



International Organization for Standardization is an independent, non-governmental international organization

From all stakeholder groups develop standards

- Academics,
- Institutions,
- Companies,
- NGOs
- ...

Experts
Around the world



ISO 9001 - Quality management systems — Requirements

ISO 14001 - Environmental management systems — Requirements with guidance for use

ISO 13485 - Medical devices — Quality management systems — Requirements for regulatory purposes

ISO 26000 - Guidance on social responsibility

ISO 16654 - Microbiology of food and animal feeding stuffs — Horizontal method for the detection of Escherichia coli O157

Etc...



ISO Members
National standards bodies

In 170 countries, representing ISO

- **BIS** Bureau of Indian Standards, India
- **AFNOR** Association française de normalisation, France
- **ABTN** Associação Brasileira de Normas Técnicas, Brazil
- **RSB** Rwanda Standards Board, Rwanda
- **JISC** Japanese Industrial Standards Committee, Japan
- ...

ISO/CS
Full-time staff



Coordinates system, Geneva based



CIRCULAR ECONOMY, a worldwide challenge to tackle resource depletion... but not only!



Created in **2019**, TC323 produces some **transversal standards** related to **Circular Economy**.

100 countries
and numerous international organizations

A PACKAGE to implement Circular Economy

Coming soon!



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

ISO 59 010 - Circular Economy – Guidance on the transition of business models and value networks

ISO 59 020 - Circular Economy – Measuring and assessing circularity performance

Still
on
works

ISO 59 040 - Circular Economy – Product Circularity Data Sheet

ISO 59 014 - Environmental management and circular economy – Sustainability and traceability of secondary materials recovery – Principles and requirements

ISO TR 59 031 - Circular Economy – Performance based approaches

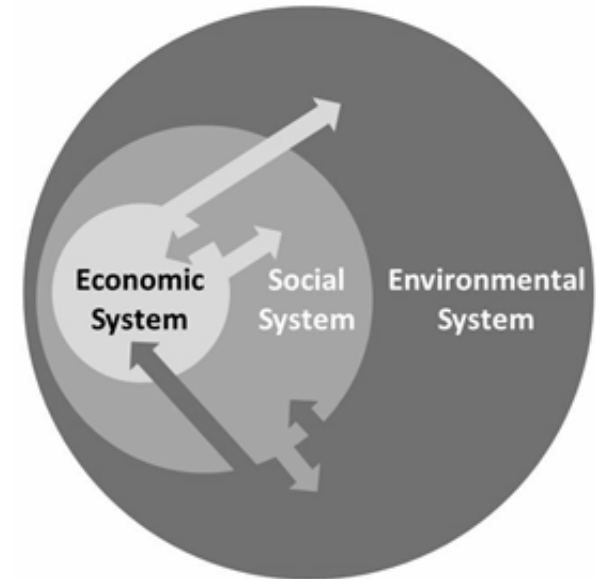
ISO TR 59 032 - Circular Economy – Review of business model implementation

Circular economy definition

economic system that uses a **systemic approach** to maintain a circular flow of resources, by **recovering, retaining or adding** to their value, while contributing to **sustainable development**.

Note 1 to entry: Resources can be considered concerning both stocks and flows.

Note 2 to entry: The inflow of virgin resources is kept as low as possible, and the circular flow of resources is kept as closed as possible to minimize waste, losses and release from the economic system





Focus: ISO 59004 - Terminology, principles and guidance for implementation

Final Draft International Standard

- **Systems thinking**
 - life cycle perspective
 - **long-term approach**
 - considering the impacts on environmental, social, and economic systems
- **Value creation**
 - recover, retain, or add value
 - provide effective solutions
 - use resources in an efficient way
- **Value sharing**
 - **collaborate** along the value chain or value network **in an inclusive and equitable way**
 - **share value created** with the provision of solutions
- **Resource stewardship**
 - manage stocks and flows of resources to contribute to their availability for present and future generations
 - **closing, slowing and narrowing resource flows**
 - reduce risks associated with dependence on virgin resources
- **Resource traceability**
 - collect and maintain data to enable resource tracking
 - **accountable for sharing information** with interested parties
- **Ecosystem resilience**
 - contribute to the **regeneration** of ecosystems and biodiversity
 - **preventing harmful losses and releases**
 - **take into account planetary boundaries**



Focus: ISO 59004 - Terminology, principles and guidance for implementation

Final Draft International Standard

Actions that contribute to a circular economy

Applicable across the value chain. The guidance for resource management can help prioritizing actions to achieve a better circularity performance.

