KPMG

Driving circularity in a multinational

Lessons from PHILIPS

KPMG International

kpmg.com

Contents

01

The circular economy conundrum

There is no single metric to measure and steer on circularity.

1.1 To simultaneously reduce environmental impact and drive sustainable business growth, businesses need a smart set of metrics for circularity

In today's business landscape, companies have started to actively explore avenues to drive sustainable business growth while mitigating their environmental impact. To effectively steer their business towards impactful and measurable change, companies must not only look at new economic models, but also consider implementing supporting frameworks, metrics and targets. This has already become common practice for climate action programs; that is, many companies have quantitative ambitions for the CO_2 (equivalent) emissions along their value chain. By committing to the Science Based Targets initiative (SBTi),[1] companies can demonstrate how their roadmaps align with the 1.5-degree global warming scenario of the Paris Agreement.

While climate action mainly addresses energy and emissions, circular economy programs act on the impact of materials. For circularity, the choice of metrics becomes complicated, for two reasons. Firstly, we have several differing ways to reduce consumption of raw materials. This is best exemplified through the R-ladder that contains a breadth of circular strategies from 'refuse to recycle'.[2] For a diversified business, like many large

[1] https://sciencebasedtargets.org/

[2] Kirchherr, J., Reike, D., Hekkert, M., 2017. Conceptualizing the circular economy: an analysis of 114 definitions. Resour. Conserv. Recycl. 127 https://doi.org/10.1016/j.resconrec.2017.09.005

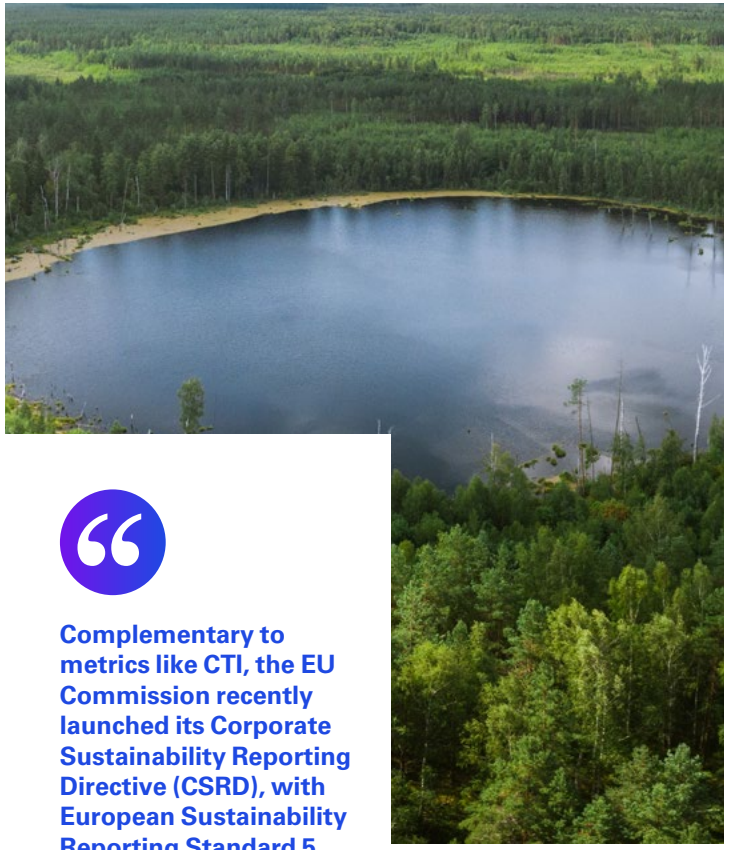
conglomerates, a variety of circular strategies (such as rethink & reuse) might be relevant and mapping them on a single metric is a challenge, or even impossible. Secondly, circular economy action can have substantial impact on various environmental factors, such as climate change,[3] biodiversity loss,[4] pollution,[5] and scarcity of materials.[6] These impacts will often not align, so this also becomes a challenge or even an impossibility to map into one metric.

To effectively steer and report on progress towards a circular economy, large corporates will therefore need sets of metrics. One set of metrics would measure their circular practices mostly for direct steering, and another set would measure the *impact* of those practices on the environment (climate, biodiversity, pollution, and resource scarcity) mostly for setting strategic priorities and for reporting.

