



Kicking circular fashion into high gear

CTI Fashion Initiative

White paper

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CTI



World Business
Council
for Sustainable
Development

Kicking circular fashion into high gear

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Executive summary

Embracing circular approaches can significantly reduce the fashion industry's climate and nature impact and create a USD \$560 billion economic opportunity.¹ But today, the industry operates on an outdated "take-make-waste" model that is both wasteful and polluting. This linear economy model in fashion is unsustainable and companies that don't shift to circular strategies and business models, will be left behind. Going circular presents important opportunities for fashion companies to build resilience and generate value by minimizing the use of virgin resources and waste and mitigating negative impacts on both people and planet.

Many fashion companies are now following new circular strategies and creating circular products to pursue a more sustainable business model. Unfortunately, as a whole, the industry is progressing slower than hoped on its circular journey. Companies face a number of challenges with the transition to a circular economy model. These include misaligned goals and incentives, fragmented supply chains and few examples of profitable circular business models at scale.

A standardized approach to measuring circularity can help rally companies in the industry around common targets and measures of success. What is needed is a methodology that can credibly quantify the impact of circularity on net-zero, nature-positive and equity targets. The methodology that can answer this need is the globally recognized metrics system [Circular Transition Indicators \(CTI\)](#), developed by the World Business Council for Sustainable Development (WBCSD). CTI is a quantitative, data-based and flexible framework offering an ideal set of metrics for establishing a sector-wide standard for the fashion industry that will support companies' decision-making and investments to implement circularity at scale.

By leveraging WBCSD's [CTI v4.0](#), fashion and textile stakeholders are coming together in the [CTI Fashion Initiative](#) to develop industry-harmonized standards, metrics and best practices to help the sector adoption of circular strategies and business models. Working together, we seek to unlock new avenues for accountability and value creation and to operationalize circularity throughout the fashion and textile value chain.

This white paper is the first milestone for this initiative. Informed by stakeholder consultations, it defines the scope of a dedicated sector guidance for measuring circularity to be published by the end of 2023. The following questions have shaped the development of this document and will form the overall scope of work for the upcoming sector guidance:

- **Indicators:** Which indicators are necessary to monitor circular performance and progress for the fashion industry and textile value chain?
- **Best practice:** Which use cases can show best practice for wider adoption of circularity?
- **Priorities:** What are key priorities and needs of the fashion industry with regard to environmental impact?
- **Materials:** What are materials commonly used in the fashion sector and how can shifting to more circular options lower a company's material carbon footprint and other environmental impacts such as land and water use?
- **Data:** What existing methodologies and data from the fashion industry can be leveraged to complement CTI v4.0 toward a standardized approach to measure circularity for the industry?

To move from circular ambition to action, the fashion industry will need a common way to assess and measure progress. The CTI Fashion Initiative is about aligning incentives, standardizing circularity measures and unlocking innovative business models for both industry players and consumers.

It's time to kick into high gear and make circular fashion a reality. We invite fashion companies and industry stakeholders to join the CTI Fashion Initiative and be part of this transformative journey! [Sign up here](#) for more information on how to get involved.

Introduction

A circular fashion industry is crucial to achieving a net-zero, nature-positive and equitable world. But today, the industry operates on an outdated "take-make-waste" model that is both wasteful and polluting. The list of harms it does is long.²

- The clothing and footwear industry is responsible for 10% of global greenhouse gas (GHG) emissions, more than shipping and international flights combined.³
- The production of textiles, from growing the crops to dyeing and finishing processes, requires more than 1,900 types of chemicals, almost 8% of which the EU has labeled as hazardous to human health and the environment.⁴
- It is a water-intensive industry, whereby the production of a single cotton t-shirt consumes 2,700 liters of water, enough to meet one person's drinking needs for 2.5 years.⁵
- Plastic leakage from synthetic textiles is also problematic, constituting between 16-35% of global microplastics released into the oceans.⁶

The linear economy model in fashion is unsustainable. From a business perspective, it creates legal, market, business and operational risks.⁷ More stringent regulatory requirements on resource use are set to reshape business models and financing.⁸ Furthermore, in 2018, a survey of respondents aged between 16 and 25 indicated that 59% would like to know how their clothes are made.⁹ Companies that don't shift to circular strategies and business models, will be left behind.

There is much to gain from a circular transition. Going circular presents important opportunities for fashion companies to build resilience and generate value by minimizing use of virgin resources and waste and mitigating negative impacts on both people and planet. Beyond resource efficiencies and cost savings, extended product lifetimes and innovative business models can lead to opportunities for higher monetization of apparel and footwear while decreasing overproduction and improve customer relationships through access to timeless, environmentally conscious, high-quality items.

Sluggish progress toward a circular fashion industry

With its innate creativity and innovation, the fashion industry has the potential to be a leader in the transition to a circular economy. Implementing circular strategies across the value chain can alleviate the industry's impact on people and the planet, while generating new opportunities for value creation.

