

Best Practice LCA: Impact Assessment, Oct 1, 2014

Questions and Answers

The following are questions and the corresponding answers from the PE INTERNATIONAL webinar titled Best Practice LCA: Impact Assessment, which took place on Oct 1, 2014. The questions are in no particular order.

General method questions

Q: So for European studies, does PE recommend ReCiPe instead of CML?

A: So far we have not reached a level of general recommendation. Recommendations will have to be done on a per-impact-category basis, and not by endorsing ReCiPe or CML in their entirety. We will publish a white paper (or similar publication) over the coming months with a general recommendation.

Q: Is Lime in GaBi?

A: Lime is currently not in GaBi. We have implemented the most commonly used impact methods. If we see relevant demand in our customer base for Lime, we would add it to our GaBi roadmap.

Q: How can I evaluate a case study comparing US and EU? Can I use the CML method for both?

A: If your company is based in Europe, I would suggest CML with TRACI as sensitivity analysis, and the other way around if your company is in the US. If the two methods contradict each other, you may have to call it a draw unless you can make the case that one is somehow more appropriate than the other for your specific study.

Q: For Latin America what's the methodology geographically recommended?

A: I would recommend CML or ReCiPe. Then test the main conclusions with one more methodology with TRACI, or the other way round.

Q: If I am not sure which method to use, can I test various ones and compare results? For which version should I go then? Least impacts?

A: I would choose a main methodology depending on the location of your company. For, e.g., a European company test with TRACI as sensitivity analysis. Your results should then be communicated as ranges rather than as single point results. It is highly unlikely that a single method will give you the lowest results across all impact categories anyway.

Q: Can ILCD be used for global studies?

A: The ILCD set of recommended impacts are designed for a European context. However, since no methodology currently implemented in GaBi cover the global situation, then ILCD can be used. Or either of CML/ReCiPe/TRACI. The main assumptions and conclusions can then be tested with an additional method besides the main one, e.g. using ILCD impacts, and doing sensitivity analysis with TRACI.

Specific method questions

Q: Does these PE calculated and verified substances for CML mean that these are something extra.. i.e. for example using different LCA tool and there CML the LCIA results are then different?

A: Yes. Quoting from Chapter 4.3.3.17 of CML methodology document 2.a:

“Many practical cases will involve emissions of toxic chemicals for which no toxicity potentials are listed in the tables with characterisation factors. The same applies to acidifying substances, ionising substances, depletable resources and so on. A general guideline given for extended LCAs is to calculate, estimate or extrapolate missing characterisation factors.”

Q: For eutrophication ReCiPe assumes all is going to air and from there to other compartments? If yes how is this modelled?

A: The air transport is modelled as changes in acid deposition in Europe, derived from continental changes in air emission, calculated with the model EUTREND (Van Jaarsveld, 1995). When checking the details, I can see that hereby ReCiPe actually calculates a removal of approx. 92% of nitrogen emitted to air before reaching the marine water where it can cause eutrophication.

There are also characterization factors allowing for direct emissions to fresh or marine waters.

Q: What's the AE methodology?

A: Accumulated Exceedance (AE) characterizes the change in critical load exceedance of the sensitive area in terrestrial and main freshwater ecosystems, to which acidifying substances deposit. ([EPLCA - European reference Life-Cycle Database](#))

USEtox

Q: What's the difference between toxicity cancer vs. non-cancer?

A: Cancer relate to carcinogenic impact of substances, whereas non-cancer relate to other health effects from toxic substances, e.g. hormone disruptions.

Q: How widely used is USEtox and how useful is it, from a US perspective?

A: The USEtox method is developed under the UNEP framework, i.e. a global perspective. Several persons involved are from the US, e.g. Olivier Joillet working at University of Michigan. US EPA chose to integrate USEtox as the method to handle toxic impacts in TRACI for these reasons. Normalization factors for USEtox are available for Europe and North America.

Other questions?

For any other question, please contact support@gabi-software.com.