The role of life cycle engineering (LCE) in meeting the sustainable development goals – report from a consultation of LCE experts

Life cycle engineering (LCE) targets product development and manufacturing activities in a life cycle perspective, with the aim to create more sustainable solutions. Coined approximately 30 years ago, it was adopted by the International Academy for Production Engineering (CIRP, from the French title), which established annual conferences on life cycle engineering to further develop the concept and its operationalisation. With the recent advent of the United Nations’ Sustainable Development Goals (SDGs), engineering is now provided with specific targets to steer societies towards sustainable production and consumption. But how can LCE contribute to meeting the UN SDGs? Here, we report on a consultation process conducted as part of the 25th CIRP LCE conference, organised in Copenhagen, DK, in 2018. Approximately 175 participants reflected on a list of ten pre-identified challenges for implementing the SDG agenda that LCE could help tackle, and were solicited to propose solutions. A total of 118 solutions were proposed, and the main messages and recommendations are summarised and reported in the paper. Overall, they voice the need for stronger action from academia (e.g. research needs related to addressing trade-offs across SDGs), business and governments (e.g. transparent and harmonised reporting on sustainability performances, internalisation of external costs) and society at large (e.g. consumer behaviour, role of education).

General information
- Publication status: Published
- Organisations: Sustainability, Quantitative Sustainability Assessment, Department of Technology, Management and Economics, Quantitative Sustainability Assessment, Technical University of Braunschweig, University of New South Wales, KU Leuven
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- Pages: 378-382
- Publication date: 2019
- Peer-reviewed: Yes

Publication information
- Journal: Journal of Cleaner Production
- Volume: 230
- ISSN (Print): 0959-6526
- Ratings:
  - BFI (2019): BFI-level 2
  - Web of Science (2019): Indexed yes
- Original language: English
- Keywords: Absolute sustainability, Interactive session, Life cycle assessment, Manufacturing, SDG, Sustainable production and consumption
- DOIs: 10.1016/j.jclepro.2019.05.129
- Source: FindIt
- Source-ID: 2448000340

Research output: Contribution to journal › Journal article – Annual report year: 2019 › Research › peer-review