CIRCULAR ECONOMY TARGET-SETTING:

New Guidance and Insights from Industry Leaders

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ABSTRACT

Companies are increasingly recognising the importance of transitioning to a more circular business model, not only to reduce environmental impacts but also to create new business opportunities and generate shared value. However, only a few have done so at scale and communicated public circular economy targets in the process. The current circular target-setting landscape is fragmented, and clear guidance for business is lacking. In 2023, on the occasion of the Annual Meeting of the World Economic Forum in Davos, the Circular Economy Indicators Coalition (CEIC), hosted by the Platform for Accelerating the Circular Economy (PACE) and Circle Economy, and supported by Accenture, introduced the "Corporate Circular Target-Setting Guidance". This reference guide is designed to support companies in navigating the complex circular target-setting landscape, enabling them to set and achieve quantifiable, targeted KPIs that drive measurable progress towards circularity.

Developed in collaboration with CEIC and Accenture, this white paper provides an overview of the guidance and offers case studies from two multinational companies, Enel and Philips, who have developed circular economy initiatives at scale implementing circular targets within their organisations. The objective of this paper is to provide an in depth analysis of how two leading companies from different sectors, such as Enel and Philips are implementing circularity metrics for their organisations, while inspiring other companies who are just beginning their journey. This paper also aims to inform business leaders about the tools and resources that are available today to design and implement circular business models, and to provide guidance that will help lead their companies towards a more sustainable and prosperous future.

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INTRODUCTION

Corporate circular target setting refers to the process of setting specific goals and objectives aimed at promoting a more circular economy across the value chain. The goal of circular business models is to decouple economic growth from resource consumption, and consequently also waste generation and carbon emissions. This is closely connected to SDG8 (Sustainable economic growth) and SDG12 (Sustainable consumption and production) outlined in the Sustainable Development Goals (SDG) agenda.

Setting circular targets allows companies to focus their efforts and track progress towards achieving their circular economy goals. This involves identifying areas of their business where circular practices can be implemented, such as shifting towards sustainable inputs in terms of material and energy, reducing overall operational waste, increasing quantity of post-use waste that is upcycled or recycled, and promoting more circular business models (e.g., connected to the sharing economy).

While the concept of circular economy business models is gaining traction across various organisations and industries, the current landscape for setting circular targets is fragmented, and target-setting and measurement are not standardised.

With the goal of advancing practice in the industry, this white paper presents the harmonized guidance published by the Circular Economy Indicators Coalition (CEIC) supported by Accenture, which was released at the World Economic Forum in 2023. The "Corporate Circular Target-Setting Guidance" offers clear guidance that can be adopted by companies for setting and working towards the achievement of circular targets. Leveraging this guidance can help to ensure that circular targets are aligned with the company's overall business strategy and stakeholder expectations, and that progress towards achieving circular goals can be tracked and reported transparently and in a comparable way.

This white paper also provides two case studies from multinational companies that have developed ambitious circular agendas and advanced approaches for circular target setting.

Enel, a multinational energy company, has set a target of doubling its circularity by 2030 compared with 2020. To achieve this target, Enel has developed a circular economy roadmap, which includes initiatives such as, the use of circular design principles (with a focus on material used also leveraging on the development of a procurement strategy to increase the circularity of equipment they buy), the promotion of circular business models, and the development of an end of life strategy to maximize the value recovered. Enel has also committed to reducing its carbon footprint along its value chain, including direct emissions from its facilities, while also upstream and downstream indirect emissions from its

suppliers and customers, and increasing the use of renewable energy sources. Enel's net zero roadmap at 2040 has been validated by the Science Based Targets initiative (SBTi) for being consistent with limiting global warming to below 1.5°C.

Philips, a global health technology company, has set the targets of increasing its circular economy revenue to 25% of sales, and ensuring 100% of its new product designs are aligned with its latest EcoDesign requirements by 2025. Also, by 2025, Philips aims to close the loop on all professional equipment, maintain 'zero waste to landfill' at its factory sites, and further extend circular practices across its sites and offices. Philips has been carbon neutral in its operations since 2020 and has aligned its strong carbon reduction ambitions with the Science-Based Targets initiative to the 1.5-degree global warming scenario. To achieve its circular economy targets, Philips has implemented several circular initiatives including the use of recycled and biobased materials in the product design of Philips consumer products, offering resource-efficient digital solutions like telehealth and cloud, lifetime extension and upgrade services, offering a refurbished product line that allows customers to choose pre-owned systems that have been thoroughly refurbished, upgraded and quality tested, as well as taking back large medical equipment that customers are willing to return.
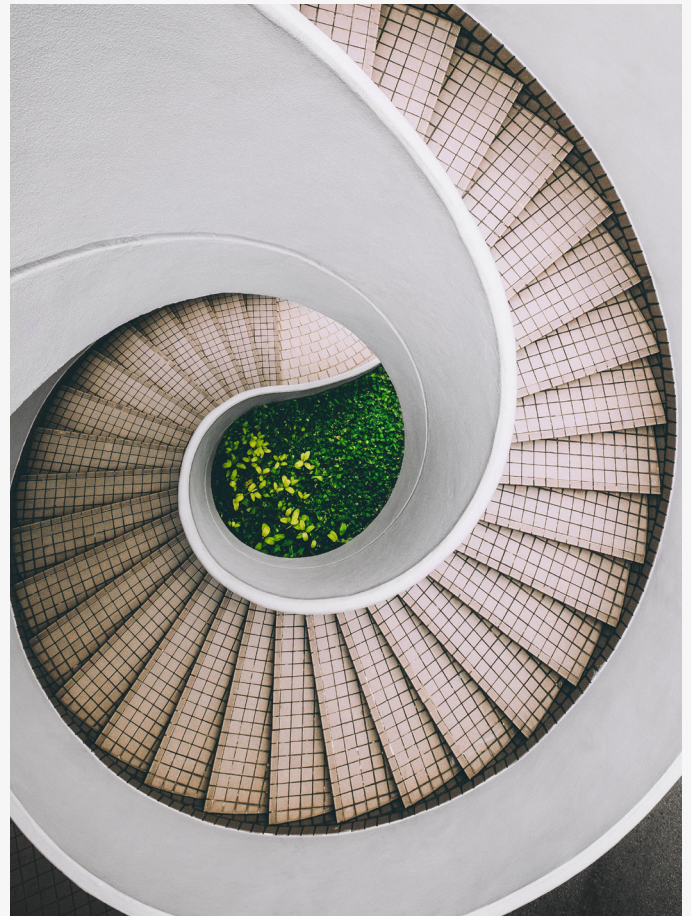
"THIS IS A RESOURCE AND A CALL TO ACTION FOR EXECUTIVE SUSTAINABILITY AND FUNCTIONAL LEADERS WHO ARE SEEKING TO LEARN ABOUT AND ULTIMATELY ACT ON BEST PRACTICES FOR CIRCULAR TARGET-SETTING"

Wesley Spindler,
Managing Director - Accenture Strategy, Sustainability Services

OVERVIEW OF THE GUIDANCE PUBLISHED BY THE CEIC AND SUPPORTED BY ACCENTURE

The Circular Economy Indicators Coalition (CEIC), a partnership between the Platform for Accelerating the Circular Economy (PACE) and Circle Economy, supported by Accenture has developed the "Corporate circular target-setting guidance". The guidance is an action-oriented reference guide supporting companies in navigating the complex circular target-setting landscape, and enabling them to set and achieve quantifiable, targeted KPIs that drive measurable progress towards circularity. It is not a new framework, but instead intends to point sustainability and functional leaders to existing frameworks and target-setting resources to enable them to act on best practices for circular target-setting.[1]

> **"This is a resource and a call to action for executive sustainability and functional leaders who are seeking to learn about and ultimately act on best practices for circular target-setting".** Wesley Spindler, Managing Director, Accenture Strategy, Sustainability Services

Developing the Guidance
A broad group of stakeholders from across diverse industries (incl. electronics, fashion, energy, capital equipment, and mining) contributed to the development of the guidance and recommended KPIs. Stakeholders were invited to participate in interviews and workshops to assess challenges, gaps, pain points, and opportunities. Extensive landscape assessments were also conducted as part of the process.

