

Preparing the road to circular economy reporting

Understanding the Circular Transition Indicators — and how they support CSRD reporting



KPMG International

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Contents





- In a circular economy, companies are incentivized to reuse products and components, minimize use of scarce resources, reduce greenhouse gas emissions (GHG), waste and pollution, and treat the environment with respect, to regenerate nature.
- The WBCSD Circular Transition Indicators (CTI)
 provide companies with a framework for measuring
 circularity, to support decision making and
 transparency in the transition towards a more circular
 business.
- The EU's groundbreaking Corporate Sustainability Reporting Directive (CSRD) requires companies to report on sustainability in line with the European Sustainability Reporting Standards (ESRS), containing the reporting and disclosure requirements.
- This paper offers guidance on how to use the CTI framework to help collect the relevant information and insights that can be used for reporting on the requirement as published in the ESRS E5 draft of June 2023, in relation to the CSRD. Although the focus is on ESRS E5, CTI also supports companies on various elements of the other environmental reporting standards ESRS E1-4.
- ESRS E5 is the draft standard that specifically focuses on resource use and circular economy. For companies that are required to apply ESRS, a 'double materiality assessment' will dictate the required reporting topics. This depends on the type of company (e.g. sector, position in supply chain) and its impacts and dependencies.

About WBCSD

The World Business Council for Sustainable Development (WBCSD) is a global community of leading businesses driving systems transformation for a better world in which 9+ billion people can live well, within planetary boundaries, by mid-century. Together with its members, WBCSD works to accelerate the required transformation of businesses, their value chains, and the systems in which they operate, to limit the impact of the climate crisis, restore nature and tackle inequality.



The EU's Corporate Sustainability Reporting Directive (CSRD) requires companies to report on their efforts to be sustainable and their impact on people and the environment. If you're one of the approximately 50,000 companies affected, then you'll have to report in line with the European Sustainability Reporting Standards (ESRS) — a set of enhanced reporting requirements that are significantly more complex and rigorous than the requirements stemming from the current Non-Financial Reporting Directive (NFRD).

Companies that meet certain criteria¹ will have to report clear ESG (environmental, social and governance) targets, strategies, policies and measures, and metrics. Depending on a company's specific circumstances this can include emissions and decarbonization, biodiversity and resource use, workers and communities in the value chain, business conduct practices, and many more.

¹ Ultimately, ESRSs would be applied by (group exemptions may apply):

Large EU companies;

Large companies are those that exceed on the balance sheet date two of the following three criteria (including EU and non-EU subsidiaries): 250 employees, net revenue of €40 million or total assets of €20 million.

Listed EU companies (except micro-undertakings);
 Micro-undertakings are companies that do not exceed two of the following criteria (including EU and non-EU subsidiaries): 10 employees, net revenue of €700,000 or total assets of €350,000.

Ultimate non-EU parent companies with a combined group turnover in the EU of more than €150 million;
 Separate standards will be developed for SMEs and non-EU parent companies (to be adopted by the European Commission by 30 June 2024)

A multitude of companies meet these criteria and must prepare for mandatory sustainability reporting, with the first disclosures due in 2025 for the financial year 2024.

It is important not to underestimate the effort involved to understand and implement the CSRD. Even those companies with relatively advanced sustainability reporting or internal information gathering may need to invest significant time and resources to ensure their disclosure practices are ready for the new requirements.

The new ESRS E5 circular economy disclosure requirements

ESRS E1 addresses climate change mitigation and adaptation, ESRS E2 covers pollution, and ESRS E3 relates to water and marine resources. Biodiversity and ecosystems matters are addressed in ESRS E4 and ESRS E5 covers resource use and circular economy — an economic system of closed 'loops' in which raw materials, components and products keep their value for as long as possible. A circular economy uses renewable energy sources and aims for secondary and renewable resource use, which minimizes 'embedded' GHG emissions.

In order to flourish in a circular economy, companies need to minimize their use of virgin non-renewable resources, design products and organize their business model to enable products and materials to be continually reused. By keeping control over products and resources for an extended timespan (and potentially over multiple product life cycles), companies can mitigate effects of

resource scarcity and price volatility, and minimize their overall footprint.

Reporting on circular performance enhances transparency and enables comparison between companies. Companies that future-proof their business through circularity are able to demonstrate these efforts in their reports to gain competitive advantage. Moreover, good circular performance helps them respond to stakeholder demands and can improve investor confidence at a time when the financial sector is increasingly building sustainability performance and ESG risk mitigation into investment decisions. Getting to grips with circularity reporting at an early stage can help companies stay ahead of evolving regulatory and compliance requirements.