1.2 The field of circular metrics is continuously developing, but there is no standard metric yet

The field of circular metrics is in continuous development. To date, no fully agreed standard exists that combines all relevant circular practices (10R). The World Business Council for Sustainable Development (WBCSD) created the Circular Transition Indicators (CTI)[7] to begin to create a common and sector-agnostic framework. Now in its fourth edition, the CTI framework offers valuable insights into a company's material inflow and outflow. However, directly reflecting progress on circular strategies such as dematerialization (through digitalization or low-weight design, for example) and optimizing product use (through upgrades and lifetime extensions, for instance) in the headline metric ('percentage material circularity'), rather than indirectly through operational indicators, has not yet been possible.

Complementary to metrics like CTI, the EU Commission recently launched its Corporate Sustainability Reporting Directive (CSRD),[8] with European Sustainability Reporting Standard 5 (ESRS E5)[9] detailing reporting requirements for resource use and circular economy. ESRS E5 provides guidance regarding metrics closely aligned to frameworks such as CTI and Circulytics, such as total weight of produced products, total amount of recycled content and total amount of waste produced. Recently, WBCSD, in collaboration with the One Planet Network, launched an initiative to create the Global Circularity Protocol,[10] which aims to build a more standardized framework for companies to assess, measure, set science-based targets, report, and disclose progress on resource efficiency and circularity information consistently and comparably.



"Complementary to metrics like CTI, the EU Commission recently launched its Corporate Sustainability Reporting Directive (CSRD), with European Sustainability Reporting Standard 5 (ESRS E5)detailing reporting requirements for resource use and circular economy."

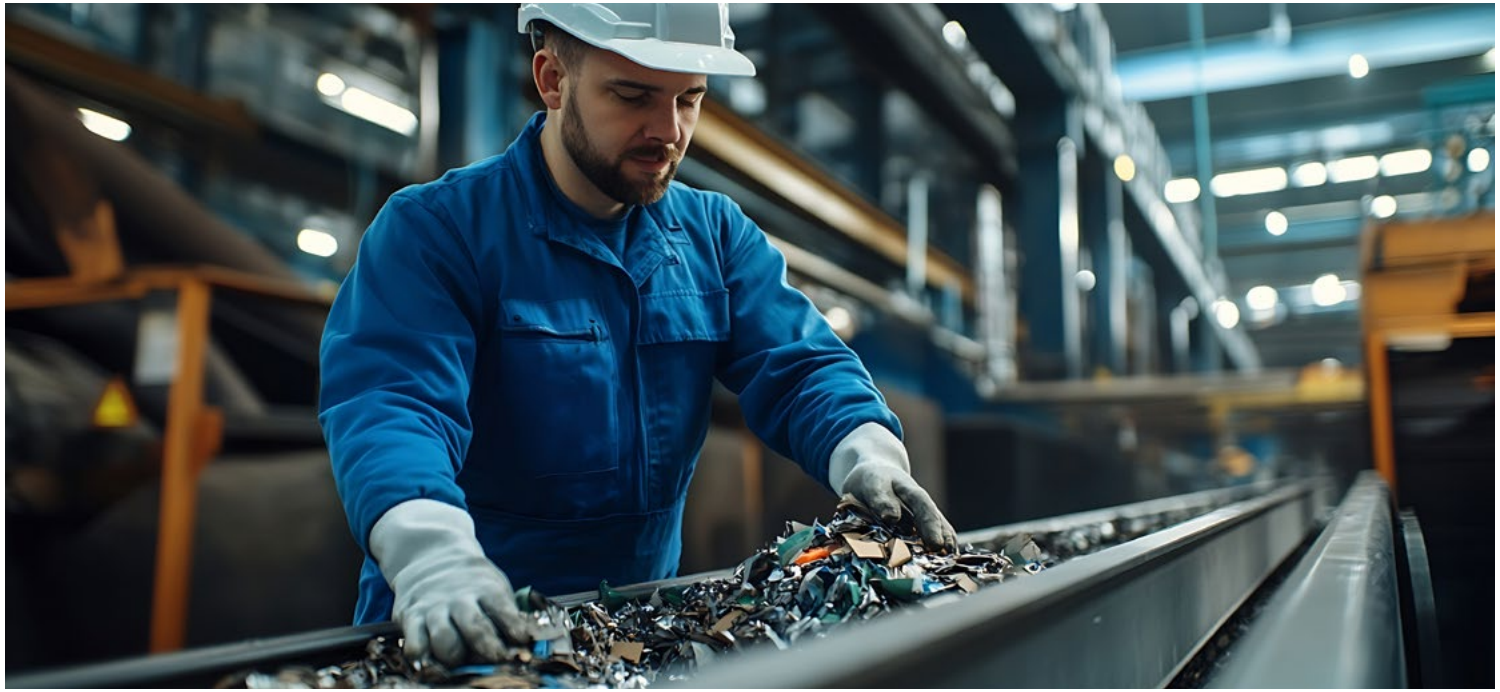
[3] https://www.ellenmacarthurfoundation.org/topics/climate/overview
[4] https://www.weforum.org/agenda/2022/06/study-shows-circular-economy-can-halt-biodiversity-loss/
[5] Circular economy principles: Eliminate waste and pollution (ellenmacarthurfoundation.org)
[6] https://www.oecd.org/cfe/regionaldevelopment/Ekins-2019-Circular-Economy-What-Why-How-Where.pdf
[7] Circular transition indicators - World Business Council for Sustainable Development (WBCSD)
[8] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32022L2464
[9] https://www.efrag.org/Assets/Download?assetUrl=/sites/webpublishing/SiteAssets/Appendix%202.4%20-%20WP%20on%20draft%20ESRS%205.pdf
[10] https://www.wbcsd.org/Pathways/Products-and-Materials/Global-Circularity-Protocol