- Design for circularity
- Circular sourcing
- Circular procurement
- Process optimization
- Industrial, regional or urban symbiosis
- Reverse logistics
- Cascading of materials
- Recycling
- Waste management
- Material recovery
- Energy recovery
- Reduce, reuse, repurpose
- Maintenance and repair
- Performance-based approaches
- Sharing to intensify use
- Refurbishing
- Remanufacturing
- Regenerate ecosystems

Actions to support a circular economy transition

- Education and research
- Innovation
- Collaboration and networks
- Helping users change their behaviour
- Policy and legal system
- Financial services
- Digitalization

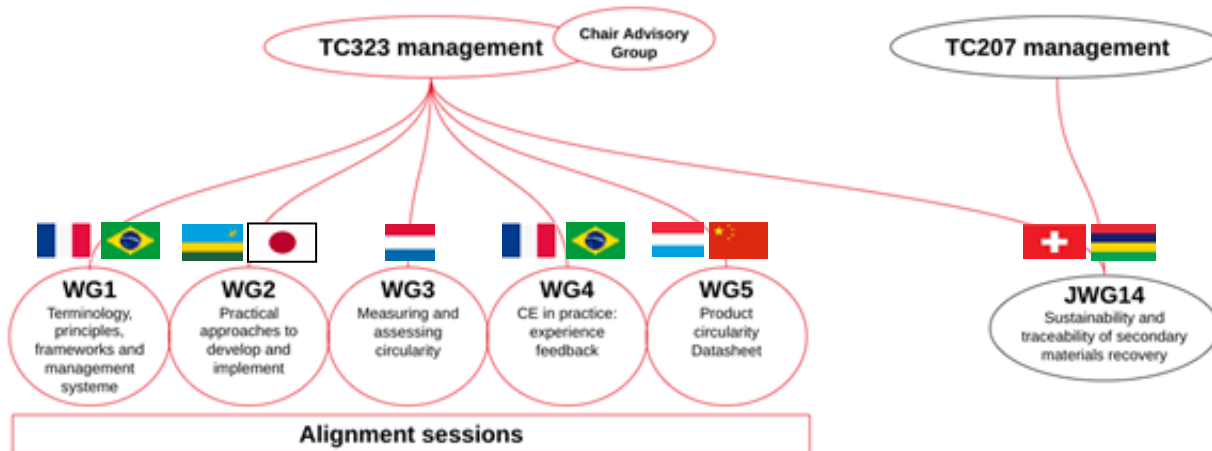
Guidance for resource management

Refuse
Rethink
Source
Reduce
Repair
Reuse
Refurbish
Remanufacture
Repurpose
Cascade
Recycle
Recover energy
Re-mine

A STRATEGY to ANSWER the challenge and WORK together

- 2019 - 2023

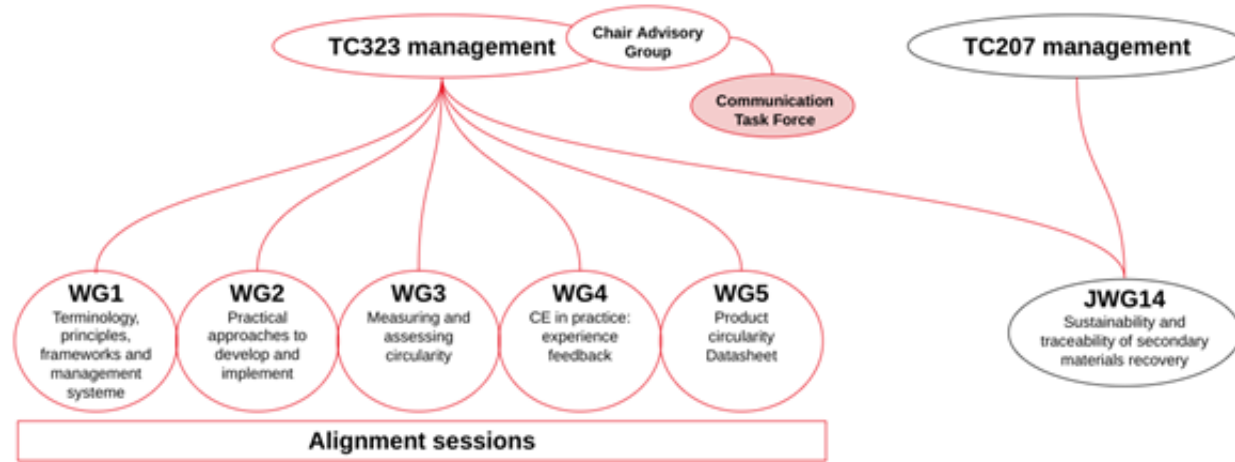
- Elaborating a package of standards, develop at the same time 3 standards to get a **common understanding** of what CE is, **actions to implement** and **indicators to measure** the performance
- **Working together** to align the 3 standards: Alignment sessions to reinforce consensus
- **Involving all geographical regions**, developing and developed countries: twinning, meetings' location (Africa, South America, Caribbean), ...





A STRATEGY to IMPROVE the WORK done

- 2024 - 2025
 - Promoting the published standards (award, brochure, events, ...): communication Task Force creation



A STRATEGY to IMPROVE the WORK done

- **2024 - 2025**

- **Revising the published standards:** decision to be taken during the ISO meeting in nov. 2025
- Launching an **international survey** to gather:
 - How organizations digest the published texts
 - Examples of implemented actions



Objective: **to feed the standards' revision**

- Improve understanding
- Integrate some requirements?
- Integrate some examples?
- Better consider SMEs needs?