Circular economy definition

An economic system in which the value of products, materials and other resources in the economy is maintained for as long as possible, enhancing their efficient use in production and consumption, thereby reducing the environmental impact of their use, minimizing waste and the release of hazardous substances at all stages of their life cycle, including through the application of the waste hierarchy.²

² European sustainability reporting standards, European Commission https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13765-European-sustainability-reporting-standards-first-set_en

The disclosure requirements for ESRS E5

E5-1

Policies related to resource use and circular economy

Show the organization's circular economyrelated policies.

E5-2

Actions and resources related to resource use and circular economy

Explain the organization's circular economyrelated actions — and the resources allocated to conduct these actions.

E5-3

Targets related to resource use and circular economy

Report on the organization's resource use and circular economy-related targets.

E5-4

Resource inflows

Provide insights into the organization's material resource inflows — to understand the resource use in the course of the undertaking's own operations and value chain.

E5-5

Resource outflows

Provide insights into the organization's material resource outflows, including waste — and the contribution to a circular economy, as a result of designing circular operations and production, as well as the actual recirculation of products and materials, and waste management strategies.

E5-6

Anticipated financial effects from material resource use and circular economy-related impacts, risks and opportunities

Show the risks and opportunities the organization faces as a result of resource use and circular economy-related impacts.



Circular economy in the ESRS

Circular economy reporting areas



General disclosures

Disclosure Requirement IRO-1 —
Description of the processes to
identify and assess material
resource use and circular
economy-related impacts, risks and
opportunities



Impact, risk and opportunity management

DR E5-1: Policies related to resource use and circular economy

DR E5-2: Action and **resources** in relation to resource use and circular economy



Metrics and targets

DR E5-3: Targets related to resource use and circular economy

DR E5-4: Resource inflows

DR E5-5: Resource outflows (Products and materials, waste)

DR E5-6: Anticipated financial effects from material resource use and circular economy-related impacts, risks and opportunities

- Risk/opportunity analysis:
 Implement a circular economy impact, risk, and opportunity (IRO) analysis (implying a change to many existing ERM systems, which only focus on financial risks)
- Policies: Define policies to manage IROs and outline how they help to a) move away from virgin non-renewable resources and b) secure the regenerative production of renewable resources.
- Actions: Define action plans and specify how they relate to the waste hierarchy and circular economy strategies
- Targets: Define targets and outline how they relate to circular economy topics (circular design, circular material use rates, waste hierarchies)
- Measure: Measure and report on resource in- and outflow KPIs as well as financial effects from IROs



How are companies shaping up for ESRS E5?

According to recent research by the World Benchmarking Alliance,³ only one-fifth (22 percent) of companies are ready to report quantitatively on their circular economy performance, or whether they have hit targets. None of the companies surveyed cover all the required topics, nor describe a company-wide circular strategy in their sustainability report.

Many companies struggle to locate and gather relevant data for measuring circularity, and lack a structured approach to generating and storing relevant data for circular economy reporting. These data inputs are often granular, mostly involving the whole value chain, and require input from third parties. As the CSRD reporting deadline looms, organizations have to play catch-up to create ESG reporting, management and measurement systems, and define achievable metrics and targets, to ensure reports can withstand scrutiny from stakeholders and independent, external auditors. This is particularly true for circularity reporting, which is still in its infancy. Whereas traditional waste reporting has been mainly

focused on amounts and types of waste coming out of a company's operations, this is no longer sufficient, because circularity reporting is about topics across the value chain such as circular design, product-level performance and characteristics of raw materials — as well as policy and targets for increasing circularity.

One of the key tasks for companies starting their CSRD journey is to carry out a double materiality assessment, requiring them to identify both their impacts on people and environment (impact materiality) as well as the sustainability matters that financially impact the undertaking (financial materiality).4 The circularity matters under ESRS E5 are likely to be material for companies that consume large amounts of materials in production processes (production companies) or are dependent upon critical materials in equipment used for their activities (service providers).

These data inputs are often granular, mostly involve the whole value chain and require input from third parties in the value chain.

³ https://www.worldbenchmarkingalliance/org/nature-benchmark/

⁴ https://kpmg.com/nl/en/home/topics/environmental-social-governance/corporate-sustainability-reporting-directive.html

About the Corporate Sustainability Reporting Directive (CSRD)

CSRD requires a

double materiality assessment

to determine material topics for the company

Material topics impact to a

large extent the reporting scope

for a company

Focus is on implementation of the first set of twelve standards

with the expectation that an interpretation committee might be established in future to provide implementation guidance

Sector standards are expected, but delayed, and the **exact timing is to be determined**

With the adoption into national laws of EU member states over the coming year,

additional legal entities

(e.g. cooperatives or foundations) might be pulled into scope



The World Business Council for Sustainable Development (WBCSD), with the support of KPMG professionals, together with dozens of WBCSD member companies, have developed a universal framework for measuring circularity. The Circular Transition Indicators (CTI) framework can be used to measure circularity of individual products, business segments or entire businesses. The framework can be applied to businesses of any size, in all industries, anywhere in the world, providing a common language for internal use — as well as for communicating with stakeholders.

