



Unified National Circular Economy Measurement Framework-FMCG Sectoral Guidelines





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Foreword



Dr. V.K. Saraswat
Member, NITI Aayog



India is spearheading the sustainability agenda among the emerging economies. Under the G20 presidency, India has a significant opportunity to shape the future of major global economies. We are committed to achieve the Net-Zero emissions target by 2070 as announced by our Hon'ble Prime Minister.

Being the world's fifth-largest economy, India's material consumption and resource demand is rapidly growing, with 65 Mn tons of Municipal waste generated annually and projected to reach 165Mn tons by 2030, acknowledging its significant environmental impact, and it's imperative to encourage sustainable resource consumption and minimize waste. By adopting a circular economy, India can reduce greenhouse gas emissions by 44%.

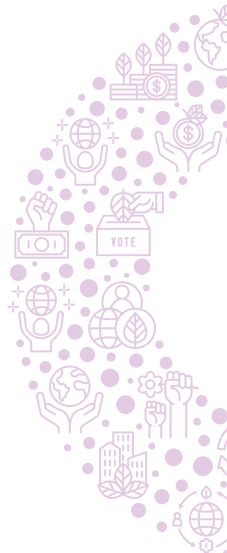
India's G20 Presidency received a major boost with the launch of the Resource Efficiency and Circular Economy Industry Coalition (RECEIC), a first-of-its-kind initiative aimed at promoting resource efficiency and circular economy practice with participation from 39 global companies. India has already taken strides towards circularity through ambitious policies and regulations, including Extended Producer Responsibility in various sectors like Plastic Management Rules 2022, Battery Waste Management Rules, 2022, Vehicle Scrappage Policy, 2022, Steel Scrap Recycling Policy, 2019, E-waste Management Rule, 2018. Private sector independently is also embracing circular business models to tap into the benefits of circular economy, few of the companies also embracing circular targets and seek to measure

circular economy through existing global CE Measurement Frameworks. However, measuring the circular performance across sectors will require addressing the sectoral nuances in adopting the globally established frameworks.

In this context, the sector specific Circular Economy Measurement Implementation playbooks will provide a valuable resource for industry practitioners to measure circularity efficiently. It offers essential insights and guidelines from sector specific perspectives, laying the foundation for introducing and implementing circular economy measurement in India.

I extend my congratulations to FICCI, Accenture, EU REI and NITI Aayog circular economy teams and industry leaders for their dedicated research in producing these well-crafted sector specific playbooks. I am confident these playbooks, including sector-specific implementation guidelines on circularity measurement, will serve as a valuable reference for policymakers and industry practitioners working on circular measurement approaches. I encourage diverse stakeholders and industry leaders to utilize these playbooks/self-assessment toolkits to measure their circular baseline, develop targets and accordingly take actions to achieve their circularity targets.

(Dr. V.K. Saraswat)





Hervé Delphin
Ambassador, Delegation of
European Union to India



The case for circular economy is imposing itself as countries and societies grapple with the imperative of sustainable development, and with the economic necessity of resources' sourcing and supply chains. This transition is not merely a shift in economic practices; it represents a fundamental reimagining of how we design, produce, consume, and dispose of goods.

Both in Europe and in India, two regions with distinct economic contexts and challenges, the urgency for circularity is particularly pronounced. The demand for resources, the impacts of climate change, and the escalating waste crisis necessitate a paradigm shift towards more sustainable, regenerative practices. Recognizing this, both regions have embarked on the journey towards a circular economy, acknowledging the imperative of reconciling economic growth with environmental stewardship but also the opportunities that may arise with it.

After decades of neglecting this dimension Europe moved and positioned itself at the forefront of the global circular economy movement. The European Union's ambitious Circular Economy Action Plan first established in 2015 and upgraded since, has served as a regulatory catalyst for a holistic transformation, promoting circularity across various economic sectors and policy areas. This initiative not only addresses resource efficiency but also underscores the potential for job creation, innovation, and enhanced competitiveness.

India, as a rapidly growing economy, faces the challenge of delivering economic and social development towards its population while minimizing environmental impacts. The circular economy presents a compelling opportunity for India to de-link economic growth from resource depletion and environmental degradation. The Indian government's emphasis on sustainable development aligns with the circular

Preface by **EU REI**

economy approach. India is well positioned in adopting this 'way of doing' which is also a 'way of being' as illustrated by the LiFE Initiative launched by India that focuses on lifestyles. It draws on Indian own ancestral experiment of sustainable use of natural resources.

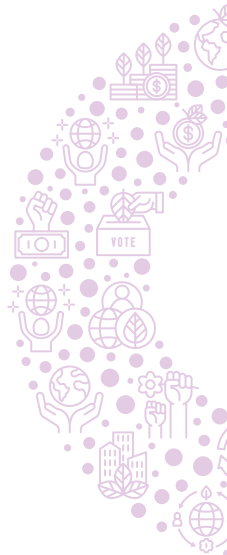
As both Europe and India have embarked on developing their circular and sustainable economy models, the importance of having monitoring frameworks in place for industries cannot be overstated. A robust monitoring framework serves as a compass and a benchmark, providing industries with the tools to assess, track, and improve their circular performance.

The Circular Economy Measurement Framework for Industries in India, developed under the guidance of NITI Aayog and with support from the European Union and its Resource Efficiency Initiative is an important step.

It focuses on particularly critical in sectors such as, automobile, and fast-moving consumer goods (FMCG), where resource intensity as well as economic and environmental impacts are high.

This Measurement Framework aims at being both a catalyst and a roadmap for sustainability, mobilising stakeholders to reassess, reimagine, and recalibrate their approaches to production and consumption.

The transition to a circular economy is a joint endeavour; it is a collective commitment to redefining our relationship with resources and the environment. The fact that this report emanates from a joint initiative between the Government of India, the EU and other key partners speaks for itself of this teamwork. We hope this framework will serve as an inspiration, catalyst, and model for circular economy transitions in India. And that it can foster a mindset—a paradigm shift towards circular thinking that can be adapted, replicated, and scaled across industries and geographies.





Shailesh K. Pathak
Secretary General
FICCI



Preface by **FICCI**

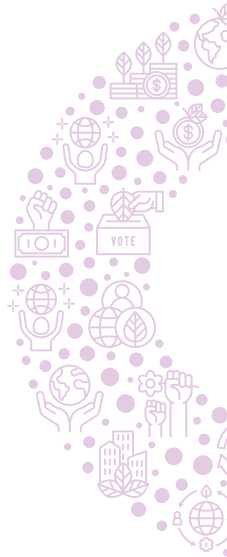
FICCI, in collaboration with European Union-Resource Efficiency Initiative (EU-REI) & Accenture as technical partner, is happy to present **“Unified National Circular Economy Measurement Framework-Sectoral Guidelines”** for Auto components & FMCG.

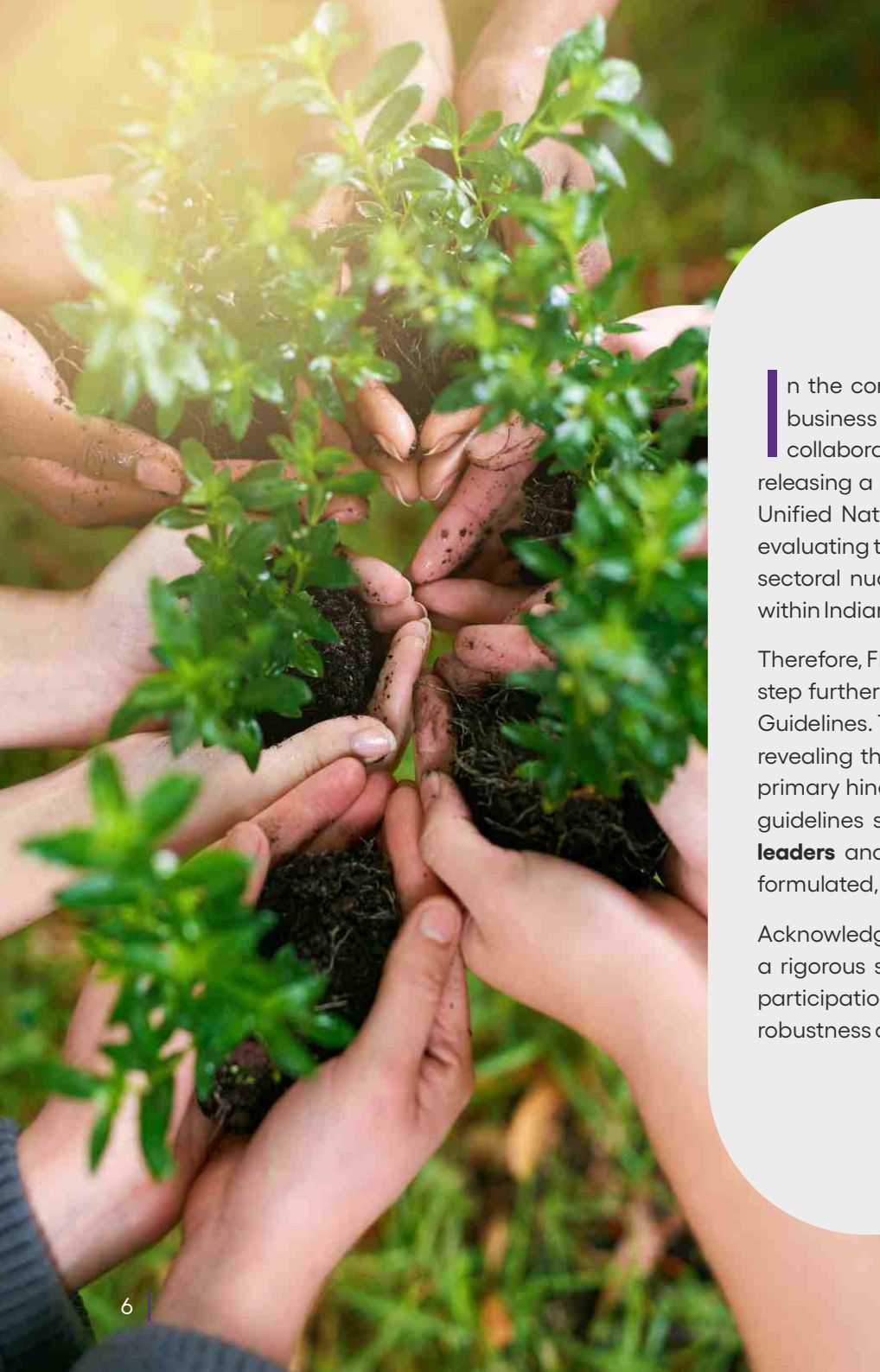
The sector specific Circular Economy Measurement Implementation playbook, developed under the project, will provide a valuable resource for industry practitioners to measure circularity efficiently. It offers essential insights and guidelines, laying the foundation for introducing and implementing circular economy measurement in India.

The Implementation playbook is a call to action. It exemplifies the collaborative spirit of industry, government, and academia working together to forge a path toward a more sustainable and resilient future. The insights within this implementation playbook will act as a roadmap for businesses, empowering them not only to endure but to flourish in the era of circular economy practices.

We hope FICCI industry members will find this framework useful for implementation.

Shailesh K. Pathak





Background

In the context of the burgeoning circular economy in India, where sustainability and responsible business practices are gaining prominence, **FICCI and Accenture, with support from NITI Aayog**, collaborated last year to create design principles for measuring the circular economy, subsequently releasing a position paper titled **Approaches for Measuring India's Circular Transition**. We curated a Unified National Circular Economy Measurement Framework aimed to guide Indian businesses in evaluating their circular economy performance. One of our key design principles was to deep dive onto sectoral nuances to **bridge the gap between theoretical understanding and practical application** within Indian industries.

Therefore, FICCI in partnership with Accenture Strategy and support from EU REI and NITI Aayog, took a step further by developing the Unified National Circular Economy Measurement Framework-Sectoral Guidelines. The impetus behind this initiative also stems from a survey conducted by Accenture-FICCI, revealing that **65% of surveyed corporations identified the lack of industry-specific guidelines** as a primary hindrance to effectively measure their circular economy performance. These sector-specific guidelines serve as a culmination of extensive research, incorporating insights from **50+ industry leaders** and delving into **35+ circular Key Performance Indicators (KPIs)**. Each KPI is meticulously formulated, considering sector-specific nuances and the primary materials of interest.