By increasing use of secondary and sustainably produced fibres, and fundamentally transforming the way clothes are designed, sold, used and disposed of, businesses can reduce GHG emissions, leakage and pollution, as well as their use of freshwater and land.¹⁰ The value of materials and products can be preserved and companies can find new ways to connect with customers.¹¹

As a whole, the industry is progressing slower than hoped. Less than half of used clothes are collected for reuse or recycling when they are no longer needed, only 1% are recycled into new clothes,¹² and despite efforts to adopt circular business models by many companies globally,^{13,14} circularity remains niche. The progress reflects difficult challenges. Goals and incentives are misaligned, supply chains are fragmented and there are few examples of profitable circular business models at scale.¹⁵

A further push toward achieving a standardized approach is imminent. To mitigate the industry's negative environmental and social externalities, the European Commission has made fashion and textiles a focus industry for the transition to circularity. These standards will affect European companies as well as companies trading on the European market. By setting standards and tightening regulations – such as imposing more stringent ecodesign requirements and requiring the

disclosure of unsold stock sent to landfill, Europe is set to place tight restrictions on the industry. It will also demand proactive steps toward circularity.¹⁶

A standardized approach to measuring circularity can help rally companies in the industry around common targets and measures of success. What is needed is a methodology that can credibly quantify the impact of circularity on net-zero, nature-positive and equity targets. The methodology that can answer this need is the Circular Transition Indicators (CTI).



The Circular Transition Indicators (CTI)

Transparency and alignment are critical to establishing a common language across industries and governments to develop strategies and measure progress. For this reason, 50+ global companies across multiple sectors and geographies have come together through the World Business Council for Sustainable Development (WBCSD) to develop CTI.

CTI is simple, applicable across industries and value chains, comprehensive yet flexible, complementary to a company's existing sustainability efforts and agnostic as to material, sector or technology.¹⁷ Central to CTI stands a self-assessment that determines a company's circular performance. It focuses primarily on the circular and linear mass that flows through the company, in which design, procurement and recovery models are crucial levers to determine how well a company performs.

WBCSD published the first version in 2020 and developed the framework based on four modules, each addressing different but complementary aspects of circularity:

- **Close the Loop** - This module is mandatory and calculates the company's effectiveness in closing the loop on its material flows. (Please refer to the [CTI v4.0](#) report for more complete information about how to calculate % material circularity)
- **Optimize the Loop** - This module provides insights on material criticality, resource-use efficiency, and higher value recovery strategies.
- **Value the Loop** - This module illustrates the added business value of a company's circular material flows.
- **Impact of the Loop** - This module shows the impact of different circular strategies and business models on a company's sustainability targets.

Built for business by business, CTI provides companies with a common language for internal decision-making and communication with key stakeholders. It is aligned with voluntary and mandatory regulatory standards on the circularity of resource use and its impact on sustainability. Since its launch, CTI has been widely adopted by companies of all sectors, geographies and sizes and the framework is currently in its fourth version.

Adopting CTI for fashion

There are currently few industry-tailored metrics to report on resource use and circular performance. This results in companies reporting towards different key performance indicators (KPIs) and targets which are not easily comparable.¹⁸ A standardized approach to measuring circularity for the industry can help align incentives and stimulate investments towards more circular and sustainable operations and business models, while preparing companies to meet sustainability regulatory requirements. Adopting CTI as a common language to measure circularity across sectors ensures consistency in circularity measurement beyond the fashion industry and textile value chain. This is especially important recognizing that upstream sector participants often also supply into other sectors (e.g. synthetic fibers and their constituent polymers).¹⁹

Businesses and key stakeholders in the fashion industry value chain are joining forces through the CTI Fashion Initiative to develop a standardized sector approach to implementing CTI to measure circular performance.

The CTI Fashion Initiative is a collaboration spearheaded by WBCSD, VF Corporation/VF Foundation, Deloitte Switzerland and industry leaders such as Avery Dennison and Aditya Birla. It equips value chain stakeholders in the fashion industry to use the robust set of circularity metrics for business included in CTI, and helps companies improve decision-making, mitigate risks, demonstrate value creation and report their progress toward circularity.

With its transparent and quantitative approach, global adoption and alignment with both voluntary and mandatory reporting standards, CTI presents the ideal set of indicators for the industry. The CTI Fashion Initiative aims to facilitate the use of CTI to promote accountability, create value and operationalize circularity roadmaps and action plans.

Accountability

Without extensive adoption of circular business practices, the fashion sector is highly unlikely to meet its climate and nature targets. On the other hand, major new avenues for value creation can be unleashed. To manage the transition and to support investments in disrupting traditional linear fashion business models requires robust metrics as a basis for strategic and investment decisions.

Prompted by the UN Paris Agreement on climate change, the fashion industry has adopted ambitious climate roadmaps.²⁰ It aims to become net zero and use 100% renewable energy by 2050. A recently released circularity roadmap for the textile value chain invites the industry to increase its revenue from circular business models to 80% of total textile revenues and to double the lifetime of an item before it is discarded (textile utility) by 2050.²¹ In the fashion industry, as with all material-centric sectors, net zero can only be achieved with a significant shift to circular solutions and business models as more than half of all GHG emissions are attributable to materials management activities.²² The same is true for key pressures on nature, especially land use change.²³ Important targets focus on increasing the circularity of materials to achieve sustainable sourcing for 25% of input materials and 100% sustainable cotton sourcing, with 45% of polyester to be recycled by 2025.²⁴

These ambitious goals require substantial investment and monitoring. Using a set of robust quantitative metrics and data-driven insights can help companies attract investments and report credibly on their progress toward circularity.