The use of these material flow-focused circular performance indicators can accelerate the transition

to the circular economy, by better understanding risks and opportunities, clarifying targets, and monitoring progress. In addition to being used for internal steering, the performance against these indicators can also be externally disclosed.

The CTI Framework consists of four modules of indicators (see figure 1). The headline indicator is the % material circularity that combines the % circular inflow and the % circular outflow. These indicators are all part of the Close the Loop module, in addition to % water circularity and % renewable energy. As its name suggests, the Optimize the Loop module contains indicators that reflect the use of recovery types that provide higher value retention and lifetime

Figure 1.

Close the Loop

% material circularity% water circularity% renewable energy

Optimize the Loop

% critical material
% recovery type actual
lifetime
onsite water circulation

Value the Loop

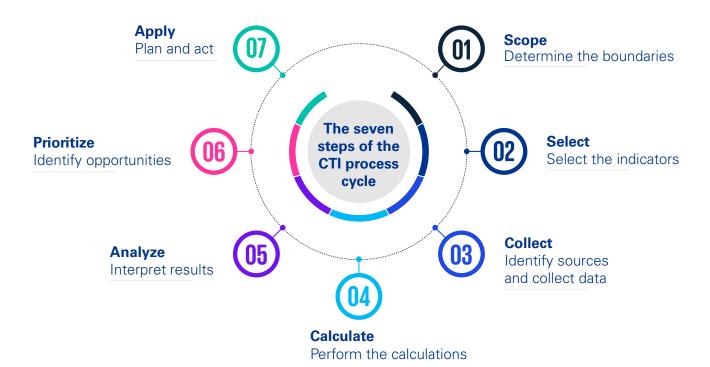
circular material productivity
CTI revenue

Impact of the Loop

GHG impact nature impact

extension, as well as insights in to the type of critical (and often valuable) materials. The Value the Loop module combines financial performance information with circular performance information to help companies decouple revenue generation from linear material usage, as well as portfolio steering towards more circular products and services. The circular performance can be measured complementarily but also in relation to other key sustainability metrics such as metrics around climate, biodiversity and social equity. The latter is done through the metrics in the Impact of the Loop module.

The assessment cycle of the CTI framework contains seven steps, to guide companies through assessing their circular performance, and to interpret the results for relevant decision-making to drive improvements. The first four steps of the CTI process are focused on the actual performance measurement with quantitative results being available at the end of step 4. The final three steps are of a more qualitative nature to contextualize the results. The framework is intended as a continuous improvement cycle.



1 Scope: Determine the boundaries

Understand the intent for the assessment, such as why circularity is important for the company, the objective of the assessment, and the target audience. Then decide upon the exact scope (for example product, business unit or company level).

2 Select: Select the indicators

CTI offers a menu of indicators that enable the company to assess its circular performance. The headline indicator is the material flow based percentage circularity. Depending on the nature of the company, and the objective of the assessment, other indicators and indicator modules can be considered for further insights in addition to the percentage material circularity (See figure 1).

Collect: Identify sources and collect data

Data collection is likely to be the most labor-intensive part of the process and companies will probably have to collaborate with value chain partners, to collect data from both up and down their value chains.

4 Calculate: Calculate circularity

The fourth step involves performing the actual calculation based on the formulas that are described in the <u>CTI v4.0 report</u>. By the end of this phase the quantitative circular performance results have been obtained.

5

Analyze: Interpret results

The results from the CTI calculation at step 4 provide a quantitative foundation for identifying circular improvement opportunities. Step 5 focuses on analyzing these results in order to contextualize, interpret and understand opportunities for improvement. Deep diving into the different sub-indicators will indicate some relevant ways to improve circular performance.



Prioritize: Identify opportunities

Circular performance insights indicate those flows with the greatest potential to improve circularity. By zooming out for a high-level qualitative assessment of risks and opportunities, companies can start to prioritize improvement opportunities, understand how circular performance relates to linear risks, and prioritize actions based upon business case opportunities.



Apply: Plan and act

The final step is to set up an action plan for improving circular performance based on the insights obtained in the previous steps. This involves setting targets for improving circular performance, identifying key actions and timelines, and determining investment in appropriate resources.

Refer to the <u>CTI v4.0</u> report for more information about how each indicator is measured.

How CTI can support you with CSRD reporting and ESRS E5 disclosures

Any type of company, in any sector, can use the CTI framework. For those new to the circular economy, the framework can help to establish a baseline, measure current performance, and analyze opportunities. More mature organizations — who already have a circular economy strategy, roadmap and KPIs — can use it for detailed target setting and measuring progress.

