

Glossary

Term	Definition	Reference
Allocation	Partitioning the input or output flows of a process or a product system between the product under study and one or more other product systems	ISO 14044
Ancillary input	Material input that is used by the unit process producing the product, but does not constitute part of the product	ISO 14044
Area of protection	A cluster of category endpoints of recognisable value to society, viz. human health, natural resources, natural environment and sometimes man-made environment	Guinée et al. (2002)
Attributional modelling (or descriptive book keeping)	LCI modelling frame that inventories the inputs and output flows of all processes of a system as they occur. Modelling process along an existing supply chain is of this type	ILCD, LCI
By-product	See also co-product. A product from a process that is not the reason why the process is run and that usually has lower value than the main product of the process	Own definition
Category endpoint	Attribute or aspect of natural environment, human health, or resources, identifying an environmental issue giving cause for concern	ISO 14044
Category indicator	See impact category indicator	
Cause–effect chain	See environmental mechanism	
Cause–effect network	See environmental mechanism	
Characterisation	A step of the impact assessment, in which the environmental interventions assigned qualitatively to a particular impact category (in classification) are quantified in terms of a common unit for that category, allowing aggregation into one figure of the indicator result	Guinée et al. (2002)

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Term	Definition	Reference
Characterisation factor	Factor derived from a characterization model which is applied to convert an assigned life cycle inventory analysis result to the common unit of the category indicator. <i>Note:</i> The common unit allows calculation of the category indicator result	ISO 14044
Characterisation model	Reflect the environmental mechanism by describing the relationship between the LCI results, category indicators and, in some cases, category endpoint(s). The characterization model is used to derive the characterization factors	ISO 14044
Classification	A step of impact assessment, in which environmental interventions are assigned to predefined impact categories on a purely qualitative basis	Guinée et al. (2002)
Co-function	Any of two or more functions provided by the same unit process or system	ILCD, LCI
Comparative assertion	Environmental claim regarding the superiority or equivalence of one product versus a competing product that performs the same function	ISO 14044
Completeness check	Process of verifying whether information from the phases of a life cycle assessment is sufficient for reaching conclusions in accordance with the goal and scope definition	ISO 14044
Consequential modelling	LCI modelling principle that identifies and models all processes in the background system of a system in consequence of decisions made in the foreground system	ILCD, LCI
Consistency check	Process of verifying that the assumptions, methods and data are consistently applied throughout the study and are in accordance with the goal and scope definition performed before conclusions are reached	ISO 14044
Co-product	Any of two or more products coming from the same unit process or product system	ISO 14044
Critical review	Process intended to ensure consistency between a life cycle assessment and the principles and requirements of the International Standards on life cycle assessment	ISO 14044
Cut-off criteria	Specification of the amount of material or energy flow or the level of environmental significance associated with unit processes or product system to be excluded from a study	ISO 14044

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Term	Definition	Reference
Damage approach	See endpoint method	
Data quality	Characteristics of data that relate to their ability to satisfy stated requirements	ISO 14044
Eco-efficiency	Ratio between the value created and the environmental impact caused by an activity	Own definition
Ecosphere	The biosphere of the earth, especially when the interaction between the living and non-living components is emphasised	Oxford Dictionary of English
Ecosystem quality	Area of protection "Ecosystem Quality" that deals with damages on the intrinsic value of natural ecosystems. See also natural environment	Verones et al. (2017)
Elementary flow/elementary exchange	Material or energy entering the system being studied that has been drawn from the environment without previous human transformation, or material or energy leaving the system being studied that is released into the environment without subsequent human transformation	ISO 14044
Emission	See release	
End-of-life product	Product at the end of its useful life that will potentially undergo reuse, recycling, or recovery	ILCD, LCI
Endpoint	See category endpoint	
Endpoint method/model/indicator	The category endpoint is an attribute or aspect of natural environment, human health, or resources, identifying an environmental issue giving cause for concern (ISO 14040). Hence, endpoint method (or damage approach)/model is a characterisation method/model that provides indicators at the level of Areas of Protection (natural environment's ecosystems, human health, resource availability) or at a level close to the areas of protection level	ILCD, LCIA
Energy flow	Input to or output from a unit process or product system, quantified in energy units. <i>Note:</i> Energy flow that is an input may be called an energy input; energy flow that is an output may be called an energy output	ISO 14044
Environmental aspect	Element of an organisation's activities, products or services that can interact with the environment	ISO 14044