Standards and regulations

Standard

Document **established by consensus** and approved by a **recognized body** that provides for common and repeated use, rules, guidelines or characteristics for activities or their results aimed at achieving the optimum degree of order in a given context.

ISO/IEC Guide 2:2004

Document approved by a **recognized body**, that provides, for common and repeated use, rules, guidelines or characteristics for products or related processes and production methods, with which **compliance is not mandatory**. It may also include or deal exclusively with terminology, symbols, packaging, marking or labelling requirements as they apply to a product, process or production method

WTO, TBT Agreement, Annex 1

(Technical) regulation

Regulation (document providing **binding legislative rules**, that is **adopted by an authority**) that provides technical requirements, either directly or by referring to or incorporating the content of a standard, technical specification or code of practice.

ISO/IEC Guide 2:2004

Document which lays down product characteristics (shape, labelling, design, performance etc.) or their related processes and production methods with which **compliance is mandatory**.

WTO, TBT Agreement, Annex 1

The Principles for the Development of International Standards

- Transparency
- Coherence
- Effectiveness and relevance
- Openness
- Impartiality and consensus
- Development dimension

Additional ISO emphasis

- Due process
- National implementation / adoption of ISO standards
- Stakeholder engagement



What can you do??

Visibility: Ensure your constituency is aware of the international standards that exists or are under development

Harmonization: Ensure that standards that already exists are referenced

Connect: Contact one of our members.

Identify: Identify gaps.

THANK YOU!

Switch to alternative models to decouple the global economy from the consumption of limited resources...

...Let's implement Circular Economy within our organizations!

For additional information

melissa.demedeiros@afnor.org

korter@iso.org

catherine.chevauche@veolia.com

To join ISO TC323 Circular Economy

Contact your national standardization body

List on <https://www.iso.org/committee/7203984.htm>



<https://www.linkedin.com/company/iso-tc-323-circular-economy/>

Annex



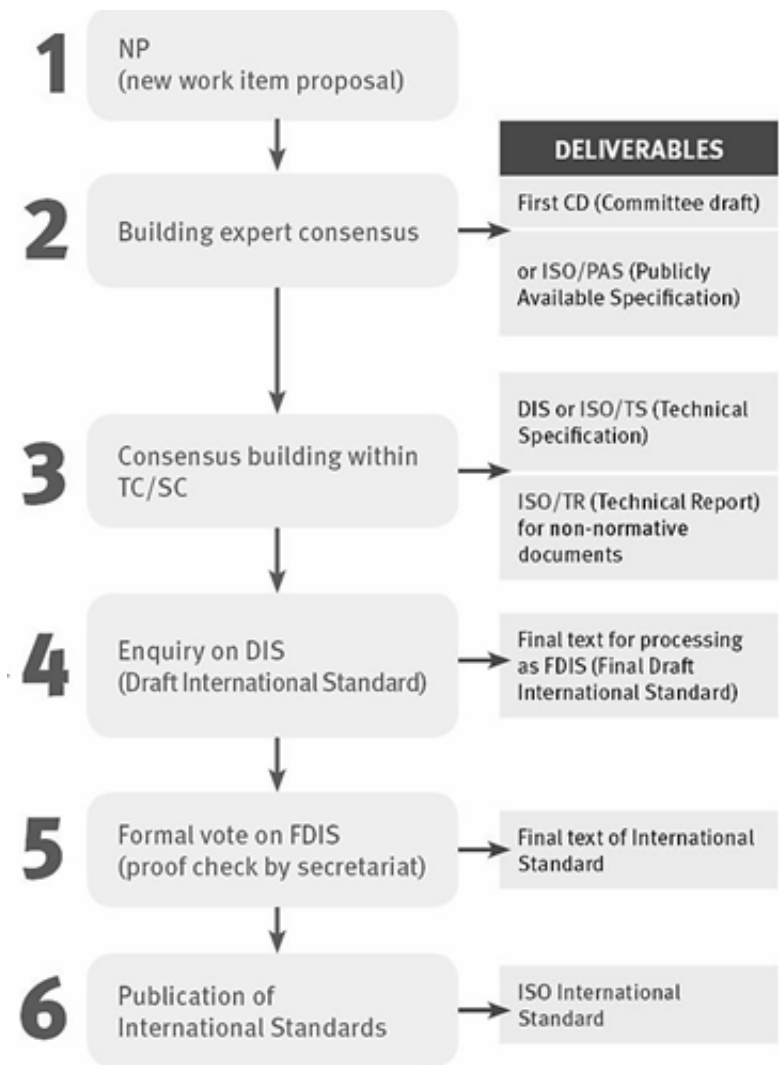
Process to elaborate international standards

Standards development:
Consensus building through experts' meetings

Standards access:
Online Browsing Platform (OBP)

