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Circular ~~Economy~~ — ~~Terminology~~economy — Vocabulary, principles and guidance for implementation

Économie circulaire — Vocabulaire, principes et recommandations pour la mise en œuvre

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 323, *Circular economy*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

0.1 Background

The global economy is “linear” as it is mainly based on extraction, production, use and disposal. This linear economy leads to resource depletion, biodiversity loss, waste and harmful losses and releases, all of which collectively are causing serious damage to the capacity of ~~our~~the planet to continue to provide for the needs of future generations.^[28] Moreover, several planetary boundaries have already been reached or exceeded.

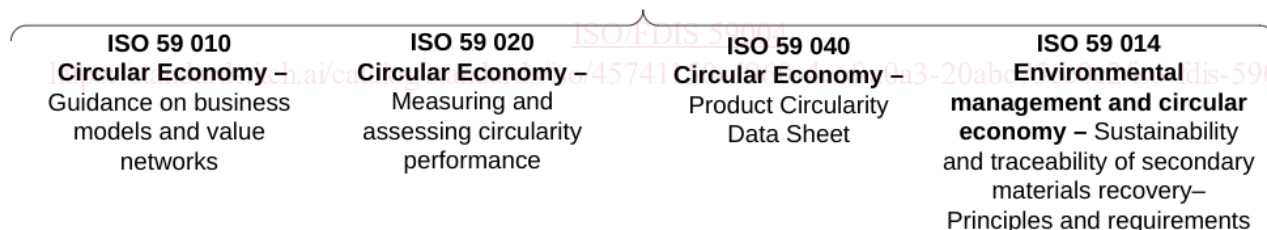
There is an increased understanding that a transition towards an economy that is more circular, based on a circular use of resources, can contribute to meeting ~~our~~current and future human needs (welfare, housing, nutrition, healthcare, mobility, etc.). Transitioning towards a circular economy can also contribute to the creation and sharing of more value within society and ~~stakeholders~~interested parties, while natural resources are managed to be replenished and renewed and in a sustainable way, securing the quality and resilience of ecosystems.

Organizations recognize many potential reasons to engage in a circular economy— (e.g. delivering more ambitious and sustainable solutions; improved relationships with ~~stakeholders~~interested parties; more effective and efficient ways to fulfil voluntary commitments or legal requirements; engaging in climate change mitigation or adaptation; managing resource scarcity risks, increasing resilience in the environmental, social and economic systems,^[29] while contributing to satisfying human needs.

The ISO 59000 family of ~~documents~~standards (see Figure 1) is designed to harmonize the understanding of the circular economy and to support its implementation and measurement. ~~It also considers organizations, such as government, industry and non-profit, in contributing to the achievement of the United Nations (UN) Agenda 2030 for Sustainable Development~~^[29].

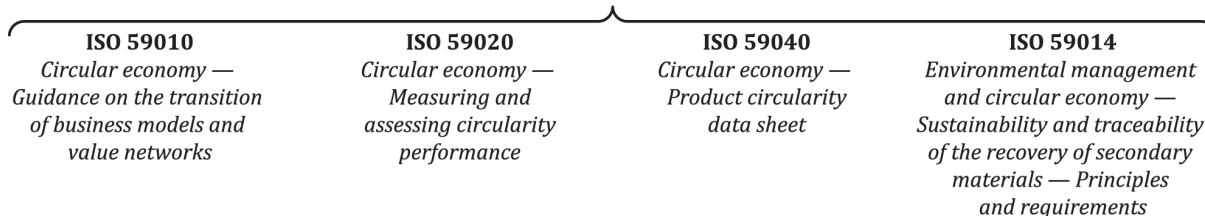
~~The family of documents also considers organizations, such as government, industry, and non-profit organizations in contributing to the achievement of the UN Agenda 2030 for Sustainable Development.~~

ISO 59 004 – Circular Economy – Terminology, principles and guidance for implementation



ISO TR 59 031 – Circular Economy – Performance based approaches
ISO TR 59 032 – Circular Economy – Review of business model implementation

ISO 59004, Circular economy — Vocabulary, principles and guidance for implementation



ISO/TR 59031, Circular economy — Performance-based approach — Analysis of case studies
ISO/TR 59032, Circular economy — Review of existing value networks

Figure 1— The — ISO 59000 family of ~~documents~~standards

0.2 Relationship between this document, ISO 59010 and ISO 59020

This document, ISO 59004, ISO 59010¹ and ISO 59020² are interconnected, as shown in Figure 2, and support organizations in implementing a transition towards a circular economy.