> **"This is the first step in the journey, where we invite you to engage in circular target-setting with this guidance".** Ramona Liberoff, Executive Director at PACE

Why is this guidance important?
Circular target-setting today may be well-intentioned but oftentimes lacks comparability and accountability due to its self-defined nature. It is difficult for businesses to choose the right KPIs because there is no singular "gold standard" for circularity, resulting in disparate targets being set. Coalescing around this guidance will encourage businesses to develop meaningful and impactful circular economy KPIs and make concerted progress towards increasing global circularity. This guidance consolidates a myriad of materials to point users towards relevant standards, tools, approaches, and methodologies, and holistically, these materials will enable companies to announce and achieve credible and impactful circular targets.

This guidance serves not only as a resource, but as a call to action for companies to take their first or next steps on a journey towards decoupling their economic activities from the consumption of resources. Advancing circularity is inherently a systems-based opportunity, and it will require engagement from organisations across industries and across the value chain to drive lasting progress in both the setting and achievement of quantifiable circular targets.

Outcome KPIs
As referenced above, the guidance is primarily formatted as a reference guide that seeks to collate and harmonise information that will drive action in businesses. As such, the guidance centres around the four Outcome KPIs summarised below:
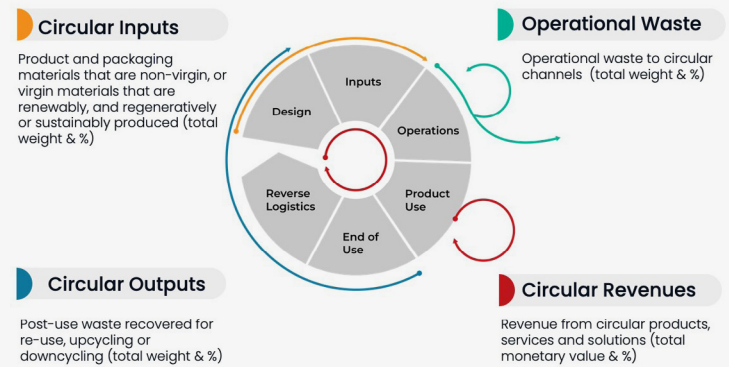

Circular Inputs
Product and packaging materials that are non-virgin, or virgin materials that are renewably, and regeneratively or sustainably produced (total weight & %)

Operational Waste
Operational waste to circular channels (total weight & %)

Circular Outputs
Post-use waste recovered for re-use, upcycling or downcycling (total weight & %)

Circular Revenues
Revenue from circular products, services and solutions (total monetary value & %)

Figure 1 — Outcome KPIs (source: CEIC)

Circular Inputs focuses on what materials are being used in products and packaging, supporting a transition away from finite, virgin materials towards circular alternatives with the goal of reducing overall material consumption.

Operational Waste focuses on concurrently reducing overall operational waste while progressing towards higher value recovery of those materials, to move away from only 'zero waste to landfill' to greater transparency and measurement of circular channels.

Circular Outputs focuses on increasing the quantity of post-use products and materials recovered, moving towards closing the loop by increasing the share of addressable post-use waste that is reused or recycled following collection.

Circular Revenues captures the share of revenue generated from circular products, services and solutions, with the goal of decoupling economic parameters (e.g., revenue, EBITDA etc.) from resource consumption.

Outcome KPIs measure the results of circular processes, programs, and operating models at a company level and should be used for public target-setting.

The guidance also highlights four Enabler KPIs that support the achievement of these four Outcome KPIs across the value chain. Enabler KPIs assess a company's progress towards establishing circular processes, programs, and operating models. These include Circular Design, Waste Production & Transparency, Product Life Extension & Utilisation, and Output Collection.

[1]Note: Regulatory examples referenced throughout this, and other sections are meant to inform business decision-making but are not intended to be signs of support for current regulations and policies or a recommendation for any regulatory or policy changes.

Circular Design refers to products and packaging designed with circular design criteria.

Waste Production & Transparency considers the reduction in waste produced across operations.

Product Life Extension & Utilization assesses the improvement in average product use life and utilization.

Output Collection quantifies the post-use waste collected.

A complete view of the Outcome and Enabler KPIs identified in the guidance can be found in Exhibit 1.

The KPIs were evaluated and selected to align with a circular value chain, considering their ability to impact and advance progress towards a circular economy. It is important to keep in mind that the achievement of these KPIs individually is not synonymous with the overall circularity of a company.

Given that circular economy targets are still in their very early stages, businesses can help to advance accountability by leveraging the information in the guidance to transparently disclose the definitions (e.g., ISO, GRI) and frameworks (e.g., Circular Transition Indicators, Circulytics) used to track and report on progress.

Guidance Structure: Overview Page, Activation Guide Deep Dives and Sector Supplements
For each of the four Outcome KPIs, the guidance provides an overview page, a two-page activation guide and three sector supplement pages covering five sectors (see Exhibits 1–4).

The overview page provides a high-level overview of the KPI, including a short description, examples of key supporting standards, an overview of measurement approaches and examples of corporate leaders (see Exhibit 2).

The two-page KPI activation guides are structured to help businesses understand what success looks like and how to achieve that same success in setting, measuring and reporting a circular KPI (see Exhibit 3).

> **"This guidance provides support for circularity and sustainability teams on how to drive progress, with deeper dives into supporting standards and measurement approaches."**
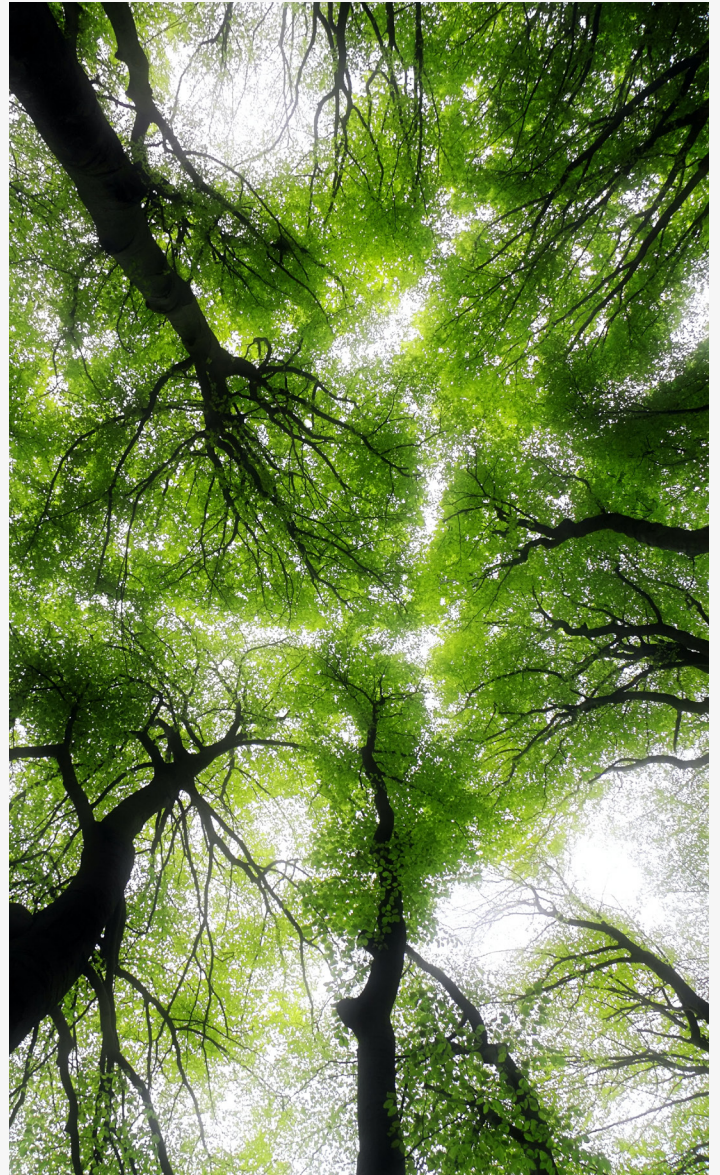> Wesley Spindler, Managing Director, Accenture Strategy, Sustainability Services

The first page of the activation guides is an executive overview, providing a detailed overview of the KPI and why it is important to business and the planet. It includes guidance on organisational ownership, overcoming common challenges, and outlines steps for a business to get started. The second page includes functional-leader-focused guidance, detailing resources to support sustainability and circular leaders in selecting and setting the KPI, including useful standards and measurement approaches.