Acknowledging the critical importance of real-world application, the developed playbooks underwent a rigorous stress-testing phase, actively involving industry giants such as **ITC and Mahindra**. Their participation not only validated the methodology but significantly contributed to enhancing the robustness of the guidelines outlined in this playbook.



Introduction



Within the broader sustainability landscape, the circular economy embodies a shift driven not only by environmental considerations but also by the industry's trend towards resilient, closed-loop systems, while unlocking significant value and enabling additional revenue streams

- Amit Sinha

Co-Chair (Circular Economy), FICCI Environment and Climate Change Committee & MD and CEO Mahindra Lifespace Developers Ltd



Engaging with the circular economy reflects a universal commitment to sustainable practices that transcends industry boundaries. It's a philosophy of responsible resource management and enduring value creation, adaptable and relevant across diverse sectors, shaping a resilient and responsible future.

- Dr, Naresh Tyagi

Co-Lead, FICCI Circular Economy Sub Committee and Chief Sustainability Officer, Aditya Birla Fashion and Retail Ltd



Introduction

Circularity has gained significant attention in recent years as businesses recognize the urgent need for more sustainable practices. In contrast to the traditional linear economy of take-make-waste, circularity presents a transformative approach that aims to minimize resource consumption, waste generation, and environmental impact.

Implementing circular practices in business requires a shift in mindset and a commitment to systemic change. It requires companies to assess entire lifecycle of their products/priority products, from design and sourcing to manufacturing, distribution, and end-of-life management.

The case for action could not be clearer. But what is unclear is: **1. What** areas should company work on to be more circular? **2. How** can company measure their circularity performance? **3. Where** will the data come from?

These are the questions we have tried to answer for FMCG and Automotive sectors to begin with, through our elaborated research and deliberations with industry leaders.

As FICCI, Accenture and EU REI, we are proud to present these sector specific circularity measurement playbooks—a culmination of rigorous research, insightful analysis, and expert collaboration. These playbooks, tailored for Indian FMCG and Automotive firms, provide a comprehensive framework encompassing circularity measurement Key Performance Indicators (KPIs) and pragmatic guidelines to implement and start measuring circularity. We believe this playbook will serve as a catalyst for the sectors to not just embrace circularity, but to lead it, fostering a future where growth is not just profitable, but also sustainable, responsible, and inclusive.



Circular Economy Measurement Framework Playbook

FMCG Sector



This is a step-by-step guidebook

It will help businesses measure **circularity** across key areas, understand their circularity baseline and identify business areas that can drive circularity.

Based on our analysis across the FMCG industry and insights from workshops with industry leaders, we have selected 28 KPIs relevant to the FMCG industry. In each KPI, we have developed clear definitions and formulae, along with other necessary details to accelerate measurement of circularity in FMCG businesses.

The playbook is designed to cater to key stakeholders in FMCG industry's value chain.

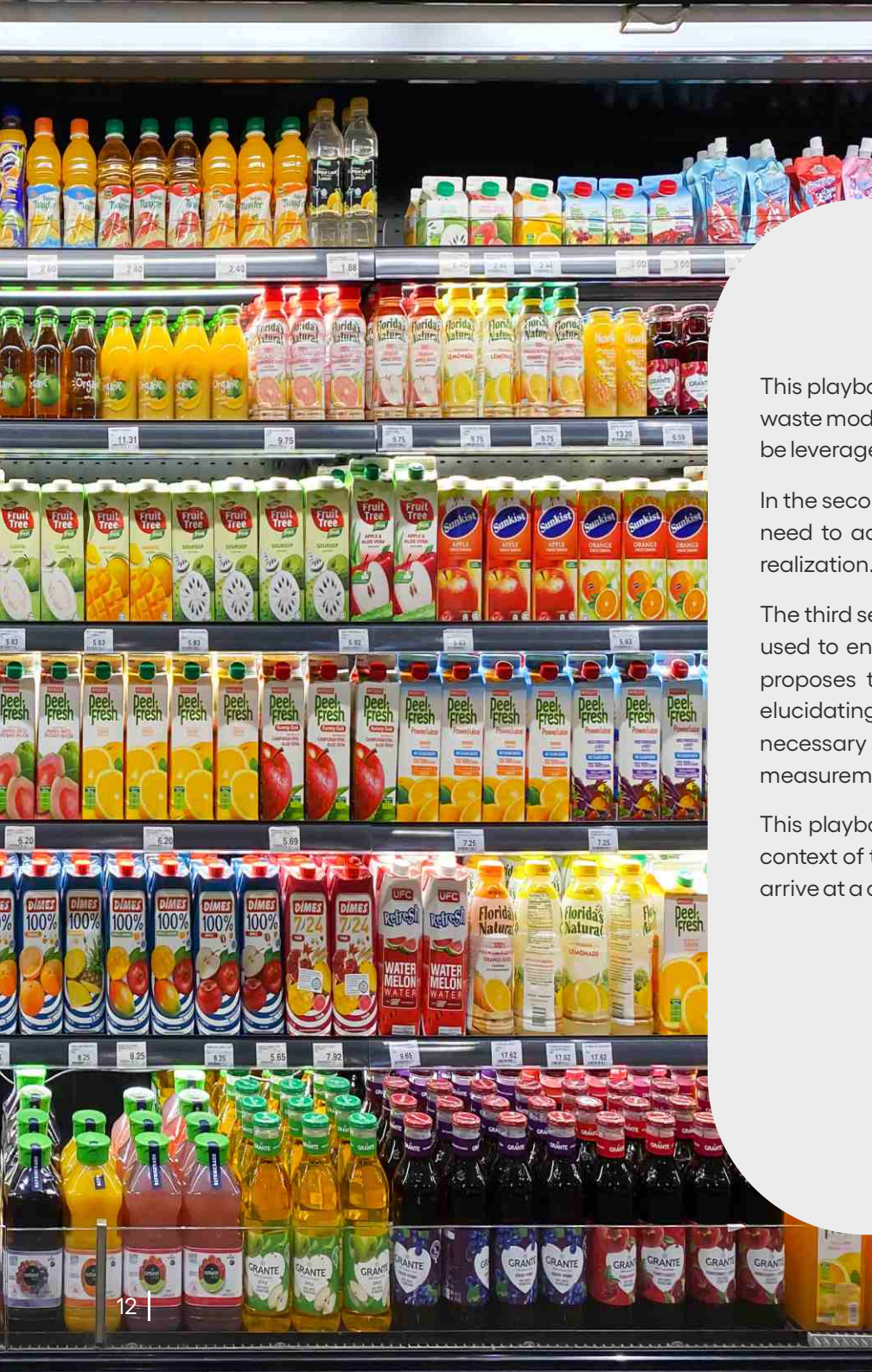


This playbook is a self assessment tool which provides FMCG industry executives with:

- 1** Circularity measurement framework
- 2** 28 KPIs across 4 categories and 10 sub-categories
- 3** Definitions, formulae and other details for each KPI
- 4** Methodology & guidelines to calculate key circular KPIs

What this playbook is not:

This playbook is NOT a mandatory reporting disclosure, or ESG standard for mandatory reporting or a guide to support existing ESG standards



How to use this playbook

Circularity in FMCG sector | Framework, KPIs | Way ahead

This playbook starts with an **overview** of the urgent need to shift from a linear economy or take-make-waste model to a circular system. The section also explains the purpose of this playbook and how it can be leveraged by the FMCG industry to measure circularity.

In the second section, we deep dive into **circularity in the FMCG sector**. In addition to emphasizing the need to adopt circular initiatives in a consumer goods company, we focus on the potential value realization.

The third section details out the **Circular Economy measurement framework** and the design principles used to ensure the framework caters to the needs of Indian businesses . Henceforth, the playbook proposes the KPIs relevant to the FMCG industry. It **demonstrates each KPI** at a granular level; elucidating the definitions, formulae, inclusions, guidelines for businesses to collect data and other necessary details. The playbook concludes by putting forward the **way ahead** for the circularity measurement framework.

This playbook is intended as a companion and guide for companies to self-assess their circularity in context of the defined KPIs. We encourage you to use this for your reference to measure each KPI and arrive at a circularity scorecard of your organization.

This playbook can be (but doesn't need to be) read sequentially

Circularity is vital to FMCG's sustainable transformation

In India, an alarming **70% of plastic packaging products swiftly transform into waste**,² polluting urban areas, soil, and posing a significant threat to marine and land-based ecosystems. Embracing circular processes not only curtails plastic waste but also mitigates the carbon footprint associated with virgin raw materials across the entire value chain.

Around **34.7 lakh tonnes** per annum (TPA) of plastic wastes was generated by India during 2019-20⁴



Circularity is now a business reality, driven by external and internal pressure across the FMCG value chain

Emerging regulations, consumer trends and competitive dynamics in the FMCG sector coupled with the general focus on sustainability in the sector make circularity an indispensable reality

Over 600 marine species have been affected by plastics so far. ~15,343 tonnes/day of marine plastic waste is generated from 60 Indian cities.⁵

Deforestation & Water consumption: India- is the world's second largest consumer of palm-oil and 30% of this is used by the FMCG sector.⁶



Environmental degradation

69% of consumers stated that they were willing to **pay more** for products which are sustainably produced or environmentally friendly.⁷

52% of consumers in urban India expect to **increase spending** on sustainable consumer brands in the next three years.⁸





Consumer pressure

Competitive pressure

Large FMCG brands are committed to providing sustainable solutions to consumers

 Reduce the share of virgin plastic in packaging by 50% within 2025⁹

 100% of packaging to be reusable, recyclable or compostable/ bio-degradable by 2028²³

 Collect & Recycle a bottle or can for each one being sold by 2030¹¹



Regulatory pressure

In July 2022, India **banned** the manufacture, import, stocking, distribution, sale, and use of **identified single-use plastic items**.

India's new **Extended Producer Responsibility (EPR)** guidelines mandate **PIBOs** to **recycle a minimum** of 30-50% of their plastic waste from 2024.¹²



By embracing circular economy principles, FMCG companies can accelerate business outcomes and growth

Value Realization Prospect

- 20% of all Consumer Goods material value can be recovered³
- Roughly 3% of the EBITDA is at stake without circularity³
- FMCG circularity has global value creation potential of \$65 billion by 2030³

Circularity in FMCG sector will lead to...



Positive impact on the **environment** & **resource utilization**



Save money on raw materials, transportation, and disposal costs



Creation of **new jobs** as well as **business opportunities**



Aids to **comply with environmental regulations** & policies



Enhances a **company's brand image** & boosts customer loyalty



Builds **long-term resilience** in a resource-constrained world, adapting to changing market dynamics

Packaging is a key driver for Circular Economy in FMCG sector

Why is packaging the answer?

According to the 2023 World Population Review, India is the **second largest plastic waste generator**.¹³ In 2018-19, India **consumed** 18.45 MMT of plastic, with **59% dedicated to packaging**, totaling around 10.9 MMT. Notably, over **37%** of petrochemical production (29.1 MMT) was channeled into **single-use plastics for packaging**.¹⁴

India's plastic waste accumulation is projected to **jump 10 times** by 2030, rising to 217 million tonnes, driven by **consumer goods packaging material**.¹⁵

70% of Plastics packaging products are converted into plastic waste in a short span in India.²

Why has packaging been a circularity bottleneck?

