

WORKSHOP ON

LCA Methodology Harmonization and Creation of Sustainability Think Tank

13-14th March, 2023

Académie de recherche et d'enseignement supérieur (ARES), Brussels.

WELCOME TO DAY 2

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LCA Methodology Harmonization Workshop, Brussels, 2023

Session Structure: Tuesday, Day 2

Expected outcomes, standardized training on LCA & possible conference structure



- 09:00 - Day 1 takeaways and next steps – **Break out sessions**

10:30 – Coffee Break

- 10:45 - Project related internal trainings for non-LCA experts
Presenter: Diana Godoi Bizarro (TNO) and Teixeira Taboada Sabela (University of Liège)



12:00 – Lunch Break

- 13:15 - Formulating Conference Structure
- 13:45 - Identifying keynote speaker on the addressed topics
- 14:15 - Budget/Financing of Conference
- 14:35 - Workshop Wrap-up, Challenges, and further research questions – Interactive discussion
- 15:00 – End of Workshop

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Recapitulating Day 1

Session 1: Introduction to LCA in current EU projects

- Introduction to 11 EU PV LCA projects along with their LCA parameters

Session 2: Background database selection and LCIA method accuracy

- Discussion on the spatial and temporal representativeness of Ecoinvent datasets focusing on the 'electricity activities'
 - Suggestion- Establish communication with Ecoinvent to highlight the temporal representativeness of 'electricity activities'
 - Recommendation: Model the electricity mix to represent the desired year till such data is available in the database
- Discussion on the selection of impact categories
 - Suggestion: Use Environmental Footprint 3 LCIA which is in accordance to the standards EN 15804 series (Although doesn't resonate internationally)
 - For toxicity related impact categories, check if all materials of the inventory (Pb) are present with a characterization factor of the LCIA method.
 - Incorporation of temporal and spatial representation of LCIA method currently not possible
 - Uncertainty analysis and global sensitivity analysis is recommended for all sensitive parameters

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Recapitulating Day 1

Session 3: Review of treatment and recycling methodologies

- Overview of different present and future EoL scenarios for c-PV, Perovskite PV and emerging PV technologies
- LCI for Perovskite PV EoL along with other EoL LCIs shown
- Avoided burden approach can overestimate the avoided burden. Only recommended to use for EoL
- Depending on the EoL technology, virgin material can have less impact than recycled material
- Currently, circularity methods lack agreed upon indicators
- Quality/purity is not included in circularity indicators

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Recapitulating Day 1

Session 4: Review of LCA Parameters and PEFCR default parameters for Perovskites, emerging PV and PV technologies

- Use of all three FU encouraged for comprehensive studies and ease in comparison later
- Discussion on selection of Database, impact assessment method, system model as well as software
- Discussion on using sensitivity analysis for Perovskite and emerging PV for Lifetime, Degradation rate and Performance ratio
- Discussion on communication with IEA PVPS Task-12 to incorporate provision for perovskite and emerging PV default parameters
- Irradiation based on EN IEC 61853 for comparison along with what is required by the project

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Session 5: Review beyond LCA

- Discussion on Prospective LCA
 - Difficult to do due to lack of standardized methodology
 - PREMISE (IAM) can be used for prospective LCAs (background developments)
 - Important for future benchmarking
 - Currently not done in EU projects
- Discussion on Criticality and Social LCA
 - Perovskite and emerging PV requires supply chain mapping
 - Cooperation between different organizations (e.g. BRGM) can facilitate standardization of criticality
 - Currently no standardization is available for social LCA, it's indicator and data selection
- Discussion on Sustainability Labels
 - Freedom of choice observed for EPDs (e.g. Solar Irradiation, database and LCIA method)
 - PCRs for PV not available for Eco-design

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Recapitulating Day 1

Session 6: Issues of reporting

- Discussion on transparency and not aggregation with respect to the boundaries of project confidentiality
- Encouragement of reporting the GWP of the used electricity mix for production along with the name of the location for temporal and spatial transparency
- Critical review of LCA deliverables: Internal review in all cases and peer-reviewed publication for some

BREAK-OUT SESSION

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