High quality LCI data sets – Review as one component

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Structure

- Three theses
- Purposes of and objects for review
- ISO 14000 about review
- Motivation of independent review
- What kind of review is needed?

Theses

For higher quality LCI datasets...

- 1. ... we need a better review for LCI datasets and LCI databases
- 2. ... we need aggregated LCI databases with appropriate documentation
- 3. ... we need self-financed, not subsidised LCI databases

Purposes of and objects for review

Purposes of review:

- LCA for public comparison
- Internal LCA
- **LCI dataset (for external use)**
- **LCI database**
- Others e.g. Type III Label issues

Objects for review on level of LCI dataset and LCI database (selection):

- Input/Output and its amount
- Other quantitative and qualitative information on unit process level
- Unit process as integrity
- LCI dataset
- Use of unit processes and LCI datasets in product systems (appropriateness)
- Link of LCI dataset to LCIA
- LCI databases
- Documentation (on all levels)
- LCI methodology

ISO 14000 about review

Independent evaluation of data used, methodology applied and conclusions drawn

- **Independent** evaluation of data used, methodology applied and interpretations of results made regarding meeting ISO Standard, being scientifically and **technically** valid, being appropriate and reasonable in relationship to goal of the study, being **transparent** and consistent.
- Critical, independent, external reviews are required in public comparisons.
- Critical review process to be defined during goal and scope definition phase of study.
- **Confidentiality** agreements integrated as needed.
- Further external reviewers can be included, which may be affected by study results or conclusions drawn from, including **competitors**.
- Critical review and comments of all parties involved in study and review are to be included into final report.

bold = difficulties / contradictions observed or often to be expected

Vague and partly contradictory: transparent documentation and confidentiality

Motivation of independent review

- O.k., but whatfor do we still need an independent review if ‘everybody’ calls for “fully transparent, public available databases”?

- Do we still need a transparent database if we have an independent review?

- And: what does “public available” mean? Non-commercial? *

* I.e. “cost free”? --> Databases listed as “public available” in ongoing database reviews are not cost free, partly even very expensive. Databases listed as “commercial” are also available to everybody, often even at lower cost --> group databases as “with costs, including tool and service” and “for free, no tool, no service” or “subsidised” and “non-subsidised” or better don’t group databases in a way, that does not state anything about its value, quality or acceptance in practice

Motivation of independent review

Advantages and disadvantages of “fully transparent, cost free databases” -I-

Pro-Arguments

- **Transparency** for ...
  - error checking by users
  - insights to users
  - detailed analysis by users

Questions

- Nice to have, but ...
  - technical knowledge of background system? Time for checking?
  - mainly academic interest (since out of influence of decision maker)
  - mainly academic interest

! Transparency prevents from having actual, detailed and complete unit process data on technology, yield, emissions etc. (Confidentiality needed!)
! Transparency makes database more complex and difficult to use and it shifts the responsibility of quality control to the user
! Decisions basing directly on LCA results are taken in industry --> decision supporters are the relevant target group for LCI datasets and databases; academic interests are secondary

Motivation of independent review

Advantages and disadvantages of “fully transparent, cost free databases” -II-

Pro-Arguments

- **Cost-free** for ...
  - no costs for users

Questions

- Nice to have, but ...
  - who pays database build-up? who maintains? who pays independent review?
  - Again: Mainly academic interest*

* Data cost << cost for carrying out studies in-house: example GaBi: Team of three inhouse-LCA experts pays 10.000 € for min. 3 years professional database incl. full software and full service hotline. Personnel costs: 150.000 € per person and year = 1.012.500 € for team of three at 75% time for work in LCA projects.

--> Data+sool+service = 1% of costs!

Discounts for academic institutions.

Motivation of independent review

Advantages and disadvantages of “fully transparent, cost free databases” -III-

! **Strong subventions** on “cost free” databases is **of low value** for supporting application of LCI data in real world
! Strong subventions also means to **punish and endanger** small ‘commercial’ database providers (**SMEs**), that made self-financing, but still cheap databases available to practitioners, thereby substantially supporting LCA practice
--> ! If policy loses interest in supporting “cost free” LCI databases after some years, it will leave behind an **empty LCI database market**

→! **Instead**, use effort and money to **support the pull-side** for LCI databases: develop demand in new applications like approval process of plants (IPPC), public purchase, EMAS II, EPD, LC-based evaluation of research promotion etc.
→! Use some effort and money to **support** developers of market-relevant LCI databases in method- and format-**harmonisation** efforts

Motivation of independent review

Needs in practice regarding LCI data (with focus on quality)

- “Relevant background data in good quality, efficient to use, with appropriate documentation”

- --> ?

- “relevant background data”: depends on industry and application
- “good quality”: guaranteed quality* by trust or independent **review**
- “efficient to use”: in appropriate format (link to tool); drag&drop; link to LCIA
- “appropriate documentation”: functional unit of product; technology(ies), time and place(s) of last process step; (link to most relevant upstream processes)

* Quality includes methodology for calculation of LCI dataset!

! For LCI datasets and LCI databases to be used by third parties !

Direct need:

- accepted and affordable

--> Derived needs:

- independent
- qualified in terms of technology and methodology
- confidentiality needs met
- affordable in costs and time

What kind of review is needed?

Sketch of review process aspects, that would meet the need

- “independent”: **really independent**, i.e. no formal link to LCI provider (for LCAs: neither LCA performer nor LCA purchaser nor owner of evaluated product system); procedure **approved by board** established/accepted by all relevant database providers
- “qualified in terms of technology and methodology”: **two reviewers**, each one reviewer with in-depth **technical** knowledge of unit process to be evaluated including emissions and the adjacent unit processes and one reviewer with some **technical** knowledge of the above **plus** in-depth **methodological** knowledge of LCA (LCI and LCIA and interpretation)
- “confidentiality needs met”: evaluation at place of LCI dataset or database **provider**; data originator can **decline reviewer**; confidentiality agreements
- “affordable in costs and time”: **costs covered by dataset users**; review sessions for minimising effort

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