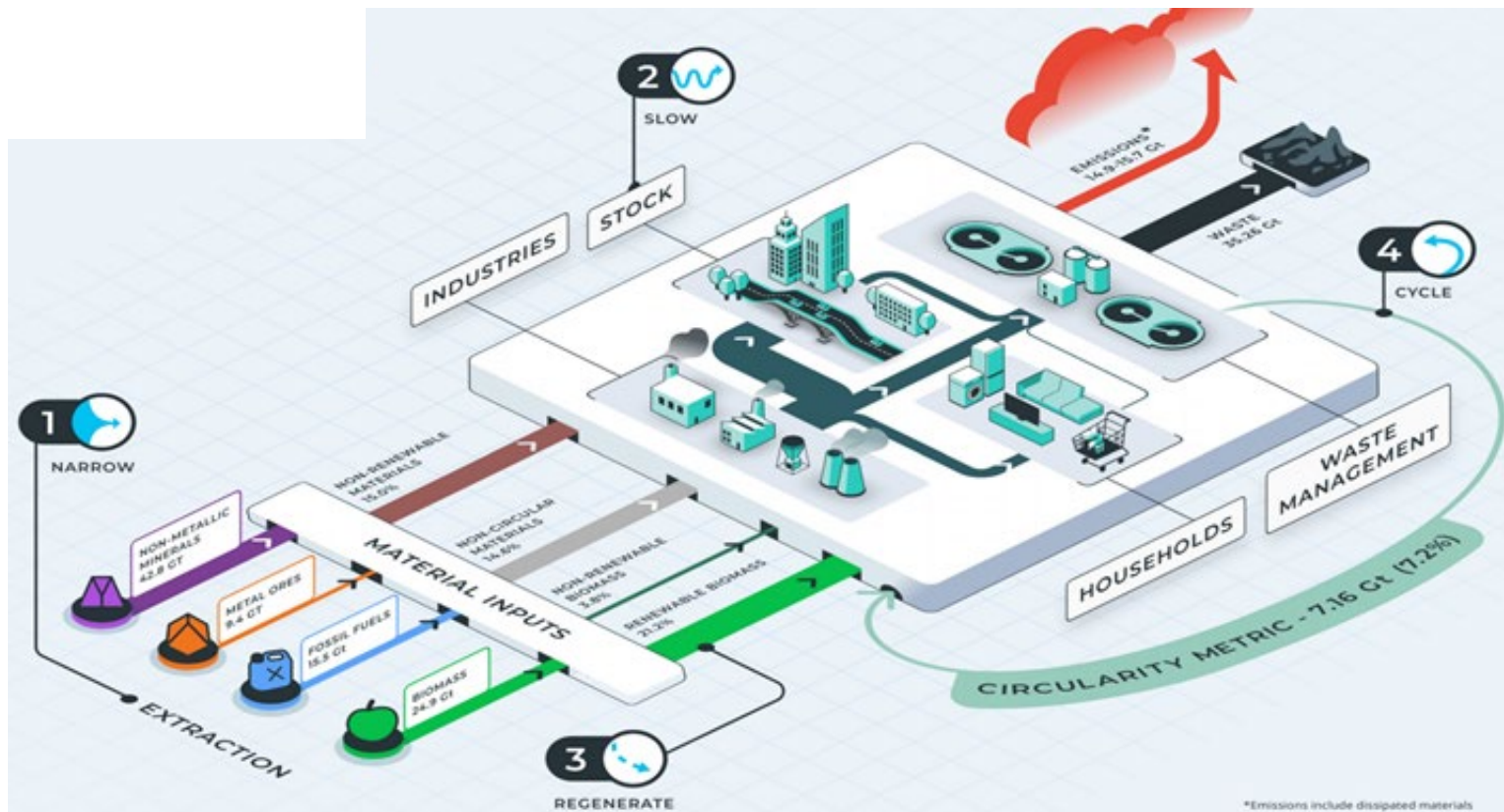
Access the most up to date content in ISO standards, graphical symbols, codes or terms and definitions.

Preview content before you buy, search within documents and easily navigate between standards.



Why Circular Economy?

Questioning our modes of production and modes of consumption



The circularity gap report

Source: The circularitygap report 2023

Focus: ISO 59010 - Guidance on the transition of business models and value networks