1.3 Circular revenue represents a financial value-based metric to create one integral view of business progress towards circularity

While perfectly fine and logical to steer a company on a portfolio of metrics, it can help to complement this with *one overarching metric that provides an integral view of (circular) progress for the entire company*. In a large corporate, for example, where assorted business units would carry individual responsibility for varying parts of the product portfolio, as well as distinct go-to-market strategies, different circular-economy practices would become relevant for different business units. If those can get combined into one overarching metric, this can help to unite all business units into one circular strategy, as every contributor gets to feed into the same overall measurement (and target commitment) for the business as a whole, while also still steering their own business with more leading KPIs.

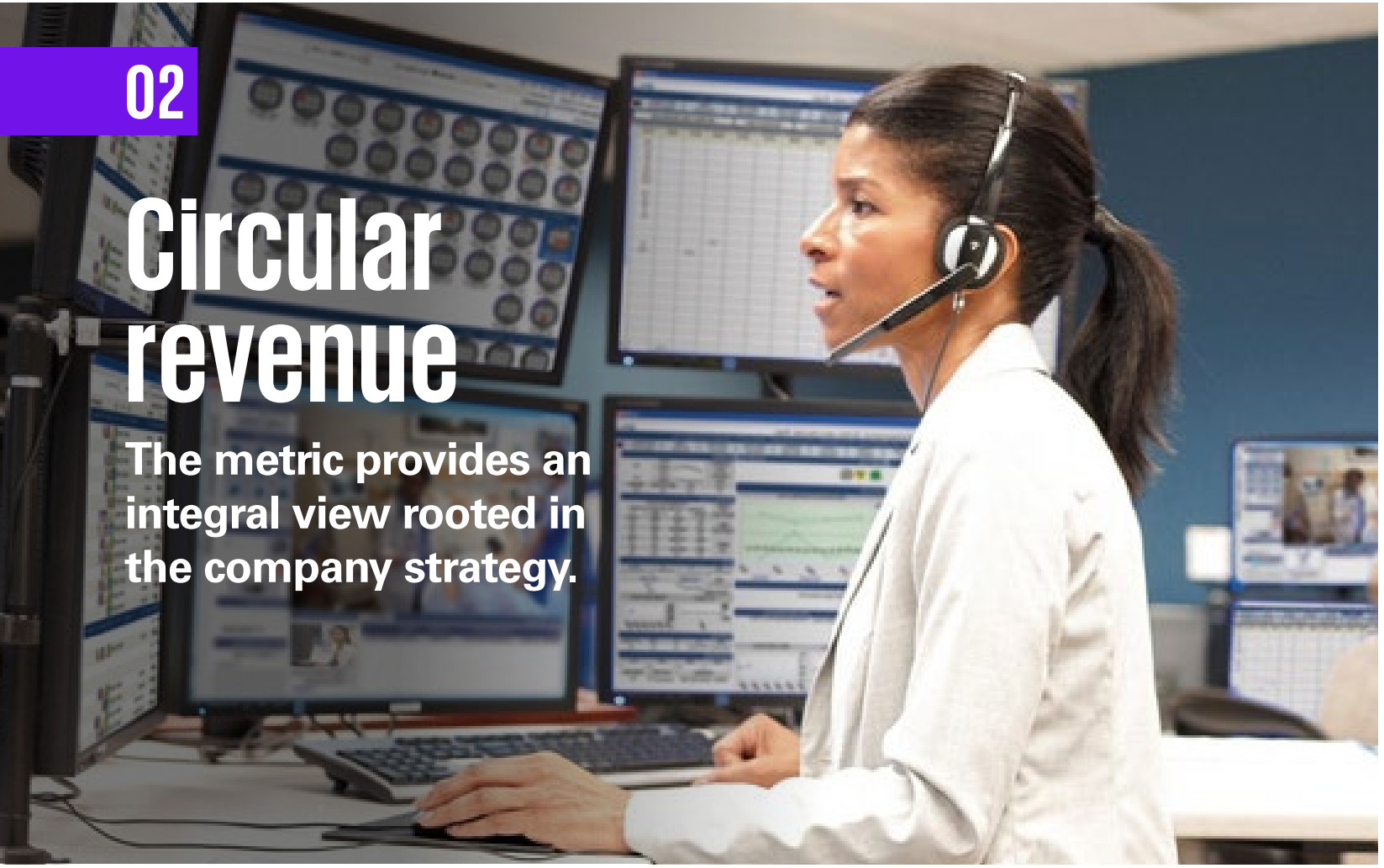
In 2015, when no formal or established circular metrics existed, Philips designed 'circular revenue' as an overarching metric to measure and provide an integral view on its progress to circularity. While Philips currently also measures and reports on material flow indicators relevant also for CSRD reporting, circular revenue still serves its purpose as the one overarching key performance indicator (KPI) that brings all business units together. Philips chose circular revenue deliberately to act as a 'financial value-based' KPI to emphasize the business value of circularity. As such, it helps to exemplify the key driver for circular economy — namely to decouple economic performance from overall resource consumption (that is, 'create more value with less materials'). At Philips, this decoupling was translated into an ambition to help customers do more with less materials through three circularity principles: *use less, use longer, use again*.