- **Flexible** and composite pose significant challenges for recycling. The extensive use of **flexible** packaging in India, such as pouches and sachets, presents a major challenge for recycling. These lightweight and convenient packaging formats are often made from multiple layers of different plastics, which makes it difficult to separate and recycle these materials effectively. Of the plastic consumed in packaging, **71% is flexible**.¹⁴
- **Composite** packaging, such as laminated plastics used in snack packaging or coffee pouches, poses unique challenges due to the fusion of different materials. The combination of plastics, aluminum, and other layers makes it difficult to separate and recycle these materials individually, resulting in limited recycling options and increased waste generation. In 2020, multi-layered plastics made up **35% of all plastic waste, and 40% of all branded plastic waste**.¹⁴
- **9400 Tonnes** of plastic waste (composed mostly of packaging) is left unrecycled and unattended in India annually, causing land, air and water pollution.²



In the dynamic world of FMCG, the circular economy is a philosophy guiding responsible consumption—a commitment to weaving sustainability into every product and packaging choice, leaving a positive imprint on both the environment and the consumer

- Madhulika Sharma
Chief Sustainability Officer, ITC Limited



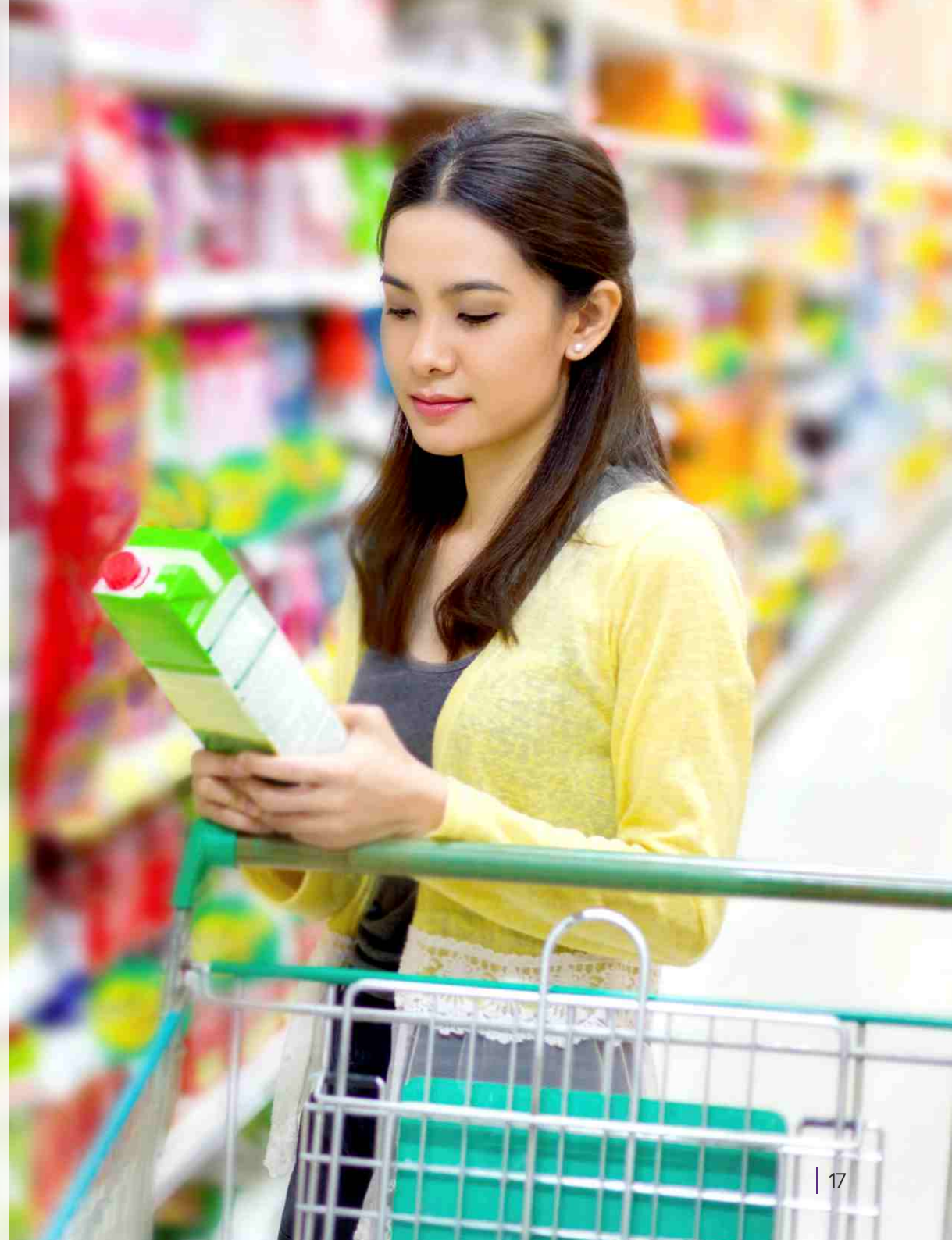
Nature teaches us that Circularity is imperative for sustainability. Industrial systems must be designed for circularity and move away from linear systems. Packaging is a significant component of any finished good and designing packaging which is circular but does not compromise on functionality is going to be a key pillar for driving Sustainability in the FMCG sector.

- Rahul Nene
Head Sustainability, Huhtamaki



Deep dive into the 28 KPIs of the FMCG Sector

- CE Measurement Framework with 28 KPIs
- What is the definition and formula for each KPI?
- Materials of interest for each KPI
- How to source data for each KPI's formula?
- Guidelines for business units on inclusion & exclusion criteria
- Additional information for better understanding



CE Measurement Framework

1. Resources

Input

- % non-virgin content (min. recycled content use)
- % material input that is reusable
- % material input designed for environment- recyclable or biodegradable
- % key ingredients/raw materials sourced responsibly
- Material input intensity

Process

- % processing (production/manufacturing) waste sent to landfill / burn without energy recovery
- % processing (production/manufacturing) waste sent for energy recovery
- % processing waste (production/manufacturing) recirculated-reuse/recycle (both internally and externally to use in any industry)
- % processing waste generated

Output

- % recovery potential
- % actual recovery
- % waste (post manufacturing and pre consumer) sent to landfill/ burn without energy recovery
- % waste (post manufacturing and pre consumer) sent for energy recovery
- % waste (post manufacturing and pre consumer) recirculated (both internally and externally to other use in other industries)
- % waste (post manufacturing and pre consumer) generated

2. Environment

Water

- % recirculated water withdrawal
- % water recirculated internally
- Water intensity
- % water restored/replenished (through water stewardship programs, rainwater harvesting etc.) in the watersheds in water stressed areas

Energy

- % energy from renewable sources
- % waste energy that is recovered

GHG emissions

- GHG emission reduction attributable to circular initiatives

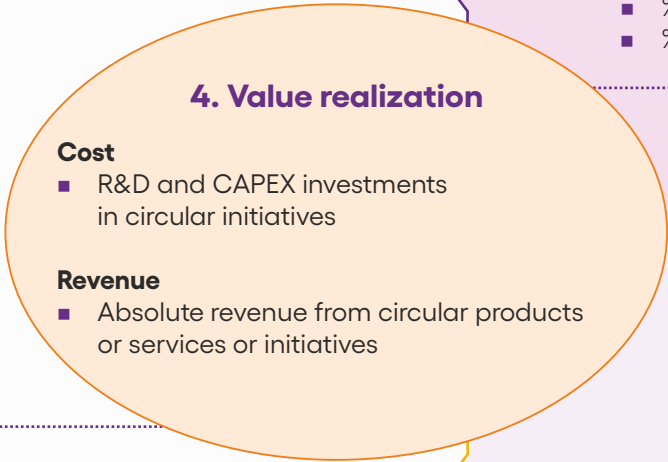
Leadership

- % functions with CE implementation responsibility
- % leadership remuneration linked to circular economy targets

3. Organization

Jobs

- No. of direct or indirect jobs generated through circular initiatives
- No. of micro enterprises engaged through circular initiatives







Level 2 KPI

How to read KPI slides

KPI name

Definition of the KPI

Material of Interest	Formula
Material 1 	
Material 2 	

 Critical  Non- critical

All **highlights** in the formula link to glossary for well explained definitions for users /company executives to comprehend and measure the KPI effectively

CATEGORY/KPI PILLAR



How can you source data for the above formulas?

This section will provide details on which teams to collaborate with, what ERP systems and digital systems to leverage to source and gather the relevant data.



Industry example

This section will provide an example of an industry leader measuring and reporting on the KPI.

In some instances, the example may not precisely match the KPI measure but rather align with some part of the KPI or represent an initiative taken toward achieving that KPI.

Guidelines for Calculation

This section will talk about the boundary and scope for the KPI calculation.

It also includes any important aspects to look through in the glossary.





Supporting ESG reporting standards

This section will help company executives understand how the KPI supports existing ESG reporting standards and how they can leverage the playbook to also ensure compliance with other relevant standards to manage their reputational/financial risks.

INPUT

% Non-virgin content (min. recycled content use)

Total weight of non-virgin/recycled materials input into the value chain over the base of total weight of material input

Material of Interest	Formula
Plastic 	$\frac{\text{(Total weight of non virgin/recycled content used as input in plastic packaging)}}{\text{(Total weight of plastic packaging input)}} * 100\%$
Paper 	$\frac{\text{(Total weight of non virgin/recycled content used as input in paper packaging)}}{\text{(Total weight of paper packaging input)}} * 100\%$
Glass 	$\frac{\text{(Total weight of non virgin/recycled content used as input glass packaging)}}{\text{(Total weight of glass packaging input)}} * 100\%$
Overall Packaging 	$\frac{\text{(Total weight of non virgin/recycled content used as input in packaging)}}{\text{(Total weight of packaging input)}} * 100\%$



How can you source data for the above formulas?

- **If the packaging is manufactured:** Collaborate with the Product, Packaging, R&D/design & engineering teams
- **If the packaging is procured:** Collaborate with the suppliers and procurement teams to understand the recycled content in the packaging procured



Industry example



During FY 2022-23, Unilever used 2.9% of recycled plastic as post-consumer recycled plastic procured on a base of the total plastic footprint in the finished goods sold⁹

Guidelines for Calculation

- Include **all types of plastics** listed in Glossary for calculations.
- All input must be calculated for finished goods manufactured
- All input must be calculated for the organization's primary products & services

Supporting ESG reporting standards

- **GRI Disclosure 301-2¹⁶** mandates firms to report % of recycled input materials used to manufacture organization's primary products
- **SEBI's BRSR¹⁷** directs firms to disclose the % of recycled or reused input material of total material used
- **ESRS E5-4¹⁸** mandates the disclosure of the weight in both absolute value (tons) and percentage, of reused or recycled input materials used to package the undertaking's products
- **WBCSD's CTI V4.0 Framework¹⁹** incorporates the weight of non-virgin inflow into calculating % circular inflow
- For producers, the **plastic EPR in India** mandates use of given % of recycled plastic in plastic packaging per Eligible Quantity in MT (refer [EPR calculation guidelines](#)) as given¹²

Plastic Packaging	2025-26	2026-27	2027-28	2028-29
Category I	30%	40%	50%	60%
Category II	10%	10%	20%	20%
Category III	5%	5%	10%	10%

INPUT

% Material input that is reusable

Total weight of input material that is reusable, refillable over the base of total weight of input material

Material of Interest	Formula
Overall Packaging 	$\frac{\text{(Total weight of packaging input that is refillable, reusable)}}{\text{(Total weight of packaging input)}} * 100\%$

Guidelines for Calculation

- Total Packaging Input includes primary packaging only, and all packaging materials within this
- Calculation must be done by weight of packaging
- Calculation must be for total finished goods produced
- All input must be calculated for the organization's primary products and definition of reusable must be aligned with definition provided in the Glossary

Supporting ESG reporting standards

- **ESRSE5-5¹⁸** mandates the disclosure of the total weight and percentage of materials in undertaking's products and services, including packaging, that have been designed for reusability & recycling
- **Plastic tax** has become increasingly popular across the world. **Spain levies plastic tax** on the amount of non-recycled plastic used in **non-reusable plastic packaging**. The tax rate is EUR 0.45 per kilogram of non-recycled plastic used.²¹
- As per Indian Plastic EPR, The Brand Owner using Category I (rigid) plastic packaging for their products shall have minimum obligation to reuse such packaging as given below¹²:

Year	Target (%) for Category I (vol 0.9 to 4.9 litres or Kgs)	Target (%) for Category I (vol > 4.9 litres or Kgs)
2025 – 26	10	70
2026 – 27	15	75
2027-28	20	80
2028-29	25	85

A. RESOURCES



How can you source data for the above formulas?

