Environment, energy and climate

Life Cycle Assessment: ISO 14040 / 14044

Two days to understand, manage and read a life cycle assessment that complies with the principles of ISO 14040 and the requirements of ISO 14044: goal and scope, functional unit, inventory, impact assessment, interpretation. You model a product from your site, learn to judge a study carried out by a third party and to know when a critical review is required.

Duration : 2 days

Objectives

1. Explain the framework of ISO 14040:2006 and ISO 14044:2006 and the four phases of a life cycle assessment
2. Define the goal, scope, functional unit and system boundaries of a study
3. Build a life cycle inventory with site data and documented generic data
4. Interpret the impact assessment results, their sensitivity and their limits
5. Assess the quality of a study carried out by a third party and the conditions for a critical review

Programme

Day 1 — morning

• What an LCA is for: ecodesign, answering a buyer, environmental product declaration, choosing between two solutions

• Normative framework: ISO 14040 for principles, ISO 14044 for requirements; derived standards such as ISO 14067 and ISO 14046

• Phase 1: goal and scope, functional unit, reference flow, system boundaries

• Cut-off rules, assumptions and how to document them

Day 1 — afternoon

• Phase 2: life cycle inventory, foreground and background data

• Collecting site data: materials, energy, water, waste, transport, packaging

• Allocation between co-products and treatment of recycling

• Exercise: process tree and collection plan for a product from your range

Day 2 — morning

• Phase 3: impact assessment, impact categories, indicators and characterisation methods

• Phase 4: interpretation, main contributions, sensitivity and uncertainty analyses

• Data quality: representativeness, completeness, consistency

• Limits of an LCA and frequent misreadings

Day 2 — afternoon (workshop)

• Workshop: simplified LCA of a product from your site on a supplied calculation model

• Critical reading of an LCA report: what to check before using it

• Critical review: when it is required, notably for a comparison intended for the public, and how it proceeds

• Communicating results and the risk of a misleading claim; knowledge test

Teaching methods

• Modelling a real product from your site, from process tree to result
• Calculation spreadsheet supplied to understand the mechanics before any specialist software
• Critical reading of extracts from published or anonymised studies
• Sub-group work on functional unit and allocation choices
• Mid-course quiz on the inventory, final test on the four LCA phases

Assessment and documents

Mid-course quiz and knowledge test at the end of the session, feedback survey at D+1. Numbered training certificate, verifiable online, for each participant; the company receives the training report and the simplified LCA model of its product.

Bilingual materials for every participant; each classroom course comes with its digital twin on OmniLearn.

Good to know

Two one-day courses apply the same method to a single indicator: “Product Carbon Footprint: ISO 14067:2018” and “Water Footprint: ISO 14046:2014”. To make use of the results in product development, see “Ecodesign: ISO 14006:2020 (formerly ISO/TR 14062)”.

Practical information

Duration	2 days
Audience	R&D, design offices, environment and CSR managers, product marketing, export project managers
Prerequisites	No prerequisites; a first approach to ecodesign or GHG inventories is useful
Group size	Groups of 6 to 12 participants, in-company
Format	In-company, face to face on your site
Language	French, Darija or English; bilingual materials
Funding	OFPPT special training contracts (TFP), GIAC, Maroc PME: we prepare the applications with you, at no extra cost.
Programme customisation	Programme adapted to your procedures, your equipment and your audience

Frequently asked questions

Do we need LCA software to take the course?
No. Exercises use a supplied spreadsheet, to understand each step of the calculation. Market software and databases are presented in general terms, with the points to check before choosing one, notably the data licence.

What is the difference between an LCA and a product carbon footprint?
LCA is multi-criteria: climate, but also water, resources, acidification, toxicity and other categories. A footprint under ISO 14067:2018 covers climate change only. An LCA avoids shifting one impact onto another without noticing.

Does an LCA have to be verified?
ISO 14044 requires a critical review when a study supports a comparative assertion intended for the public. In other cases it remains recommended as soon as the results leave the company. The course explains how it proceeds and what it costs in time.

What data should we prepare before the session?
The bill of materials of a product, its energy and water consumption per unit or batch, its packaging, its material yields and its main transport routes. Orders of magnitude are enough for the workshop.