Of course, choosing a revenue-based metric also helps to connect to the common language of financial institutes, investors, and others in the sector. The European Taxonomy regulation (EU 2020/852) similarly provides criteria for determining economic activities that can be considered environmentally sustainable. Enel, an energy utility, is an example of a company that has chosen a similar route. Their Economic CirculAbility KPI[11] connects with EBITDA in a value-based metric. Other companies with a circular revenue-based metric include Solvay (chemicals) and Signify (lighting).[12]



[11] https://www.enel.com/company/our-commitment/circular-economy/methodology-economic-circulability

[12] https://www.signify.com/global/sustainability/sustainable-lighting/circular-economy



02

Circular revenue

The metric provides an integral view rooted in the company strategy.

2.1 Start with the why: Circular revenue needs to be anchored in an end-to-end circular strategy

Metrics are a means to an end. They intend to measure and steer upon progress in a direction that an organization wants to go. Since circular revenue can act as an overarching metric on a company's progress on circularity, it needs to be anchored in a circular strategy. To become future-ready as a business in a circular economy, a business should transition to a circular business. To achieve this, a circular strategy with metrics that help a company move towards circular business practices across the value chain is needed.

> **"Since circular revenue can act as an overarching metric on a company's progress on circularity it needs to be anchored in a circular strategy."**

Figure 1: Philips circular economy strategy

In Figure 1, we present the "Philips Circular Strategy" as an example. We believe the main elements would apply to many large corporates. When aiming to optimize the value delivered to your customers and society while decreasing the required amount of materials, we know from experience that design, procurement, manufacturing, delivery, use phase, and eventually takeback and recirculation must also be considered.