The ESRS E5 contains six circular economy performanceand strategy-related disclosure requirements. The data necessary to satisfy these requirements cover three broad categories:

(1) qualitative data on policies, actions and targets; (2) quantitative data on resource inflows and outflows; and (3) financial effects. The CTI framework provides a structured methodology to gather this data on circular performance, insights from which can be used to design circular policies, actions and targets. The quantitative disclosures can be covered by steps 1–4 of CTI and the qualitative disclosures by 5–7 of CTI.

CTI steps 1–4 provide relevant information for the quantitative disclosure criteria

CTI steps 1–4 help to produce a baseline on circular performance and enable understanding and measurement of circular and linear material inflow and outflow. This data could be used for the quantitative ESRS E-5 disclosure requirements, such as inflow (covered in ESRS E5-4) and outflow (ESRS E5-5). The Value the Loop indicators could provide insights into ESRS E5-6, covering potential financial effects from resource use, and circular economy-related impacts, risks and opportunities.

CTI steps 5–7 provide relevant information for the qualitative disclosure criteria

Insights and information from steps 1–4 are a starting point for drafting policies, targets and actions that are the focus of steps 5–7. By following steps 5–7, companies can analyze the results of their circular economy activities, prioritize actions based on risks and opportunities, and draft a roadmap to execute on these actions. These enable reporting on ESRS E5-1: policies, ESRS E5-2: actions and resources, and ESRS E5-3: targets.

Visualization of reporting requirements covered by different CTI indicators

As mentioned before, CTI can provide relevant information for both quantitative and qualitative disclosure criteria of ESRS E5. The link between the CTI aspects and the ESRS E5 specific disclosure requirements is visualized in figures 2 and 3. In figure 2 (page 13), the quantitative metrics of steps 1–4 of CTI are related to the disclosure requirements of ESRS E5. In figure 3 (page 14), the qualitative aspects of steps 5–7 are related to the disclosure requirements of ESRS E5.

The disclosure requirements in the figure are the specific disclosure requirements of ESRS E5-1 till ESRS E5-6.

Figure 2. Quantitative CTI metrics and the ESRS E5 disclosures for which they provide information