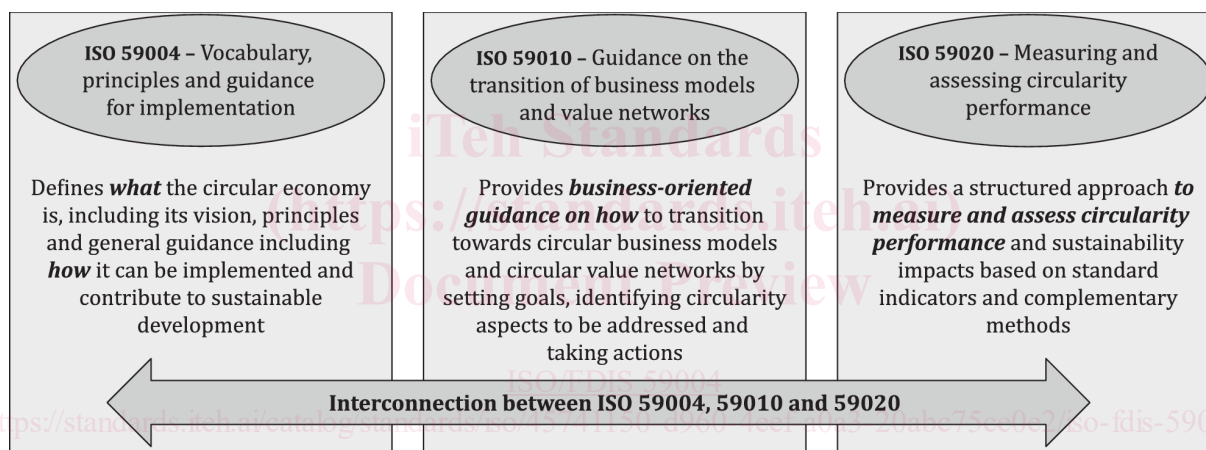
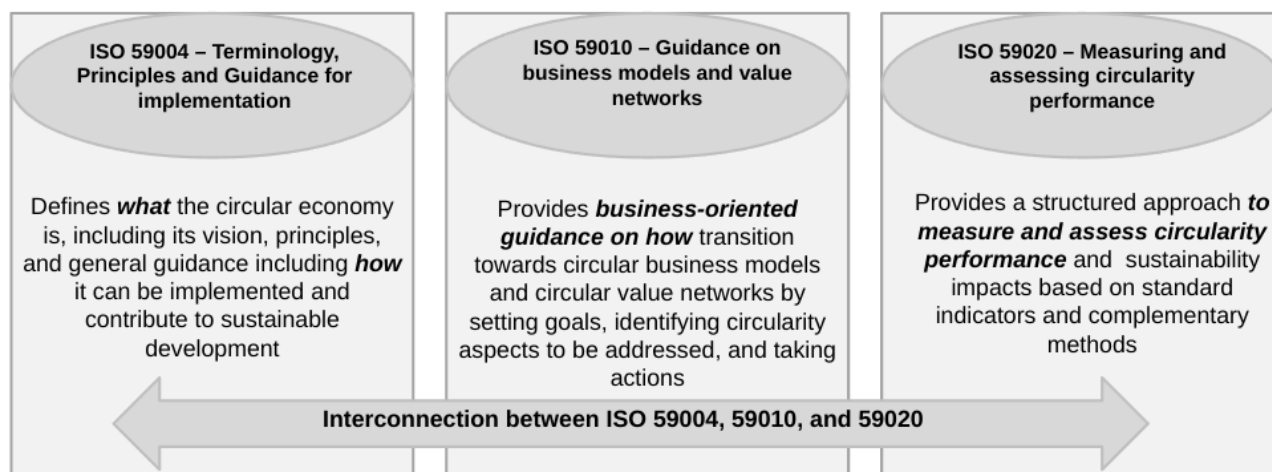


Figure 2 — Relationship between this document, ISO 59010 and ISO 59020

0.3 Purpose and the outline of this document

This document bringsgives guidance tofor any kind of organization. It describes the main terms and definitions (see Clause 3), a circular economy vision (see Clause 4), the circular economy principles (see Clause 5), provides practical guidance on actions that contribute to a circular economy (see Clause 6) and guidance to implement a circular economy in any kind of organization (see Clause 7).

