



This project is co-funded by the European Union and the Republic of Turkey

## Technical Assistance for Assessment of Türkiye's Potential on Transition to Circular Economy

EuropeAid/140562/IH/SER/TR

# ISO 59000 Standards (under development) foreseen role in the implementation of circular economy principles in organizations

**Andjelka Mihajlov** – European Climate Pact Ambassador, Environmental Ambassador for Sustainable Development

Activity 1.2.2 - Circular Economy Workshops,  
6<sup>th</sup> of October 2022, Ankara, Türkiye

# Content

- 1. Refresh on indicators (CE-circular economy)
- 2. Refresh on circular economy indicators
- 3. Refresh on ISO standards
  - 3.1. Circular economy standards vs circularity standards
- 4. ISO 59000s family standards: circular economy will have its own ISO standards
  - 4.1. ISO standards and SDGs, with refresh on CE and SDGs
- 5. Towards Development of an Overall Monitoring Mechanism and Indicators within DEEP project

# 1. Refresh on Indicators

- Indicators are defined in many different ways by different organizations. Possible definition is :
  - “A quantitative or qualitative factor or variable that provides a simple and reliable means to measure achievement, to reflect the changes connected to an intervention, or to help assess the performance of a development actor.” (OECD, 2010).
  - The most common are quantitative and qualitative indicators.

Indicator type: Quantitative, semiquantitative, qualitative, calculable

## 2.Refresh on circular economy indicators

There is still no international agreement on system to measure circular economy process\*

Different/some national-wide indicators

OECD – 474 circular-economy- related **indicators** (collected between 2018 and 2020) from different studies ...

- 39% environmental
- 34% governance
- 14% economic and business
- 8% infrastructure and technology
- 5% jobs

The monitoring framework on the circular economy as set up by the European Commission consists of **10+indicators**, some of which are broken down in sub-indicators.

The European Commission will continue to elaborate the indicators which need further developments, in particular regarding the methodology and/or data collections.

**ISO Standards on relevant indicators- under development**

\*Bisoni et al.. (2020) Towards a Global framework to Measure and Asses Circular Economy, Symphonya. Emerging Issues in Management (1), 88-100

# 3. Refresh on ISO standards

- It is well known how **ISO standards** improve companies and organizations of any size performance (for example: ISO 9000 family is the world's most best-known quality management standard; ISO 14000 family standards Improve companies environmental performance; ISO/IEC 27000 standards is designed for security for any kind of digital information). Those standards are **voluntary, consensus-based, market relevant international standards**.
- Basically, there are at least two groups of standards:
  - FOR CERTIFICATION purposes, like ISO9001-quality management standards, ISO14001 –environmental management standard, etc, and
  - TO GUIDE, present Requirements..... - like ISO22000-food safety, ISO26000-social responsibility, ISO31000 – risk management, etc...
- **International Organization for Standardization** is an independent, non-governmental international organization with a membership of **167 national standards bodies**. Through its members, it brings together experts to share knowledge and develop ISO Standards that support innovation and provide solutions to global challenges. Central Secretariat is in Geneva, Switzerland.

Sometimes they become mandatory if prescribed by some law

# ISO Standards cont.

- **ISO standards support the three pillars of sustainable development**
  - Economic
  - Social sustainability
  - Environmental sustainability
- ISO standards are internationally agreed by **experts**.
- The **voting** process is the key to **consensus**. If that's achieved then the draft is on the way to become an ISO standard (if agreement is not reached the draft will be modified further, and voted on again). From the first proposal to final publication, developing a standard usually takes about 3 years

Fact that ISO CE Standards are under development now, is limitation of this presentation – it is risk to talk on indicators there are still not agreed; however, the basic what we could expect is presented

# 3.1. Circular economy standards vs circularity standards

- **Noted:**
- EEA is about **circular economy indicators** (...these indicators were selected in order to capture the main elements of a circular economy...relying on statistics as much as possible...interlinkages between circularity, climate neutrality and the zero pollution ambitions)
- ISO59004 is about **circularity indicator** (...to which extend the principles of CE are implemented / progress to reach relevant objective/target)
  - **Circularity indicators can be defined as measuring instruments aiming to quantify the performance and progress of systems from circular economy perspective\***

\*Saidani M, H.Kim, Nexus between LCA, Circularity and Sustainability Indicators, Circular Economy and Sustainability, Feb.2022

<http://circulareconomyindicators.com/>

Moraga et al., Circular economy indicators: What do they measure, Resources, Conservation and Recycling, 146, 452-461 (2019)

## 4. ISO 59000s family standards: circular economy will have its own ISO standards

- The goal of standardization in the field of CE is to develop **frameworks, requirements, guides, support tool for implementation of activities** of all the organizations involved, to maximize the contribution to SD.
- **ISO 59000s** family standards (under development) will provide **indicators that will measure circularity of manufacturing processes, by reducing their environmental footprint.**
- In July 2022 the first drafts of 3/7 of the 59000 series standards on CE was available and in voting phase. These drafts are part of the technical work developed by ISO/TC323 technical Committee created in 2018 (being excluded from this committee the aspects of Circular Economy already covered by other existing committees.)
- **Once the standards have been published, *ignorance of CE will no longer be an excuse for organizations not shifting away from the unsustainable linear model of production and consumption.***