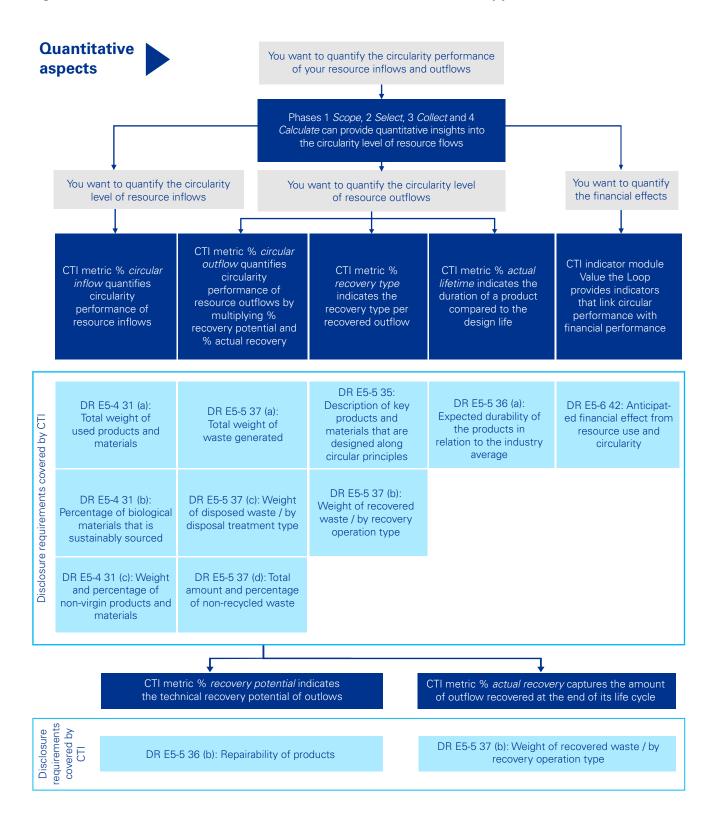
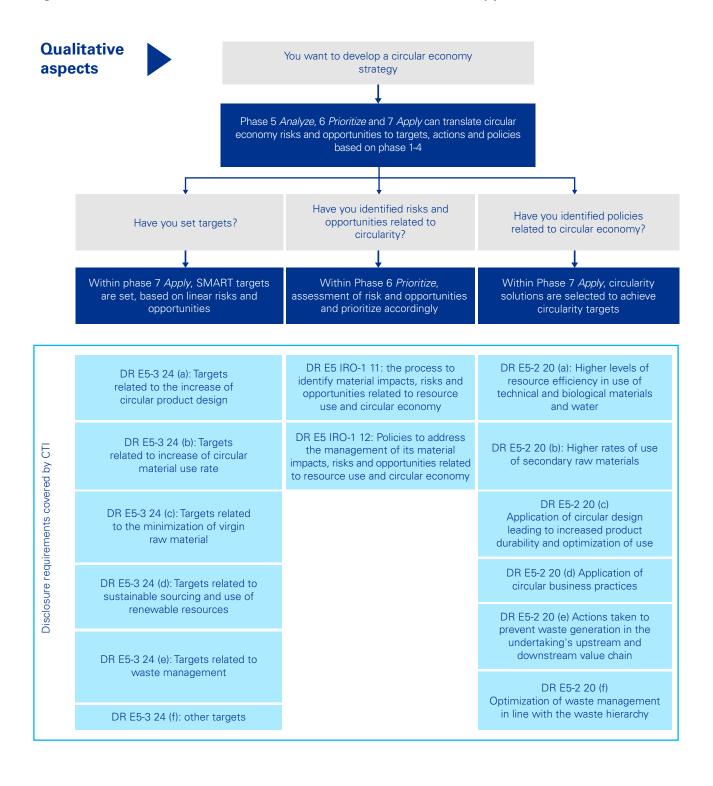
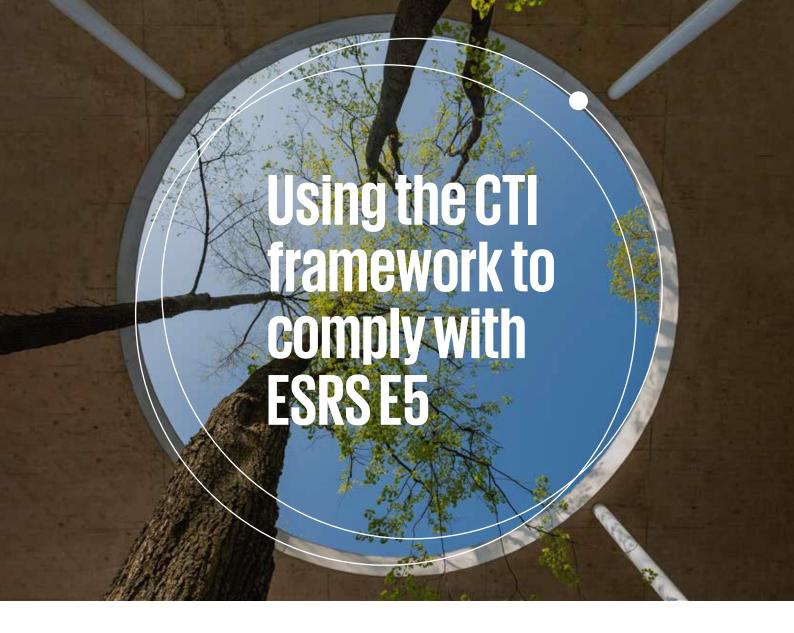


Figure 3. Qualitative CTI metrics and the ESRS E5 disclosures for which they provide information







This section discusses in greater detail how the CTI framework — and, more specifically, the various steps in the CTI process cycle — can help companies satisfy each of the six ESRS E5 disclosure requirements. For many companies, even starting to consider how to acquire the data for disclosure is a daunting prospect, given the considerable effort required to identify where the data might lie, and establish processes for gathering and collating this data.

A double materiality assessment will identify the topics a company must disclose under ESRS E5. Some of the following disclosure requirements may, therefore, not (yet) be applicable to all businesses. A double materiality assessment will identify the topics a company must disclose under ESRS E5.

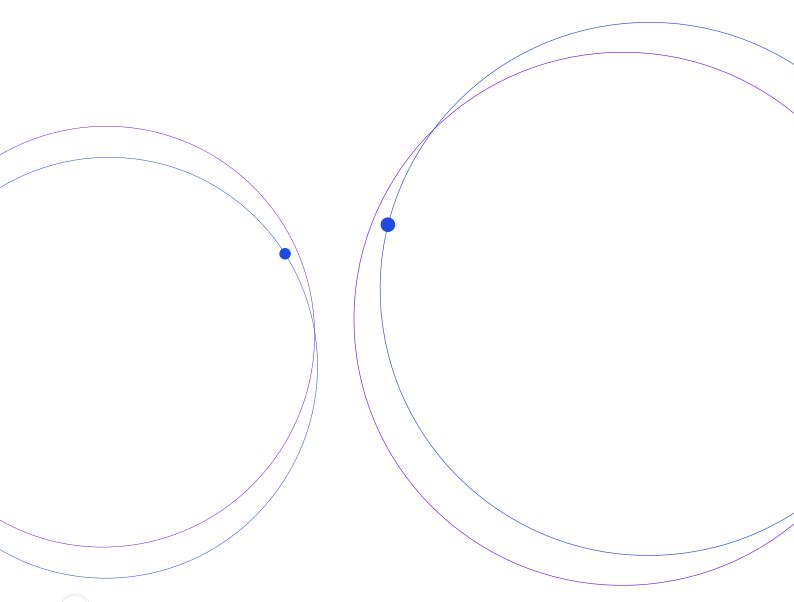
E5-1 Policies on resource use and circular economy