Following each of the activation guides, the guidance features a sector-specific supplement to consider how the Outcome KPIs can be applied within five sectors: textiles, plastics, food, electronics, and capital equipment (see Exhibit 4). This section highlights industry-specific data points, sector-specific considerations, supplemental guidelines and disclosure requirements, and additional resources and organisations supporting businesses in advancing circularity.

Next Steps and Call to Action
This guidance is one of the first widely applicable resources for corporates to use to define their circular ambition and set impactful, quantifiable circular targets. However, this is just the first step in a longer journey to driving impactful progress on circularity within, as well as across industries. The CEIC, supported by Accenture, will continue to act as a facilitator, bringing leading organisations and necessary partners together in the next stage of the journey[2].

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[2]All organisations that would like to collaborate are encouraged to reach out to PACE (pace@wri.org).

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"THIS IS THE FIRST STEP IN THE JOURNEY, WHERE WE INVITE YOU TO ENGAGE IN CIRCULAR TARGET-SETTING WITH THIS GUIDANCE"

Ramona Liberoff,
Executive Director at PACE

ENEL CASE STUDY

Overview of the company

Enel is a multinational energy company and a leading integrated operator. Worldwide, it is the largest private operator of renewables (with a total capacity of over 56 GW including wind, solar, geothermal, hydroelectric and storage plants, in Europe, the Americas, Africa, Asia and Oceania), the first grid operator by number of end users (approximately 76 million) and the largest retail operator by number of customers (over 70 million). The Group is the world leader in demand response (with a total capacity of approximately 8.2 GW) and the largest European utility by ordinary EBITDA[3]. Enel is present in 30 countries around the world and produces energy with a total capacity of around 93 GW and a managed distribution network of approximately 2.3 million kilometers. Furthermore, the Enel Group includes Enel X Way, a company entirely dedicated to electric mobility, which manages approximately 430,000 public and private charging points for electric vehicles.

Circular economy approach and strategy

Enel started down its path towards circularity in 2015. In 2023, the circular economy represents a key strategic driver in Enel's business, as well as a growth accelerator along its entire value chain.

The main goal of a circular economy for Enel is to decouple resource consumption from business activities. To achieve this goal, Enel recognises that circular business models must be implemented along the whole value chain. Through this lens, circular economy is considered a key lever to achieve increasingly ambitious decarbonisation goals. The approach includes redesigning the energy system deploying renewable sources, smart grids, storage, the electrification of final use consumption (e.g., electric vehicle) and addressing the raw material needs (critical ones in particular) within a circular economy framework. Therefore, to achieve a fully sustainable transition, a systematic assessment of environmental, social, price and geopolitical factors is needed. Redesigning the current development model by combining competitiveness and sustainability through innovation is also key. Rethinking the business model from a circular point of view is a challenge not only in terms of technological innovation, but also in terms of collaborating in an increasingly integrated way across Enel's ecosystem.

The Group's circular vision addresses the whole value chain – starting with the design, raw materials and energy selection phases – and is structured on the following pillars: circular input, useful life extension, product as a service, shared platforms, new life cycles (Figure 2).

Examples of circular initiatives

Enel projects[4] are aimed at decoupling the Group's activities from the consumption of resources and mitigating the residual related impacts. An ad hoc working group on raw materials was set up in 2020, involving all relevant areas, to constantly update the strategy, set priorities and targets and ensure widespread implementation of projects to achieve targets.

Figure 2 — Pillars of Enel's circular economy strategy (source: Enel)

Enel is also developing various initiatives to improve the circularity of key assets (wind, solar, pv, grid, batteries, EV charging stations) throughout the life cycle (from input material to life extension and new life cycles). Below are some examples:

- **Circular Procurement strategy:** the aim is to measure (using the Environmental Product Declaration) the environmental impacts associated with the strategic product categories the company purchases (wind, solar, batteries, meters, charging stations for EV etc), reward the most virtuous suppliers and co-innovate for improving circularity.

- **3SUN Gigafactory:** the new HJT (Hetero Junction Technology) Tandem solar module that will be produced in the Gigafactory in Catania, set to become Europe's largest PV factory[5], is a bifacial module that allows for a 15-20% greater electricity production (more than 30% efficiency). Moreover, Enel is working on new technologies that can allow the use of recycled materials, such as recycled plastic instead of glass and through the EU Photorama projects to the development of a recycling technology to recover precious materials such as silver with high purity (above to 99.9%) reaching a total recycling rate of 95%.

- **Circular Batteries:** Enel is implementing various solutions such as the development of alternative technologies without critical materials such as gravitational or thermal storage (e.g., industrial storage solutions that use rocks or similar materials in place of lithium or cobalt), second life application of EV

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batteries as storage systems (e.g. in Mellila a 4MW/1.7MWh system reusing around 80 EV batteries), and battery recycling plants in Spain and Italy.

- **Circular Meter:** From 2020, the production of the new meter began through a circular model and a path aimed at redesigning the value chain of the meter, using the material from decommissioned meters to make the new ones. Approximately 2 million circular meters were produced in 2022 (48% by weight is made up of regenerated materials and recyclability at the end of their life is estimated at 79% by weight).

- **Circularity for Wind:** Enel is implementing various initiatives to improve the circularity of wind technology, from the choice of input materials more sustainable (e.g. evaluating innovative solutions such as wooden towers or fabric wind blades easy to be recycled) to end-of-life management through the development of two wind blade recycling plants in Spain (target capacity of 8.000 tons/year from 2025) and Italy (3.000 tons/year from second half 2025).

- **Circular Design for EV Charging Stations:** Enel has already been working for several years to redesign EV charging stations and improve their circularity. Main products for AC (alternating current) charging, use recycled polycarbonate as the main structural material (100% for the JuiceBoxes and 75% for the JuicePoles). For the JuicePoles the use of materials was also optimised, reducing the overall weight of the product by approximately 32%.

Circular corporate target-setting approach

Enel, from the beginning of its activities on Circular Economy in 2015, placed a strong focus on KPIs and metrics, as this is a highly data-driven topic. In the initial stages, in the absence of international reference methodologies that addressed the entire value chain, the company developed its own model for measuring circularity with its CirculAbility Model©[6].

Building on this model, which represented the conceptual guidance of the Group, further initiatives were developed, from procurement to Enel X, with metrics to measure circularity at the product, corporate, city and site levels[7]. Furthermore, Enel has focused on identifying and adopting simple economic/physical KPIs at the Group level that could clearly represent the transition towards circularity in terms of decoupling business activities from resource consumption, and that could be understood easily by stakeholders and investors.

With these goals in mind, during Capital Market Day 2020, Enel launched a first KPI "Circularity Improvement", which measured the consumption of raw materials and fuels (tons) throughout the life of the production plants compared with the energy generated (MWh).