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Term	Definition	Reference
Environmental impact	Potential impact on the natural environment, human health or the depletion of natural resources, caused by the interventions between the technosphere and the ecosphere as covered by LCA (e.g. emissions, resource extraction, land use)	ILCD, LCI
Environmental indicator	An environmental indicator can be a measurable feature or features that provide managerially and scientifically useful evidence of the environment and ecosystem quality or reliable evidence of trends in quality. Thus, environmental indicators must be measurable with available technology, scientifically valid for assessing or documenting ecosystem quality, and useful for providing information for management decision-making. Indicators can be used to: (1) compare current conditions with desired performance; (2) show trends over time, to allow comparisons between different regions; (3) help judge the sustainability of current practices; and (4) define and publicise new standards and measures for assessing progress toward a sustainable future	JRC
Environmental intervention	A human intervention in the environment, either physical, chemical or biological; in particular resource extraction, emissions (incl. noise and heat) and land use; the term is thus broader than “elementary flow”	Guinée et al. (2002)
Environmental mechanism	System of physical, chemical and biological processes for a given impact category, linking the life cycle inventory analysis results to category indicators and to category endpoints by means of a characterisation model	ISO 14044
Environmental life cycle costing	Assessment of all costs associated with the life cycle of a product that are directly covered by any one or more of the actors in the product life cycle with complementary inclusion of externalities that are anticipated to be internalised in the decision-relevant future (Hunkeler et al. 2008). The analysis is performed consistent with the system boundaries of the environmental LCA	Hunkeler et al. (2008)
Environmental process	A physical, chemical or biological process in the environment system that is identified as part of the causal chain linking a	Guinée et al. (2002)

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Term	Definition	Reference
	particular environmental intervention to a particular impact, e.g. pollution leaching or bioaccumulation; for a given impact category, the environmental processes together form the environmental mechanism	
Environmental (impact) profile	The result of the characterisation step showing the indicator results for all the predefined impact categories, supplemented by any other relevant information	Guinée et al. (2002)
Environmental relevance	Degree of linkage between category indicator result and category endpoints	ISO 14044
Environmentally extended input–output analysis	Linking environmental impacts to economic demand through the use of economic input–output tables originally developed for macroeconomic systems analysis and planning by combining them with tables that describe how much direct environmental impacts each economic sector causes per economic output during a year of production	Own definition
Evaluation	Element within the life cycle interpretation phase intended to establish confidence in the results of the life cycle assessment. <i>Note:</i> Evaluation includes completeness check, sensitivity check, consistency check, and any other validation that may be required according to the goal and scope definition of the study	ISO 14044
Extraction	Withdrawal of a biotic or abiotic resource from the environment in a unit process, considered as an environmental intervention	Guinée et al. (2002)
Feedstock energy	Heat of combustion of a raw material input that is not used as an energy source to a product system, expressed in terms of higher heating value or lower heating value. <i>Note:</i> Care is necessary to ensure that the energy content of raw materials is not counted twice	ISO 14044
Functional unit	Quantified performance of a product system for use as a reference un	ISO 14044
Grouping	Sorting and possibly ranking of the impact categories	ISO 14044
Impact assessment	See life cycle impact assessment	
Impact category	Class representing environmental issues of concern to which life cycle inventory analysis results may be assigned	ISO 14044
Impact category indicator	Quantifiable representation of an impact category	ISO 14044

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Term	Definition	Reference
Impact pathway	Cause–effect chain of an environmental mechanism linking interventions through midpoint impacts to damages to areas of protection	Own definition
Impact score	See indicator result	
Indicator result	The numerical result of the characterisation step for a particular impact category, e.g. 12 kg CO ₂ -equivalents for climate change	Guinée et al. (2002)
Input	Product, material or energy flow that enters a unit process. <i>Note:</i> Products and materials include raw materials, intermediate products and co-products	ISO 14044
Interested party	Individual or group concerned with or affected by the environmental performance of a product system, or by the results of the life cycle assessment	ISO 14044
Intermediate flow	Product, material or energy flow occurring between unit processes of the product system being studied	ISO 14044
Intermediate product	Output from a unit process that is input to other unit processes that require further transformation within the system	ISO 14044
Interpretation	See life cycle interpretation	
Inventory analysis	See life cycle inventory analysis	
Inventory table	See life cycle inventory analysis results	
Land occupation	The unavailability of a given plot of land for alternative uses for a certain period of time	Guinée et al. (2002)
Land transformation	The change in the quality of a given plot of land due to a particular mode of human use, measured in terms of changes in biodiversity and life support functions	Guinée et al. (2002)
Land use	The impact category land use reflects the damage to ecosystems due to the effects of occupation and transformation of land. Examples of land use are agricultural production, mineral extraction and human settlement. Occupation of land can be defined as the maintenance of an area in a particular state over a particular time period. Transformation is the conversion of land from one state to another state, e.g. from its original state to an altered state or from an altered state to another altered state	ILCD-LCIA
LCIA method	Collection of individual characterisation models (each addressing their separate impact category)	Hauschild et al. (2013)

