

ILCD/PEF requirements and ecoinvent database interoperability: how to integrate them together within an LCA software? A case study on EIME

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1. Problematic

For a few years, the methodological requirements for life cycle inventory (LCI) dataset databases have been evolving drastically. New referential methods have come into force, specifying precise ways to create, manage and present LCI datasets.

ILCD aims at harmonizing those methodologies on a global level. To this intent, it has defined a specific methodology and data documentation format. The European environmental labelling scheme (PEF/OEF) is using it as a basis for their recommendations. Overall, most environmental programs and LCI dataset databases are converging towards this method.

Among them, the ecoinvent database compliance to ILCD requirements has been checked by the ENEA on behalf of the JRC. Moreover, the ecoinvent format (EcoSpold02) can now be converted to the ILCD format thanks to openLCA format converter, allowing the adaptation of ecoinvent data to new LCA software. Though, the compatibility between ILCD/PEF requirements, ecoinvent and the different LCA software brings into light the difficulty of such integration.

This study aims at providing a practical presentation of the occurring issues and their solving concerning the integration of the ecoinvent database within the LCA software EIME, while attempting to achieve compliance with the ILCD entry-level and PEF requirements.

2. Method: practical integration of the ecoinvent database

The first aspect was to draw the gap analysis between PEF/ILCD, ecoinvent and EIME in term of database and technical requirement. It appeared that many aspects were already common as both databases have been dealing with ILCD/PEF recommendations. This work allowed the identification of straightforward integration and reduced the necessary amount of time and effort.

On the contrary, other aspects were divergent, such as the flows list or the classification method of LCI datasets. Therefore, alternative matching and compatibility solutions have been found and applied to ensure both a practical integration of the datasets, and a methodological coherence.

3. Results and discussion

This study can be used as a basis for current and future integrations of LCI dataset databases within LCA software, as the same issues are subject to arise. By crossing different views and sources, it also highlights which aspects of the ILCD referential method are difficult to comply with. Finally, it details the actual practical inter-operability between ILCD/PEF requirements and the ecoinvent database.