Collaborate with all product & category teams and R&D/packaging/design & engineering teams to understand proportion of refillable packaging used in finished goods produced



Industry example



Pepsico has estimated that approximately 10% of their beverage servings are already in reusable packaging²⁰

INPUT

% Material input designed for environment

% input that is recyclable, biodegradable or compostable.

Material of Interest	Formula
Plastic	$\frac{\text{(Total weight of plastic packaging that is recyclable, biodegradable, compostable, biobased)}}{\text{(Total weight of plastic packaging input)}} \times 100\%$
Overall Packaging	$\frac{\text{(Total weight of packaging that is recyclable, biodegradable, compostable, biobased)}}{\text{(Total weight of packaging input)}} \times 100\%$

Guidelines for Calculation

- Include all types of plastics listed in Glossary for calculations.
- Include **biodegradable and compostable** materials
- Photodegradable and Oxodegradable Plastics are NOT to be considered as biodegradable/compostable (CPCB)
- All input must be calculated for finished goods manufactured and organization's primary products
- Calculate KPI separately for primary, secondary and tertiary packaging

Supporting ESG reporting standards

- Under **GRI 301-1**¹⁶, organizations disclose total weight of renewable materials used to produce and package the organization's primary products during the reporting period
- **ESRS E5-5**¹⁸ mandates the disclosure of the total weight and percentage of material in undertaking's products, including packaging, that have been designed for:
 - durability;
 - reusability;
 - repairability;
 - disassembly;
 - remanufacturing or refurbishment;
 - recycling; and
 - other potential optimization of product and material use

A. RESOURCES



How can you source data for the above formulas?

1. **If the packaging is manufactured:** Collaborate with the Product, Packaging, R&D/design & engineering teams
2. **If the packaging is procured:** Collaborate with the suppliers to understand the recycled content in the packaging procured



Industry example



Nestlé targets to have over 95% of plastic packaging designed for recycling by 2025¹⁰

INPUT

% Key ingredients/raw materials sourced responsibly

% of raw material committing to sustainable sourcing protocols (including traceability) for identified key ingredients

Material of Interest	Formula
Raw Material	$\frac{\text{(weight of raw material input committing to sustainable sourcing protocols, including traceability for identified key raw materials)}}{\text{(Total input weight of the identified key raw materials)}} * 100\%$
Local sourcing	$\frac{\text{(Budget spent on material purchased locally)}}{\text{(Total budget spent on material procurement)}} * 100\%$

Raw materials to be focused on for sustainable sourcing:

From FMCG perspective, **agriculture and animal farming based ingredients/raw materials** become critical for sustainable sourcing to ensure regenerative and circular supply chains.

Key raw materials of focus (non-exhaustive):

Palm oil, soy, tea, coffee, cocoa, paper, pulp, cotton, natural rubber, sugar, vegetables, meats, dairy

Guidelines for Calculation

- Criteria to qualify for sustainable sourcing: A good way to measure this will be through relevant **ecolabels/ consumer information tools and certifications** like supplier ecolabels, FSC, Cradle to Cradle certification etc.
- Companies can identify the key raw materials for this KPI basis input/consumption weight and criticality to business.
- FMCG companies must mandatorily include these material categories – agricultural crops & animal products, including paper and pulp.

Supporting ESG reporting standards

- GRI 204-1**²⁴ mandates organizations to disclose % of the procurement budget spent on suppliers local to that operation (such as percentage of products and services purchased locally)
- Under **BRSR**¹⁷, organizations are required to disclose if the entity have procedures in place for sustainable sourcing? (Yes/No) If yes, what percentage of inputs were sourced sustainably?
- According to the **WWF Sustainable Sourcing Guidelines**, ecolabel certifications given by third parties can ensure whether a product comes from sources and production processes that apply sustainable principles.²⁵
- TNFD's** recommendation A3.4 Area used for the production of natural commodities and C3.1 Quantity of high-risk natural commodities sourced from land/ocean/ freshwater are supportive of responsible sourcing metrics described.²⁶

A. RESOURCES

How can you source data for the above formulas?

Collaborate with the Procurement Teams and suppliers to understand the

- Contribution of each raw material supplier
- The type of material they provide
- The certifications they possess
- Traceability data from credible traceability applications & systems

Industry example



Around 43% of HUL's key crops are sourced sustainably under the Sustainable Agriculture Code. They target to reach 100% sustainable sourcing of key crops.²²



Around 21% of all of ITC's paper packaging is FSC certified 84% of the fibre produced is from wood sourced from ITC's Social & Farm Forestry initiatives. All 4 manufacturing units of paper business are FSC-COC certified²³

INPUT

Material input intensity

Total weight of input material as a percentage of total gross weight of products manufactured annually

Material of Interest	Formula
Plastic	$\frac{\text{(Total weight of plastic packaging input across the portfolio)}}{\text{(Total gross weight of products manufactured)}} * 100\%$
Overall Packaging	$\frac{\text{(Total weight of packaging input across the portfolio)}}{\text{(Total gross weight of products manufactured)}} * 100\%$

Guidelines for Calculation

- Include all types of plastics listed in Glossary for calculations. All input must be calculated for finished goods manufactured and company's primary products
- Packaging input must include primary, secondary and tertiary packaging
- It is recommended to also track absolute numerator values
- The KPI can be measured as a base of gross weight or product equivalent of finished goods manufactured or total revenue for the reporting period

Supporting ESG reporting standards

- This KPI aligns with **GRI 301-1**¹⁶ where organizations disclose total weight or volume of materials that are used to produce and package the organization's primary products and services during the reporting period
- **Plastic tax** has become increasingly popular across the world. **Spain levies plastic tax** on the amount of non-recycled plastic used in **non-reusable plastic packaging**. The tax rate is EUR 0.45 per kilogram of non-recycled plastic used.²¹
- Similarly, under the **UK plastic** tax system, producers will need to pay Plastic Packaging Tax if they have manufactured or imported plastic packaging components which contain less than 30% recycled plastic.²⁷



How can you source data for the above formulas?

Collaborate with all category teams and packaging teams to understand weight of packaging used in finished goods produced for the reporting period – this includes manufactured and procured packaging.

Total gross weight/product equivalent of finished goods manufactured, or total revenue can be fetched systematically from the ERP and other enterprise application software



Industry example




ITC's annual packaging footprint, from its FMCG businesses, across primary, secondary and tertiary packaging formats is around 210,000 tonnes. primarily composed of paper/paperboard-based packaging (73%), followed by plastic packaging (27%). Glass, wood and metal contribute to less than 1%²³

PROCESS

% Processing waste generated

% processing waste generated as a proportion of overall production

Material of Interest	Formula
Overall Packaging 	$\frac{\text{(Total processing waste generated)}}{\text{(Total gross weight of products manufactured)}} * 100\%$

Guidelines for Calculation

- Include all waste generated in production process across company's own factories/sites; exclude effluents
- Exclude waste generated for production at contract manufacturers/third parties
- All input must be calculated for finished goods manufactured and company's primary products
- It is recommended to also track absolute numerator values
- The KPI can be measured as a base of gross weight or product equivalent of finished goods manufactured or total revenue for the reporting period

Supporting ESG reporting standards

- **GRI Disclosure 306-3** ³⁰ mandates firms to report total weight of waste generated in metric tons and a breakdown of this total by composition of the waste
- **SEBI's BRSR** ¹⁷ directs firms to disclose the amount of total waste generated (in metric tons) in current & previous fiscal year
- Similarly, **ESRS E5-6-41** ¹⁸ also mandates similar disclosure to BRSR

A. RESOURCES



How can you source data for the above formulas?

Collaborate with the internal teams (factories/manufacturing units/waste disposal cells) to understand how the processing waste is being managed and the data around it.

The data can systematically also be fetched through ERP/enterprise application software systems.

Total gross weight/product equivalent of finished goods manufactured, or total revenue can be fetched systematically from the ERP systems.



Industry example



The total waste generated by Unilever factories (processing waste) in FY22 was 571 K Metric Tonnes.²⁹

INPUT

% Processing (production/manufacturing) waste sent to landfill / incinerated without energy recovery

Total processing (production/manufacturing) waste sent to landfill/ burn/incinerate without energy recovery over the base of total processing waste generated

Material of Interest	Formula
Food	$\frac{\text{(Processing food waste (in kg/ton) sent to landfill or burn without energy recovery)}}{\text{(Total processing food waste (in kg/ton) generated)}} \times 100\%$
Hazardous Material	$\frac{\text{(Processing hazardous waste (in kg/ton) sent to landfill or burn without energy recovery)}}{\text{(Total processing hazardous waste (in kg/ton) generated)}} \times 100\%$
Overall Packaging	$\frac{\text{(Processing overall waste (in kg/ton) sent to landfill or burn without energy recovery)}}{\text{(Total processing waste (in kg/ton) generated)}} \times 100\%$

Guidelines for Calculation

- Include all waste generated during production across company's own factories/sites
- Exclude waste generated for production at contract manufacturers/third parties
- Exclude **effluents**
- Include all types of hazardous waste listed in Glossary for calculations

Supporting ESG reporting standards

- **GRI Disclosure 306-5**³⁰ mandates firms to report total weight of waste directed to disposal in metric tons and a breakdown of both hazardous and non-hazardous waste across landfills, incinerated with and without energy recovery
- **SEBI's BRSR**¹⁷ directs firms to report, for each category of waste generated, total waste disposed by nature of disposal method – landfilling, incineration and other disposal operation
- **ESRS E5-6-41**¹⁸ also mandates similar disclosure to BRSR

A. RESOURCES



How can you source data for the above formulas?

Collaborate with the internal manufacturing and operations teams across factories and waste sales teams to understand how the processing waste is being managed and the data around it.

The data can also be fetched systematically through ERP/enterprise application software systems via POs and invoices for various disposal activities.



Industry example



In FY22, Unilever sent 0.1% of all manufacturing waste to landfill or incineration without energy recovery across manufacturing sites²⁹






Over the last 10 years, Nestlé has more than halved, per tonne of product, the amount of waste for disposal (destined for final disposal to landfill or to incineration without energy recovery) generated in its factories.¹⁰

INPUT

% Processing (production/manufacturing) waste sent for energy recovery

Total processing (production/manufacturing) waste sent for incineration with energy recovery/energy recovery from combustion over the base of total processing waste generated

Material of Interest	Formula
Food 	$\frac{\text{(Processing food waste (in kg/ton) sent for energy recovery)}}{\text{(Total processing food waste (kg/ton) generated)}} * 100\%$
Hazardous Material 	$\frac{\text{(Processing hazardous waste (in kg/ton) sent for energy recovery)}}{\text{(Total processing hazardous waste (kg/ton) generated)}} * 100\%$
Overall Packaging 	$\frac{\text{(Processing overall waste (in kg/ton) sent for energy recovery)}}{\text{(Total processing waste (kg/ton) generated)}} * 100\%$



How can you source data for the above formulas?

Collaborate with the internal manufacturing and operations teams across factories and waste sales teams to understand how the processing waste is being managed and the data around it.

The data can also be fetched systematically through ERP/enterprise application software systems via POs and invoices for various disposal activities.