Value creation

Adopting a standardized approach to measure circularity through CTI can uncover new avenues for value creation and unlock the opportunities behind them. Through CTI, companies can look at the life cycle of fashion products through the lenses of material inputs, manufacturing processes, life cycle enhancements (durability, reusability, reparability, etc.). Each of these areas present powerful opportunities for new value creation and positive impact, provided that businesses invest in, and engage with, innovative business models that generate profitability without further pressuring the planetary boundaries.

CTI offers an opportunity to measure circularity with robust quantitative indicators while exploring qualitative elements that bring innovation to the company. This starts with clear, consistent reporting and data exchange around circular indicators. Processes need to be adapted with novel technologies. New materials can inspire unique designs. Product performance can be enhanced, and with it a company's competitive advantage.²⁵ All these steps can enhance value creation.

Operationalization

Designing products that stay in use for longer can reduce environmental pollution, optimize resource use – and improve the quality of the products themselves.²⁶ Design influences 80% of a product's environmental impact.²⁷ Circular business models enable recovery, multiple product lifecycles and higher value retention.

Defining best practices and tangible actions is vital. Changing product designs and a company's supply chain takes time, energy and investment. Circular business models at scale have the potential to enhance profitability and resilience and can be a source of competitive advantage for many companies across industries.²⁸

CTI offers a simple methodology that is flexible in scope and scalable. It provides an overview of which flows have the greatest potential for improvement from a resource use and sustainability perspective and allows for aggregation, helping companies to understand and measure the impact of chosen strategies, products and processes. This all enables operationalization of circularity roadmaps.

The CTI Fashion Initiative makes it easier to identify opportunities for scalability and impact on sustainability targets. The time to strengthen your competitive advantage is now by joining this initiative and accelerating circularity adoption within your company and beyond.

Overall approach and scope of the work

The CTI Fashion Initiative is an industry-wide collaboration that aims to promote circularity and transparency in the fashion and textile value chain by providing aligned standards, metrics, data and best practices with the objective to

- Empower companies to steer action based on quantitative, data-based insights.
- Enable accountability and transparency toward environmental and social impacts.
- Showcase the impact of circularity on sustainability.
- Democratize access to circularity measurement by all actors in the value chain.
- Build an ecosystem of players that creates opportunities for synergies toward more circularity adoption by the industry and value chain

This initiative is based on WBCSD's Circular Transition Indicators ([CTI v4.0](#)), informed by stakeholder consultations, and will result in a dedicated sector guidance to be published by the end of 2023. By reviewing and building upon [CTI v4.0](#), the sector guidance aims to guide fashion

companies toward concrete insights into how they can most effectively transition to a circular economy.

The Circular Transition Indicators - Methodology

CTI is based on material flows through the company. By analyzing these flows, the company determines its ability and ambition to minimize resource extraction and waste material. It entails the assessment of the mass flows within the company's boundaries at three key intervention points:

Inflow: How circular are the resources, materials, products and parts sourced?

Outflow – recovery potential: How does the company design its products to ensure the technical recovery of components and materials at a functional equivalence (e.g., by designing for disassembly, repairability, recyclability, etc.) and/or that they are biodegradable at end of life (EOL)?

Outflow – actual recovery: How much of the outflow does the company actually recover? The outflow includes products, by-products and waste streams. Companies can improve actual recovery rates through closed-loop business models or mandatory or voluntary open-loop recovery scheme efforts.

By answering to the questions above, a company can determine how effective it is at closing material loops.

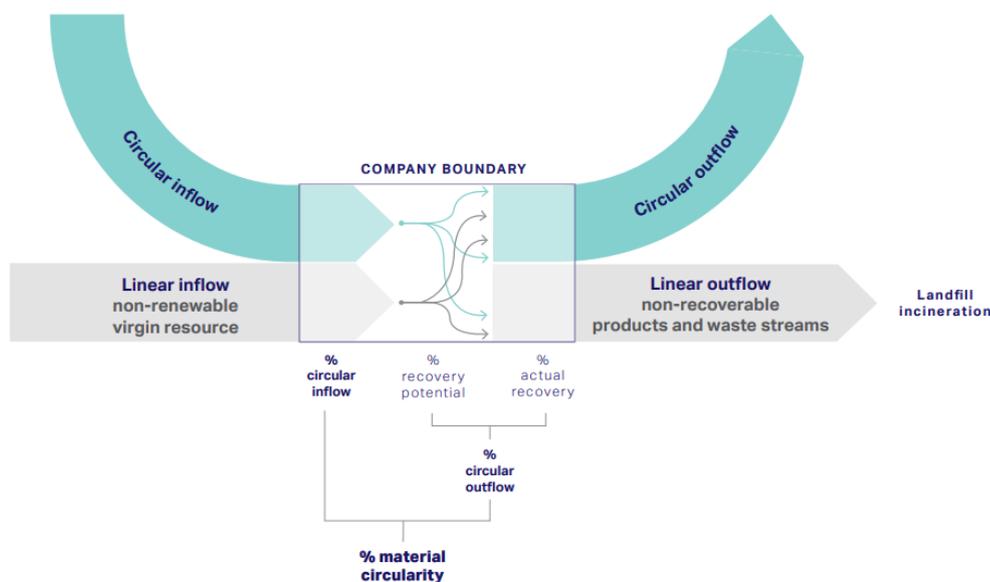


Figure 1 Illustration of material flows

These three pillars combined determine a company's performance in closing the loop, expressed in the % of material circularity, calculated as the weighted average between % circular inflow and % circular outflow.²⁹

Beyond its headline indicator, % material circularity, CTI v4.0 includes additional indicators offering companies further insights.



