



ECONOMIC TOOLS IN LCA – LIFE CYCLE COSTING, EXTERNAL COSTS AND COST-BENEFIT ANALYSIS

An introduction to the technique of life cycle costing (LCC). The objective and scope of LCC are illustrated with case studies. Macroeconomic concepts with relevance for LCA. The distinction between biophysical, economic and social externalities and their consistent treatment in LCA and Cost-Benefit Analysis (CBA). Different procedures for monetary valuation. Socio-economic classes and distributional analysis. The rationale and procedure for discounting. The ISO standardisation of LCC, CBA, and monetary valuation.

The course

COURSE OUTLINE

- Basic economic concepts with relevance for LCC and LCA. Definition and types of LCC and comparisons with CBA. Relevant ISO standards for LCC.
- Data sources for LCC and CBA, added values, prices, taxes and subsidies.
- Exercise: Calculation of an LCC. Interpretation of LCC results and the identification of hotspots.
- Distinction between biophysical, economic and social externalities. Cost shifting and accounting for externalities in LCA and CBA.
- Monetary valuation methods, their suitability for different applications. ISO 14008. Exercise with monetary valuation of impacts from a diesel engine.
- Eco-efficiency. Interpretation of LCC results and monetarised externalities.
- Discounting, its rationale and the choice of discount rates in economic, social and environmental contexts. Exercises using the Ramsey formula, decreasing discount rates, and discounting in impact assessment.
- The distribution of incomes and external costs on social groups. Exercise on equity-weighting of utility using a simple database.
- The limitations of monetary valuation and economic analysis in LCA.
- The critique from ecological economics.
- Communicating the results of LCC and monetary valuation to LCA experts and decision makers.

FORM AND ACADEMIC RECOGNITION

Form: 12 hours lectures, 8 hours exercises.

Academic recognition: 2 ECTS-point including mandatory pre-course reading from a literature list provided.



LEARNING OUTCOMES

- Understanding the basics of LCC and cost shifting across the life cycles of products and socio-economic classes.
- Ability to quantify life cycle costs and integrate them in a consistent way into LCA using a simple input-output database.
- Understanding the concepts of economic, social and biophysical externalities and the procedures and problems of monetary valuation.
- Ability to interpret the results of LCC, eco-efficiency analysis and Cost-Benefit Analysis.
- Ability to integrate distributional effects in an LCA result using a simple input-output database with socio-economic data.
- Understanding the rationale for discounting. Ability to argue for a specific choice of discount rate and to discount an assessment result.
- Knowing the relevant ISO standards and understanding the ongoing ISO standardization process.
- Understanding the challenges in communicating results of using LCC, monetary valuation and other economic tools in LCA.

The practicalities

WHEN AND WHERE?

Monday, January 14 to Wednesday, January 16, 2019

Spain, Barcelona, International Life Cycle Academy (ESCI-UPF), Passeig Pujades 1 (entry from Passeig Picasso 8)

PARTICIPANT PREREQUISITES

Master degree or equivalent. A basic understanding of life cycle assessment. Must bring own laptop computer.

TEACHING STAFF

Prof. Bo Weidema, University of Aalborg, Denmark

Dr. Till Bachmann, Karlsruhe Institute of Technology, Germany

Dr. Claudio Cattaneo, Universitat Autònoma de Barcelona, Spain

PRICE AND COURSE CONDITIONS

3000 Euro for professionals

1500 Euro for university personnel and

750 Euro for students.

Second registrations from the same institution offered at 50% discount.

Prices do not include travel, accommodation and meals.

Accommodation recommendations will be sent once course is confirmed.

CONTACT PERSON:

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