¹ Under preparation.

² Under preparation.

Circular Economy — Terminology — Vocabulary, principles and guidance for implementation

1 Scope

This document defines key ~~terminology and terms~~, establishes a vision and principles for a circular economy, and ~~provides gives~~ guidance, including possible actions, for an organization to implement.

It is ~~intended applicable to be used by~~ organizations seeking to understand and commit or contribute to a circular economy while contributing to sustainable development. These organizations can be either private or public, acting individually or collectively, regardless of type or size, and located in any jurisdiction, or position within a specific value chain or value network.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

~~For the purposes of this document, the following terms and definitions apply.~~

ISO and IEC maintain ~~terminological terminology~~ databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

~~NOTE — See Annex A for an index of terms or designations for the different concepts defined in Clause 3.~~

3.23.1 Terms related to a circular economy 59004

3.1.1

circular economy

economic system (3.1.2) that uses a systemic approach to maintain a circular flow of resources (3.1.6), by recovering, retaining or adding to their value (3.1.7), while contributing to sustainable development (3.1.11)

Note 1 to entry: *Resources (3.1.5) can be considered concerning both stocks and flows.*

Note 2 to entry: The inflow of *virgin resources (3.3.2)* is kept as low as possible, and the circular flow of resources is kept as closed as possible to minimize *waste (3.3.6)*, *losses (3.3.7)* and *releases (3.3.8)* from the economic system.

3.1.2

economic system

system (3.1.22) by which a society organizes and allocates resources (3.1.5)

Note 1 to entry: The economic system can vary depending upon the geographic region or governmental jurisdiction.

Note 2 to entry: This can include the regulation of resources and the production, use and disposal of these resources.

3.1.3

social system

system (3.1.22) by which human beings are expected to undertake different types of tasks in order to achieve common goals within a society

3.1.4

environmental system

systems (3.1.22) of the natural environment that interact, encompassing biotic and abiotic components

Note 1 to entry: In particular, this includes the atmosphere, *biosphere* (3.1.19), hydrosphere, cryosphere, pedosphere and lithosphere.

3.1.5

resource

asset from which a *solution* (3.2.1) is created or implemented

Note 1 to entry: Depending on the context, reference to ~~‘resource’~~“resource” includes “raw material”, “feedstock”, “material” or “component”.

Note 2 to entry: For the purpose of this document, asset refers to physical resources such as *natural resources* (3.3.1), *virgin resources* (3.3.2), *recoverable resources* (3.3.3) and *recovered resources* (3.3.5).

Note 3 to entry: Resource includes any energy type, ~~(e.g. the energy content or energy potential of materials).~~

Note 4 to entry: Resources can be considered concerning both stocks and flows.

3.1.6

circular flow of resources

systematic cycling of the provision and use of *resources* (3.1.5) within multiple *technical* (3.1.20) or *biological cycles* (3.1.21)

Note 1 to entry: The biological and technical cycles represent loops into the complex *system* (3.1.22) of resource flows in the economy.

3.1.7

value

gain(s) or benefit(s) from satisfying needs and expectations, in relation to the use and ~~the~~ conservation of *resources* (3.1.5)

~~EXAMPLES: Revenues~~EXAMPLE Revenue, savings, productivity, sustainability, satisfaction, empowerment, engagement, experience, public health, trust.

Note 1 to entry: Value is relative to, and determined by the perception of, those *interested party(ies)* (3.4.2) able to capture it.

Note 2 to entry: Value can be financial or non-financial, e.g. social, environmental, ~~and~~ other gains or benefits.

Note 3 to entry: Value is dynamic over time.

[SOURCE: ISO 56000:2020, 3.7.6, modified — ~~Definition wording has been expanded to be more specific, one Example has been~~“gain(s) or benefit(s)” replaced “gains” and “use and the conservation of resources” replaced “resources used” in the definition. “public health” added, ~~one new Note 3 to entry has been added, in Note 1 the reference to organizations has been deleted and~~ ‘to the example. “those interested party(ies) able to capture it’ added, it” replaced “the organization and three former Notes interested parties” in Note 1 to entry. Example added in Note 2 to entry ~~have been~~. Notes 3 to 5 to entry deleted. New Note 3 to entry added.]

