



Life Cycle Assessment of products and services

2023

kept

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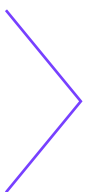
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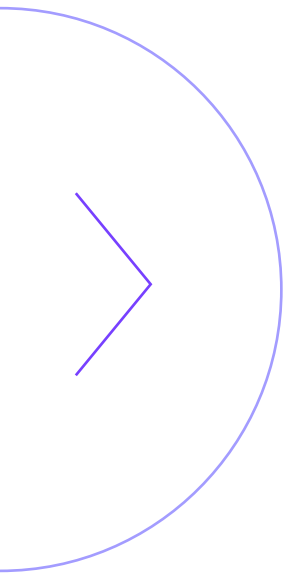
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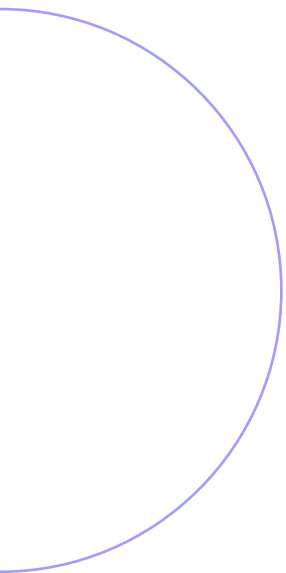


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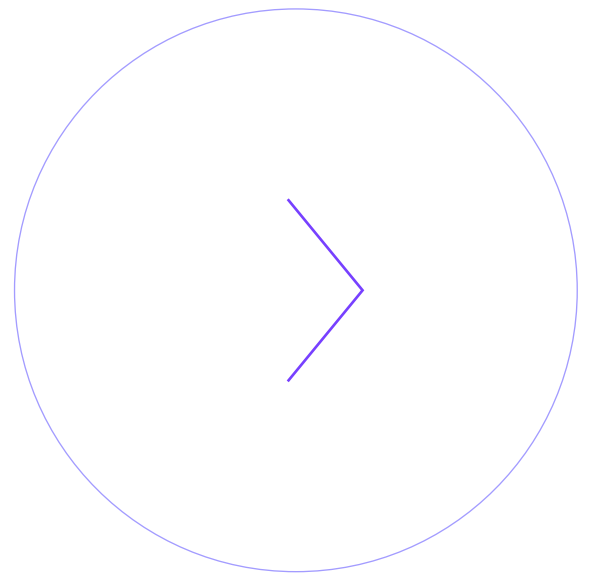
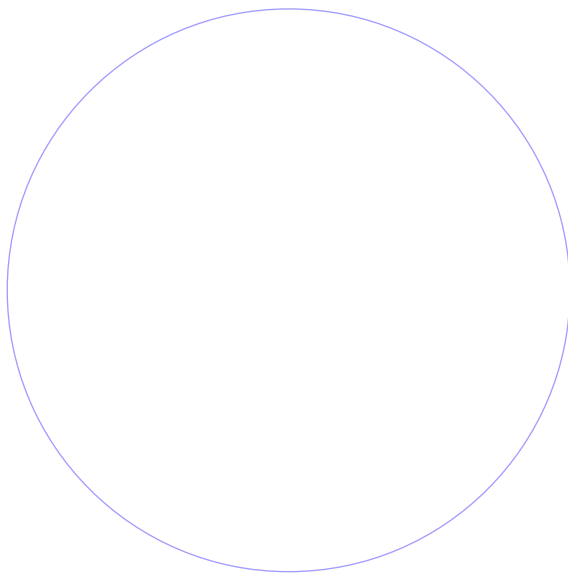


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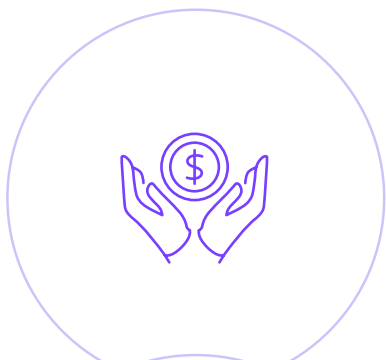
Life Cycle Assessment of products and services

In today's world, responsible companies strive to minimize their environmental impact and to constantly improve the competitiveness of their products and services.

