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Training and capacity building on LCA in Slovenia

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Introduction

This presentation describes two examples of good practices on LCA training and capacity building based on expert workshops organized recently in Slovenia:

- “Introducing circular changes in the economy through product life cycle analysis (LCA)”,[1]

and

- “Process planning and multi-criteria decision making in a circular economy”.[2]

Sources:

[1]https://www.stajerskagz.si/izdelek/strokovna-delavnica-uvajanje-kroznih-sprememb-v-gospodarstvu-s-pomocjo-analize-zivljenjskega-cikla-izdelka-lca/

[2]https://koc-krozno-gospodarstvo.si/29-6-in-30-6-2021-napoved-usposabljanja-%cb%9dnacrtovanje-procesov-in-veckriterijsko-odlocanje-v-kroznem-gospodarstvu%cb%9d/

Introduction – Case 1

Product life cycle analysis (LCA analysis) is an internationally established method that allows the evaluation of environmental impacts that occur throughout the life cycle of a product, service or process in a transparent manner.

LCA analysis helps us in assessing environmental impacts or decisions on the use of a newly developed product (services, process, …), and compare it with competing products and identify the key stages at which changes would reduce environmental impacts.

Environmental management - life cycle assessment - principles and frameworks are defined in ISO standard 14040.

The use of LCA analysis is also supported by the European Commission. The results of LCA analyses are of interest to the economy / industry and to consumers / users, including the public sector, as the protection of the environment and the rational use of resources are the most important priorities of any society.

Introduction – Case 1

The above was presented to participants of the expert workshop “Introducing circular changes in the economy through product life cycle analysis (LCA)”, which was organized by the Chamber of Commerce of Styria and held on 12 December 2019 in Maribor, Slovenia. The presentations were given by experts from the Slovenian academic institutions:

- University of Maribor (Dr. Zorka Novak Pintarič, Dr. Damjan Krajnc, Dr. Gregor Radonjič), and
- University of Ljubljana (Dr. Mitja Mori).

Evidence of success – Case 1

The workshop described was intended for entrepreneurs interested in the circular economy, other entrepreneurs and future entrepreneurs interested in new business opportunities, and other interested parties, including participants from the public sector. The participants of the event were able to get knowledge on:

- characteristics of the circular economy,
- basics of LCA analysis and examples,
- ways to carry out and undertake LCA analysis in companies, and about
- the complexity of life cycle evaluation in energy conversion processes.

Introduction – Case 2

Circular economy projects differ from conventional development projects in several aspects:

- technologies are little researched, so as a rule, demanding research and development of new technological processes and products are needed,
- generally high investment, and
- the obtained results are not highly profitable, so classical economic indicators are often unfavourable.

For the planning of processes in the field of circular economy, it is necessary to introduce multi-criteria decision-making, where, in addition to economic criteria, we also take into account environmental and social impacts, which can be addressed by life cycle analysis (LCA). Among the alternatives, we choose the one that represents a balanced compromise between all three factors, i.e. economic, environmental and social.

Introduction – Case 2

The above was presented to participants of the two-day event entitled “Process planning and multi-criteria decision making in a circular economy”, which was organized by the Chamber of Commerce of Styria and Competence Center on Circular Economy, and held on 29-30 June 2021 in Maribor, Slovenia. The presentations were given by experts from the University of Maribor, Faculty of Chemistry and Chemical Technology (Dr. Andreja Nemet, Dr. Miloš Bogataj, Dr. Damjan Krajnc, Dr. Zorka Novak Pintarič and Dr. Anita Kovač Kralj).

Evidence of success – Case 2

The two-day workshop was intended for participants from companies interested in the circular economy, other entrepreneurs and future entrepreneurs interested in new business opportunities, and other interested parties. The participants of the event were able to get knowledge on:

- the concept of the circular economy and sustainable development,
- methods and metrics for preliminary assessment of processes and technologies for the circular economy,
- LCA analysis as a tool for environmental design of products and processes,
- reduction of heat and water consumption through integration,
- evaluation of circular economy projects, and
- examples of sustainable production of different processes.

Potential for learning or transfer

The described expert workshops provided an opportunity to the participants to get new knowledge and expertise on the use of product life cycle analysis that they can use while introducing new products into production, as well as to those coming from the public sector to obtain insight and experience on creating new policies.

Other workshops on LCA

Expert workshops on LCA training and capacity building have been also organized in Slovenia occasionally by:

- Slovenian Chamber of Commerce, and
- Slovenian National Building and Civil Engineering Institute.

Education

In the study programs of the Faculty of Chemistry and Chemical Technology of the University of Maribor, the study of LCA methodologies is conducted in the following subjects:

- the optional subject "Life cycle assessment" in the doctoral study program, and
- two optional courses in the master's program: "Environmental Management" and "Eco-design and life cycle assessment".

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Thank you!

Questions welcome

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