Industry example



In FY2020, Unilever sent 37% of its global food waste for controlled combustion with energy recovery²⁹

Guidelines for Calculation

- Include all waste generated in the production process across company's own factories/sites; exclude effluents
- Exclude waste generated for production at contract manufacturers/third parties
- Only include processing waste sent to incineration with energy recovery or other energy recovery via combustion
- Anaerobic digestion of food waste will be considered as recirculation and should not be captured under this KPI

Supporting ESG reporting standards

- **GRI Disclosure 306-5**³⁰ mandates firms to report total weight of waste directed to disposal in metric tons and a breakdown of both hazardous and non-hazardous waste across landfills, incinerated with and without energy
- **SEBI's BRSR**¹⁷ directs firms to report, for each category of waste generated, total waste disposed by nature of disposal method – landfilling, incineration and other disposal operation
- **ESRS E5-6-41**¹⁸ also mandates similar disclosure to BRSR

PROCESS

% Processing waste (production) waste recirculated - reuse /recycle (both internally & externally used in any industry)

Total processing waste (production/manufacturing) recirculated - reused, recycled (both internally or externally) over the base of total processing waste generated

Material of Interest	Formula
Food	$\frac{\text{(Total processing food waste (in kg/ton) recycled, reused internally or externally)}}{\text{(Total processing food waste (in kg/ton) generated)}} * 100\%$
Hazardous Material	$\frac{\text{(Total processing hazardous waste (in kg/ton) recycled, reused internally or externally)}}{\text{(Total processing hazardous waste (in kg/ton) generated)}} * 100\%$
Overall Packaging	$\frac{\text{(Total processing overall waste (in kg/ton) recycled, reused internally or externally)}}{\text{(Total processing waste (in kg/ton) generated)}} * 100\%$



How can you source data for the above formulas?

Collaborate with the internal teams (factories/manufacturing units/waste disposal cells) to understand how the processing waste is being managed and the data around it.

The data can also be fetched systematically through ERP/enterprise application software systems via POs and invoices for various disposal activities.



Industry example



97% of all Unilever Manufacturing Waste was reused, recycled and recovered in FY22.²⁹

In FY22-23, HUL recycled 65,658 MT of manufacturing waste and reused 24,181 MT.²²



In FY22-23, ITC units generated about 695 kilo-tonnes of non-hazardous waste, and close to 99.9% was sent for recycling. 19 kilo-tonnes of hazardous waste was generated, and % was sent for recycling²³

Guidelines for Calculation

- Include all waste generated in production process across company's own factories/sites; exclude effluents
- Exclude waste generated for production at contract manufacturers/third parties.
- There might be cases, when the process waste is reused internally in the next batches and the data is not logged either manually or systematically under waste. Those cases can be excluded from the calculation.

Supporting ESG reporting standards

- **GRI Disclosure 306-4**³⁰ mandates firms to report total weight of waste diverted from disposal in metric tons and a breakdown of both hazardous and non-hazardous waste diverted into preparation for reuse, recycling and other recovery operations
- **ESRS E5-5-38**¹⁸ also mandates disclosure of additional information on the weight and percentage of products and materials that come out of the undertaking including packaging that are recirculated in practice after their first use.
- **Indian Plastic EPR**¹² mandates that the Producers shall ensure minimum level of recycling (excluding end of life disposal) of plastic packaging waste collected, as follows:

Plastic category	2024-25	2025-26	2026-27	2027-28
Category I	50%	60%	70%	80%
Category II	30%	40%	50%	60%
Category III	30%	40%	50%	60%
Category IV	50%	60%	70%	80%

PROCESS

% Waste (post manufacturing and pre consumer) generated

% waste (post manufacturing and pre consumer) generated as a proportion of overall production

Material of Interest	Formula
Overall Packaging 	$\frac{\text{(Total waste (post manufacturing and pre consumer) generated)}}{\text{(Total gross weight of products manufactured)}} * 100\%$

Guidelines for Calculation

- Include all waste generated post manufacturing and pre-consumer (during transportation, warehousing, distribution, retailer/distributor takebacks)
- Exclude effluents
- It is recommended to also track absolute numerator values
- The KPI can be measured as a base of gross weight or product equivalent of finished goods manufactured or total revenue for the reporting period

Supporting ESG reporting standards

- **GRI Disclosure 306-3**³⁰ mandates firms to report total weight of waste generated in metric tons and a breakdown of this total by composition of the waste
- **SEBI's BRSR**¹⁷ directs firms to disclose the amount of total waste generated (in metric tons) in current & previous fiscal year
- Similarly, **ESRS E5-6-41**¹⁸ also mandates the same disclosure as BRSR

A. RESOURCES



How can you source data for the above formulas?

Collaborate with the logistics, warehousing and distributor engagement teams to understand how the waste is being managed and the data around it.




The data can systematically also be fetched through ERP/enterprise application software systems.

Total gross weight/product equivalent of finished goods manufactured, or total revenue can be fetched systematically from the ERP systems

PROCESS

% Waste (post manufacturing and pre consumer) sent to landfill/burn without energy recovery

Total waste (post manufacturing and pre consumer) sent to landfill/burn without energy recovery over the base of total waste generated post manufacturing and pre consumer

Material of Interest	Formula
Food 	$\frac{\text{(Total PMPC food waste in kg/ton sent to landfill/ burn without energy recovery)}}{\text{(Total food waste generated in kg/ton generated)}} \times 100\%$
Hazardous Material 	$\frac{\text{(Total PMPC hazardous waste in kg/ton sent to landfill/ burn without energy recovery)}}{\text{(Total processing hazardous waste (kg/ton) generated)}} \times 100\%$
Overall Packaging 	$\frac{\text{(Total PMPC overall waste (in kg/ton) sent to landfill/burn without energy recovery)}}{\text{(Total waste generated in kg/ton generated)}} \times 100\%$

* PMPC- post manufacturing and pre-consumer



How can you source data for the above formulas?

Collaborate with the logistics, warehousing and distributor engagement teams to understand how the waste is being managed and the data around it.

The data can also be fetched systematically through ERP/enterprise application software systems via POs and invoices for various disposal activities.

Food waste data can be gathered from facilities management & HR teams for cafeterias.

Guidelines for Calculation

- Include all waste generated post manufacturing and pre-consumer (during transportation, warehousing, distribution, retailer/distributor takebacks)
- Include all types of hazardous waste listed in Glossary for calculations
- Exclude effluents
- Consider food waste from cafeterias across facilities




Supporting ESG reporting standards

- **GRI Disclosure 306-5**³⁰ mandates firms to report total weight of waste directed to disposal in metric tons and a breakdown of both hazardous and non-hazardous waste across landfills, incinerated with and without energy recovery
- **SEBI's BRSR**¹⁷ directs firms to report, for each category of waste generated, total waste disposed by nature of disposal method – landfilling, incineration and other disposal operation
- **ESRS E5-6-41**¹⁸ also mandates similar disclosure to BRSR

PROCESS

% Waste (post manufacturing and pre consumer) sent for energy recovery

Total waste (post manufacturing and pre consumer) sent for energy recovery (incineration with energy recovery/energy recovery from combustion) over the base of total waste generated post manufacturing and pre consumer

Material of Interest	Formula
Food 	$\frac{\text{(Total PMPC food waste (in kg/ton) sent for energy recovery)}}{\text{(Total food waste generated (in kg/ton) generated)}} * 100\%$
Hazardous Material 	$\frac{\text{(Total PMPC hazardous waste (in kg/ton) sent for energy recovery)}}{\text{(Total hazardous waste generated (in kg/ton) generated)}} * 100\%$
Overall Packaging 	$\frac{\text{(Total PMPC overall waste (in kg/ton) sent to landfill/ incinerated/energy recovery)}}{\text{(Total waste generated (in kg/ton) generated)}} * 100\%$

* PMPC- post manufacturing and pre-consumer



How can you source data for the above formulas?

Collaborate with the logistics, warehousing and distributor engagement teams to understand how the waste is being managed and the data around it.

The data can also be fetched systematically through ERP/enterprise application software systems via POs and invoices for various disposal activities.

Food waste data can be gathered from facilities management & HR teams for cafeterias.

A. RESOURCES

Guidelines for Calculation

- Include all waste generated post manufacturing and pre-consumer (during transportation, warehousing, distribution, retailer/distributor takebacks)
- Only include processing waste sent to incineration with energy recovery or other energy recovery via combustion only
- Anaerobic digestion of food waste will be considered as recirculation and not to be captured under this KPI
- Exclude effluents; consider food waste from cafeterias across facilities




Supporting ESG reporting standards

- **GRI Disclosure 306-5**³⁰ mandates firms to report total weight of waste directed to disposal in metric tons and a breakdown of both hazardous and non-hazardous waste across landfills, incinerated with and without energy recovery
- **SEBI's BRSR**¹⁷ directs firms to report, for each category of waste generated, total waste disposed by nature of disposal method – landfilling, incineration and other disposal operation
- **ESRS E5-6-41**¹⁸ also mandates similar disclosure to BRSR

PROCESS

% Waste (post manufacturing and pre consumer) recirculated (both internally and externally)

Total waste (post manufacturing and pre consumer) recirculated- reused, recycled, upcycled (both internally or externally) over the base of total waste generated post manufacturing and pre consumer

Material of Interest	Formula
Food 	$\frac{\text{(Total PMPC food waste (in kg/ton) recycled, reused, internally or externally)}}{\text{(Total food waste generated (in kg/ton) generated)}} * 100\%$
Hazardous Material 	$\frac{\text{(Total PMPC hazardous waste (in kg/ton) recycled, reused, internally or externally)}}{\text{(Total hazardous waste generated (in kg/ton) generated)}} * 100\%$
Overall Packaging 	$\frac{\text{(Total PMPC overall waste (in kg/ton) recycled, reused, internally or externally)}}{\text{(Total waste generated (in kg/ton) generated)}} * 100\%$

* PMPC- post manufacturing and pre-consumer

Guidelines for Calculation

- Include all waste generated post manufacturing and pre-consumer (during transportation, warehousing, distribution, retailer/distributor takebacks)
- Exclude effluents
- Consider food waste from cafeterias across facilities

Supporting ESG reporting standards

- **GRI Disclosure 306-4**³⁰ mandates firms to report total weight of waste diverted from disposal in metric tons and a breakdown of both hazardous and non-hazardous waste diverted into preparation for reuse, recycling and other recovery operations
- **ESRS E5-5-25**¹⁸ also mandates disclosure of additional information on the weight and percentage of products and materials that come out of the undertaking including packaging that are recirculated in practice after their first use.
- **Indian Plastic EPR** mandates that the Producer shall ensure minimum level of recycling (excluding end of life disposal) of plastic packaging waste collected¹²:

Plastic category	2024-25	2025-26	2026-27	2027-28
Category I	50%	60%	70%	80%
Category II	30%	40%	50%	60%
Category III	30%	40%	50%	60%
Category IV	50%	60%	70%	80%

A. RESOURCES



How can you source data for the above formulas?

Collaborate with the logistics, warehousing and distributor engagement teams to understand how the waste is being managed and the data around it.

The data can systematically also be fetched through ERP/enterprise application software systems via POs and invoices for various recycling activities across the warehousing facilities.

Food waste data can be gathered from facilities management & HR teams for cafeterias.



Industry example



iD Foods's operational model consists of the company taking back unsold inventory periodically from the retailers they work with, and selling the surplus inventory to local hotels & restaurants³¹




Unilever is enrolling key food-service distributors to tackle food waste in distribution through prevention and redistribution⁹

PROCESS

% Recovery potential

% of product portfolio with packaging that is technically possible to recycle, reuse, refurbish, remanufacture

Material of Interest	Formula
Overall Packaging 	$\frac{\text{(Total number of products sold in portfolio whose packaging is technically possible to recover)}}{\text{(Total number of products sold in a portfolio)}} * 100\%$

Guidelines for Calculation

- Include products technically possible to recycle, reuse, refurbish: Refer to Glossary for **types of packaging** and their recyclability
- All input must be calculated for finished goods manufactured and organization's primary products
- Only primary packaging must be considered
- Measure the KPI with and without energy recovery

Supporting ESG reporting standards

- Under **GRI 301-3**¹⁶, organizations need to disclose % of reclaimed products and their packaging materials for each product category
- **WBCSD's CTI V4.0 Framework**¹⁹ provides a metric that is in line with this KPI - % Recovery potential
- Aligns with **BRSR's**¹⁷ mandatory disclosure on reclaimed products and their packaging materials (as percentage of products sold) for each product category
- **ESRS E5-5** mandates the disclosure of the total weight and percentage of material in undertaking's products, including packaging, that have been designed for environment

A. RESOURCES



How can you source data for the above formulas?