By using the Life Cycle Assessment (LCA) tool, companies can determine the environmental impact of their products, services or processes at each stage of the life cycle.



is an effective tool for creating sustainable business management practices that makes it possible to quantify the environmental impact in terms of various aspects of the production of goods or provision of services.



Companies' interest in applying the LCA method is driven by their willingness to **increase the market value** of products or services through the disclosure of information on their sustainability.



LCA allows to identify the most energy-intensive and resource-intensive stages of processes and to optimize them, thus creating prerequisites for **reducing the costs** due to rational use of raw materials, supplies, fuel and energy.



LCA data serves as an important starting point for **making strategic decisions on business development and innovations**.

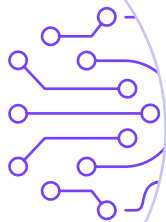
Capabilities

Product development and innovation



- Development of new, more environmentally friendly and sustainable products and services, and process improvement
- Use of safe supplies and raw materials to create green products
- Certification and environmental labeling

Improvement of business operations



- Improvement of production performance
- Identification of opportunities for cost reduction and risk mitigation
- Making the best strategic business decisions due to the availability of quantitative data on the environmental impact of products, services or processes under various scenarios

Expansion into new markets



- Access to developed markets due to increased competitiveness of products
- Additional tool for communicating with stakeholders, clients and consumers

Additional capabilities

LCA is the cornerstone of preparing the

Environmental Product Declaration

EPD

EPD is a Type III environmental declaration in accordance with ISO 14025 intended primarily for B2B communications. The declaration contains quantitative data on the environmental impact, as well as general information on the company, products and additional environmental information.

EPD can be developed for various types of products (construction materials and equipment, furniture, textiles, chemical products, food products, etc.) and for various types of services (plastic processing, cleaning services, etc.).

The LCA method can be used to assess the impact and select the most successful circular economy strategies.

A circular economy involves reducing, reusing, recycling and recovering materials in the production, distribution and consumption processes instead of landfilling and incineration.

Approach and methodology

The LCA methodology is based on the standards of the International Organization for Standardization (ISO)

ISO 14040:2006/Amd 1:2020
Environmental management –
Life cycle assessment – Principles and
framework – Amendment 1