For this requirement, companies should disclose how their policies address material impacts, risks and opportunities from their use of resources — in their own operations, and along the upstream and downstream value chain. Companies should indicate whether and how its policies address transitioning away from use of virgin resources and sustainable sourcing and use of renewable resources where material.

How CTI helps

The policies to address the circular economy may be considered qualitative, but the data behind these policies are quantitative, using indicators like: proportion of circular inflow, renewable material, actual recovery and recovery type (e.g. reuse vs remanufacture or recyling). Steps 2–4 provide a foundation for creating a baseline, gathering appropriate data, and setting clear circular targets.

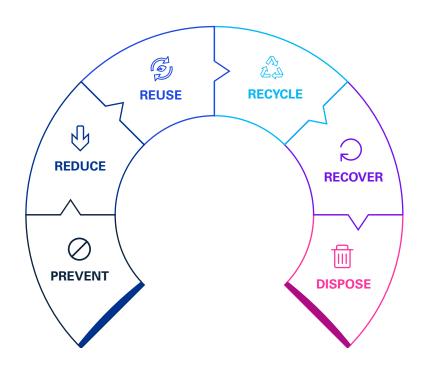
Companies can then use steps 5–7 to create a strategy and policy, using the metrics to create future scenarios (as explained in step 6), and report on its circularity policy. They can also assess the impact of their circularity strategy (Impact of the Loop module), identify gaps (step 5) and build roadmaps that embed circular solutions (step 7). Refer to the <u>CTI v4.0</u> report for more information about each of the steps.



E5-2 Actions and resources to address resource use and circular economy

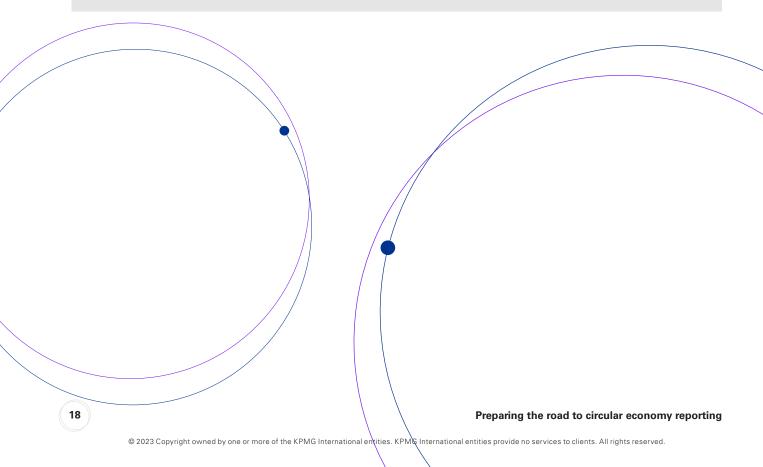
This disclosure covers what companies are doing to achieve their circular economy targets, including the financial and human resources they're committing. They should specify whether their actions relate to the waste hierarchy (which ranks waste management on a scale from 'high' (prevent) to 'low' (dispose), or whether they have a more detailed circular economy strategy throughout the value chain (refuse, rethink, reduce, reuse, repair, refurbish, remanufacture and repurpose, recycle).

Companies also need to describe what they are doing to prevent waste generation across their upstream and downstream value chain.



How CTI helps

CTI steps 2–4 help to calculate performance. In steps 5–7 this performance is analyzed to prioritize the areas of improvement and set-up an action plan with defined actions and resource allocation. The indicator for recovery type can further help specify the relative use of the different circular economy strategies. Refer to the CTI v4.0 report for more information about each of the steps.