Final Draft International Standard

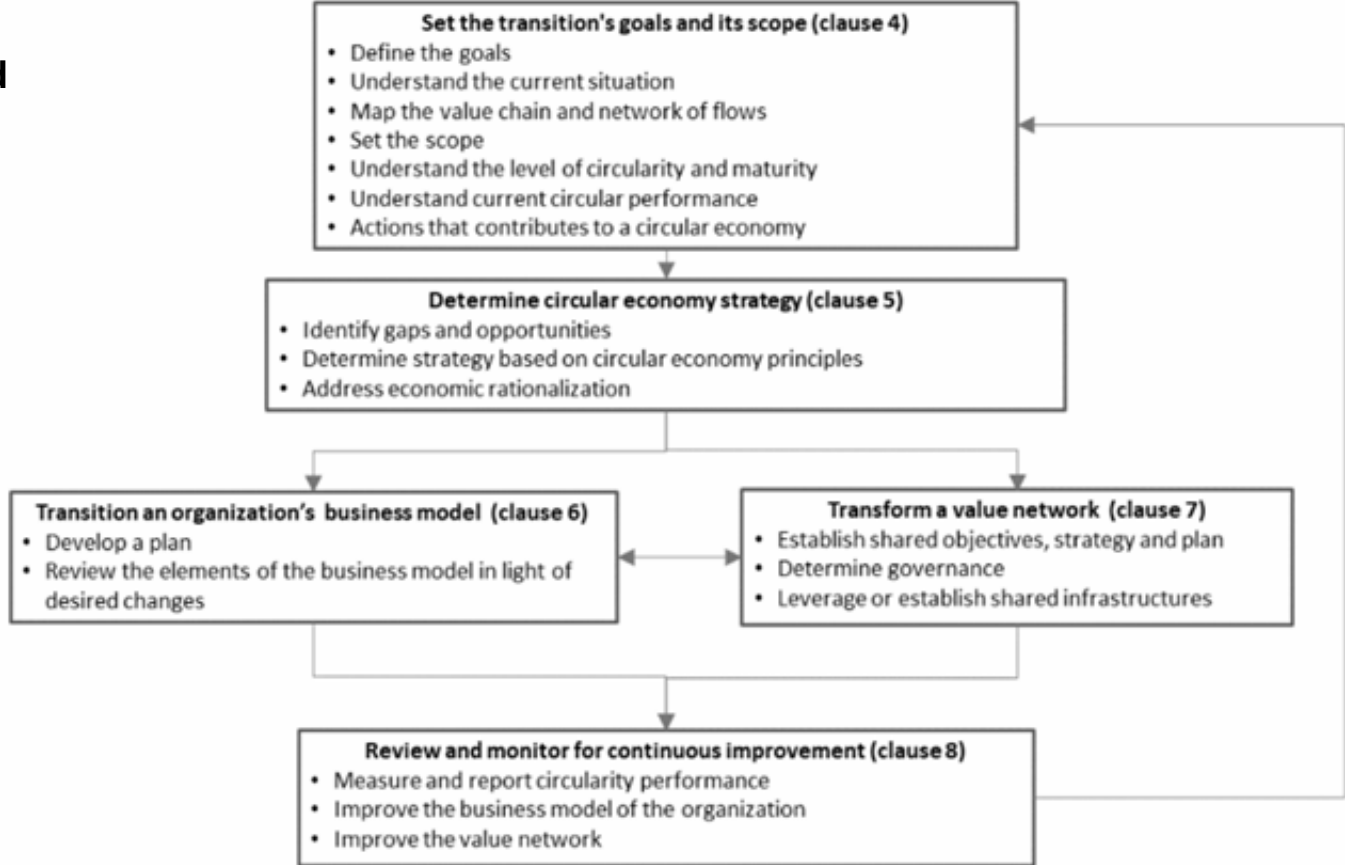
Analyze the **current business models** and **value networks**



through the **circular economy principles** and **actions to implement**



to transition to **circular business models**.





Focus: ISO 59020 - Measuring and assessing circularity

Final Draft International Standard

Scope: the standard specifies a framework for organizations to measure and assess circularity, enabling those organizations to contribute to sustainable development.

=> Applicable to multiple levels of an economic system from regional to product level including organizations and inter-organizations levels.

=> Include some requirements regarding indicators to be measured.

Measure and assess your circularity is key to transition

Based on a circularity measurement taxonomy

- **Monitor circular actions**
 - Reuse, Reduce, Repair, Recycle, Remanufacture, etc...
- **Measure flows**
 - Retain, regenerate, create, etc...
- **Assess sustainability impacts**
 - Social, environmental and economic impacts

Indicator category	Man-datory / Optional	Circularity in	Indicator category	Man-datory / Optional	Circularity indicator
Energy	Optional	A.4.2 Average energy consumption renewable energy	Resource Inflows	Mandatory	A.2.2 Average reused content of an inflow (X)
	Optional	A.4.3 Average energy consumption non-renewable energy		Mandatory	A.2.3 Average recycled content of an inflow (X)
	Optional	A.4.4 Average energy consumption total		Mandatory	A.2.4 Average renewable content of an inflow (X)
Water	Optional	A.5.2 Percent withdrawal from circular source	Resource Outflows	Optional	A.3.2 Average lifetime of product or material relative to industry average
	Optional	A.5.3 Percent discharged in compliance with quality requirements		Mandatory	A.3.3 Percent actual reused products and components derived from outflow (X)
	Optional	A.5.4 Ratio (or internal) water recirculation		Mandatory	A.3.4 Percent actual recycled material derived from outflow (X)
Economic	Optional	A.6.2 Material productivity (I)		Mandatory	A.3.5 Percent actual recirculation of outflow in the biological cycle
	Optional	A.6.3 Resource index (RII)			



Focus: ISO 59040 - Product Circularity Data Sheet

Draft International Standard

ISO 59040 helps to:

- **Provide basic product circularity data** about products,
 - Improve circularity data **sharing efficiency**,
 - Encourage improved **product circularity performance**.
- General methodology and format for **reporting and exchanging** information about the circular economy aspects of products when acquiring or supplying products;
 - 3 tier system based on picklist concept:
 - Minimum set of circular required statements needed to have a solid base of statements;
 - Additional optional statements which can be made required;
 - Free form addition linked to a statement or supplemental information.