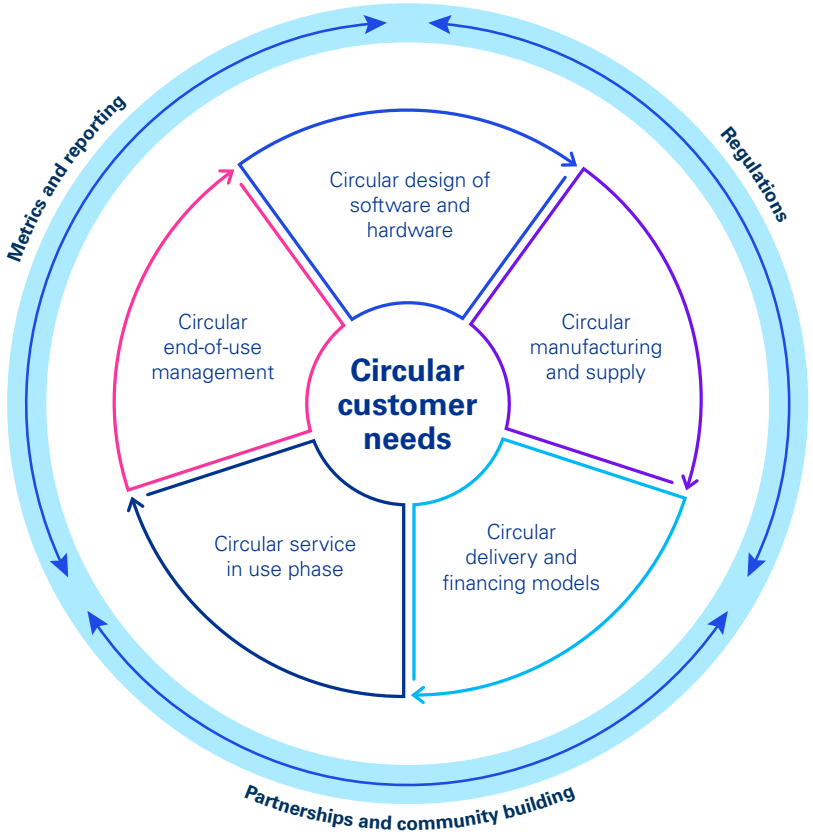


Figure 2: Driving Philips circular economy across five strategic areas — from design to responsible end-of-use

Four out of five circular strategy pillars illustrated in Figure 1 and 2 relate to products and services offered to the market. The second pillar, 'Circular manufacturing and supply', relates to the circularity of the business' own operations. Because circular revenue is meant to relate to products and services that are put to the market, only pillars 1 and 3-5 are included in circular revenue. At Philips, pillar two is monitored by two other KPIs ('Circular materials management' and 'Zero waste to landfill').

Circular design of software and hardware

Designing products to use less materials, use them longer or use again

Circular manufacturing and supply

Preserving material value during manufacturing and partner with our suppliers to deliver circular solutions

Circular delivery and financing models

Delivering innovative business models that can incentivize material efficiency across value chains

Circular service in use phase

Optimizing lifetime value during use

Circular end-of-use management

Ensuring products and parts can be recirculated responsibly after use

2.2 Circular revenue as a framework that can be sharpened over time, based on a solid governance structure

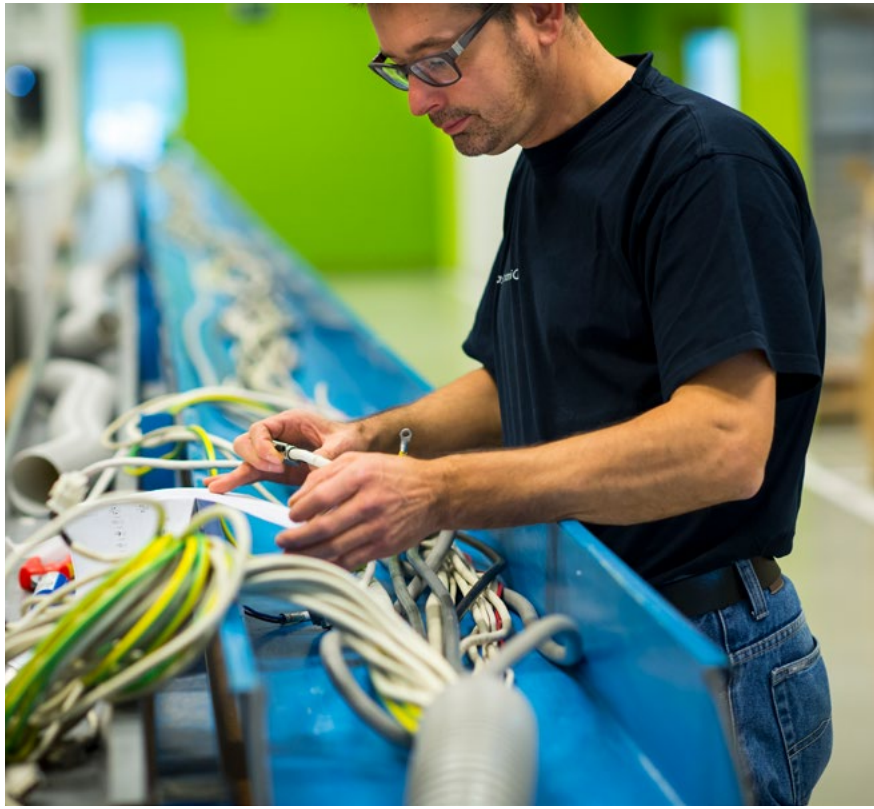
Circular revenue was introduced to measure to what extent Philips' products and services contribute to a circular economy; i.e., help create more value with less materials. In practice, propositions that qualify for the circular revenue metric must comply with the requirements for at least one of the circular-revenue categories. These include, among others, products designed with low weight or with recycled or bio-based plastics (minimum threshold), as-a-service models, software running on cloud, virtual care, upgrades, lifetime extensions, and refurbished equipment. If a product or solution meets those requirements, the revenue generated gets captured and included as circular revenue.