3.1.8

recover value

process (3.5.5) to recuperate the *value* (3.1.7) of the object of consideration

3.1.9

retain value

process (3.5.5) to maintain the *value* (3.1.7) of the object of consideration

3.1.10

add value

process (3.5.5) to increase the *value* (3.1.7) of the object of consideration

3.1.11

sustainable development

development that meets the environmental, social and economic needs of the present without compromising the ability of future generations to meet their own needs

Note 1 to entry: Derived from the Brundtland Report^[28]~~[27]~~.

[SOURCE: ISO Guide 82:2019, 3.2]

3.1.12

resilience

ability to endure, resist, adapt to or recover from disruptive events or conditions, whether natural or anthropogenic

Note 1 to entry: Resilience of an *ecosystem* (3.1.17) relates to its ability to resist or rebuild itself after some form of disruption without shifting into a qualitatively different state.

3.1.13

principle

fundamental basis for decision-making or behaviour

[SOURCE: ISO 26000:2010, 2.14]

3.1.14

circular

aligned with the *principles* (3.1.13) for a *circular economy* (3.1.1)

Note 1 to entry: Objectives and goals for a circular economy can be defined with respect to the principles for a circular economy.

3.1.15

circularity

degree of alignment with the *principles* (3.1.13) for a *circular economy* (3.1.1)

3.1.16

environment

surroundings in which an *organization* (3.4.1) operates, including air, water, land, *natural resources* (3.3.1), flora, fauna, humans, and their interrelationships

Note 1 to entry: Surroundings can be described in terms of biodiversity, *ecosystems* (3.1.17), climate or other characteristics.

[SOURCE: ISO 14001:2015, 3.2.1 modified — ~~The original~~ Note 1 to entry ~~has been~~ deleted, ~~and~~ Note 2 to entry ~~has been~~ renumbered ~~as Note 1 to entry~~ accordingly.]

3.1.17

ecosystem

dynamic complex of communities of plants, animals and microorganisms and their non-living *environment* (3.1.16), interacting as a functional entity

[SOURCE: ISO 14050:2020, 3.2.43]

3.1.18

technosphere

sphere or realm of human technological activity ~~that~~which results in a technologically modified *environment* (3.1.16)

[SOURCE: ISO 21930:2017, 3.8.4, modified — ~~The~~Note 1 to entry ~~has been removed~~deleted.]

3.1.19

biosphere

part of the *environmental system* (3.1.4) that is capable of supporting life

[SOURCE: BSI 8001:2017, 2.7, modified—~~reference expanded to refer to — “environmental system” added and to remove—“in which living organisms exist.” deleted.~~]

3.1.20

technical cycle

cycle(s) within the *social system* (3.1.3) through which *resources* (3.1.5) are used, recovered, restored and utilized within existing or new *solutions* (3.2.1)

Note 1 to entry: Resources flow into and within a technical cycle, which involves activities ~~like~~such as sharing, maintenance, *reuse* (3.5.17), *repair* (3.5.16), *remanufacturing* (3.5.21) and *recycling* (3.5.24).

3.1.21

biological cycle

cycle(s) through which biological nutrients are utilized by living organisms and subsequently restored into or within the *biosphere* (3.1.19) in a way that rebuilds *ecosystem* (3.1.17)*resilience* (3.1.12) and natural capital and enables the regrowth of *renewable resources* (3.3.10)

Note 1 to entry: Such cycles can involve, at various stages, *cascading* (3.3.15), *composting* (3.3.18), *anaerobic digestion* (3.3.17) or the extraction of bio-chemicals.

Note 2 to entry: Natural capital refers to the renewable and *non-renewable* (3.3.7)*natural resources* (3.3.1) (e.g. plants, animals, air, water, soils, minerals) that combine to yield a flow of benefits to people, including various ecosystem services such as producing oxygen, capturing carbon dioxide, purifying water, nutrient cycling, etc.

3.1.22

system

set of interrelated or interacting elements

[SOURCE: ISO 9000:2015, 3.5.1]

3.1.23

system in focus

system (3.1.22) that is defined by selected system boundaries and is the subject of a *circularity measurement* (3.6.4) and a *circularity assessment* (3.6.5)

Note 1 to entry: Four system levels are being used for measuring and assessing *circularity performance* (3.6.3): regional, ~~inter-organizational~~interorganizational, organizational and product level.