Collaborate with Packaging, Product, R&D, design & engineering, and ESG teams to calculate the number of products with packaging that can be technically recovered after end-of-life use



Industry example





% Of plastic packaging utilised that is recyclable, reusable or compostable/ biodegradable is 99.9% implying that less than 0.1% of packaging portfolio is non-recyclable or hard to recycle – phase out plans in place²³

ITC is also actively working to increase the collection and recycling rates for Multi-Layered Plastic (MLP) packaging waste by implementing replicable, scalable and sustainable models of solid waste management

OUTPUT

% Actual recovery

% actual recovery indicator captures the amount of outflow recovered at the end of its initial life cycle

Material of Interest	Formula
Overall Packaging 	$\frac{\text{(Total weight of material recovered from products after reaching end of life)}}{\text{(Total weight of material input in products sold)}} * 100\%$
Plastic packaging 	$\frac{\text{(Total weight of plastic recovered from products after reaching end of life)}}{\text{(Total weight of plastic input in products sold)}} * 100\%$



How can you source data for the above formulas?

1. If working with a third-party recycler, leverage data from the on-ground recycling partners.
2. This disclosure is similar to CPCB disclosure along the same lines, data submitted to CPCB can be leveraged.
3. Collaborate with the packaging and ESG teams to fetch the data.
4. With established plastic EPR, Actual recovery data of plastic packaging can be fetched systematically through PROs or recycling certificates and invoices.



Industry example



94.9% of total plastic packing packaging materials (as a percentage of products sold) was reclaimed/ recovered by HUL in FY22²²



ITC is sustaining plastic neutrality for 2nd year in a row. Achieved plastic neutrality in FY 2021-22.

In FY 2022-23, ITC collected and sustainably managed more than 60,000 tonnes of plastic waste across India²³

Guidelines for Calculation

- Only end of life, post-consumer material recovery should be considered
- All input must be calculated for finished goods sold
- All input must be calculated for all of the organization's primary products
- Only primary packaging to be considered

Supporting ESG reporting standards

- Under **GRI 301-3**¹⁶, organizations need to disclose % of reclaimed products and their packaging materials for each product category.
- Aligns with **BRSR's**¹⁷ mandatory disclosure on reclaimed products and their packaging materials (as percentage of products sold) for each product category.
- EU imposes €0.80 penalty per kg of non-recycled plastic packaging waste to Member States.³²
- **Indian Plastic EPR**¹² mandates plastic Producers to recycle the below minimum % of Eligible Quantities (refer EPR guidelines) qualified:

Plastic Category	2024-25	2025-26	2026-27	2027-28
Category I	50%	60%	70%	80%
Category II	30%	40%	50%	60%
Category III	30%	40%	50%	60%
Category IV	50%	60%	70%	80%

WATER

% Recirculated water withdrawal

% water sourced/withdrawal from recirculated sources as a proportion of total water withdrawal

Material of Interest	Formula
Overall	$\frac{\text{(Qty of water sourced/withdrawn from recirculated sources)}}{\text{(Qty of total water withdrawal)}} * 100\%$

Guidelines for Calculation

- Include the **recycled/treated water** procured and used in operations (including cooling, cleaning, dust suppression, irrigation, sanitary usage, etc.)
- Include procurement of recycled treated water from municipal water suppliers, municipal wastewater treatment plants, public or private utilities, and other organizations involved in the provision, transport, treatment of tertiary treated recycled water.

Supporting ESG reporting standards

- **GRI Disclosure 303-3**³³ directs firms to report water withdrawal by source
- **WBCSD's CTI V4.0 Framework**¹⁹ directs firms to track through % circular water inflow which aligns with the stipulated KPI. CTI also mandates that the volume, quality and sources of water inflow/outflow, source vulnerability and local regulatory requirement to be reported by firms.
- **Alliance for Water Stewardship Standard**³⁴ mandates firms to report their sources of water withdrawal and water-management/conservation efforts
- **ISO 14046:2014**³⁵ mandates firms to report their water use, withdrawal from all sources and asks for detailed water-foot printing of products, processes of the organization based on LCA
- **TNFD A3.2**²⁶ mandates firms to disclose Water reduced, reused or recycled and A2.0 Wastewater treated, reused/recycled or avoided



How can you source data for the above formulas?

Collaborate with utilities, environment and ESG teams to gather the data, systematically through:

- **Invoices/bills** with quantity of treated water procured from third party sources, municipal wastewater treatment plants
- **Water meter records and calculations based on water audit:** Meter logbooks and water balance plan detailing the quantity of treated water and quantity of total water withdrawal
- **SAP/ERP/enterprise app. software:** records to fetch qty of total water withdrawal/sourced.



Industry example




Coco Cola has a goal of using 100% recycled water in its operations by 2030. The company is using recycled water in some of its bottling plants, and aims to expand across all plants¹¹

WATER

% Water recirculated internally

% water recirculated internally as a proportion of total water withdrawal

Material of Interest	Formula
Overall 	$\frac{\text{(Qty of total water recirculated internally)}}{\text{(Qty of total water withdrawal)}} * 100\%$

Guidelines for Calculation

- Include water reused/recirculated on site for purpose like flushing, landscaping, gardening, cooling, etc.
- Include the quantity treated wastewater from wastewater treatment plants, which gets utilized once again in operations of same company.
- In the absence of water meter data for each source stream to fetch water recirculation, use reasonable estimations and apportioning based on limit of STPs etc.

Supporting ESG reporting standards

- **ESRS E3 (Water and Marine Resources)**³⁷ mandates firms to report the quantity of water recycled/re-used
- **WBCSD's CTI V4.0 Framework**¹⁹ directs firms to track onsite water circulation (reuse and recycle) along with % circular water inflow focusing on internal facility circulation through reuse and recycling.
- **ISO 14046:2014**³⁵ mandates firms to report their water use, withdrawal from all sources and asks for detailed water-foot printing of products, processes of the organization based on LCA
- **TNFD A3.2**²⁶ mandates firms to disclose Water reduced, reused or recycled and **A2.0** Wastewater treated, reused/recycled or avoided



How can you source data for the above formulas?

Collaborate with utilities, environment and ESG team to gather the data, systematically through

- **Water Meter records and calculations based on water audit:** Meter logbooks and water balance plan detailing the quantity of water reused/recirculated again
- **SAP / ERP:** SAP records of quantity of treated water reused again in operations and qty of total water withdrawal/sourced



Industry example



Carlsberg has committed to reducing its water consumption by 50% by 2030. To achieve this, Carlsberg is using recycled water from its own wastewater treatment plant in its breweries³⁶

WATER

Water intensity

% total qty of withdrawal as a proportion of total gross weight of production

Material of Interest	Formula
Overall	$\frac{\text{(Qty of water withdrawn)}}{\text{(Total gross weight of products manufactured)}} * 100\%$

Guidelines for Calculation

- The KPI can be measured as a base of gross weight or product equivalent of finished goods manufactured or total revenue for the reporting period
- It is recommended to also track absolute numerator values

Supporting ESG reporting standards

- **GRI Disclosure 303-3**³³ directs firms to report water withdrawal by source
- **Alliance for Water Stewardship Standard**³⁴ mandates firms to report their sources of water withdrawal and water-management/conservation efforts
- **ISO 14046:2014**³⁵ mandates firms to report their water use, withdrawal from all sources and asks for detailed water-foot printing of products, processes of the organization based on LCA
- **TNFD A3.0**²⁶ mandates disclosure of Total water consumption and withdrawal and C3.0 mandates disclosure of Water withdrawal and consumption from areas of water scarcity



How can you source data for the above formulas?

Collaborate with utilities, environment and ESG team to gather the data, systematically through

ERP/water meters : Bills/invoices and other meter records to fetch qty of water withdrawal/sourced from multiple sources.

Total gross weight/product equivalent of finished goods manufactured, or total revenue can also be fetched systematically from the ERP systems



Industry example



PepsiCo has a goal to improve agricultural water use efficiency by 15% by 2025 against a 2015 baseline via decreasing water intensity²⁰




ITC has a target to reduce water consumption per unit of production by 40% by 2030.

Food business has reduced water consumption by 31% in FY 2022-23²³

WATER

% Water restored/replenished (through water stewardship programs, rainwater harvesting etc.) in the watersheds in water stressed areas

% water restored or replenished in the watersheds in water stressed areas as a proportion of total water withdrawal

Material of Interest	Formula
Overall 	$\frac{\text{(Qty of total water replenished/restored in the watersheds in water stressed areas)}}{\text{(Qty of total water withdrawal)}} * 100\%$

Guidelines for Calculation

- Include all water harvesting initiatives to recharge groundwater in the catchment areas where company is operating, focusing on the water stressed areas.
- If water to be recharged calculations are not available through hydrogeology studies, then refer to government district rain gauge, terrain wise estimated percolation data to estimate replenishment for the catchment.

Supporting ESG reporting standards

- **GRI Disclosure 303-1 (Interactions with water as a shared resource)**³³ mandates firms to report water stewardship efforts made in collaboration with other stakeholders
- **Alliance for Water Stewardship Standard**³⁴ mandates firms to report their sources of water withdrawal and water-management/conservation efforts
- **ISO 14046:2014**³⁵ mandates firms to report their water use, withdrawal from all sources and asks for detailed water-foot printing of products, processes of the organization based on LCA
- **TNFD A3.1**²⁶ mandates disclosure of Volume of water (m³) replenished to the environment through replenishment programmes (split into total and to areas of water scarcity).



How can you source data for the above formulas?

Collaborate with utilities, environment, ESG teams and external hydrogeologists to gather the data.

ERP/water meters: Bills/invoices and other meter records to fetch qty of water withdrawal/sourced from multiple sources.

Estimation of water to be recharged through water harvesting programs can be done through **hydrogeology study reports of the catchment area** and stakeholder consultation reports from NGOs & local communities/farmers.



Industry example



Since 2021, Nestlé Waters has been identifying and implementing projects designed to help regenerate local water cycles in areas where they operate. Projects includes pond restoration, building water harvesting structures etc. These projects have delivered a volumetric water benefit of 2.3 million cubic meters so far¹⁰



ITC has built rainwater harvesting structures over the years to create storage potential of nearly 50 million kl as of FY 2022-23²³

ENERGY

% Energy from renewable sources

Percentage of energy consumption from renewable sources as a proportion of total energy consumption

Material of Interest	Formula
Overall	$\frac{\text{(Qty of energy consumed from renewable sources)}}{\text{(Qty of total consumption of energy)}} * 100\%$

% Waste energy that is recovered

Percentage of energy that is recovered as a proportion of total waste energy/gases (e.g. Flue gas) generated

Material of Interest	Formula
Overall	$\frac{\text{(Qty of waste energy that is recovered)}}{\text{(Qty of total waste energy/gases generated)}} * 100\%$

Guidelines for Calculation

- Renewable energy classification must follow GRI or ESRS boundaries (refer to Glossary)
- Energy consumption must be calculated at company level across usage sites.
- Include renewable energy sourced through strategic partnerships like Power Purchase Agreements (PPA) and Renewable Energy Certificates (REC)s etc.
- It is recommended to also track & assess absolute energy consumption across the organization

Supporting ESG reporting standards

- GRI Disclosure 302-1 (Energy Consumption within the organization)**³⁸ mandates firms to report fuel consumption from renewable sources including the fuel types
- SEBI's BRSR**¹⁷ directs firms to report total energy consumed from renewable sources under their leadership indicators
- WBCSD's CTI V4.0 Framework**¹⁹ specifically mentions %renewable energy as one of the key energy indicators for firms to track & report
- ESRS E5 (Resource use and circular economy)**¹⁸ mandates firms to report the transitioning from non-renewable to renewable sources of energy
- ISO 50001 (Energy Management Systems)**³⁹ directs firms to report the RE sources of energy along with other details from their energy purchase specifications



How can you source data for the above formulas?