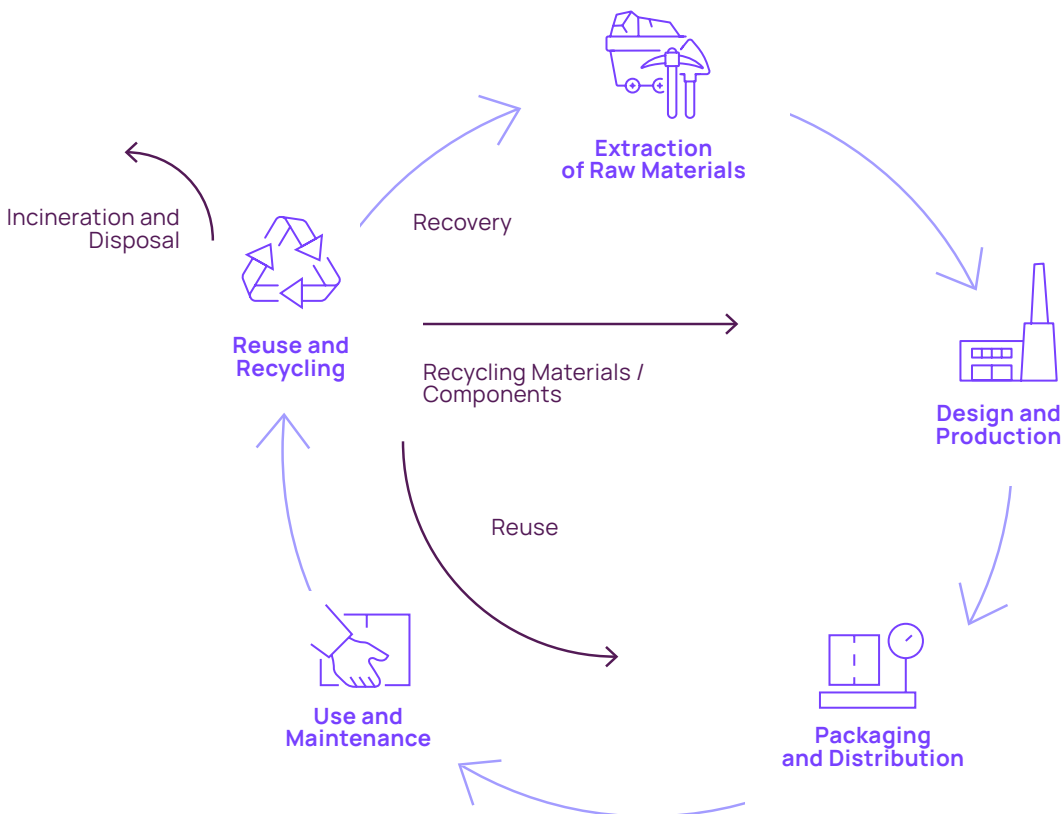
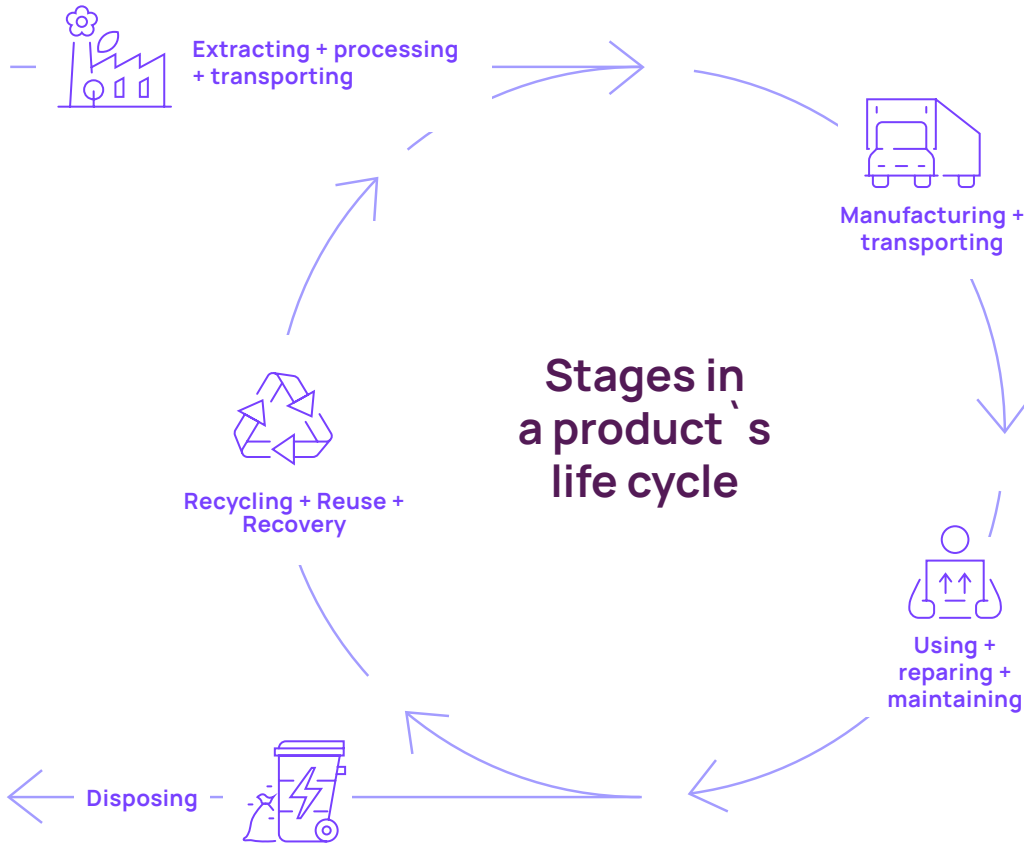
ISO 14044:2006/Amd 2:2020
Environmental management –
Life cycle assessment – Requirements
and guidelines – Amendment 2