Figure 2 CTI indicators retrieved from CTI 4.0

(Refer to [CTI v4.0](#) for more detailed information on how to calculate all indicators outlined above).

CTI outlines seven process steps that support organizations in quantifying their circular performance across one assessment cycle:

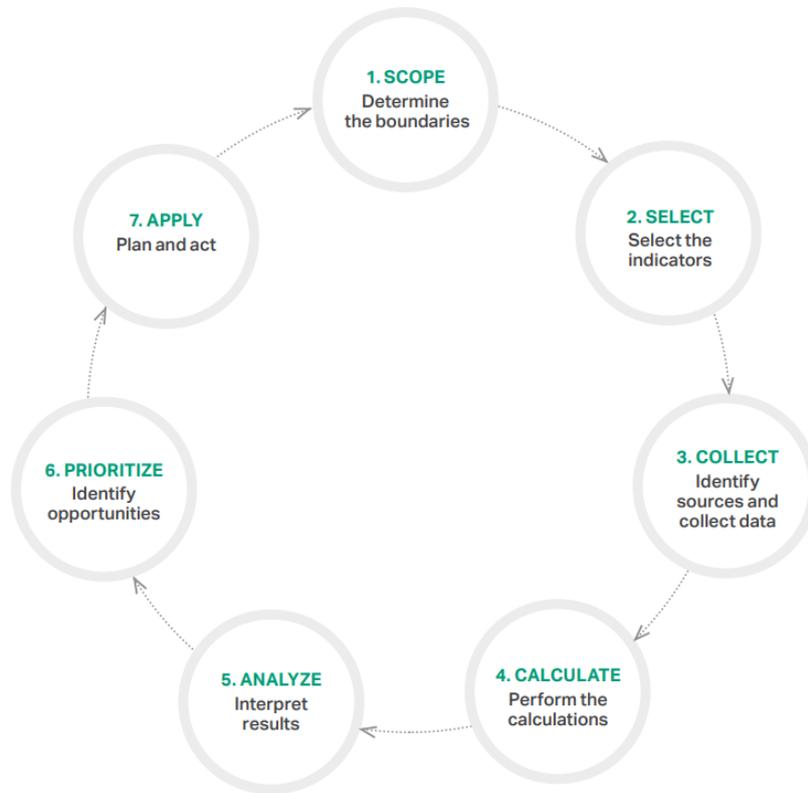


Figure 3 The seven steps in the CTI framework

Running the assessment for the first time will be informative and insightful. Repeating the cycle regularly allows the company to monitor progress in its circular transition.

Step 1 – Scope: Determine boundaries

The CTI methodology is flexible as it allows organizations to measure circularity at different business levels: full company but also specific parts of the company, such as business unit, production facility, product group. To develop meaningful insights, companies must clearly determine the boundaries of the assessment before starting.

To deliver a standardized approach to circularity, the CTI Fashion Initiative aims to provide guidance to ensure that different levels of assessment are carried out in a comparable manner by all actors in the value chain. It also guides companies on how to include all information on the level of business assessed, the timeframe, inclusions and exclusions. The sector guidance will include use cases and examples to highlight best practices in scoping for a CTI assessment at different levels.

Step 2 – Select: Select the indicators

The selection of indicators should be in line with the scoping for the assessment, as most indicators in [CTI v4.0](#) are voluntary. All indicators, with the exception of % material circularity, are left to the discretion of the company depending on the insights the company aims to obtain from the assessment.

The CTI Fashion Initiative aims to identify which indicators must be considered for all assessments from companies in the fashion industry. Guidelines may vary based on the nature of the actor, or the actor's position in the fashion value chain. As part of the development of the CTI for Fashion Initiative, some indicators might be considered mandatory for the fashion industry, while other indicators will be highly recommended.

Step 3 – Collect: Identify sources and collect data

Data collection relies on primary data, directly provided by the organization, but also leverages secondary data (macro-level information).

- **Primary data** - Most indicators in the CTI framework require primary data. The sector guidance will outline best practices for collection and guidance on data quality.
- **Secondary data** - Secondary data provides additional data points, such as data from the Ecoinvent database for GHG impact,³⁰ or the actual recovery rate in different markets. In order to improve accuracy, organizations are encouraged to replace secondary with primary data wherever possible.

Step 4 – Calculate: Perform the calculations

To calculate a company, facility, or product groups' circular performance, [CTI v4.0](#) proposes various indicators based on the four loops. To support the establishment of a baseline for the sector guidance, an initial mapping of all relevant indicators to measure circular performance by the fashion industry was conducted. The aim of this mapping was to clarify, through workshops and bilateral discussions with companies and partners, the most suitable indicators to focus on for the fashion industry and value chain. This mapping resulted in the following outline of circularity indicators for the fashion value chain:

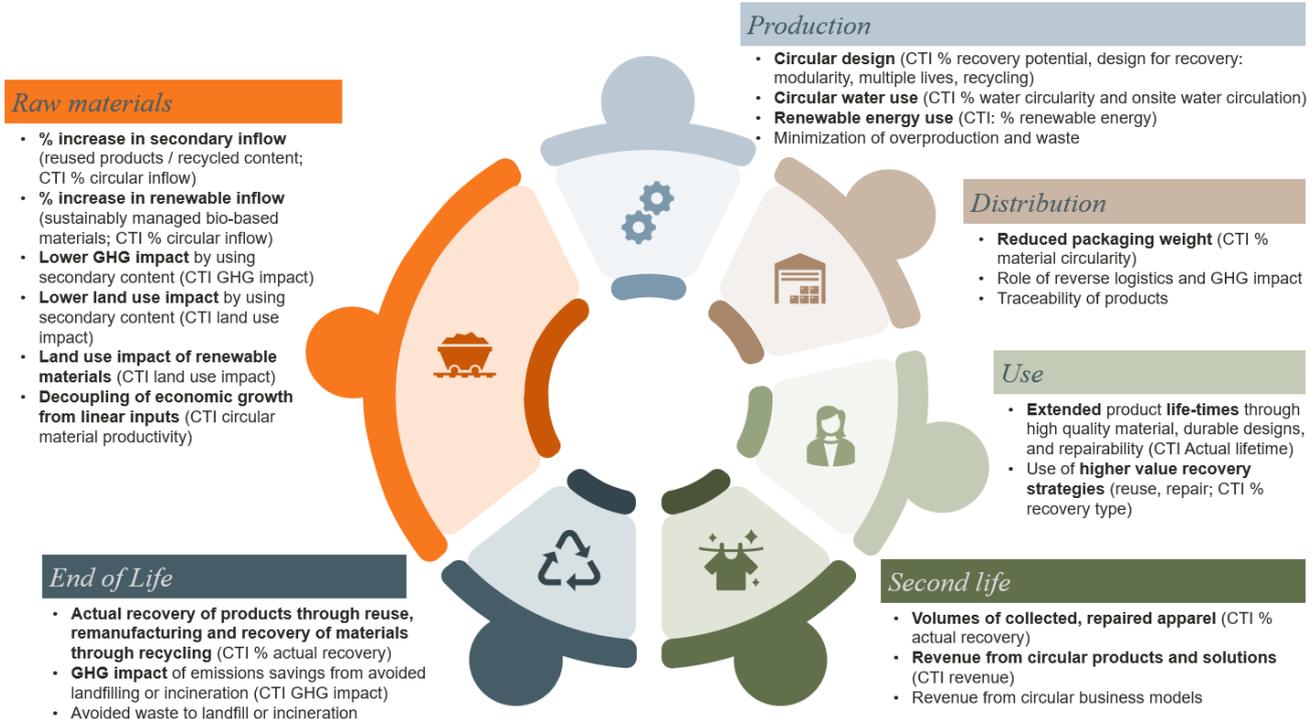


Figure 4 CTI indicators mapped for the fashion value chain, in bold are indicators included in CTI v4.0

Close the Loop

This mandatory module calculates the company’s effectiveness in closing the loop on its material flows. Performance is expressed in % material circularity, which is the weighted average between % circular inflow and % circular outflow. The % circular inflow is determined by the % non-virgin content and % renewable content (sustainably managed bio-based sources). The % circular outflow is determined by the % recovery potential (which is focused on design) and the actual recovery. These three pillars address various aspects of the business: procurement for inflow; design for potential recovery and business model innovation (closed); and legal and partnerships (open) for actual recovery.³¹

Circular inflow - non-virgin inflow

CTI v4.0 definition: Inflow previously used (secondary), e.g., recycled materials, second-hand products, or refurbished parts.

Objectives for sector guidance

- Clarify the characteristics of circular inflow for the industry according to CTI for materials and products from the technical cycle.³²
- Define data points that can be leveraged to define recycling for specific materials relevant to fashion.
- Design a matrix to help fashion organizations select between renewable, non-renewable, non-virgin and virgin inflows.

Circular inflow – renewable inflow

CTI v4.0 definition: Sustainably managed resources, most often demonstrated by internationally recognized certification schemes like the Forest Stewardship Council (FSC), Programme for the Endorsement of Forest Certification (PEFC), Roundtable on Sustainable Palm Oil (RSPO), etc., that, after extraction, return to their previous stock levels by natural growth or replenishment processes at a rate in line with use cycles. Therefore, they are replenished/regrown at a faster rate than harvested/extracted.

Objectives for sector guidance

- Identify certifications relevant to the fashion industry to categorize renewable inflow.
- Consider monitoring progress in use of regenerative inflow versus sustainably managed inflow as part of circular inflow
- Include reference to a matrix to support fashion organizations in selecting between renewable, non-renewable, non-virgin, and virgin inflows.

Circular outflow - recovery potential

CTI v4.0 definition: The recovery potential reflects the company's ability to design its material outflow to ensure it can be recovered through either the technical or biological cycles. A weight-based approach should be used to quantify the recovery percentage (weight that can be recovered / total weight).

Objectives for sector guidance

- Clarify principles of circular design and best practices, including certifications, that companies can apply or refer to when designing products for circularity.
- Clarify how to evaluate whether products and materials under scope are designed to enable recovery through (reuse, repair, refurbish, remanufacture or recycle).
- Establish guardrails such as accepted testing methods and standards.

Circular outflow - actual recovery

CTI v4.0 definition: The actual recovery indicator captures the amount of outflow recovered at the end of its initial life cycle.

Objectives for sector guidance

- Define data points that can be leveraged to define actual recovery in different markets following existing and evolving regulations from EU.
- Clarify categories of products to be used for leveraging the above data points.