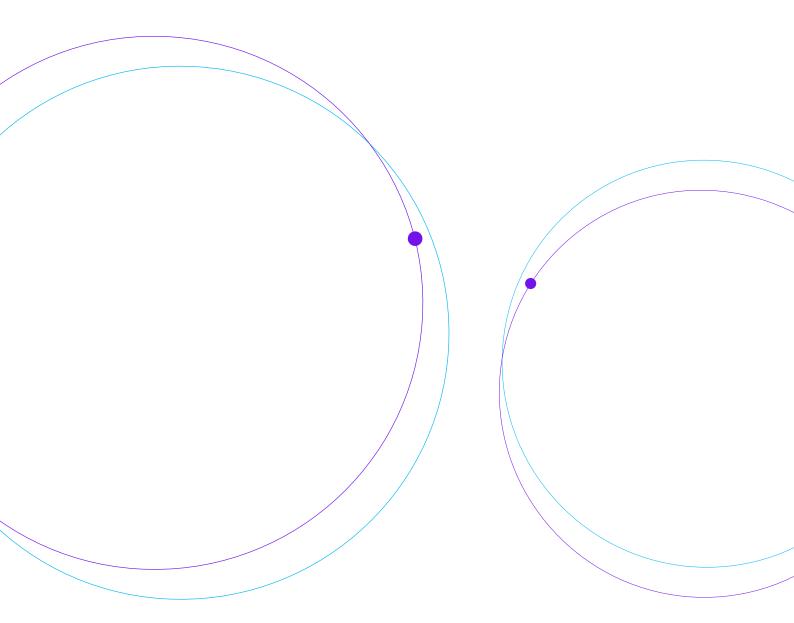
E5-3 Targets for resource use and circular economy

Companies must describe their resource use and circular economy targets and the rationale behind these objectives — as well as showing how they address material impacts, risks and opportunities.

Each target should specify whether and how it relates to inflow or outflows including: waste, products and materials; which layer of the waste hierarchy the target relates to and whether the target is mandatory and based on legislation.

How CTI helps

The performance against the CTI indicators can be analyzed to identify opportunities for improvement that can lay the foundation for establishing realistic yet ambitious targets. This information can be used for the formulation of SMART (specific, measurable, achievable, relevant, time-bound) targets under step 7. Refer to the CTI v4.0 report for more information about each of the steps.



E5-4 Resource inflows

Companies must report on products/materials used, including the use of sustainably sourced biological materials, non-virgin, reused or recycled materials. They should specify the methodologies behind their calculations.

How CTI helps

The CTI indicators for circular inflows calculate the data for material resources inflows (for a specified period), including:

- total weight of products/materials used
- · weight in both absolute value, and as a percentage, of renewable input
- weight in both absolute value, and as a percentage, of reused or recycled products and materials used

Refer to the CTI v4.0 report for more information about each of the steps.



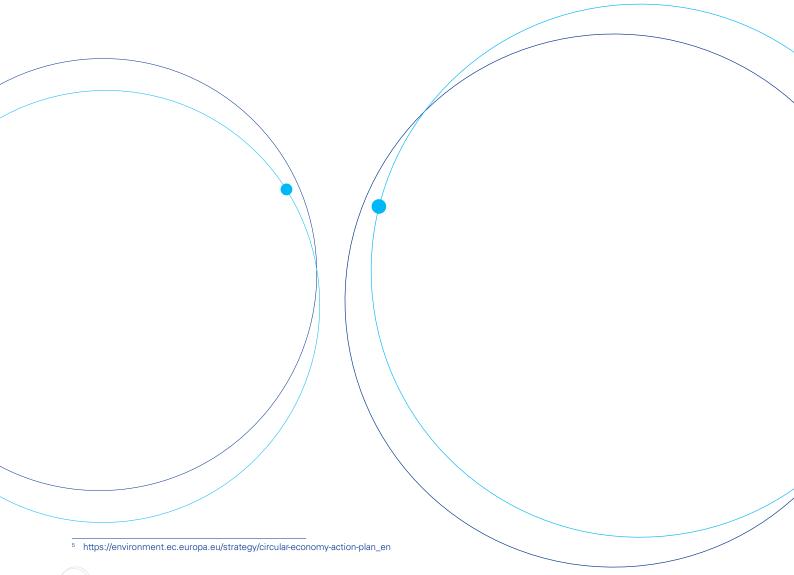
E5-5 Resource outflows — including waste

For E5-5, companies are required to provide an understanding of how they contribute to a circular economy by designing products and materials in accordance with circular principles. This involves describing their key products and materials that are designed along circular economy principles. They should at the same time disclose information on durability, repairability and rates of recycled content for outflows that are considered material.

The disclosure should also describe the company's waste management strategy including total amount of waste generated, recovery and treatment type of the waste, amount and percentage of non-recycled waste, and composition of the waste — as well as the methodologies to calculate the data.

How CTI helps

By using the CTI outflow indicator, companies can calculate the proportion of their resource outflows that are circular. The percentage circular outflow is composed of two sub-indicators % recovery potential and % actual recovery. The % recovery potential will help specify the relative weight of outflow designed according to circular principles. The additional indicator on actual lifetime provides further information on the design for circularity. The % actual recovery gives the required information in relation to waste management, while the % recovery type details out the different recovery strategies. Refer to the CTI v4.0 report for more information about each of the steps.