[https://unece.org/sites/default/files/2021-11/2\\_2\\_ENG\\_2021%2011%20ISO%20TC%20323%20presentation\\_0.pdf](https://unece.org/sites/default/files/2021-11/2_2_ENG_2021%2011%20ISO%20TC%20323%20presentation_0.pdf)

[https://www.duurzaam-ondernemen.nl/wordpress/wp-content/uploads/2021/04/iso\\_ce.pdf](https://www.duurzaam-ondernemen.nl/wordpress/wp-content/uploads/2021/04/iso_ce.pdf)



# Proposed standards development track

<b>Standard</b>	<b>ISO/WD 59004</b>	<b>ISO/WD 59010</b>	<b>ISO/WD 59020</b>	<b>ISO/CD TR 59031</b>
Planned publication, as in 2020	Early/mid 2023	Early/mid 2023	Early/mid 2023	2021/early 2022
	<b>ISO NWP 59040</b>	<b>ISO TR 59032</b>		<b>ISO WD 59014</b>
	End 2023	Early 2022		End of 2024

# The following are the working groups of ISO/TC 323

as of October, 2021.

<p><b>Working Group 1:</b> Principles, Terminology, management system Leader: France/Brazil</p>	<p><b>Working Group 2:</b> Guidance for implementation Leader: Japan/Rwanda</p>	<p><b>Working Group 3:</b> Measuring Circularity Leader: The Netherlands</p>	<p><b>Working Group 4:</b> Specific issues related to Circular Economy Leader: Brazil/France</p>	<p><b>Working Group 5:</b> Product circularity data sheet (PCDS)</p>
<p>Identifying CE-related terms and providing technical definitions.</p> <p><b>ISO59004</b></p>	<p>Collating business case studies that are implementing CE. Identifying their challenges and successes.</p> <p>Framework for organizations to develop CE business models.</p> <p><b>ISO59010</b></p>	<p>Identifying metrics to measure and quantify CE (value-based, LCA-based, etc.).</p> <p>Working to harmonize the most relevant metrics.</p> <p>If possible, will identify/develop one metric that captures the measure of CE.</p> <p><b>ISO59020</b></p>	<p>Performance-based approach for CE (Economy of Functionality and Cooperation).</p> <p>Definitions and concepts to help analyze and evaluate case studies from a triple-bottom line perspective.</p> <p><b>ISO59031</b></p>	<p>Developing a PCDS, a standardized document that enables the digital exchange of data related to circularity characteristics of products across supply chains.</p> <p>The PCDS aims to facilitate data related to circularity characteristics to support standardization and transparency.</p>

**Joint ISO WG 323 with TC207 SC5, JWG14 - Secondary materials**

# Available drafts

- **ISO59004: Circular Economy “Terminology, principles and guidance for implementation” “UMBRELLA STANDARD”**
  - This document defines key terminology, establishes circular economy principles, and provides guidance for its implementation by using a framework and areas of action.
  - It is intended to be used by organizations seeking to understand and commit 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.
- **ISO59010: Circular economy “guidelines on the transition of business models and value networks”**
  - This document provides guidance for an organization seeking to transition its business models and value networks from linear to circular.
  - This document applies to any organization dealing with products or services regardless of its size, sector or region.

- **ISO59020: Circular economy “Measurements and evaluation of circularity”**
- This document specifies a framework for organizations to measure and assess circularity, enabling those organizations to contribute to sustainable development.
- The framework is applicable to multiple levels of an economic system, ranging from regional, inter-organizational, organizational to the product level.
- The framework provides guidance on how the circularity performance of an economic system can be objectively, comprehensively and reliably measured and assessed using **circularity indicators and complementary methods**. **The framework can be used to determine the effectiveness of circular actions executed by public and private organizations.**
- The purpose of the standard is to assist organizations in the collection of necessary information to enable circular economic practices that minimize resource use and/or enable a circular flow of resources and contribute to sustainable development.
- The framework can account for consideration of social, environmental and economic impacts when assessing circularity performance by allowing input from a variety of complementary methods.