In 2023, with the aim of creating a target that considers all business activities, Enel launched a new KPI, "Economic CirculAbility©". "Economic CirculAbility©" considers the Group's overall EBITDA and compares it with the overall resources consumed (fuel and materials), along the value chain:

$$\text{Economic CirculAbility}_{\text{yearX}} = \frac{EBITDA_{\text{yearX}} \; [\text{€}]}{Resource\ Consumption_{\text{yearX}} \; [ton]}$$

Where resource consumption is calculated as follows:

$$Resource\ consumption_{\text{yearX}} = total\ resource\ used_{\text{yearX}} [tons] - circular\ input_{\text{yearX}} [tons] - \\ - circular\ output_{\text{yearX}} [tons]$$

- Circular input: tons of material from previous life cycles (e.g., recycled, reused) or renewable
- Circular output: tons of materials recovered at the end of life (e.g., through re-use, recycling)

The above KPI can be considered an "outcome KPI" and is mapped on the CEIC's target-setting guidance in the Circular Revenue section, as it aims to measure the decoupling of economic performance from resource consumption.

Enel presented this KPI at the 2023 World Economic Forum in Davos, at the same time undertaking to double its value by 2030 (compared to 2020), i.e., halving the amount of resources consumed compared to the EBITDA generated. Enel thus became the first company in the world to take a pledge to double a circularity indicator that includes economic and resource perspectives.

> **"The aim of our circular economy strategy is to decouple business activities from resource consumption along the whole value chain. To monitor our progress we needed a clear, simple, rigorous and objective KPI and to measure our overall economic performance vs. our overall resource consumption has emerged as the most effective approach "** Luca Meini, Head of Sustainability Initiatives and Circular Economy, Enel

Enel aims to reach this target by leveraging on the development of new renewable capacity to have a 100% sustainable fleet, phase out from coal generation by 2027, exit from retail gas sales and transition to 100% renewable energy by 2040, and close the loop on key technologies with a potential of 95% recyclability for PV and 90% for wind etc.

[6] https://corporate.Enel.it/en/circular-economy-sustainable-future/performance-indicators
[7] https://corporate.Enelx.com/en/our-commitment/circular-economy/client-report

The role of metrics

Enel's journey towards circularity, which began in 2015, has brought to light several advantages, opportunities and challenges which have helped shape the company's strategy over the years. One of the main challenges for the effective implementation of a circular economy model is setting criteria and metrics to be able to distinguish between circular and non-circular solutions, measure their environmental, economic and social impacts, set objectives and understand the levers for improvement. Furthermore, based on the scope of measurement (a product, a project, the entire company, etc.) and the objective (external communication, internal monitoring, measuring circularity of customer or suppliers etc.), it is necessary to approach the issue differently. It was therefore necessary to develop different tools (from the Environmental Product Declaration for suppliers, to specific KPIs for projects or external target and circularity metrics to measure circularity of customers at corporate, product, site level etc.) in any case maintaining consistency with a common approach to measurement focused on the quantitative analysis of materials and energy flows considering the entire life cycle. In this way it is possible to be effective in identifying the specific improvement levers for the various company areas and to communicate the right message with each stakeholder at the same time optimizing the data collection and analysis processes.

For example for circular target setting was fundamental to identify simple and objective KPIs like the Economic CirculAbility© to clearly communicate the overall performance in terms of circularity and monitor progress. Below is a summary of key learnings that have emerged throughout the development of this KPI:

Advantages
- Relevance: The KPI provides an overall economic/physical assessment of the company's circularity
- Cross circular economy strategies: The evaluation of the resources consumed considering the circular input/output represents a proxy for the circularity obtainable through the implementation of the various circular models
- Easy to understand: This KPI, based exclusively on economic/physical data, is easy to understand for subjects outside the company
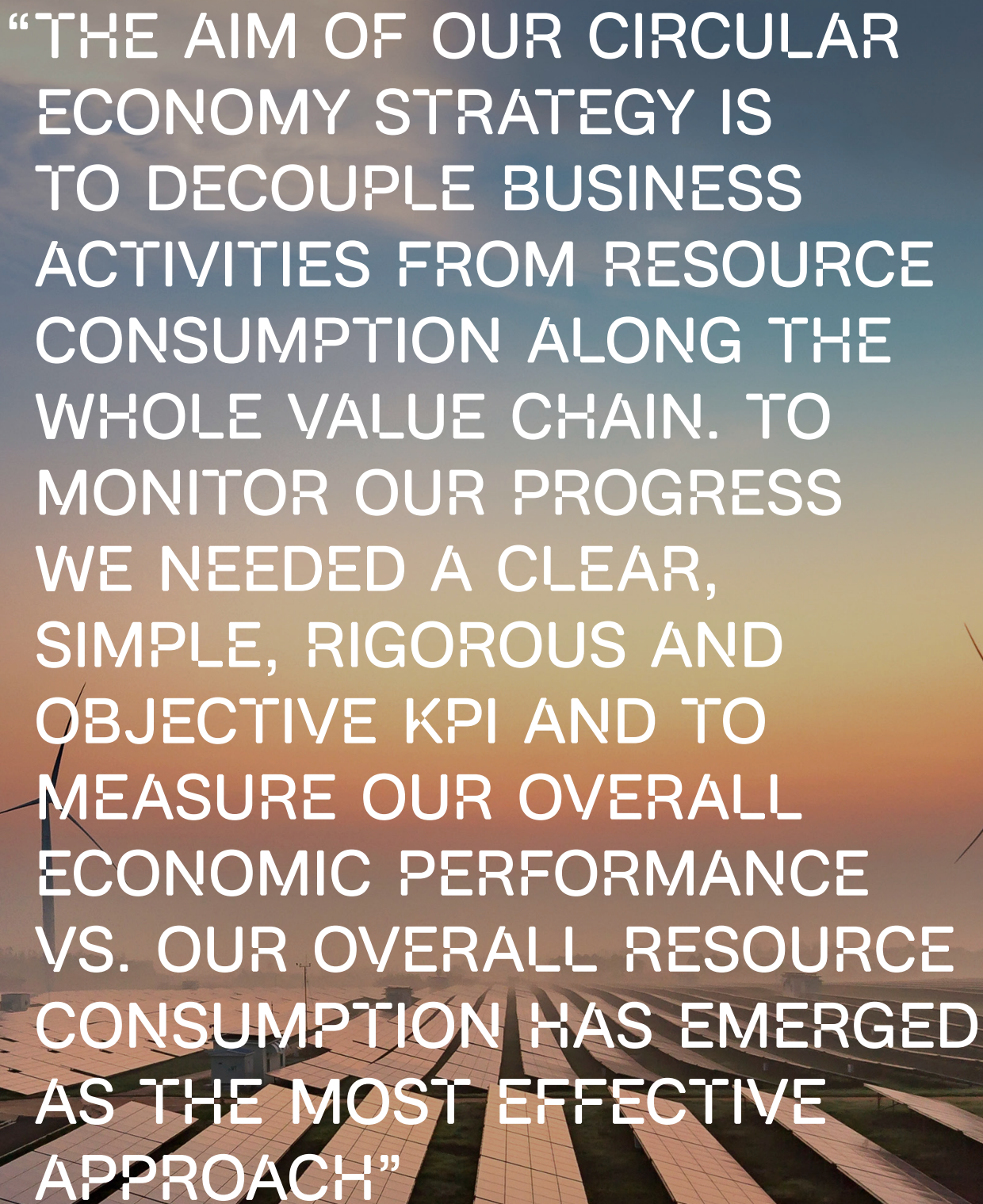
Applicability
- Enel considers the KPI can be applied to Companies of any sector (although the comparison must be done only within the same sector to be meaningful)
- Even if it loses relevance as it represents a partial performance of the company, it can be applied to a specific business division while maintaining consistency between EBITDA and resources considered
- It uses publicly certified data (EBITDA) and objective physical data that can be certified and verified; therefore no hidden assumptions on subjective evaluations are present