Over time, the metric has evolved in two ways. First, specific requirements (the 'threshold to be included') get refined when the view on sustainability has changed or when certain practices have become the industrial standard. This can mean that certain products or services that were counted as circular revenue in the past no longer qualify in the present. Second, new practices are added; e.g., when new circular models have been developed or when new businesses with other circular practices have been acquired and integrated. The inclusion of software that lowers material footprint demonstrates a recent example.

All requirements and definitions are documented and embedded in processes. Any product or service that an individual business unit deems eligible for circular revenue requires submission with proper evidence and goes through an approval process by the central sustainability group. As circular revenue is part of Philips 2025-ESG commitments, an external auditor examines the progress as reported in the Annual Report with the same rigor as the financial metrics (reasonable assurance).

In 2022, KPMG in the Netherlands supported Philips in the review, update and future proofing of its Circular Revenue framework. This update considered circular frameworks used by other organizations, updates in reporting frameworks such as WBCSD's CTI, and upcoming reporting requirements such as the CSRD.

> **"These include, among others, products designed with low weight with recycled or bio-based plastics (minimum threshold), as-a-service models, software running on cloud, telehealth, upgrades, lifetime extensions, and refurbished equipment. If a product or solution meets those requirements, the revenue generated gets captured and included as circular revenue."**



03

Circular revenue across the value chain

From design and delivery, to product use to end of use.

3.1 Each of the four categories include requirements on what qualifies as circular

As mentioned, four out of the five pillars of Philips' circular economy strategy relate to products or services that are brought to market, and hence can be associated with a revenue contribution. These four pillars represent categories that cover the entire value chain — from design and delivery to product use to end of use. For each category, detailed requirements are defined to determine which products or services qualify (or do not qualify). (See section 2.2).

In the sections below, we provide examples about circular revenue contributions for which qualified products and services have been defined. Although the examples are specific to Philips, we believe any company could perform a similar assessment: what strategic pillars are relevant for your company based on their position in the value chain. For a manufacturer, the pillars in Figure 1 should be quite universal. For a recycler or service provider, however, the end-of-use category would be most relevant, and others less. Conversely, for a materials or parts provider, the front-end of the value chain would be most relevant. Within each category, you can then start to identify products or services that stand out in their contribution to circularity.

3.2 Circular revenue in practice: design of software and hardware

For both software and hardware, the way a product gets designed can qualify it for circular revenue. Examples of circular design requirements include design with sustainable materials, design with low weight, and design for recycling. A product becomes eligible for circular revenue if it stands out with a significant improvement in terms of meeting set thresholds and/or compared to a predecessor product or industry standard. When a product meets this threshold, the full revenue from the product's sales is included as circular revenue. Continuous improvement is achieved by frequently raising the bar on the thresholds, in line with external developments and best practices.

A Philips example is the Incisive CT (Computed Tomography) Platform designed to weigh up to 24 percent less compared to its predecessor product thereby avoiding 720kg of additional material per system.

3.3 Circular revenue in practice: delivery and financing models

New models to deliver and finance products and/or services to the customer can also help drive circularity, such as rentals and leases, or delivering products as-a-service. These models can contribute to circularity by helping to incentivise material efficiency across the value chain. For example, the manufacturer can implement a system where products get returned to them at end-of-use, and/or where the utilization of products delivered to the customer is optimized, creating more value with the same or less material. The revenue from this type of business model counts as circular.

Other delivery and financing models to consider include digital solutions that drive dematerialization, which help to further reduce use of virgin materials. Consider software that runs in the cloud. This uses significantly less resources compared to running IT hardware on customer premises. Think about virtual care offerings (specific to the medical sector, of course) which can help bring care to remote places or enable remote collaboration with virtual experts that supports workflow efficiency improvements and better patient outcomes — all of which help increase resource efficiency. The revenue from these alternate models count as circular revenue.

A Philips example of as-a-service products is Enterprise Monitoring as a Service (eMaaS).[13] An example of dematerialization by digitization is the eICU program. Patients who received their ICU care from a hospital that utilized eICU were 16 percent more likely to survive hospitalizaiton and be discharged from the hospital 15 percent faster.[14]

[13] https://www.usa.philips.com/healthcare/clinical-solutions/monitoringasaservice

[14] Lilly study from 2014- eICU system.