The standards have been developed to achieve the following UN Sustainable Development Goals:



Examples of life cycle visualization

LCA may include consideration of the following stages:



Examples of environmental impact parameters under review

- Global Warming Potential, GWP, kg CO₂ eq.
- Ozone Depletion Potential, ODP, kg CFC-11 eq.
- Acidification Potential, AP, kg/mol H⁺ eq.
- Eutrophication Potential, EP, kg PO₄⁻³ eq.
- Use of renewable and non-renewable primary energy, MJ
- Use of secondary raw materials, kg
- Use of renewable secondary fuel, MJ
- Use of fresh water, m³
- Recycled hazardous, non-hazardous and radioactive waste, kg

Main stages of LCA

- Determination of the purpose and area of assessment** > Determination of the LCA purpose and scope, and selection of the functional unit in terms of which impacts will be assessed (e.g. m², t, kg)
- Inventory analysis** > Collection and quantitative analysis of all required input and output data, including raw materials, fuel and energy, water, emissions, waste, etc.
- Life cycle impact assessment** > Quantification of possible environmental impacts at each stage of the product, service or process life cycle.
As part of this stage, all input and output flows collected during the inventory analysis should be entered into a specialized software application to obtain quantitative environmental impact values.
- Interpretation of results** > Interpretation and validation of LCA results.
Identification of the most resource-intensive and energy-intensive processes with the greatest impact on the environment.
Preparation of reports and development of recommendations.