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Term	Definition	Reference
Life cycle	Consecutive and interlinked stages of a product system, from raw material acquisition or generation from natural resources to final disposal	ISO 14044
Life cycle assessment (LCA)	Compilation and evaluation of the inputs, outputs and the potential environmental impacts of a product system throughout its life cycle	ISO 14044
Life cycle impact assessment (LCIA)	Phase of life cycle assessment aimed at understanding and evaluating the magnitude and significance of the potential environmental impacts for a product system throughout the life cycle of the product	ISO 14044
Life cycle impact category indicator	See category indicator	
Life cycle initiative (UNEP/SETAC LCI)	An international partnership to enable users around the world to put life cycle thinking into effective practice. Launched in 2002 by The United Nations Environment Programme (UNEP) and the Society for Environmental Toxicology and Chemistry (SETAC)	www.lifecycleinitiative.org
Life cycle interpretation	Phase of life cycle assessment in which the findings of either the inventory analysis or the impact assessment, or both, are evaluated in relation to the defined goal and scope in order to reach conclusions and recommendations	ISO 14044
Life cycle inventory analysis (LCI)	Phase of life cycle assessment involving the compilation and quantification of inputs and outputs for a product throughout its life cycle	ISO 14044
Life cycle inventory analysis result	Outcome of a life cycle inventory analysis that catalogues the flows crossing the system boundary and provides the starting point for life cycle impact assessment	ISO 14044
Life cycle phase	Major methodological element of LCA. The four phases of an LCA are: Goal and scope definition, life cycle inventory analysis, life cycle impact assessment, life cycle interpretation	Own definition based on ISO 14044
Life cycle stage	A stage in the life time of the product/service. Defined by the LCA practitioner, but often considered as stages are: raw materials extraction, manufacturing, distribution, use and disposal	Own definition based on ISO 14044

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Term	Definition	Reference
Marginal process	Process that is affected (employed or taken out of use) as a response to an increase or decrease in the demand of a product, respectively	Own definition
Midpoint indicator	Impact category indicator located somewhere along the impact pathway between emission and category endpoint	Hauschild and Huijbregts (2015)
Midpoint method/approach	The midpoint method is a characterisation method that provides indicators for comparison of environmental interventions at a level of cause-effect chain between emissions/resource consumption and the endpoint level	ILCD, LCIA
Multifunctional process	Process or system that performs more than one function. Examples: Processes with more than one product as output (e.g. NaOH, Cl ₂ and H ₂ from chloralkali electrolysis) or more than one waste treated jointly (e.g. mixed household waste incineration with energy recovery). See also: "Allocation" and "System expansion"	ILCD, LCI
Natural environment	Area of protection that addresses impacts to ecosystems and landscapes. See also ecosystem quality	ILCD-LCIA
Normalisation	Calculation of the magnitude of category indicator results relative to some reference information	ISO 14044
Normalisation result/factor/reference	See normalised environmental profile	
Normalised environmental profile	The result of the normalisation step: a table showing the normalised indicator results for all the selected impact categories, supplemented by any other relevant information	Guinée et al. (2002)
Normalised indicator result	The numerical result of normalisation for a particular impact category, e.g. 0.02 year for climate change	Guinée et al. (2002)
Obligatory property	Feature that the product must possess for any user to perceive it as a product valid for fulfilling the desired function. May also include legally required features. Can usually be expressed in technical terms	Own definition
Output	Product, material or energy flow that leaves a unit process. <i>Note:</i> Products and materials include raw materials, intermediate products, co-products and releases	ISO 14044

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Term	Definition	Reference
Positioning property	Optional feature of a product, which can be used to position it as more attractive to the consumer in the competition with other similar products. In contrast to obligatory properties (see this), positioning properties often vary from consumer to consumer	Own definition
Potential impact	Relative performance indicators which can be the basis of comparisons and optimisation of the system or product	Hauschild and Huijbregts (2015)
Problem-oriented approach	See midpoint approach	
Process	Set of interrelated or interacting activities that transforms inputs into outputs	ISO 14044
Process energy	Energy input required for operating the process or equipment within a unit process, excluding energy inputs for production and delivery of the energy itself	ISO 14044
Product	<p>Any goods or service. <i>Note 1:</i> The product can be categorised as follows:</p> <ul style="list-style-type: none"> – services (e.g. transport) <p><i>Note 2:</i> Services have tangible and intangible elements. Provision of a service can involve, for example, the following:</p> <ul style="list-style-type: none"> – an activity performed on a customer-supplied tangible product (e.g. automobile to be repaired) – an activity performed on a customer-supplied intangible product (e.g. the income statement needed to prepare a tax return) – the delivery of an intangible product (e.g. the delivery of information in the context of knowledge transmission) – the creation of ambience for the customer (e.g. in hotels and restaurants) <p>Software consists of information and is generally intangible and can be in the form of approaches, transactions or procedures. Hardware is generally tangible and its amount is a countable characteristic. Processed materials are generally tangible and their amount is a continuous characteristic:</p> <ul style="list-style-type: none"> – software (e.g. computer program, dictionary) – hardware (e.g. engine mechanical part) – processed materials (e.g. lubricant) 	ISO 14044