3.4 Circular revenue in practice: service in use phase

The circular economy is not only about 'closing loops'. In fact, one of the most impactful circular strategies aims to help customers optimize the use of their products. This often gets overlooked in circular measurement systems and national target setting, which is why a circular economy is still too often equated with a 'recycling economy'. For example, in this category, companies can offer customers to extend the lifetime of their products and/or upgrade the products to the latest technology 'on site'. The revenue of such services can count as circular revenue.

An example from Philips concerns the MR SmartPath portfolio that helps customers reuse their existing magnets and convert these to the next generation of MR, while software upgrades like SmartSpeed can scan up to three times faster[15] while reducing power consumption on average by 32 percent per patient scan while still using the same equipment.[16] Note: Philips has deliberately decided not to include the revenue of regular maintenance services for medical equipment as part of circular revenue, since maintenance services are standard practice in the healthcare sector.

3.5 Circular revenue in practice: end-of-use management

Manufacturers of large equipment can choose to take back the equipment from its customers at the end of the use cycle, either as a trade-in or as part of a service at customer request. This is a key action a manufacturer can take to 'close loops' and take responsible care at the end of use of a product. Equipment coming back to the manufacturer can, where feasible, be made available for refurbishment and/or parts recovery, or locally recycled in a certified way to ensure it does not end up in landfill. Systems that are refurbished can be brought back to the market. The revenue from the sales of refurbished systems then counts as circular revenue. Harvested parts can where possible be reused in maintenance services. Although this generally does not create direct revenue, a circular revenue contribution can be calculated by taking the relative contribution of reused material cost versus total cost of material and labor as part of the total maintenance revenue.

A Philips example in this category is the Circular Edition products portfolio, which offers 'as good as new' refurbished imaging systems across MR, CT, ultrasound imaging and Image Guided Therapy (IGT), with the same quality standards, warranty and services as with new systems. In 2023, Philips reused 79 percent of material weight from returned MR, CT, Mobile Surgery and Image Guided Therapy systems during refurbishment, thereby reducing the need for 400 tonnes of additional materials.[17]

"Philips has a commitment to take back electrical (i.e., medical) equipment from its customer at the end of the use cycle, either as a trade-in or as part of a service at customer request. This is a key action a manufacturer can take to 'close loops' and take responsible care at the end of use of a product."

[15] Compared to Philips SENSE

[16] Applicable to MR 5300 and Ambition S. Philips SmartSpeed power consumption versus Philips SENSE based scanning. Based on COCIR and in-house simulated environment. Results can vary based on site condition.

[17] Based on the average weight re-use percentage per system for Philips MR, CT, Mobile Surgery and Image Guided Therapy refurbished systems in 2023. Results may vary based on amount, type, mix and age of returned systems.

04

Looking back and forward

Circular revenue can aid corporate steering on circularity and serve as partial input for the CSRD; four steps can help companies start their journey.

4.1 Circular revenue can steer companies to circularity with one overarching framework, to which different parts of the company can contribute

As an overarching framework, circular revenue can significantly impact steering on circularity in the organization with its three differentiating characteristics.

Overarching

Circular revenue seeks to provide one comprehensive framework that covers all business practices and recognizes their contribution to circularity. It thereby provides a pragmatic way to bundle vastly different practices (from design, business models, to takeback) without aiming to sum up their environmental contributions. This approach is complementary to other frameworks, like CTI (that adds up different practices mostly from a material-flow perspective).

Drives internal change

By measuring one indicator across the organization, circular revenue can help to drive internal change by providing a clear framework on how to compare circular impact across the company from a perspective of relative revenue contributions. The metric clarifies to business divisions how their circularity efforts compare to each other, including identifying the frontrunners. It enables (parts of) the business to take ownership of their impact by, for example, creating roadmaps and planning on implementation strategies.

Language of business

Circular revenue measures circularity through the lens of revenue, which represents a financial language already known and understood by the business while also helping to create alignment with other entities. This choice of language also helps track the success of achieving sustainable growth.

4.2 Circular revenue in the context of CSRD-ESRS E5

Companies can view circular revenue as one of the multiple metrics and further components necessary to drive a business to circularity and to report on its impact. As explored in chapter 1, a range of methods can reduce consumption of raw materials; circularity can further impact various planetary outcomes (climate, biodiversity, pollution, and resource scarcity). As such, it currently remains unlikely that just one metric to report on all progress and impact will ultimately emerge.

