GaBi databases 2019 (Service Pack 39) in openLCA

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Author:	Salwa Burhan

GreenDelta GmbH, KaiserDamm 13, 14057 Berlin, Germany
gd@greendelta.com

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Content

1 GaBi databases 2019 SP39 – What's new?

As published by thinkstep[1] in the GaBi website, the Midyear Release SP39 version of GaBi databases 2019 include:

- 21 new and 61 updated datasets added to the Professional Database. These datasets originate from Worldsteel, Plastics Europe and International Molybdenum Association.
- Bug fix in a dataset from GaBi Extension Database XXI India, related to Indian Aluminium Ingot.
- With regards to LCIA methods, EF 2.0 further updated to EF 3.0 and method for EN 15804 construction standard has been amended to comply with EF 3.0.

For further information on changes / updates in the 2019 edition of the GaBi databases please refer to this document on the GaBi website.

2 GaBi databases 2019 SP39 in openLCA

Several modifications from the original ILCD package provided by thinkstep to GreenDelta were carried out during the implementation of the database in openLCA:

- Refactoring of categories for the flows in the database: the original ILCD package contains a structure of categories adhering to the ILCD flow category nomenclature, this was modified to GaBi flow category nomenclature as can be seen below (Figure 1).
- Adapt the GaBi datasets to the modelling requirements of openLCA (e.g. mapping of flow properties and unit groups from openLCA to the GaBi flows, etc.).
- Insertion of the ILCD data quality system for the GaBi databases in openLCA. (Figure 2) The system provides data quality of the processes, ranging from Very good to Very poor, for six indicators, namely, 'Technological representativeness', 'Time representativeness', 'Geographical representativeness', 'Completeness', 'Precision', 'Methodological appropriateness and consistency'.

[1] http://www.gabi-software.com/fileadmin/Documents/Upgrades_and_Improvements_in_GaBi_2018.pdf

Figure 1. Flow categories; before (right) and after(left) refactoring

- Implementation of GaBi Impact Assessment methods in openLCA, which can be imported separately through the JSON-LD format. These methods are designed specifically for the new GaBi databases. Users should keep in mind that only the GaBi LCIA method package are compatible with the GaBi databases. Using any other methods from openLCA (e.g. the openLCA LCIA method package will lead to incorrect/ or no results.

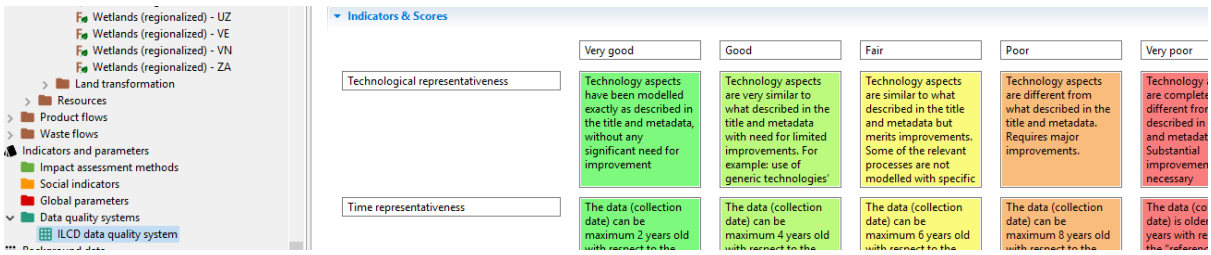

Figure 2. ILCD Data quality system for the GaBi databases

The next sections contain specific information about some of the modifications done, as well as tips and recommendations for the usage of the GaBi databases in openLCA.

2.1 General modelling

GaBi databases are created with the LCA software GaBi and, therefore, the structure of their datasets is, in some cases, highly influenced by the type of modelling carried out in that software. For instance, it includes:

- Graphical modelling: the user creates the connections in the supply chains manually in the model graph; automatic connections are not feasible. That is one reason because most of the datasets included in GaBi databases are either fully aggregated or partially aggregated processes (i.e. creating thousands of linkages manually as when using unit processes might require too much effort).
- The same flow can be generated by multiple processes within the database (e.g. "electricity", by all electricity mixes).
- Default providers cannot be set within the software, neither are supported by ILCD, which is the format used by thinkstep to provide to GreenDelta the datasets.

Due to all the above-mentioned conditions, **it is strongly recommended to create the product systems only linking the default providers** for GaBi databases in openLCA. Therefore, please remember to select the "Only link default providers" option in the product system wizard (Figure 3) for provider listing, when creating new product systems. In case of selecting the "prefer default providers" option in the product system wizard (Figure 3) for provider listing, please check the model graphs to eliminate the unwanted providers to avoid miscalculations in the impact assessment.

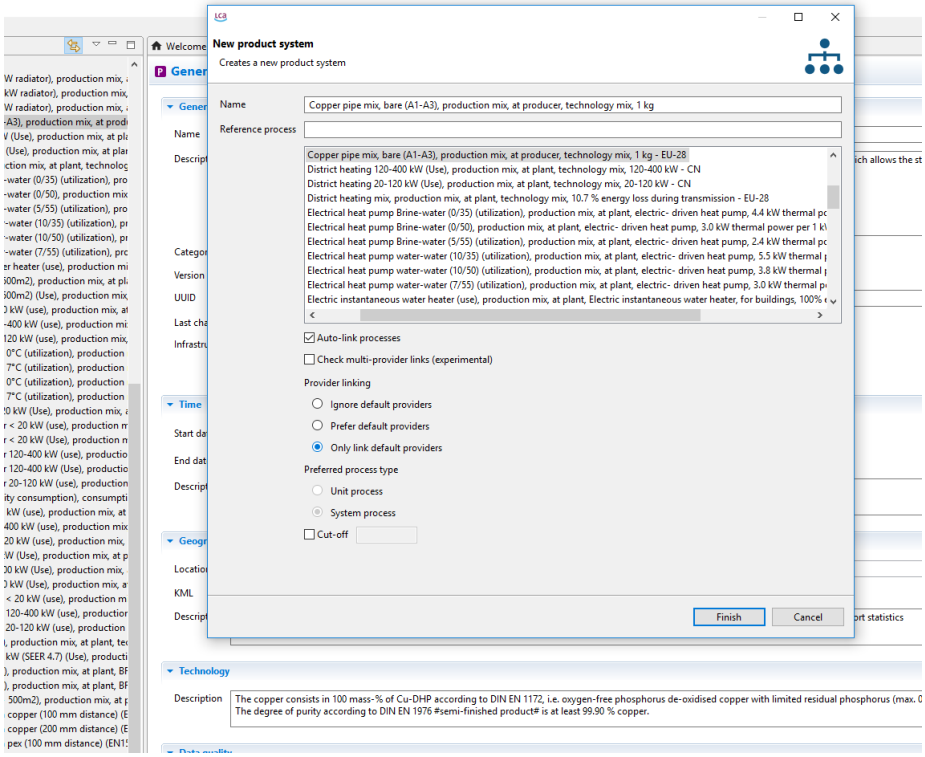

Figure 3. Wizard for creating a product system in openLCA 1.9.0

3 Feedback & Contact

If you have other questions not addressed by this document, or should you need further clarifications on any of the points commented, then please contact us:

Tel. +49 30 48 496 – 030

Fax +49 30 48 496 – 991

gd@greendelta.com

GreenDelta GmbH

KaiserDamm 13

14057 Berlin, Germany

www.greendelta.com

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