Challenges
- Measuring the overall resources used requires the involvement of all business lines and integration with internal reporting processes
- Measuring consumed resources requires strong supplier engagement along the value chain
- The relevance of each resource considered (fuel, materials) can be further explored, e.g., by providing specific views of the KPI on different types of resources (e.g. raw materials, critical raw materials etc)

"THE AIM OF OUR CIRCULAR ECONOMY STRATEGY IS TO DECOUPLE BUSINESS ACTIVITIES FROM RESOURCE CONSUMPTION ALONG THE WHOLE VALUE CHAIN. TO MONITOR OUR PROGRESS WE NEEDED A CLEAR, SIMPLE, RIGOROUS AND OBJECTIVE KPI AND TO MEASURE OUR OVERALL ECONOMIC PERFORMANCE VS. OUR OVERALL RESOURCE CONSUMPTION HAS EMERGED AS THE MOST EFFECTIVE APPROACH"

Luca Meini,
Head of Sustainability Initiatives and Circular Economy, Enel

PHILIPS CASE STUDY

Overview of the company

Philips is a global leader in healthcare technology with a mission to improve people's health and wellbeing through meaningful innovation and improve the lives of 2.5 billion people a year by 2030. Originally founded in the Netherlands in 1891, Philips generated 2022 sales of EUR 17.8 billion and employs approximately 77,000 employees with sales and services in more than 100 countries.

Philips has a proud heritage of ground-breaking innovation that stretches back almost 130 years. Meaningful innovation – focused on its customers' needs – is at the heart of everything the company does. Within the healthcare industry, the company's areas of expertise include diagnosis and treatment, connected care, and personal care. It designs products and healthcare systems across a range of applications.

As a responsible business, the company operates sustainably, to high Environmental, Social and Governance (ESG) standards. Sustainability is deeply embedded in the business – within its own operations and beyond, together with its customers and partners. There is an increase in momentum across the healthcare industry, and on the part of customers, to reduce the environmental impact of the sector. This is also an urgent necessity, since healthcare is responsible for 4.4% of the global CO2 emissions, more than the aviation and shipping industry.[8] Additionally, the sector uses 10% of all materials extracted globally each year.[9] Reducing healthcare inequality where half of the world's population have no access to health services that they need is also high on the agenda. With a rapidly growing sustainable innovations portfolio, Philips is well placed – and highly committed – to lead and help create a sustainable infrastructure for the future of healthcare.

Circular economy approach and strategy

The circular economy is one of the critical pillars of Philip's strategy to reduce environmental impact. Philips' 2025 ESG commitments include ambitious circular economy targets — such as increasing its circular revenues to 25% of sales and ensuring that 100% of new product designs meet the company's EcoDesign requirements (of which circularity is a crucial pillar).

It is the company's ambition to be a leading circular economy company, decoupling growth from resource consumption across the value chain – from how it develops better products to how it delivers them in a circular way. Philips continues to step up and accelerate its efforts to minimise the use of materials and waste, adopt innovative business models, offer resource-efficient digital solutions and maximise the lifetime value of its products and solutions. The company aims to keep its hardware in the value chain for as long as possible, and increasingly relies on software – and digital solutions such as telehealth and cloud – to increase efficiency in its use of resources.

Additionally, the company is continuously rethinking its services to become more circular and further embed circular practices across its sites and offices. In 2022, 18% of Philips business revenue came from circular products and services; and the company already offers trade-ins on all large medical equipment.

Examples of circular initiatives

Health systems are increasingly focused on decarbonising healthcare for which circularity is a key driver. With ever-increasing pressure on cost, healthcare facilities are looking to fundamentally rethink models of care without compromising on quality. Consumers too are keen to break the cycle of "take-make-dispose". Examples of Philips' efforts include:

- **Circular design** where EcoDesigned products significantly outperform in any of the circular design strategies, for example design with sustainable materials. Recycled and biobased materials have become an integral part of the product design of Philips consumer products. For example, as part of the Personal Health portfolio several grooming and beauty products now contain recycled plastics. Philips introduced its first brush heads containing 75% bio-based materials, in 2022.

- **Leases, rentals and other service based models** that help to incentivize material efficiency across the value chain where
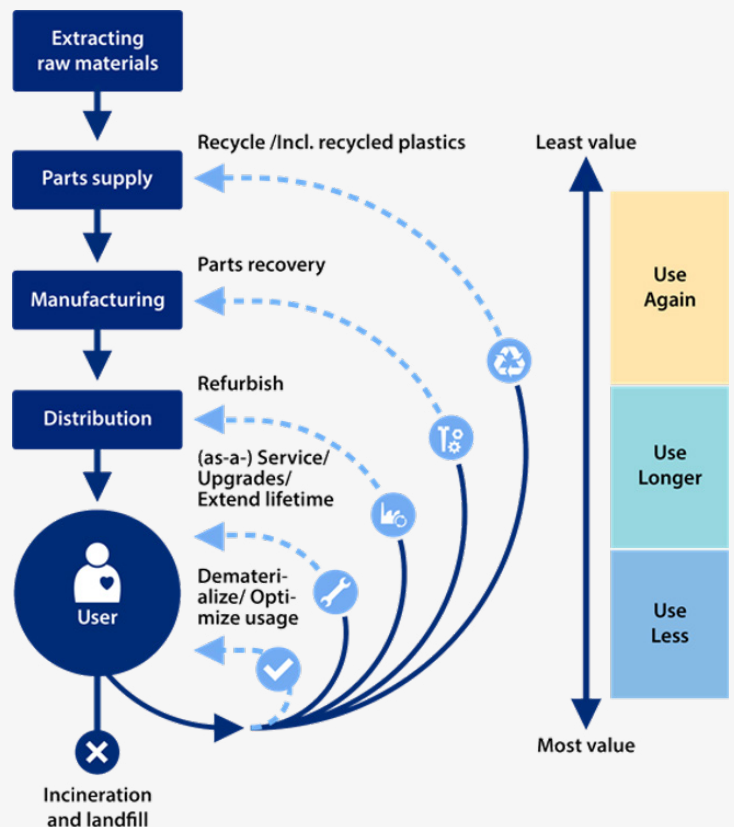

Figure 3 – Philips' circular practices to decouple economic growth from resource consumption (source: Philips)

[8]Health Care Without Harm (2019), https://noharm-global.org/documents/
health-care-climate-footprint-report
[9]Circularity Gap Report 2020

customers do not retain ownership of the hardware, but instead access its functionality. Philips' Lumify with Reacts portable ultrasound service is a good example. Under this flexible subscription service, users can have access to transducers, an app and online ecosystem. The subscription service reduces upfront costs and improves patient access to innovative care in underserved communities.

- **Digital solutions** that help customers to increase their resource-efficiency for example through telehealth or transitioning the computing and storage to cloud. Solutions like PerformanceBridge also help customers to increase the utilisation rates of their medical equipment, helping to treat more patients while using the same equipment.

- **Refurbishment and parts recovery** offer customers a choice of pre-owned systems that have been thoroughly refurbished, upgraded and quality tested. The Philips Circular Edition portfolio makes first-rate equipment available at a lower cost, offering high-quality refurbished systems with a full Philips warranty. In this way, customers can benefit from state-of-the-art technology at a more affordable price. Also, parts are re-used in our maintenance services.

- **Upgrades and life-time extensions** help customers to get more value from equipment that is already installed. For example, upgrades help to enhance existing Philips systems to current technology or increased capacities. For example, with SmartPath upgrades, users get the most advanced enhancements in workflow, dose management, clinical capabilities, and imaging quality with equipment they already own.

DID YOU KNOW THAT...