Collaborate with utilities, manufacturing and operations teams to gather data

Data on quantity of renewable energy consumed can be gathered systematically:

- SCADA systems & Energy Management systems
- Renewable Energy Supplier Information
- Energy Audits



Industry example



ITC has taken a target of 50% renewable energy and 100% purchased grid electricity requirements from renewables by 2030

In the ITC food business, there has been an increase the share of renewables in electricity consumption from 28% to 34% in FY22, despite significant expansion in scale of operations.²³

LEADERSHIP & JOBS

Number of CE specific targets established

No. of Circularity specific targets

Circular Economy specific targets are vital for FMCG organizations, driving efficiency, cost savings, and eco-friendly practices. Embracing circularity ensures environmental responsibility, consumer appeal, and long-term competitiveness in the dynamic market landscape.

% leadership remuneration linked to circular economy targets

Percentage of leaders whose remuneration is linked to achieving circularity targets

This approach enhances accountability, aligning executive incentives with sustainable practices and fostering a culture of responsible resource management. It also accelerates **circular initiatives**, and reinforces the company's commitment to driving positive environmental and economic outcomes.

Number of micro-enterprise suppliers engaged on circular initiatives

No. of micro enterprises/startups engaged in the entire value chain through circular initiatives

Engaging a growing number of micro-enterprise suppliers through circular initiatives is essential for FMCG organizations, promoting inclusive sustainable practices throughout the supply chain. This approach empowers local economies, fosters innovation, and strengthens social and environmental resilience, reinforcing the organization's commitment to holistic circularity and positive societal impact.

Guidelines for Calculation

- Sustainability targets can be defined as Circular Economy/Circularity targets if they align with any of the KPIs discussed as part of this playbook
- Any initiatives aligned with the KPIs discussed as part of this playbook can be classified as circular initiatives
- Refer to Glossary for details on what would constitute as circular initiatives
- To quantify micro-enterprise engagement through circular initiatives, it is recommended to also look at monetary value of these contracts vs. value of overall contracts


Supporting ESG reporting standards

- **SEBI's BRSR** ¹⁷ mandates firms to report the circular initiatives they have organized in each fiscal year related to improving resource efficiency, water/waste/emissions/ effluent discharge management
- **ESRS E5 Resource Use and Circular Economy Disclosure 5** ¹⁸ directs firms to report the measurable outcome-oriented target set to meet the resource-use and circular economy-related policy's objectives related to the management of material impact, risk and opportunities

COST & REVENUE


R&D and CAPEX investments in circular initiatives

R&D and CAPEX investments in circular initiatives in the year

Material of Interest	Formula
Overall 	Total R&D and CAPEX investment amount in CE initiatives annually

Revenue from circular products or services

Revenue generated from circular products/services/initiatives in the year

Material of Interest	Formula
Overall 	Total Revenue from circular products or services or initiatives annually

D. VALUE REALIZATION



How can you source data for the above formulas?

- Collaborate with finance & R&D teams to identify funds invested in circularity initiatives
- Access ERP and financial system reports to identify relevant cost centers for circular initiative investment
- Collaborate with products teams to identify revenue streams aligned with circular products and services



Industry example



In Fife, Scotland, Nestlé UK & Ireland partnered with Yes Recycling to process hard-to-recycle plastics. Nestlé – Yes Recycling’s first investor – has invested GBP 1.65 million (CHF 1.88 million) toward the site, which started operating at the end of 2022 and aims to offer a 15000-tonnes capacity in the production of alternative/circular inputs¹⁰

Guidelines for Calculation

- Include only invested capital and not earmarked funds
- Include only realized revenue from circular products and services into consideration
- Any initiatives aligned with the KPIs discussed as part of this playbook can be classified as circular initiatives
- Refer to Glossary for details on what would constitute as circular initiatives

Alignment with ESG reporting standards

- **GRI 201-2**⁴⁰ (Financial Implications and other risks and opportunities due to climate change) directs firms to report the percentage of capital expenditure that is allocated to investments in ESG initiatives
- **SEBI’s BRSR**¹⁷ mandates firms to report percentage of R&D and CAPEX investments in specific technologies to improve the environmental and social impact of products & processes

ASPIRATIONAL

No. of direct or indirect jobs generated through circular initiatives

No. of direct or indirect jobs generated through circular initiatives

This KPI highlights contribution to sustainable employment, showcases social responsibility, and reinforces their role in fostering a circular economy that benefits both business and society. As the FMCG industry embraces circular practices, there will be a growing demand for recycling, repurposing, and refurbishing materials. This will create job opportunities in collection, sorting, processing, and transforming waste materials into usable resources. Circular practices encourage businesses to offer services such as repair, maintenance, and product leasing instead of just selling products. These new business models can lead to the creation of skilled jobs in repair centers, maintenance services, and product customization. Embracing circularity will drive the need for innovative solutions and technologies for resource recovery, sustainable packaging, and waste reduction. This will lead to the growth of research and development sectors, creating employment for scientists, engineers, and innovators. Entrepreneurship & supply chain optimization will also see an increase in opportunities.

AMBITIOUS INDICATORS GHG emission reduction attributable to circular initiatives

Total reduction in GHG emissions (across Scope 1, 2 and 3) from circular initiatives

Recognizing that circular economy initiatives inherently drive GHG emission reduction, it's imperative for Indian FMCG companies to report on the total reduction in GHG emissions (across Scope 1, 2, and 3) resulting from circular initiatives. With the FMCG sector responsible for approximately 40% of India's total carbon footprint, showcasing circular strategies' environmental impact reinforces their role in achieving sustainability goals while addressing a critical aspect of their industry's environmental responsibility.

Guidelines to approach these KPIs

- Refer to Glossary for details on what would constitute as circular initiatives
- Any initiatives aligned with the KPIs discussed as part of this playbook can be classified as circular initiatives

No. of jobs generated through CI initiatives

- Collaborate with the recycling/ecosystem partners, and internal circular initiatives teams such as manufacturing, logistics, R&D, waste management, and other relevant functions to understand an impact on additional job creation/formalization to support those initiatives.
- It is also recommended to track the training and development of workforce in circular skills

GHG emission reduction from CI initiatives

- Leverage LCAs to measure the GHG emissions reduction with implementation of circular initiatives.
- Ensure that emissions reductions from all three scopes (Scope 1,2,3) are considered.
- Ensure accuracy and credibility by using established **GHG calculation methodologies** from:
 - GHG protocol
 - GRI 305: Emissions
 - European Commission Guidelines
 - IPCC Guidelines
 - ESRS E1 – Climate Change

Now the big question is:

What is the way ahead?



Setting the foundation for *The Next Phase...*

PHASE 1 (Playbook Launch)

Measure circular KPIs

- Examine company's current circularity initiatives
- Map these initiatives to the KPIs provided in the CE Measurement framework
- Refer this playbook guide to calculate and measure circularity across the 28 defined KPIs
- Set these circularity scores across KPIs as the baseline numbers

Stress testing

- Collaborated with ITC to stress test (check and validate) the implementation feasibility of the 28 KPIs, their definitions and formulas
- Captured any data related hiccups, definitional requirements and way forward to resolve them
- Integrated key learnings from stress testing into the playbook
- Promote adoption of the CE Measurement Framework Playbook-Phase 1

PHASE 2

Post adoption

- Analyze baselines numbers for all companies in the FMCG sector
- Set benchmark scores for each KPI based on the above analysis
- Companies will be able to calculate an overall circularity score based on level wise benchmarks
- Companies can establish KPI specific circularity targets and measure success to achieve them

The **ABCD** approach

Analyze

With phase 1 adoption of the framework, companies will calculate the circularity across the KPIs, and we will analyze these baseline numbers across FMCG companies

Benchmark

Post analyzing the baseline numbers, we will set up a level-based benchmark for each KPI as per the industry trends

Calculate

Companies will be able to calculate overall circularity score using the level-based benchmarks across all KPIs

Deep dive

Using this uniform framework, companies can benchmark & evaluate circularity with peers to develop future initiatives

Conclusion

The objective of businesses in the 21st century is to reach net zero in time to prevent a worldwide catastrophe. It is not just a moral requirement but also an **unprecedented opportunity** for the consumer goods industries to future-proof their business models and add value over the long term. Without decoupling growth from linear resource use, companies will cross planetary boundaries of resource usage and environmental impact. Transitioning from a **take-make-waste model to a circular economy** rebuilds value chains to create waste-less and restorative systems.

By virtue of environmental laws, regulations, and competitive pressures, FMCG players are already focusing heavily on pathways to decarbonize their value chain. The circular economy measurement framework requires them to **take one step further** by measuring the outcomes of their circular initiatives at an organizational level. Conducting this exercise would require FMCG companies to **collaborate with various stakeholders** within and outside their organizations. **Detailed LCA of the priority products** can help companies understand the material footprint and related impacts to determine the correct course of circular interventions at product level.

This playbook aims to help any FMCG company to **begin to adopt circularity measurement** across its entire operations. More than a playbook guide created for defining the first steps towards circular economy measurement, this playbook is intended as a **long-term companion on a challenging but highly rewarding path**. Once organizations start defining measurements for circularity, they will be set on a **path of circularity adoption** that would help companies to reduce linear resource consumption, aid to save environment, involve leadership for circularity initiatives and discover pathways to value realization.



For the consumer goods industry, setting up a roadmap towards measuring circularity is an unprecedented opportunity to create long-term value. By placing this challenge at the heart of their businesses, they will realize a competitive advantage that will carry them well into the future. As we have seen, the stakes are now simply too high, and the value-creation opportunities too great, to delay action. Each and every consumer goods company can accelerate their journey by defining the specific steps to achieve their circularity goals and targets. We hope that this guide will help you navigate your company's path to circularity.

Glossary: Sample FMCG circular scorecard

Illustrative








Level 1	Level 2	Level 3 & Level 4 (Level 4 applicable only to resources)										
Resources	Input	% non-virgin content (min. recycled content use)	15% 80% 80%	% material that is reusable/refillable	10%	% material input designed for environment	70% 90%	% input sourced responsibly	50% 20%	% material input intensity	60% 50%	
	Process	% processing waste sent to landfill / incinerated without ER	1% 5% 19%	% processing waste sent for energy recovery	1% 17% 5%	% processing waste recirculated (both internal/external)	50% 11% 40%	% processing waste generated	16%			
	Output	% waste (post mfg & pre consumer) - sent to landfill/ incineration without ER	1% 5% 19%	% waste (post mfg & pre consumer) - sent for energy recovery	1% 5% 19%	% waste (post mfg & pre consumer) recirculated both internal/external	1% 5% 5%	% recovery potential	60%	% actual recovery	20%	% waste (post manufacturing and pre consumer) generated
Environment	Water	% Recirculated water withdrawal by source	60%	% Water recirculated (internal/external use)	70%	% Water Discharge	30%	% Water restored/replenished	80%			
	Energy	% Energy from renewable sources	50%	% Waste energy that is recovered	20%							
	GHG	GHG emission reduction attributable to circular initiatives	5%									
Organization	Jobs	Jobs generated through circular initiatives	10K	No. of micro enterprise partners engaged through CI	11							
	Leadership	% Leadership remuneration linked to circular targets	10%	No. of CE specific targets established	14							
Value Realization	Cost	R&D and CAPEX investments in circular initiatives	USD 40K									
	Revenue	Revenue from circular products or services	USD 1M									

Legends on material classification

- Overall KPI score at entity/organization level
- Food (Food waste is the key metric followed by FMCG sector)
- Overall packaging
- Plastic
- Paper
- Glass
- Hazardous waste
- Locally sourced

Glossary: Packaging Taxonomy and Recyclability (1/2)^{41, 42, 43}

Packaging Material	Usage	Recyclability Difficulty	Quality After Recycling
Glass	Made from sand, soda ash, and limestone; commonly used for bottles and jars	Widely recycled	Recycled glass can be used to make new bottles, fiberglass, and glassware
Aluminum	Lightweight metal often used for beverage cans and food packaging	Widely recycled	Recycled aluminum retains its quality and can be endlessly recycled into new cans and other products
Paper/Cardboard	Made from wood pulp fibers; used for packaging boxes, cartons, and paper bags	Widely recycled, but contaminated or mixed paper may have challenges	Recycled paper/cardboard can be used for new packaging materials, tissue products, and recycled paperboard
Steel	Durable metal commonly used for food cans and aerosol containers	Widely recycled	Recycled steel retains its strength and can be used for new cans, automotive parts, and construction materials
Flexible Plastic Films	Thin plastic films used for packaging snacks, bread, and other products	Challenging to recycle due to mixed materials and contamination	Limited recycling options; can be downcycled into lower-quality plastic products or used for energy recovery
Composite Materials	Packaging materials made of multiple layers, such as laminated films or pouches	Difficult to recycle due to complex composition	Limited recycling options; often incinerated for energy recovery or disposed of in landfills