Category Number	Category	UID	Module Name	Obligation
1	PCDS template	1.1.0.00	PCDS authority	Required
		1.2.0.00	PCDS template identifier	Required
		1.3.0.00	PCDS template version number	Required
		1.4.0.00	Persistent identifier page	Optional
2	Company and product information	2.1.0.00	Product identification	Required
		2.2.0.00	Supplier identification	Required
		2.3.0.00	Production site information	Required
		2.4.0.00	PCDS issuance	Required
		2.5.0.00	PCDS revision	Required
3	Material inputs	3.1.0.00	Product composition	Required
		3.2.0.00	Hazardous substances and substances of concern	Required
		3.3.0.00	Reused content	Optional
		3.4.0.00	Recycled materials	Required
		3.5.0.00	Sustainably produced renewable materials	Required
4	Circular production	4.1.0.00	Renewable energy	Optional
		4.2.0.00	Closed loop water	Optional
5	Durability and extended lifetime	5.1.0.00	Reliability	Optional
		5.2.0.00	Maintenance and repair	Optional
		5.3.0.00	Upgradeability	Optional
		5.4.0.00	Demounting	Optional
		5.5.0.00	Disassembly	Optional
		5.6.0.00	Reuse	Optional
6	Circularity at end of product use period	6.1.0.00	Product portion released into the environment during its use	Required
		6.2.0.00	Recycling	Required
		6.3.0.00	Dismantling	Optional
		6.4.0.00	Composting	Optional
7	Positive circular economics impacts	7.1.0.00	Positive circular economics impacts	Optional

UID	Statement topic for optional statements
3.4.1.01	Availability of pre-consumer recycled content threshold limit of 0,1 % of recycled content w
3.4.1.02	The data is available publicly (relates to UID :)
	Availability of post-consumer recycled con

UID	Statement topic for required statements
3.5.0.01	Mass fraction of renewable materials out of the tot 0%.
3.5.0.02-09	Mass fraction of renewable materials out of the total product mass is (expressed in ranges).
3.5.0.10	The data on renewable content is available publicly.



Focus: ISO 59014 - Environmental management and circular economy – Sustainability and traceability of secondary materials recovery – Principles and requirements *Draft International Standard*

Scope

- Establishes principles, specifies requirements and provides guidance for facilitating the **sustainability and traceability of activities** for the **recovery of secondary materials**.
- Specifies requirements and provides guidance for organizations that engage with individuals involved in **subsistence activities** (SAs) within secondary materials recovery with the aim of ensuring their safe and healthy working conditions and the continual improvement of the well-being, livelihoods and professional practices.
- Is intended for use by organizations seeking to **recover secondary materials** in a systematic and responsible manner by using **life cycle and circular economy thinking**.
- Does not provide quality criteria for specific types of secondary materials recovered. Final treatment such as energy recovery and disposal do not fall within the scope of this standard.

=> Applicable to any organization, regardless of their size, type and nature of the activities or the location/region at which they occur.



Focus: ISO 59014 - Environmental management and circular economy – Sustainability and traceability of secondary materials recovery – Principles and requirements *Draft International Standard*

Operational requirements

- **Classification and determination of recovery pathways** => *to increase recovery based on documented methodology*
- **Collection of recoverable resources** => *separate collection*
- **Sorting** => *traceability*
- **Material recovery processing** => *select the destructive or non destructive process to maximize the material recovery with the best environmental and social outcome*
- **Logistics** => *prevent environmental and human health risks*

Management and organizational requirements

- **Social responsibility** => *consider the value chain, stakeholder engagement, labour practice and decent work conditions*
- **Risk** => *inform affected communities and authorities about environmental and health*
- **Resource use** => *minimize resource use*
- **Monitoring, evaluation and continual improvement**
- **Competences and training**

Traceability requirements => *upstream and downstream data requirement - value chain vision and interested parties vision*

Focus: ISO 59010 - Guidance on the transition of business models and value networks

