers and excellent Master thesis can be easily stored and used for future research. This will allow a better integration of the research within the Institute, and a higher accessibility to inventory data on innovative technologies (which is often missing in external LCA databases).

The student participating in this project will have the opportunity to dive into the LCA methodology and the Simapro software, and acquire a deep understanding on how LCA models and databases are created and made available for future use. It is expected that the student will:

- Get an understanding on how LCA models are created within the Simapro software;
- Review the LCA research projects carried out by Copernicus researchers within the Simapro software;
- Complete the documentation of the LCA projects in the software (based on available reports and short interviews with the authors) and create an internal database of LCA models;
- Create a protocol on how to register LCA data in Simapro, to be followed by future Copernicus researchers.

Job requirements

- General knowledge of Life Cycle Assessment methodology
- Good analysing qualities
- Good English skills (written and oral)