In 2022, Philips re-used 79% of material weight from returned MR and CT systems during refurbishing therefore reducing the need for virgin materials.[10]

The carbon footprint of a refurbished MR system is 45% lower than for a new one.[11]

The healthcare industry is the world's biggest consumer of helium, a scarce resource, accounting for around 30% of global use. With over 600 units installed globally, MRI scanners equipped with Philips' BlueSeal magnet technology have already saved more than 1,000,000 liters of helium, since 2018.[12]

Circular corporate target-setting approach

Building further on earlier circularity targets, Philips raised the bar in 2020 when they announced their 2025 targets towards a circular economy. By 2025, the company aims to:

1. Generate 25% of its total revenue from products, services, and solutions that contribute to circularity

2. Have 100% of its new product designs according to its latest EcoDesign requirements

3. Remain "zero waste to landfill" at its factories, extend this across other sites, and extend circular practices across its operations

4. Close the loop by offering a trade-in on all professional medical equipment, and take care of responsible end-of-use management of traded-in systems

These targets reflect the challenge of capturing the circular economy efforts of a company using a stand-alone single metric. The above targets can be considered outcome KPIs and can be easily mapped on CEIC's target-setting guidance: #1 refers to "circular revenue" as an overarching metric; #2 refers to "circular inputs; #3 refers to "operational waste"; and #4 refers to "circular outputs".

As a company with a long-standing history of integrated reporting, Philips believes in transparency. The company's approach to reporting means that all of its ESG targets undergo the same level of scrutiny with its auditors, as its financial targets. The company publishes its progress annually (partly quarterly), as part of its Annual and Quality reporting cycle.

"There is a vast number of ways to close loops, even for an individual company. Therefore, a company should not strive for one metric on circularity, but smartly choose a concise set of metrics that cover the different circular practices of the company along its value chain"
Harald Tepper, Circular Economy Lead, Philips

[10] Based on the average weight re-use percentage per system for Philips MR and CT circular systems in 2022. Results may vary based on amount, mix and age of returned systems.

[11] Based on LCA using ReCiPe2008 and ecoinvent3.8 database, f or an refurbished MR Ingenia Omega HD compared to a new MR Ingenia Omega HD, used in Paris, France and refurbished in Best, the Netherlands. Results will vary per system (type)/age, region/country due to, amongst other things, source of energy and logistics.

[12] Distribution of helium consumption worldwide as of 2021, by end use https://www.statista.com/statistics/729995/helium-consumption-distribution-by-end-use-worldwide/ Total helium saved compared to conventional, helium-cooled scanners across both production and operations since 2018.

The role of metrics

Philips has been measuring Circular Revenue since 2016. At that time, very few metrics for circularity were available. Understanding that measurement is a critical element of steering an organisation's performance, the company developed its own metrics. Circular Revenue brings together the various circular practices at Philips. Over time, the company grew the framework together with its internal businesses, building on new insights & practices (such as Circular Design and the impact of Digitalization) as well as external development on metrics and reporting disclosures.

Progress on these practices is also measured individually, with metrics around waste, recycled content, number of systems returned for refurbishment, etcetera. By having one overarching metric (Circular Revenue) as well, business units and markets can see how they contribute to one common goal.

A key learning that emerged throughout this journey is that having one overarching story (and metric) is insufficient. It helps to be as specific as possible about what circular economy means for different roles within the company. Hence the need for output metrics defined specifically for EcoDesign, circular operations, and closing the loop.

Another key learning for the company was finding a good balance between leading and lagging indicators. While it is suitable from an overall tracking and reporting perspective to set clear targets on the "outcome indicators" - as mentioned above, often more fast-moving indicators are needed internally to stay on course. For instance, for design, several check-ins are conducted on innovation projects along the innovation timeline: early on, Philips project managers assess the potential for EcoDesign; they then select specific design strategies; and later in the process, they check the entire implementation.

In another example, pertaining to closing the loop, Philips not only measures what systems are traded-in, but also how many of them are good for refurbishment, how many can be used to recover parts, and how many are being recycled responsibly.

Finally, on the operations side, Philips looks separately at what materials go into its factories, what amount goes into products, what ends up as operational waste, how waste can be further reduced, and ultimately what happens to the remaining waste streams.

In short, Philips has seen several advantages, opportunities, and challenges in implementing its portfolio of circular metrics:

Advantages
- Metrics help a company to prioritize its actions and to steer towards a clear goal
- Having a revenue-related metric helps to collect all circular practices into one common goal
- Having a revenue-related metric helps to emphasise the economic value of the circular economy

Applicability
- For practical applicability, it is important to have a balanced set of leading and lagging indicators. The latter show more clearly the output, while they tend to move too slow for timely steering
- Having key metrics for key roles in the value chain, is necessary to clarify how different roles in the company (designers, marketeers, business developers etc.) can contribute

Challenges
- Being a front-runner, you often have to develop and implement metrics where no standard or benchmark is available. It is important to choose these metrics wisely, as close as possible to where the company can have the most impact

Altogether, each of Philips business decisions and initiatives support the company's circular business model. As Philips continues to drive circularity forward, the company will remain focused on incorporating metrics that supports its progress towards a circular company and tell its transition story.

CONCLUSION

The Circular Target-Setting Guidance presented by CEIC, with the support of Accenture, provides business leaders with guidance on circular target setting, which is currently lacking across industries.

With clearly defined KPIs, this guidance offers businesses tools and resources designed to help companies transition towards circular business models that can lead to a more significant positive impact on the planet and business.
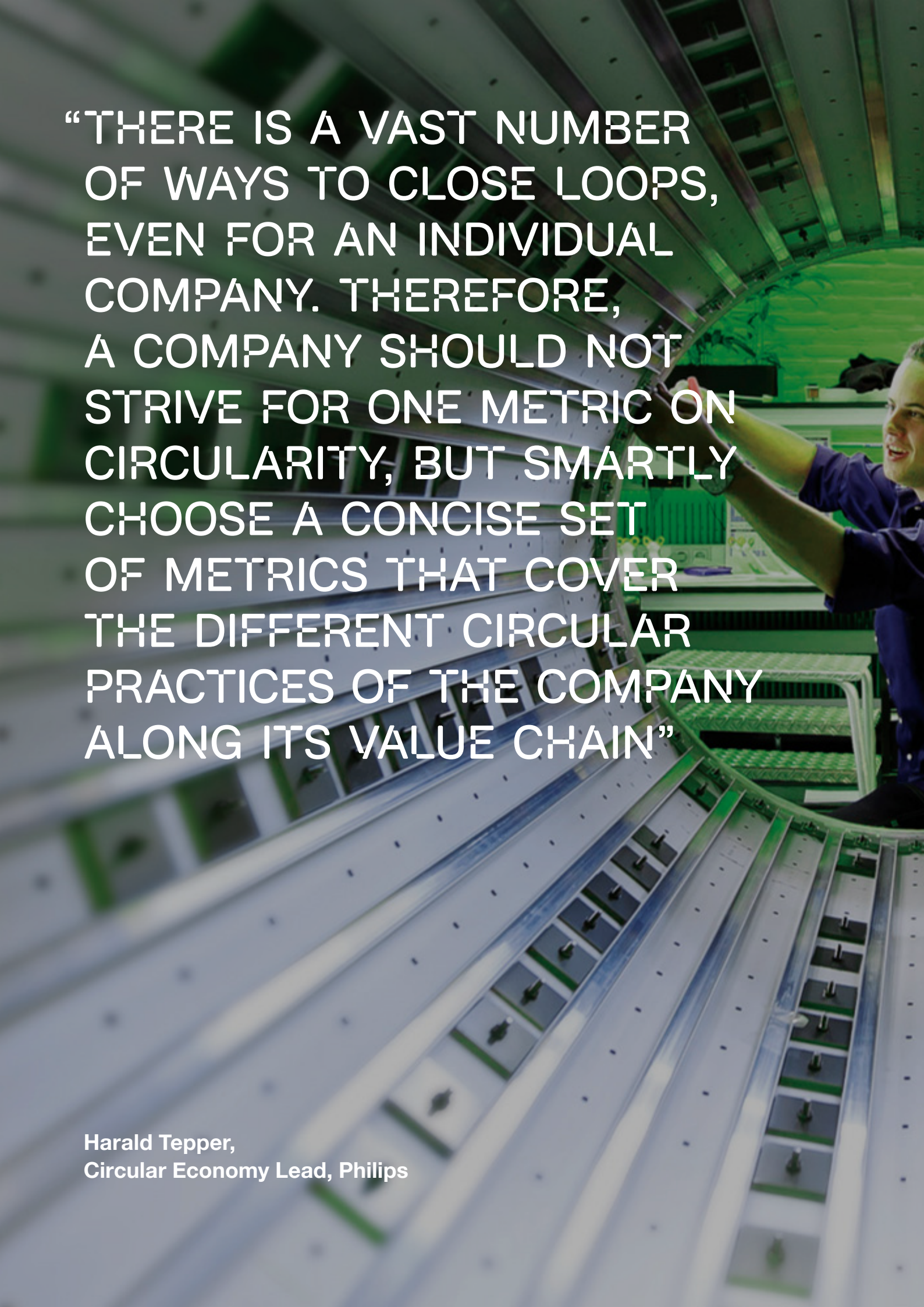
As was seen in the examples of Enel and Philips, placing a strong focus on KPIs and metrics from the beginning is an essential step in a company's journey towards circularity. In addition to setting overall targets for the entire company to work towards, it is equally as important to define and communicate targets that are specific to each business area. Understanding how each individual target ladders up to the broader company objectives is key to actioning a company's circular business model across an organisation.