Final Draft International Standard

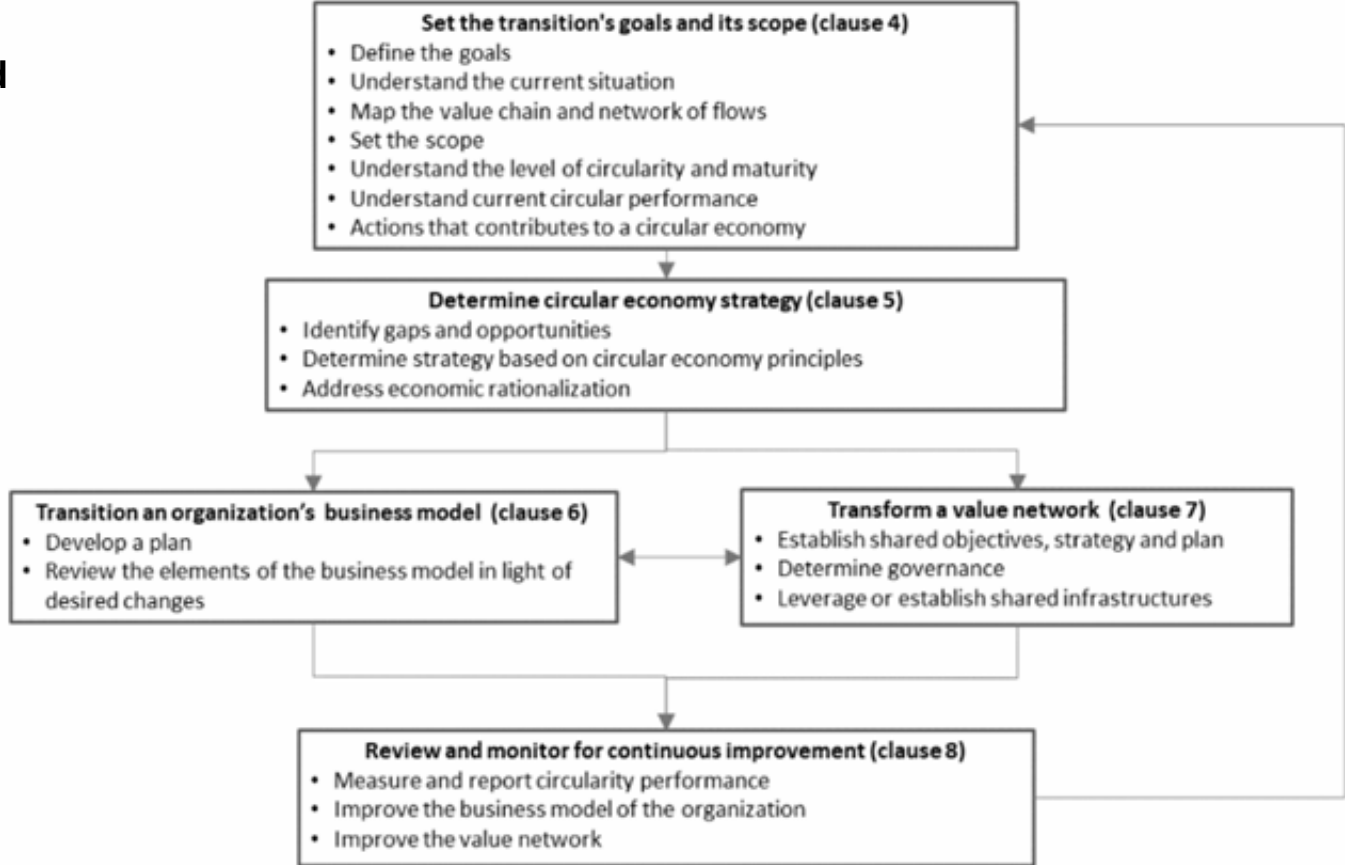
Analyze the **current business models** and **value networks**



through the **circular economy principles** and **actions to implement**



to transition to **circular business models**.





Focus: ISO 59020 - Measuring and assessing circularity

Final Draft International Standard

Scope: the standard specifies a framework for organizations to measure and assess circularity, enabling those organizations to contribute to sustainable development.

=> Applicable to multiple levels of an economic system from regional to product level including organizations and inter-organizations levels.

=> Include some requirements regarding indicators to be measured.

Measure and assess your circularity is key to transition

Based on a circularity measurement taxonomy

- **Monitor circular actions**
 - Reuse, Reduce, Repair, Recycle, Remanufacture, etc...
- **Measure flows**
 - Retain, regenerate, create, etc...
- **Assess sustainability impacts**
 - Social, environmental and economic impacts

Indicator category	Man-datory / Optional	Circularity in	Indicator category	Man-datory / Optional	Circularity indicator
Energy	Optional	A.4.2 Average energy consumption renewable energy	Resource Inflows	Mandatory	A.2.2 Average reused content of an inflow (X)
	Optional	A.4.3 Average energy consumption non-renewable energy		Mandatory	A.2.3 Average recycled content of an inflow (X)
	Optional	A.4.4 Average energy consumption total		Mandatory	A.2.4 Average renewable content of an inflow (X)
Water	Optional	A.5.2 Percent withdrawal from circular source	Resource Outflows	Optional	A.3.2 Average lifetime of product or material relative to industry average
	Optional	A.5.3 Percent discharged in compliance with quality requirements		Mandatory	A.3.3 Percent actual reused products and components derived from outflow (X)
	Optional	A.5.4 Ratio (or internal) water recirculation		Mandatory	A.3.4 Percent actual recycled material derived from outflow (X)
Economic	Optional	A.6.2 Material productivity (I)		Mandatory	A.3.5 Percent actual recirculation of outflow in the biological cycle
	Optional	A.6.3 Resource index (RII)			



