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Transparent methodology and education on Life Cycle Assessments - LCA trainings as a successful starting point

The new EU Battery Regulation increases the transparency, traceability and timeliness of battery data that battery manufacturers must comply with. At the same time, market demand for batteries is expected to grow rapidly in the near future. Life Cycle Assessments (LCA) are a key component to improve sustainability along the entire battery value chain. Therefore, the EU-funded HiQ-LCA project aims to educate professionals from different fields, such as industry and academia, on the methodology, potential and use cases of LCA along the battery value chain. As a first step, the HiQ-LCA partner University of Bordeaux, in collaboration with the CyVi Group, conducted a one-day hybrid LCA training in Bordeaux as part of the project's research measurements. This proved to be a promising basis for future regular LCA trainings.

Led by Professor Guido Sonnemann, Head of the Life Cycle Group CyVi at the Bordeaux University Institute of Molecular Sciences, students and industry stakeholders alike were invited to Bordeaux on May 6th, 2024, to learn more about LCA, work on case studies, and provide feedback for upcoming case studies. 55 international participants took up the offer, both online and in person. Approximately 63 % of the participants were women, which demonstrates that the training courses contribute to ensure diversity in the field of LCA. “It is clear that LCA for sustainability assessment is a field where many women are interested and already make a significant contribution with their respective expertise”, says Guido Sonnemann.

Comprehensive training for LCA beginners and more advanced practitioners

Training topics covered a wide range of LCA areas, from an introduction to LCA and resource efficiency, through different types of LCAs and environmental impacts, up to battery LCAs for sustainable chemistry and information on life cycle management. The management perspective focuses on how to use LCAs as a business and for eco-design and communication purposes. The wide range of training topics corresponded to the interdisciplinary composition of participants, which included beginners and advanced participants as well as experts and students from academia and industry.

High knowledge gain from the training

The course took the form of a survey at the beginning of the training to assess initial knowledge of LCA. At the end of the course, participants completed a quiz to measure their gain in LCA knowledge, followed by feedback

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forms for improvement suggestions and other ideas. The case studies, EPD and LCA applications were rated as the most valuable parts of the training in the feedback forms completed by 24 of the participants. 46% of the participants experienced their first LCA training through this course. According to a self-assessment, the participants' LCA knowledge increased from a basic level to a medium level. Practical training has not been provided yet.

Committed to expanding and disseminating training programs

Based on the results of the feedback, improvements to future LCA training will include hands-on exercises and software training. In addition, reports on market and training needs are already being prepared to improve future LCA training offers. The LCA training provided by the University of Bordeaux has been very successful, according to surveys of the participants. Therefore, the offer will be extended on an in-person and virtual scale to widen the reach in academic and industrial fields to create "greener" value chains, in particular in relation to batteries and e-mobility. Another HiQ-LCA partner, CML of Leiden University, will offer prospective LCA training on how to perform scenario-based prospective LCA using the Activity Browser. In the near future, comprehensive virtual and physical battery LCA trainings shall be offered via a start-up company that will be created within the HiQ-LCA project.

Partners

- Bureau de Recherches Géologiques et Minières, BRGM, France
- CellCircle UG (haftungsbeschränkt), Germany
- ecoinvent Association, Switzerland
- Eramet SA, France
- European Lithium Institute eLi, Belgium (project coordinator)
- Fraunhofer Institute for Silicate Research ISC, Germany
- Fraunhofer Institute for Surface Engineering and Thin Films IST, Germany
- Ghent University, Belgium
- Leiden University, Netherlands
- Minviro Ltd, United Kingdom
- Northvolt AB, Sweden
- Université de Bordeaux, France

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Picture

Guido Sonnemann starting the LCA trainings. Source: University of Bordeaux, Grace Lovio

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