Plastic Type	Usage	Recyclability Difficulty	Quality After Recycling
PET (Polyethylen Terephthalate) 	Commonly used for beverage bottles and food packaging	Widely recycled	Recycled PET can be used to make new bottles, fiberfill for jackets, and carpeting
HDPE (High-Density Polyethylene) 	Used for milk jugs, detergent bottles, and household containers	Widely recycled	Recycled HDPE can be used for new containers, plastic lumber, and pipes
PVC (Polyvinyl Chloride) 	Often found in pipes, window frames, and flooring	Challenging to recycle	Recycled PVC has limited applications due to difficulties in separating additives
LDPE (Low-Density Polyethylene) 	Used for plastic bags, shrink wraps, and squeeze bottles	Recyclability varies; collection programs needed	Recycled LDPE can be used for trash can liners, plastic lumber, and agricultural film
PP (Polypropylene) 	Commonly used for yogurt cups, bottle caps, and food containers	Widely recycled	Recycled PP can be used for new food packaging, automotive parts, and textiles
PS (Polystyrene) 	Found in foam products, disposable cutlery, and packaging	Challenging to recycle due to limited infrastructure	Recycled PS has limited applications due to challenges in processing & contamination
Other/Mixed Plastics 	Miscellaneous plastics that don't fall into specific categories	Difficult to recycle	Recycling options for mixed plastics are limited, often downcycled into lower-quality products

Glossary: Packaging Taxonomy and Recyclability (2/2) ^{12, 43, 44, 45}

Packaging Type	Definition	Recyclability	Quality After Recycling	Examples
Rigid Packaging (EPR Category 1)	Packaging that maintains its shape and integrity during use	Generally recyclable, depending on the material composition	Can yield high-quality recycled materials for reuse	Plastic bottles, glass jars, metal cans
Flexible Packaging (EPR Category 2)	Packaging that can be easily bent, folded, or rolled up	Challenging to recycle due to complex material combinations and lack of recycling infrastructure	Limited recycling options, often downcycled into lower-value products	Plastic bags, pouches, laminated films
Composite Packaging (EPR Category 3)	Packaging made of multiple materials or layers	Difficult to separate and recycle due to material complexity	Limited recycling options, often requires specialized processes	Tetra Pak cartons, blister packs, multi-layered food packaging
Primary Packaging	Packaging conceived to constitute a sales unit to the final user or consumer at the point of purchase (EEA)	Varies based on the material used	Can be recycled or reused depending on the material and local recycling capabilities	Plastic bottles, glass jars, metal cans
Secondary Packaging	Packaging conceived to constitute at the point of purchase a grouping of a certain number of sales units whether the latter is sold as such to the final user or consumer or whether it serves only to replenish the shelves at the point of sale; it can be removed from the product without affecting its characteristics (EEA)	Varies based on the material used	Can be recycled or reused depending on the material and local recycling capabilities	Cardboard boxes, paperboard cartons, shrink wrap
Tertiary Packaging	Packaging conceived to facilitate handling and transport of a number of sales units or grouped packagings to prevent physical handling and transport damage (EEA)	Varies based on the material used	Can be recycled or reused depending on the material and local recycling capabilities	Pallets, stretch film, shipping containers

Glossary

- **Circular Economy/Circularity⁴⁶:** The circular economy is a system where materials never become waste and nature is regenerated. In a circular economy, products and materials are kept in circulation through processes like maintenance, reuse, refurbishment, remanufacture, recycling, and composting. (Ellen MacArthur Foundation)
- **Extended Producer Responsibility¹²:** means the responsibility of a producer for the environmentally sound management of the product until the end of its life (CPCB, EPR PWM Amendment Rules ²⁰²²)
- **PIBOs¹²:** The following entities shall be covered under the Extended Producer Responsibility (EPR India) obligations and provisions of these guidelines namely: (i) Producer (P) of plastic packaging;(ii) Importer (I) of all imported plastic packaging and / or plastic packaging of imported products;(iii) Brand Owners (BO) including online platforms/marketplaces and supermarkets/retail chains other than those, which are micro and small enterprises as per the criteria of Ministry of Micro, Small and Medium Enterprises, Government of India.:(iv) Plastic Waste Processors (CPCB, EPR PWM Amendment Rules ²⁰²²)
- **Non-virgin/recycled input¹⁹:** Inflow previously used (secondary), e.g., recycled materials, second-hand products or refurbished parts. (CTI)
- **Non-reusable/single-use packaging⁴⁷:** include items intended to be used only once before they are thrown away or recycled (UNEP)
- **Reusable Packaging¹⁶:** packaging that have become waste and put to use for the same purpose for which they were conceived (GRI)
- **Refillable Packaging⁴⁸:** packaging that is designed to be returned, refilled, and used multiple times, either within a closed-loop system or through a deposit-refund system (Ellen MacArthur Foundation)
- **Local suppliers²⁴:** organization or person that provides a product or service to the reporting organization, and that is based in the same geographic market as the reporting organization (that is, no transnational payments are made to a local supplier) (GRI)
- **Plastic Packaging¹²:** packaging material made by using plastics for protecting, preserving, storing and transporting of products in a variety of ways. (India EPR)
- **Processing food waste:** all food-related waste generated during the manufacturing process
- **Hazardous waste: As per CPCB, Hazardous Waste is classified as⁴⁹:**
 - I. **Toxic:** Waste that contains substances that are harmful to human health or the environment, and can cause adverse effects when ingested, inhaled, or come into contact with the skin.
 - II. **Reactive:** Waste that is unstable and can cause explosions, fires, or release toxic gases when exposed to heat, pressure, or other substances.
 - III. **Flammable:** Waste that can easily catch fire and sustain combustion under specific conditions.
 - IV. **Corrosive:** Waste that can corrode or eat away at metals or other materials.
 - V. **Infectious:** Waste that contains pathogens (e.g., bacteria, viruses, parasites) capable of causing diseases in humans or animals.
- To align with GRI ³⁰⁶ and UNEP international hazardous waste standards, refer to Annex III (Glossary) of Basel Convention⁵⁰

- **Biodegradable materials⁵²**: able to be broken down into carbon dioxide, water, and bioweight by the natural action of microorganisms over an unspecified length of time and in undefined conditions. (Ellen Macarthur Foundation)
- **Compostable materials⁵²**: able to be broken down into carbon dioxide, water, and bioweight within a specific time-frame under specific conditions (Ellen Macarthur Foundation)
- **Bio-based plastics⁵²**: refers to where the material comes from rather than what happens to it after use. Conventional plastics are largely oil-based. Bio-based plastics are made – either wholly or partly – from polymers drawn from organic sources such as plants, microorganisms, and greenhouse gases (examples include corn, algae, yeast and CO₂) (Ellen Macarthur Foundation)
- **Recyclable packaging⁴³**: Packaging is recyclable if the post-consumer collection, sorting, and effective recycling of the major component of the entire packaging weight is proven to work successfully in practice and at scale, and if the remaining minor components are compatible with the recycling process and do not hinder the recyclability of the main component (India Plastics Pact)
- **Effluents³³**: treated or untreated wastewater that is discharged (GRI, AWS)
- **Incineration¹⁸**: controlled burning of waste at high temperatures. Incineration of waste can be carried out with or without energy recovery. It is **with energy recovery** when the energy created in the combustion process is harnessed for re-use, for example for power generation. It is **without energy recovery** when the heat generated by combustion is dissipated in the environment. (ESRS)
- **Landfill¹⁸**: final depositing of solid waste at, below, or above ground level at engineered disposal sites; In the context of waste reporting, landfilling refers to depositing of solid waste in sanitary landfills, and excludes uncontrolled waste disposal such as open burning and dumping. (ESRS)
- **Technically recyclable materials¹⁸**: Materials which may be collected, separated or processed and returned to the economic mainstream in the form of secondary raw materials or products. (ESRS)
- **Recovery of material¹⁶**: any operation wherein products, components of products, or materials that have become waste are prepared to fulfill a purpose in place of new products, components, or materials that would otherwise have been used for that purpose (GRI)
- **Recovery types¹⁹**: The different forms of material recovery, such as (in order of the recirculation loops in the Ellen Macarthur Foundation's Circular Economy System Diagram⁶⁷ or butterfly diagram) (CTI definition):
 - **Reuse** To extend a product's lifetime beyond its intentional 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. Biodegrade Microbial (bacteria and fungi) breakdown of organic matter in the presence of oxygen to produce soil with high organic (humus) content.

- **Water withdrawal³³:** sum of all water drawn from surface water, groundwater, seawater, or a third party for any use over the course of the reporting period (GRI)
- **Water stress³³:** ability, or lack thereof, to meet the human and ecological demand for water (GRI)
- **Recycled/reused water³⁷:** Water and wastewater (treated or untreated) that has been used more than once before being discharged from the undertaking's boundary, so that water demand is reduced. This may be in the same process (recycled) or in a different process within the same facility or another of the undertaking's facilities (reused). (ESRS E3)
- **Water recycling and reuse³⁵:** act of processing used water and wastewater through another cycle before discharge to final treatment and discharge to the environment (GRI)
- **Watershed⁵²:** Watershed is a geographical unit with a common natural drainage outlet. The extent varies from 500 (micro-watershed) to 5000 ha (sub-watershed). For management purposes. 5000 ha is considered as a unit of intervention. (MyGov.in)
- **Renewable energy³⁸:** energy taken from sources that are inexhaustible. Renewable energy covers wind, solar (solar thermal and solar photovoltaic) and geothermal energy, ambient energy, tide, wave and other ocean energy, hydropower, biowaste, landfill gas, sewage treatment plant gas, and biogas. (Art. 2 (1) Directive (EU) 2018/2001), (GRI)
- **Waste gas/heat/energy⁵³:** Waste heat is heat, which is generated in a process by way of fuel combustion or chemical reaction, and then "dumped" into the environment even though it could still be reused for some useful and economic purpose. The essential quality of heat is not

the amount but rather its "value". The strategy of how to recover this heat depends in part on the temperature of the waste heat gases and the economics involved. Large quantity of hot flue gases is generated from Boilers, Kilns, Ovens and Furnaces. If some of this waste heat could be recovered, a considerable amount of primary fuel could be saved. The energy lost in waste gases cannot be fully recovered. However, much of the heat could be recovered and loss minimized by adopting circular initiatives (Bureau of Energy Efficiency, India)

- **Circularity measures¹⁶:** measures taken to retain the value of products, materials, and resources and redirect them back to use for as long as possible with the lowest carbon and resource footprint possible, such that fewer raw materials and resources are extracted, and waste generation is prevented (GRI).
- **Circular initiatives:** Initiatives focused on and driving circularity and resource efficiency, fitting under below categories (non-exhaustive):
 1. Circular design interventions, relevant to both the product and packaging, that would optimize packaging, reduce virgin input, move to biobased inputs or improve recyclability
 2. Interventions focused on resource efficiency through circularity focused on raw material, water and energy.
 3. Interventions to recover (recovery types defined) the waste across the value chain, including post consumer waste and the overall waste management
 4. Initiatives focused on or leveraging new circular models and partnerships that improves recoverability, the recycling ecosystem/infrastructure and traceability of materials.

Non-exhaustive

Glossary: Some key examples of responsible sourcing certifications and labels

FMCG companies can look for the below certifications from their suppliers to determine responsible practices

Plant-based materials	Animal-based materials	Labor, Ethics & Consumer Health	Circularity	General sustainable business processes
 	 	 	 	  
 	 	 	 	 
 	 	 	 	 
 	 			
 	 	 		 

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