% Renewable energy

CTI v4.0 definition: Measurement expresses the energy content and includes all the energy carriers that flow into the company (including, but not limited to, gas, electricity, and fuels). Should you need guidance on the definition of renewable energy, please refer to the energy sources published by IRENA (International Renewable Energy Agency)³³:

- Solar energy
- Wind energy
- Hydropower energy
- Geothermal energy
- Ocean (tidal) energy Bioenergy

Objectives for sector guidance

- Assess whether this indicator should be mandatory for companies from the industry.

% Water circularity

CTI v4.0 definition: CTI's water circularity indicator is a context-based indicator determined by the average between % circular water inflow and % circular water outflow (assuming the volume is the same).

Objective for sector guidance

- Assess whether this indicator should be made mandatory for the companies from the industry.

Optimize the Loop

This module provides insights into material criticality, resource-use efficiency, and higher-value recovery strategies. This module and its indicators are optional.

% Critical material

CTI v4.0 definition: The results of this indicator demonstrate to what extent a company is dependent on materials identified as critical. Even if the percentage of critical materials is small, it may be relevant to further analyze it to understand:

- The diversity in critical materials
- The substitutability of critical materials
- The absolute use of critical materials
- Revenue dependent on critical materials (revenue at risk)

Objective for sector guidance

- Define which critical materials can be relevant to the fashion industry.

% Recovery type

CTI v4.0 definition: % recovery type focuses on how the company recovers outflow and recirculates it into the value chain. Recovery type is applied to % actual recovery. The results provide a breakdown of the recovered outflow in shares reused/repared, refurbished, remanufactured recycled or biodegraded.

Objectives for sector guidance

- Define data points that can be leveraged to define recovery type in different markets following existing and evolving regulations.
- Clarify categories of products (fashion categories could be shoes, apparel, etc.) to allow benchmarking between categories.

% Onsite water circulation

CTI v4.0 definition: This indicator determines the total circularity of all water outflow over the chosen period (water reused or recycled onsite).

Objective:

- Review applicability to fashion industry.

Actual lifetime

CTI v4.0 definition: The actual lifetime indicator allows companies to monitor their performance on a product's lifetime by providing a higher score for those goods whose lifetime is longer than the industry average.

Objectives:

- Review if above definition is suitable for the fashion industry.
- Define data points that can be leveraged to define actual lifetime in different markets following new regulations.
- Integrate EU regulations for durability.

A number of industry-relevant topics have emerged to further explore in the sector guidance. These include:

- **Traceability:**
Refer companies to best practices and existing, or evolving methodologies and tools to enable traceability across the value chain.
- **Chemicals:**
Highlight the role of chemicals in enabling or preventing circularity.
- **Distribution:**
Understand impacts of distribution methods and scale on environmental pressures.

Value the Loop

This module illustrates the added business value of a company's circular material flows. The indicators are optional.

Circular material productivity

CTI v4.0 definition: The first indicator in this module is circular material productivity, which expresses the value a company generates per unit of linear inflow. The outcome produces a value that companies can monitor over time.

Objective:

- Review applicability to fashion industry through use cases and include recommendations for use.

CTI revenue

CTI v4.0 definition: The CTI revenue indicator creates an objective and quantitative bridge between a company's performance in closing the loop on the resources it uses and how that affects a company's financial performance.

Objective:

- Review applicability to fashion industry through use cases and include recommendations for use.

Consider any other industry-relevant indicator.

Impact of the Loop

This module measures the difference in impact between the company's current circular performance versus 100% circularity. The indicators are optional.

GHG impact

CTI v4.0 definition: This indicator calculates the GHG emission savings associated with circular strategies compared to using linear ones.

Objectives for sector guidance

- Prioritize the list of materials to include for the fashion industry.
- Define data points that can be leveraged to populate the existing secondary database.

Nature impact

CTI v4.0 definition: The nature impact score measures the land use impacts of material extraction and cultivation. It represents the loss of quality-adjusted km² that a company is responsible for, weighted according to the global extinction threat associated with sourcing locations. Land-use impacts associated with manufacturing processes are not included (but can also be estimated using LCA based methods), while any additional primary sourced parts introduced into circular processes (e.g., new elements added in repaired products) are considered within the standard framework.

Objectives for sector guidance

- Prioritize the list of materials to include for the fashion industry.
- Define data points that can be leveraged around LCA data to populate the database.

WBCSD is currently developing indicators to reflect the positive contribution of circularity on equity and potential trade-offs. These will be included in an updated version of the sector guidance.

Step 5 – Analyze: Interpret results

The results from the CTI assessment provide the quantitative foundation for identifying, prioritizing and implementing circular initiatives. Analyzing the underlying indicators is relevant to understanding what actions are necessary to increase the company's level of circularity, while the most valuable insights come from tracking performance over time. If performance does not meet the expectations, the company may further analyze the underlying indicators and parameters that influence their outcomes.

The sector guidance will provide instructions and examples to help companies determine how performance should be understood and monitored. A few focus areas can already be identified:

Indicator	Comments
Aim	CTI has been designed to facilitate decision making and scale-up of circular solutions and business models. Additional considerations should be applied when using CTI for communication or reporting. For example, while biodegradability is an important aspect for the closing of material loops in the biological cycle, biodegradation of apparel and footwear is highly uncommon. Companies in the industry must therefore not use CTI to report on a product's biodegradability.
Accuracy	Circular performance might vary over time, which also holds true for the accuracy of the data. While conducting an assessment, not all information will have full accuracy. Data sources and assumptions should be carefully documented as companies make efforts to progressively improve the quality of the data that inform their analysis.
Completeness	Companies should apply all relevant indicators to obtain a complete picture of the circularity of the product under scope and identify opportunities for improvement over time.