Focus: ISO 59040 - Product Circularity Data Sheet

Draft International Standard

ISO 59040 helps to:

- **Provide basic product circularity data** about products,
 - Improve circularity data **sharing efficiency**,
 - Encourage improved **product circularity performance**.
- General methodology and format for **reporting and exchanging** information about the circular economy aspects of products when acquiring or supplying products;
 - 3 tier system based on picklist concept:
 - Minimum set of circular required statements needed to have a solid base of statements;
 - Additional optional statements which can be made required;
 - Free form addition linked to a statement or supplemental information.

UID	Statement topic for optional s
3.4.1.01	Availability of pre-consumer recycled content with a threshold limit of 0,1 % of recycled content w
3.4.1.02	The data is available publicly (relates to UID :
	Availability of post-consumer recycled con

UID	Statement topic for required statem
3.5.0.01	Mass fraction of renewable materials out of the tot 0%.
3.5.0.02-09	Mass fraction of renewable materials out of the total product mass is (expressed in ranges).
3.5.0.10	The data on renewable content is available publicly.

Category Number	Category	UID	Module Name	Obligation		
1	PCDS template	1.1.0.00	PCDS authority	Required		
		1.2.0.00	PCDS template identifier	Required		
		1.3.0.00	PCDS template version number	Required		
		1.4.0.00	Persistent identifier page	Optional		
2	Company and product information	2.1.0.00	Product identification	Required		
		2.2.0.00	Supplier identification	Required		
		2.3.0.00	Production site information	Required		
		2.4.0.00	PCDS issuance	Required		
		2.5.0.00	PCDS revision	Required		
3	Material inputs	3.1.0.00	Product composition	Required		
		3.2.0.00	Hazardous substances and substances of concern	Required		
		3.3.0.00	Reused content	Optional		
		3.4.0.00	Recycled materials	Required		
		3.5.0.00	Sustainably produced renewable materials	Required		
		4	Circular production	4.1.0.00	Renewable energy	Optional
				4.2.0.00	Closed loop water	Optional
5	Durability and extended lifetime	5.1.0.00	Reliability	Optional		
		5.2.0.00	Maintenance and repair	Optional		
		5.3.0.00	Upgradeability	Optional		
		5.4.0.00	Demounting	Optional		
		5.5.0.00	Disassembly	Optional		
		5.6.0.00	Reuse	Optional		
6	Circularity at end of product use period	5.7.0.00	Redarbitishment	Optional		
		6.1.0.00	Product portion released into the environment during its use	Required		
		6.2.0.00	Recycling	Required		
		6.3.0.00	Dismantling	Optional		
		6.4.0.00	Composting	Optional		
		7	Positive circular economics impacts	7.1.0.00	Positive circular economics impacts	Optional



Focus: ISO 59014 - Environmental management and circular economy – Sustainability and traceability of secondary materials recovery – Principles and requirements *Draft International Standard*

Scope

- Establishes principles, specifies requirements and provides guidance for facilitating the **sustainability and traceability of activities** for the **recovery of secondary materials**.
- Specifies requirements and provides guidance for organizations that engage with individuals involved in **subsistence activities** (SAs) within secondary materials recovery with the aim of ensuring their safe and healthy working conditions and the continual improvement of the well-being, livelihoods and professional practices.
- Is intended for use by organizations seeking to **recover secondary materials** in a systematic and responsible manner by using **life cycle and circular economy thinking**.
- Does not provide quality criteria for specific types of secondary materials recovered. Final treatment such as energy recovery and disposal do not fall within the scope of this standard.

=> Applicable to any organization, regardless of their size, type and nature of the activities or the location/region at which they occur.



Focus: ISO 59014 - Environmental management and circular economy – Sustainability and traceability of secondary materials recovery – Principles and requirements *Draft International Standard*

Operational requirements

- **Classification and determination of recovery pathways** => *to increase recovery based on documented methodology*
- **Collection of recoverable resources** => *separate collection*
- **Sorting** => *traceability*
- **Material recovery processing** => *select the destructive or non destructive process to maximize the material recovery with the best environmental and social outcome*
- **Logistics** => *prevent environmental and human health risks*

Management and organizational requirements

- **Social responsibility** => *consider the value chain, stakeholder engagement, labour practice and decent work conditions*
- **Risk** => *inform affected communities and authorities about environmental and health*
- **Resource use** => *minimize resource use*
- **Monitoring, evaluation and continual improvement**
- **Competences and training**

Traceability requirements => *upstream and downstream data requirement - value chain vision and interested parties vision*