E5-6 Anticipated financial effects from material resource use and circular economy-related impacts, risks and opportunities

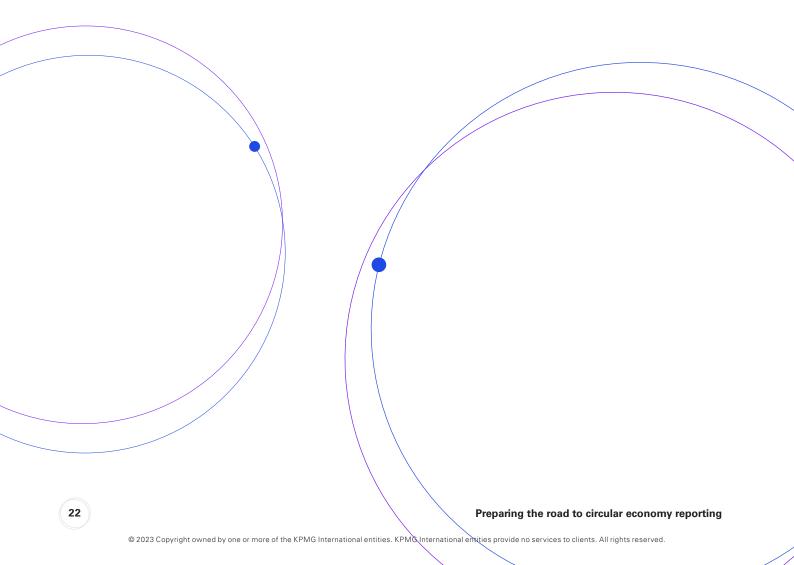
Companies need to report the anticipated financial effects, or, when this is not possible without undue cost or effort, provide suitable qualitative information.

How CTI helps

Steps 1–5 indicate those inflows and outflows with the greatest potential for improvement. For step 6, companies should understand how circular performance relates to both linear risks and circular opportunities, by assessing their exposure to risks in various scenarios, and evaluating opportunities via a business case.

Using the information gathered from the scenario analysis, companies can start prioritizing linear risks, based on threat and vulnerability. This allows them to plot and prioritize linear risks, define potential action roadmaps to mitigate these risks, and unlock potential benefits from circular opportunities.

By selecting the Value the Loop module in step 2, two indicators that help monetize circular performance can be added to provide insights on financial effect. Companies can demonstrate decoupling of generating revenue (economic value) from linear (virgin) material use with the CTI metric *circular material productivity*. The metric *CTI revenue* can be used for portfolio steering as well as disclosure of the product portfolio circular performance based on monetary value (instead of only weight-based). Refer to the <u>CTI v4.0</u> report for more information about each of the steps.



$\label{thm:continuous} \textbf{Quantitative mapping CTI metrics versus Disclosure Requirements ESRS5}$

	Close the loop					Optimize the loop			Value the loop	
	% circular inflow	% circular outflow	% recovery potential	% actual recovery	% renewable energy	% critical material	% recovery type	actual lifetime	circular material productivity	CTI revenue
DR E5-4 31 (a):Total weight of used products and material	/									
DR E5-4 31 (b): Percentage of biological materials that is sustainably sourced	/									
DR E5-4 31 (c): Weight and percentage of non-virgin products and materials	/									
DR E5-5 35: Description of key products and materials that are designed along circular principles		/	/				/	/		
DR E5-5 37 (a):Total weight of waste generated		/		/						
DR E5-5 37 (b): Weight of recovered waste / by recovery operation type		/		/			/			
DR E5-5 37 (c): Weight of disposed waste / by disposal treatment type		/		/						
DR E5-5 37 (d):Total amount and percentage of non-recycled waste		/		/			/			
DR E5-5 39: Total amount of hazardous and radioactive waste generated by the undertaking		/		/						
DR E5-6 43: Quantification of the anticipated financial effects (monetary terms)									/	<u> </u>

66

We simply can't achieve a net-zero, naturepositive and equitable future without transitioning to a circular economy. The new EU's European Sustainability Standard on resource use and circular economy (ESRS E5) stands as a vital compass, guiding business toward the transformative power of the circular economy. It highlights the importance of transparency, accountability and measurable progress in promoting responsible practices that respect our planet's finite resources. The Circular Transition Indicators (CTI) offer a comprehensive, measurable and compatible framework that supports companies in aligning their reporting with ESRS E5, providing a clear pathway for organizations to integrate circular economy principles in their reporting practices and enabling them to demonstrate their commitment to sustainability. 99

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Designed by Evalueserve.
Publication name: Preparing the road to circular economy reporting
Publication number: 138823-G
Publication date: July 2023