Step 6 – Prioritize: Identify opportunities

The insights gathered through CTI highlight the areas with highest potential for improvement. To use this information to make decisions and prioritize, companies may want to understand how circular solutions can drive value creation through building resilience in the face of operational, market, business and legal risks represented by continuing to operate in a linear model.³⁴

Through a detailed mapping of risks and opportunities, examples and use cases, the sector guidance will highlight how companies may prioritize implementation of circular solutions and business models to effectively address risks and build resilience while capitalizing on opportunities to generate value.³⁵

Step 7 – Apply: Plan and act

After analyzing the results, prioritizing the risks and opportunities, assessing the circular solutions and defining the business case, the next step is to formulate targets for improvement and execute related actions.

The sector guidance will provide companies with support on how to formulate targets for improvement and roll out action roadmaps to meet industry targets on climate and nature.



Conclusion

Linear business models have been profitable for decades. This "take-make-waste" model is, however, unsustainable, and it is responsible for significant environmental degradation across the globe. This is particularly true for the fashion sector, which accounts for 10% of global GHG emissions³⁶, and is an extremely water-intensive industry. Furthermore, the industry generates considerable waste streams that are usually not brought back into the system and end up polluting the environment.

Transitioning to a circular economy could enable the fashion sector to minimize its environmental impact. At the heart of the business case for circularity sits the opportunity for companies to create more value by being smarter about how they use resources and contribute to a net-zero, nature-positive and equitable world.

Scaling-up circularity for the fashion sector is a challenge for the industry, as the industry is progressing slower than hoped on its circular journey. One key justification for this lack of transformation is the lack of accepted measurement standards for circularity in the industry.

Measuring circularity offers a new paradigm for the industry to transition to a more resilient and fairer model. The key to making rapid progress is to measure circularity in the industry reliably. A comprehensive system of measurement of progress toward net-zero, environmental and equity targets can provide a sound basis for decision-making. Through harmonized circular indicators, fashion companies can accelerate accountability, enhance value creation and drive operationalization.

The [Circular Transition Indicators \(CTI\)](#) provide the framework that is needed. They have been developed in collaboration with companies across the globe in different sectors and offer a methodology that can quantify the impacts of circularity. As CTI is industry-agnostic, the [CTI Fashion Initiative](#) has been created to align the framework to the needs of the industry. Leveraging [CTI v4.0](#), this initiative aims to make circularity measurement and standards complete for the fashion industry.

We encourage companies to join the CTI Fashion Initiative now. Doing so can help turn the fashion industry from laggard to leader in the effort to create a better future for the Earth and its citizens. And it will unlock new opportunities for the fashion industry to meet the needs of future consumers and create value. The time to get out of the slow lane is now.

[Sign up here](#) for more information on how to get involved.

CTI Glossary

% Material Circularity

The weighted average of the % circular inflow and % circular outflow for a given product (group or portfolio), business unit, or company.

Chemical recycling

Chemical recycling refers to the process of modifying the structure of the fiber to transform it into a new fiber that can then be used.

Circular economy principles

- Design out waste and pollution
- Keep products and materials in use
- Regenerate natural systems.

Circular inflow

Inflow that is:

Renewable inflow (see definition) and used at a rate in line with natural cycles of renewability

OR

Non-virgin (recycled, reused, or remanufactured materials)

Circular outflow

Outflow that is:

Designed and treated in a manner that ensures products and materials have a full recovery potential and extend their economic lifetime after their technical lifetime

AND

Demonstrably recovered

Circular performance

The multidimensional results of a product (group), business unit, including % circularity (% circular inflow and % circular outflow) and at least one other CTI indicator. This indicator may be from any of the three modules.

CTI revenue

The revenue generated by a product (group or portfolio), business unit or company multiplied by its % circularity.

Company boundary

Physical or administrative perimeter of the organization, consistent in scope with financial and sustainable reporting.

Downcycling

Recycling "something in such a way that the resulting product is of lower (economic) value than the original item"³⁷. It indicates a loss of the material/product's original characteristics that precludes use in a similar function to its previous cycle (functional equivalence). Downcycling is usually used to describe a product's material properties, level of degradation or, in the case of metals, degree of impurity, which leads to a loss of economic value³⁸.

Durability

Durability means the ability of a product to function as required, under specified conditions of use, maintenance and repair, until a limiting event prevents it functioning.

Emotional durability: Applying strategies that increase and maintain a product's relevance and desirability to a user, or multiple users, over time³⁹.

Physical durability: Combining material choices and garment construction, including component reinforcement, in order to create highly durable products that can resist damage and wear over long periods of time⁴⁰.

Fashion industry

The fashion industry in this white paper will refer to both "high fashion" and "mass fashion". The industry will contain three levels: the production of raw materials, principally fibres and textiles but also leather and fur; the production of fashion goods by designers, manufacturers, contractor and others; and retail sales. [Fashion industry | Design, Fashion Shows, Marketing, & Facts | Britannica](#)

Functional equivalence

"The state or property of being equivalent" (or equal) in function⁴¹.