# Structure/ category of indicators used to measure circularity \*

From ISO

Systemically maintains a circular flow of resources	Adding resource value	Retaining resource value	Regenerating resource value	Contributing to sustainable development
Resource quality and quantity indicators	Resource value indicators	Resource value retention indicator, e.g. product lifetime	Resource value regeneration indicator, e.g. recycled	Sustainability target, i.e. improving quality of life

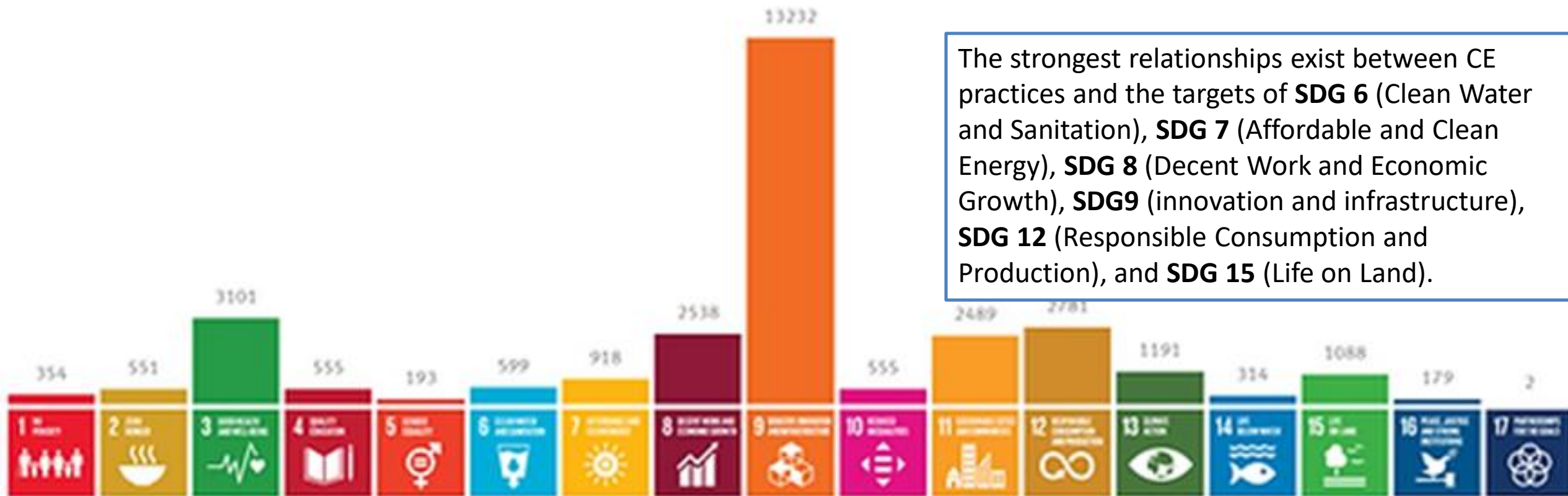
\*Carlsson et al., Trace certainty- Testing metrics for measuring the circularity while metrics are being standardized, Project final report, RISE report 2022;29, Research institute of Sweden

# and WP under development

- **ISO/WD59040 Circular Economy – Product Circularity Data Sheet**
  - The document provides a general methodology for improving the accuracy and completeness of circular economy related information based on the usage of a Product Circularity Data Sheet when acquiring or supplying products.
  - This general methodology contains then a set of requirements that need to be established by an organization aiming to use the concerned data sheet when acquiring or supplying products, which also includes the trusted reporting and exchanging of circular economy related information.
  - The document also provides guidance for the definition and sharing of a Product Circularity Data Sheet, considering the type, content and format of information to be provided. This guidance and these requirements are intended to be applicable to all organizations, regardless of type, size and nature.
  - These requirements implement a qualitative approach for business-to-business data exchange to be inclusive with small and medium businesses/enterprises and to protect confidential information.
- **ISO/CD TR 59031 Circular economy – Performance based approach – Analysis of case studies**
- **ISO/CD TR 59032.2 Circular economy – Review of business model implementation**
- **ISO59014 Secondary materials – principles, sustainability and traceability requirements**

## 4.1. ISO standards and SDGs, with refresh on CE and SDGs

- ISO contributes to all of the SDGs. Here you can see the number of ISO standards that are directly applicable to each Goal.





# ISO 59000 Standards and SDGs

ISO	59040	59020	59010	59004
SDG	3,6,7,8,9,11,12,13	1,2,3,4,5,6,7,8,9,10, 11,12,13,14,15,16	1,2,3,6,7,8,9,11, 12,13,14,15	1,2,3,4,5,6,7,8,9,10, 11,12,13,14,15,16





## 5. Towards Development of an Overall Monitoring Mechanism and Indicators within DEEP project

- With horizontal knowledge on EEA indicators, SDGs indicators as well as ISO standards related circular economy (with this presentation) DEEP is moving towards “Development of an Overall Monitoring Mechanism and Indicators”
- **The landscape of CE Indicators, at the time when project come to that stage, depends where ISO 59020 (and other ISO59000 standards) will be in approval process; however, this track for indicators have to be acknowledged, in any case.**



This project is co-funded by the European Union and the Republic of Turkey

# Thanks for your attention.



Türkiye Döngüsel Ekonomi

IPACevre



@turkiyedonguseleekonomi

@ipa.cevre



@trdonguseleko

@ipacevre



Türkiye Döngüsel Ekonomi

IPA Çevre/Environment TÜRKİYE



Türkiye Döngüsel Ekonomi

IPA Çevre

[dongusel.csb.gov.tr](http://dongusel.csb.gov.tr)