RawMaterials
Connecting matters

Integrating dissipation into Life Cycle Assessment

Prof. Dr. Guido Sonnemann
Université de Bordeaux

Brokerage Event & Expert Forum^3 | 13-14 October 2021

Co-funded by the
European Union

SHORT DESCRIPTION OF THE IDEA

- The **life cycle assessment (LCA)** according to 14040/44 is a relevant environmental impact assessment method to improve product designs and communicate on their environmental performance.
- **Dissipative flows of abiotic resources** are flows to sinks or stocks that are not accessible to future users due to different constraints; hence they are the **"negation" of a circular economy**.
- These constraints prevent humans to make use of the function(s) that the resources could have in the technosphere and these flows are currently **not considered in LCA**.
- The idea of our project is to **integrate life cycle inventory data and an impact assessment method** for estimating the impacts of dissipative flows of abiotic resources **in LCA* software**.
- The business model is to **sell data and the assessment method as an add-on to LCA software to the growing marke**t of LCA practitioners, based on a related **dataset for dynamic material flow analysis (MFA)**

*Charpentier Poncelet, A., Helbig, C., Loubet, P., Beylot, A., Muller, S., Villeneuve, J., Laratte, B., Thorenz, A., Tuma, A., & Sonnemann, G. (2021). Life cycle impact assessment methods for estimating the impacts of dissipative flows of metals. J. Ind. Ecol. jiec.13136. https://doi.org/10.1111/jiec.13136

THEMATIC SCOPE OF THE PROJECT PROPOSAL

Category of activity:

- Upscaling

Link with the topics addressed in KAVA Call 9:

- Raw Materials and Circular Societies Lighthouse:
  - Recycling of end-of-life products containing Strategic Materials and/or CRMs
  - Resource and Energy efficient in metallurgical and Mineralogical processing
- Sustainable Materials Future Mobility Lighthouse:
  - Innovative technical and business solutions in process design, plant engineering and construction
  - Development of an improved Life Cycle Inventory database
- Sustainable Discovery and Supply Lighthouse:
  - Environmental-Social-Governance (ESG)

CURRENT STATUS OF THE PROPOSAL

- Current partners: Université de Bordeaux & BRGM

- Type of expertise requested:

  Dynamic material flow analysis (MFA

  Life Cycle Assessment (LCA) database developer, method developer and software developer

  Commercialising partner

  Companies interested in testing the use of dissipative flows of abiotic resources in their LCA studies

CONTACT PERSONS

Dr Guido Sonnemann

Professor, Sustainable Chemistry

Université de Bordeaux, France

E-mail address: guido.sonnemann@u-bordeaux-.fr

Dr Marie ROSSELIN

Innovation Manager, Materials

Université de Bordeaux, France

E-mail address: marie.rosselin@u-bordeaux.fr