Comprehensive LCA

Product, service or process life cycle assessment is part of a comprehensive

Life Cycle Sustainability Assessment

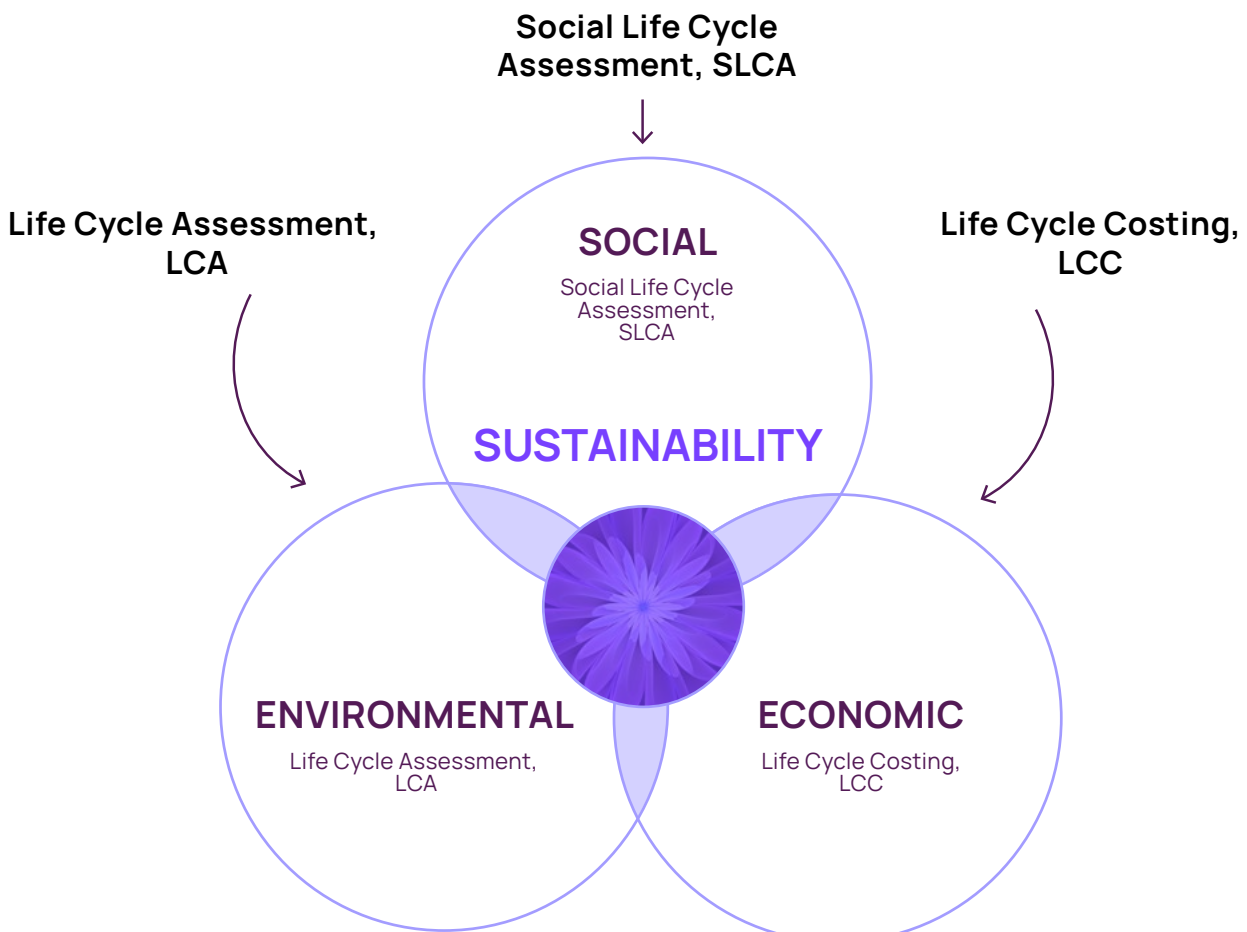
LCSA

This method also includes Life Cycle Costing (LCC) and Social Life Cycle Assessment (SLCA) components.

The purpose of the SLCA method is to assess the actual and potential social impact of products, both positive and negative, over the life cycle.

The purpose of the LCC method is to determine the cost of design/development, production, operation and disposal of products in order to reduce the total cost. The method makes it possible to perform a comparative assessment of costs (in terms of initial costs and future operating costs) over a specific period of time.

Kept provides comprehensive LCSA services



Kept services on product, service or process life cycle assessment

Preparation for the LCA



Benchmarking of current work on LCA of similar products, services or processes



Determination of the purpose and scope of assessment



Collection and quantitative analysis of necessary data for LCA, from content analysis of open sources to identification of impacts at a production site

LCA performance



Quantification of possible environmental impacts over the product, service or process life cycle



Benchmarking the life cycle of several products to identify the most promising option to enter highly competitive markets

Assurance



Independent review of internal life cycle assessment in accordance with ISO to provide assurance in case of planned product life cycle assessment disclosure

Preparation of documents and reporting



Development of sustainability strategies and goals based on LCA results

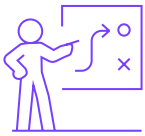


Development of specific measures to reduce the environmental impact at each stage of the product, service or process life cycle

Why Kept

Operational Risk & Sustainability Group at the forefront of ESG transformation

Due to our extensive sustainability experience, Kept is ready to offer leading-edge services in product and service life cycle assessment.



Best practice in ensuring compliance with environmental laws across Eurasia



A balanced team of certified specialists with advanced expertise

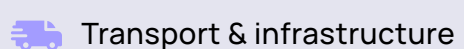
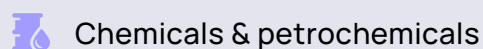
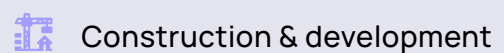
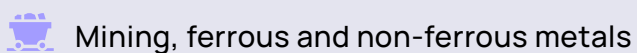
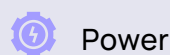
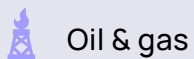


Profound industry competence and in-depth understanding of production processes affecting the environment

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years of successful work with sustainability leaders, and the growing client base

We work with companies from various industries, including:



Contact us



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