Both Enel and Philips showcased that **adopting a systematic approach to circularity can allow companies to harness the many environmental and economic benefits** and outcomes that come with clearly defined KPIs, not least of which includes creating economic value with and for stakeholders.

The Corporate circular target-setting guidance was developed thanks to the collaboration of stakeholders from various industries. As Ramona Liberoff, Executive Director at PACE aptly pointed out, the guidance presented is the first step on this journey. Cross industry collaboration and sharing of best practices will continue to be key as momentum towards circular business models continues to build.

"THERE IS A VAST NUMBER OF WAYS TO CLOSE LOOPS, EVEN FOR AN INDIVIDUAL COMPANY. THEREFORE, A COMPANY SHOULD NOT STRIVE FOR ONE METRIC ON CIRCULARITY, BUT SMARTLY CHOOSE A CONCISE SET OF METRICS THAT COVER THE DIFFERENT CIRCULAR PRACTICES OF THE COMPANY ALONG ITS VALUE CHAIN"

Harald Tepper,
Circular Economy Lead, Philips

EXHIBITS

Exhibit 1: CEIC Guidance - Overview KPI visual
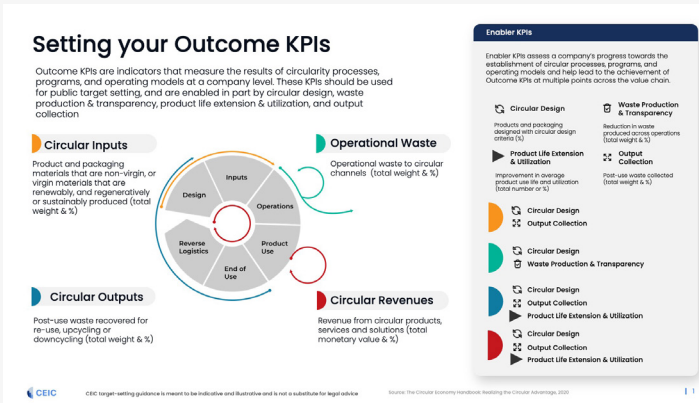
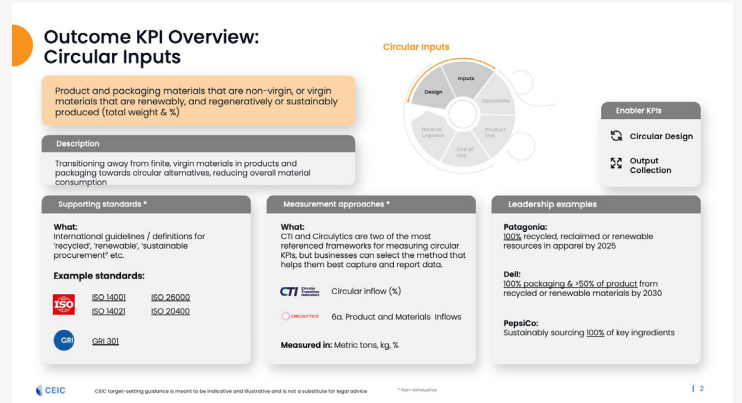## Exhibit 2: CEIC Guidance, Example of Outcome KPI overview (Circular Inputs)