In the context of CTI, this defines an outflow (a product, product part, waste stream, etc.) designed so that it is technically feasible and economically viable to bring it back to inflow (as material, product part, etc.), preserving a similar function to its previous cycle. For example, it is possible to recycle the plastics used in mobile phones for kitchen appliances because properties like strength and aesthetics are equivalent.

Inflow

Resources that enter the company, including materials, parts or products (depending on a company's position within the supply chain). Not included are water and energy, which are part of the specific water and energy indicators.

Land-use change

Land-use change is the conversion of natural areas into human-dominated landscapes, caused by activities such as urbanisation, deforestation, agriculture and infrastructure development. This process is a key driver of biodiversity loss. Addressing land-use change is vital to preserving biodiversity and ensuring sustainable development.

Linear inflow

Inflow that is from virgin, non-renewable resources.

Linear outflow

Outflow that is not classifiable as circular. This means that the outflow:

Is not circular in design/consists of materials treated in a manner that leaves no recovery potential

OR

Not demonstrably recovered nor flowing back into the economy.

Linear risk

Exposure to linear business practices: use scarce and non-renewable resources, prioritise sales of new products, fail to collaborate and fail to innovate or adapt. This will negatively impact a company's license to operate⁴².

Mechanical recycling

Mechanical recycling refers to the processing of fibers by sorting, grinding, and compounding the fibers to be reused.

Non-virgin inflow

Inflow previously used (secondary), e.g. recycled materials, second-hand products or refurbished parts.

Outflow

Material flows that leave the company, including materials, parts, products, by-products and waste streams (depending on a company's position within the supply chain).

Product Lifetime

The duration of the product that starts at the moment a product is released for use after manufacturing or recovery and ends at the moment a product becomes obsolete. Its durability, intended as the ability to "function as required, under specified conditions of use, maintenance and repair, until a limiting event prevents its functioning" drives the longer product lifetime.

Recovery

The technically feasible and economically viable recovery of compounds, materials, parts, components or even products (depending on the organisation) at the same level of functional equivalence through reuse, repair, refurbishment, repurposing, remanufacturing, recycling, or biodegrading. This excludes energy recovery from waste and any biological cycle waste that does not satisfy all criteria outlined in the biological cycle.

Recovery types

The different forms of material recovery, such as (in order of the recirculation loops in the Ellen Macarthur Foundation's Circular Economy System Diagram⁴³ or butterfly diagram):

- **Reuse:** To extend a product's lifetime beyond its intended designed life span, without changes made to the product or its functionality.
- **Repair:** To extend a product's lifetime by restoring it after breakage or tearing, without changes made to the product or its functionality.
- **Refurbish:** To extend a product's lifetime by large repair, potentially with replacement of parts, without changes made to the product's functionality.
- **Remanufacture:** To disassemble a product to the component level and reassemble (replacing components where necessary) to as-new condition with possible changes made to the functionality of the product.
- **Recycle:** To reduce a product back to its material level, thereby allowing the use of those materials in new products. For the fashion industry, recycling should be separated between chemical and mechanical recycling.

Regenerative

To have the ability to restore material resources and improve ecosystem health to ensure productivity and other benefits (e.g. carbon capture, biodiversity, and other ecosystem services). Note that regeneration goes beyond retaining the status quo of natural systems that may already have degraded from their initial state⁴⁴.

Renewable inflow

Sustainably managed resources, most often demonstrated by internationally recognised certification schemes like the Forest Stewardship Council (FSC), Programme for the Endorsement of Forest Certification (PEFC), Roundtable on Sustainable Palm Oil (RSPO), etc.⁴⁵ that, after extraction, return to their previous stock levels by natural growth or replenishment processes at a rate in line with use cycles. Therefore, they are replenished/regrown at a faster rate than harvested/extracted⁴⁶.

Virgin inflow

Inflow not previously used or consumed (primary).

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Disclaimer

This white paper is released in the name of WBCSD. Like other papers, it is the result of collaborative efforts by WBCSD staff and experts from member companies. It does not mean, however, that every member company of WBCSD agrees with every word.

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Authors:

- **WBCSD – Irene Martinetti, Manager, Circular Economy**
- **Deloitte – Carlo Giardinetti, Sustainability Lead Consulting Switzerland**
- **Deloitte – Joy Jadam, Sustainability Manager**
- **Deloitte – Deborah de Wolff, Sustainability Consultant**
- **Deloitte – Merel ten Hoedt, Sustainability Consultant**

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About WBCSD

WBCSD is the premier global, CEO-led community of over 200 of the world's leading sustainable businesses working collectively to accelerate the system transformations needed for a net zero, nature positive, and more equitable future.

We do this by engaging executives and sustainability leaders from business and elsewhere to share practical insights on the obstacles and opportunities we currently face in tackling the integrated climate, nature and inequality sustainability challenge; by co-developing “how-to” CEO-guides from these insights; by providing science-based target guidance including standards and protocols; and by developing tools and platforms to help leading businesses in sustainability drive integrated actions to tackle climate, nature and inequality challenges across sectors and geographical regions.

Our member companies come from all business sectors and all major economies and our global network of almost 70 national business councils gives our members unparalleled reach across the globe. Since 1995, WBCSD has been uniquely positioned to work with member companies along and across value chains to deliver impactful business solutions to the most challenging sustainability issues.

Together, we are the leading voice of business for sustainability, united by our vision of a world in which 9+ billion people are living well, within planetary boundaries, by mid-century.

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