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Term	Definition	Reference
Product category rules	Set of specific rules, requirements and guidelines for developing type III environmental declarations for one or more product categories	ISO 14025
Product environmental footprint	Result of a product environmental footprint study based on the product environmental footprint method	2013/179/EU
Product environmental footprint method	General method to measure and communicate the potential life cycle environmental impact of a product. In EU this methods is detailed in Annex II of COMMISSION RECOMMENDATION of 9 April 2013 on the use of common methods to measure and communicate the life cycle environmental performance of products and organisations	2013/179/EU
Product flow	Products entering from or leaving to another product system	ISO 14044
Product system	Collection of unit processes with elementary and product flows, performing one or more defined functions, and which models the life cycle of a product	ISO 14044
Raw material	Primary or secondary material that is used to produce a product. <i>Note:</i> Secondary material includes recycled material	ISO 14044
Recycling, reuse recovery	Recovery is any form of recovering value from a waste stream whether in the form of material value (i.e. recycling) or recovery of energy content through incineration. "Recycling" means any recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes. It includes the reprocessing of organic material but does not include energy recovery and the reprocessing into materials that are to be used as fuels or for backfilling operations Reuse is a form of waste prevention since the product re-use avoids the need for the manufacture of a new product. A simple example is the direct re-use of containers, bricks or other materials on site	Based on EUR 24916 EN (2011)
Reference flow	Measure of the outputs from processes in a given product system required to fulfil the function expressed by the functional unit'	ISO 14044
Releases	Emissions to air and discharges to water and soil	ISO 14044

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Term	Definition	Reference
Scenario	Generally, scenarios are different, more or less realistic, descriptions of actions or situations in the future based on certain assumptions and factors	Own definition
Secondary good	Secondary material, recovered energy, reused part or similar as the product of a reuse, recycling, recovery, refurbishing or similar process	ILCD, LCI
Secondary function	Unintended functions that usually have low or no relevance to the users of a product, meaning that they are not contributing to the obligatory or positioning properties	Own definition
Sensitivity analysis	Systematic procedures for estimating the effects of the choices made regarding methods and data on the outcome of a study	ISO 14044
Sensitivity check	Process of verifying that the information obtained from a sensitivity analysis is relevant for reaching the conclusions and giving recommendations	ISO 14044
Subcategory	A subdivision of an impact category, e.g. freshwater aquatic ecotoxicity as a subcategory of ecotoxicity	Guinée et al. (2002)
Substitution	Solving multifunctionality of processes and products by expanding the system boundaries and substituting the not required function with an alternative way of providing it, i.e. the process(es) or product (s) that the not required function supersedes. Effectively the life cycle inventory of the superseded process(es) or product(s) is subtracted from that of the analysed system, i.e. it is “credited”. Substitution is a special (subtractive) case of applying the system expansion principle	ILCD, LCI
System	Any good, service, event, basket-of-products, average consumption of a citizen, or similar object that is analysed in the context of the LCA study	ILCD, LCI
System boundary	Set of criteria specifying which unit processes are part of a product system	ISO 14044
System expansion	Adding specific processes or products and the related life cycle inventories to the analysed system. Used to make several multifunctional systems with an only partly equivalent set of functions comparable within LCA	ILCD, LCI

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Term	Definition	Reference
Technosphere	The sphere or realm of human technological activity; the technologically modified environment	Oxford Dictionary of English
Transparency	Open, comprehensive and understandable presentation of information	ISO 14044
Uncertainty analysis	Systematic procedure to quantify the uncertainty introduced in the results of a life cycle inventory analysis due to the cumulative effects of model imprecision, input uncertainty and data variability. <i>Note:</i> Either ranges or probability distributions are used to determine uncertainty in the results	ISO 14044
Unit process	Smallest element considered in the life cycle inventory analysis for which input and output data are quantified	ISO 14044
Waste	Substances or objects which the holder intends or is required to dispose of (ISO 14044, 2008) Output with zero or negative value. The moment it gets a value, it turns into a co-product or secondary function and system expansion or allocation become relevant	Own definition
Weighting	Converting and possibly aggregating indicator results across impact categories using numerical factors based on value-choices; data prior to weighting should remain available	Guinée et al. (2002)
Weighting factor	A factor obtained with a weighting method and used to express a particular (normalised) indicator result in terms of the common unit of the weighting result	Guinée et al. (2002)
Weighting result	The numerical part of the result of weighting and aggregation of all (normalised) indicator results, e.g. 0.08 year (<i>Note:</i> the result may be expressed as more than one numerical value)	Guinée et al. (2002)

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