Exhibit 3: CEIC Guidance - Example of Outcome KPI Activation Guides (Circular Inputs)
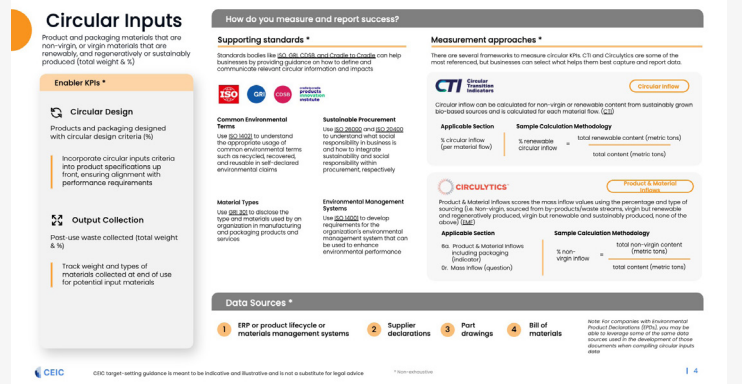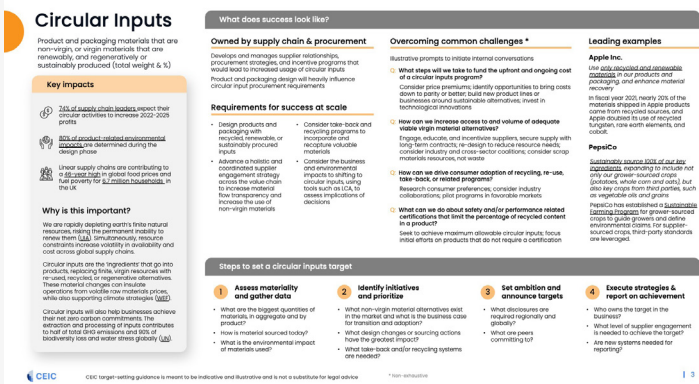
Exhibit 4: CEIC Guidance - Example of Outcome KPI sector-specific considerations (Circular Inputs)
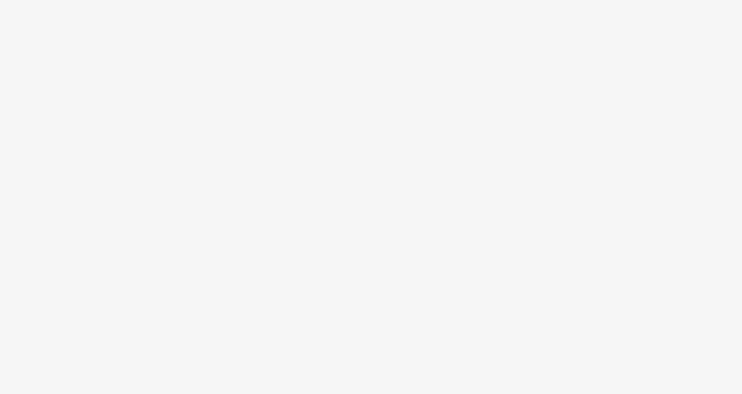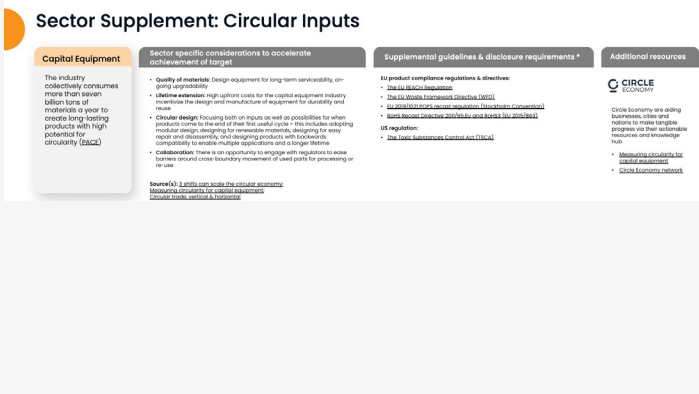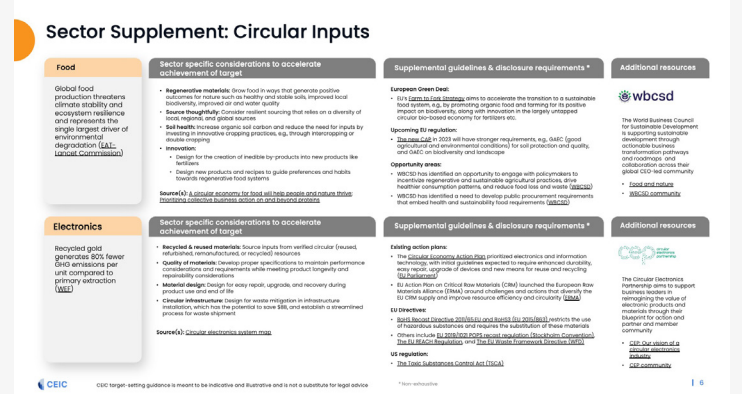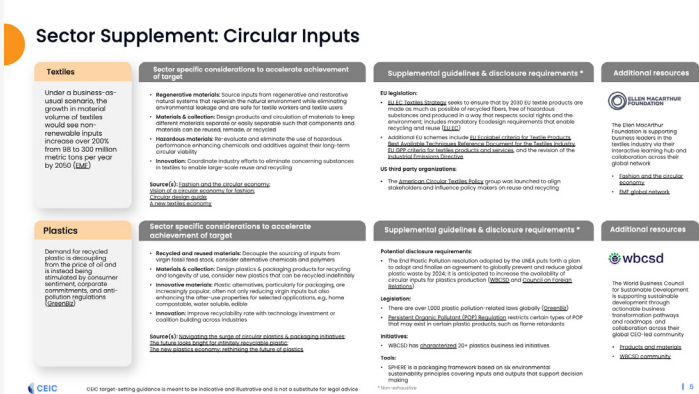
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Paolo Taticchi is Professor in Strategy and Sustainability & School Deputy Director (MBA, Global Engagement, Executive Education) at UCL School of Management.

Highly active in executive education, Paolo has trained thousands of managers and executives of Fortune Global 500 companies; and is a sought-after speaker regularly invited to give keynote talks at world-class academic, governmental and industry events. Paolo's research on corporate sustainability and performance measurement is internationally recognised. Paolo's latest books include "Corporate Sustainability in Practice", which was published in January 2021, and "Sustainable Transformation Strategy", published in June 2023.

Outside of the academy, Paolo has significant consultancy experience in the fields of strategy, education, and sustainability. He has worked in this capacity for firms of various sizes, and in a range of different industries. Today, he advises (or serves in the advisory board) influential organisations and is one of the scientific advisors of the Ministry of Environment and Energy Security in Italy.

He has received numerous awards for the impact of his work. His projects, quotes and opinions have been featured over 350 times in international media outlets. In the last three years, Paolo was indicated by Italian's leading business daily Sole 24 Ore as the most influential Italian under the age of 40.

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Melina is a Research Assistant at UCL School of Management, where she supports various projects focused on business strategy and sustainability, including case studies and white papers. Melina is also a freelance consultant supporting organisations with their marketing and business communications needs, as well as with developing their Sustainability Reports.

In collaboration with Professor Taticchi and Melissa Demartini, Melina co-authored a book titled "Sustainable Transformation Strategy", published in June 2023.

Previously, Melina worked in the Media Sponsorship & Marketing field for 15+ years in Canada, where she collaborated with various Fortune 500 companies and brands to develop strategic partnership marketing initiatives, including several programmes that garnered awards from the Sponsorship Marketing Council of Canada. More recently, Melina worked as a Sustainable Content Marketing Strategist for a UK based consulting agency specialising in the sports and sustainability field.

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**UCL
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Organisations involved in this white paper:

Circular Economy Indicators Coalition
The Circular Economy Indicators Coalition (CEIC), co-hosted by PACE and Circle Economy and supported by Accenture, aims to build on the current metrics landscape to:

1. Increase the use of meaningful circular indicators to measure the progress and impact of the circular economy.
2. Connect key initiatives and stakeholders to facilitate exchange, improve alignment, and bridge critical gaps.

Platform for Accelerating the Circular Economy
PACE is a global collaboration platform for key public and private decision makers to share a vision and best practices and scale the circular economy together. PACE was created in 2018 by the World Economic Forum and is now hosted by the World Resources Institute.

Circle Economy
Circle Economy is a global impact organization with an international team of passionate experts based in Amsterdam. Circle Economy aims to empower businesses, cities and nations with practical and scalable solutions to put the circular economy into action. Their vision is an economic system that ensures the planet and all people can thrive.

Accenture
Accenture is a global professional services company with leading capabilities in digital, cloud and security. Combining unmatched experience and specialized skills across more than 40 industries, we offer Strategy and Consulting, Technology and Operations services and Accenture Song — all powered by the world's largest network of Advanced Technology and Intelligent Operations centers. Our 738,000 people deliver on the promise of technology and human ingenuity every day, serving clients in more than 120 countries. We embrace the power of change to create value and shared success for our clients, people, shareholders, partners and communities. Visit us at www.accenture.com

Enel
Enel is a multinational power company and a leading integrated player in the global power and renewables markets. At a global level, it is the largest renewable private player, the foremost network operator by number of end users and the biggest retail operator by customer base. The Group is the worldwide demand response leader and the largest European utility by ordinary EBITDA [1]. Enel is present in 30 countries worldwide, producing energy with more than 90 GW of total capacity (of which 59 GW is renewable). The Group delivers electricity through a network of more than 2 million kilometers to approximately 73 million end users and brings energy to around 67 million homes and businesses. Moreover, it manages nearly 430,000 public and private EV charging points worldwide, both directly and through interoperability agreements.

[1] Enel's leadership in the different categories is defined by comparison with competitors' FY 2021 data. Publicly owned operators are not included.

Philips
Royal Philips (NYSE: PHG, AEX: PHIA) is a leading health technology company focused on improving people's health and well-being through meaningful innovation. Philips' patient- and people-centric innovation leverages advanced technology and deep clinical and consumer insights to deliver personal health solutions for consumers and professional health solutions for healthcare providers and their patients in the hospital and the home. Headquartered in the Netherlands, the company is a leader in diagnostic imaging, ultrasound, image-guided therapy, monitoring and enterprise informatics, as well as in personal health. Philips generated 2022 sales of EUR 17.8 billion and employs approximately 77,000 employees with sales and services in more than 100 countries. News about Philips can be found at www.philips.com/newscenter.