This need for a set of metrics (rather than one) is reflected in the CSRD and its relevant ESRS. We see that the standard ESRS E5 (regarding resource use and circular economy) comprises six different disclosure requirements. ESRS E5-4 and ESRS E5-5 mostly concentrate on material flows, and require disclosure on the amount or percentage of reused, recycled, and renewable inflow, as well as specifics about material outflow.

It is clear that companies need to measure and report on all relevant material flow metrics separately. Circular revenue is primarily a steering metric that helps companies move the entire organization in one overarching direction. As such, companies can use it as input for ESRS E5-2 and ESRS ES-3, as well as support to steer progress in the direction of the specific requirements of ESRS E5-4 and E5-5. Correspondingly, Philips uses circular revenue as a steering mechanism for businesses to sell, for example, more refurbished products. In parallel, based on the amount of reused parts in the refurbished products, Philips measures the impact on the total amount of non-virgin material that it puts on the market annually, and reports on that metric as well, in the context of the CSRD.

4.3 Four steps can help corporations to start their journey to measure and steer circularity

Steering on circularity requires a good set of metrics that (a) encompass the most impactful circular practices in the organization, (b) provide clear and actionable guidance for all stakeholders across the organization, and (c) cover the relevant outcome and impact parameters required by reporting standards.

As discussed in this paper, circular revenue can act as a helpful and even powerful steering element in such a set of metrics.

But how do you start as an organization that is just entering the journey towards circularity? Measurement is only one element of it. Your defined measurements need to be rooted in a clear strategy, and need to be complemented by comprehensive roadmaps to help turn ideas into tangible — and measurable — action.

> **“While ESRS E5-4 and ESRS E5-5 mostly concentrate on material flows, and require disclosure on the amount or percentage of reused, recycled, and renewable inflow, as well as specifics about material outflow, ESRS E5-2 and ESRS E5-3 command more entity-specific disclosures such as measurable company targets, strategies and roadmaps.”**

Figure 3: identified four learnings, that can prove helpful for other organizations on this important journey.

Strategy and framework

Set the strategy for circularity (focus business areas, priority interventions to reduce environmental impact) and develop the supporting framework for the strategy, based on the conditions in place such as which metrics and target year are chosen. Here, a company should:

a. Formulate a strategy and scope needs (of both internal and external stakeholders)
b. Develop a framework

Key lesson learned: The framework could be a logical representation of how the business is structured (e.g., in line with business divisions), but does not have to be. Given the systemic nature of circular economy, it is important to take an end-to-end view along the value chain.

Identify metrics and targets

a. Explore solutions (potential metrics and frameworks) for measurement and target-setting
b. Review data availability
c. Select the right and feasible metrics for each element of the strategic frameworks or both (most probably a mix)
d. Set ambitious yet achievable targets on those metrics
e. Secure team capacity

Key lesson learned: Involve all relevant business leaders in understanding the situation on circularity, identifying initiatives that will improve the target, identifying additional levers to increase circularity, and looking at how to encourage or incentivize behaviour for circularity within their business.

Collect data and measure

Start with the first data collection and analysis for implementation.

a. Collect data
b. Calculate and analyse
c. Set up a rigorous and regular performance management cadence with the relevant decision makers across the organization
d. Translate findings into action/business decisions

Key lesson learned: Implement with the end goal in mind: use circular data as a tool for steering on circularity. With every step in data collection and analysis, identify opportunities to translate this into concrete actions with or for the business leaders. As part of the performance management cadence, this should be implemented as a closed PDCA (plan-do-check-act) cycle. Keep in mind the operating model that carries the data flow and framework. This includes gaining a very clear understanding of who is responsible for which part of the data collection, where the data is stored, who reviews and evaluates the quality, and who performs controls via a four-eye principle to ensure auditability.

Evaluate and monitor

Determine the suitability of the framework to achieve its intended impacts.

a. Understand what information your stakeholders are wanting to know about your disclosures
b. Monitor over time to evaluate whether the framework has the desired effect
c. Work with the business to evaluate whether changes are needed to improve and/or enhance the framework

Key lesson learned: Put monitoring systems in place to enable timely evaluation, keeping in mind that the engagement of the business is a continuous process. Obtain feedback from employees across relevant divisions of the business, and on each level, and encourage the business leaders to do the same, to drive effective behavioural change.

For more resources about how to implement a new framework for a business, see KPMG's collection of insights on ESG strategy, transformation and implementation.

For more information about Philips's Circular Strategy and measurements, please visit: https://www.philips.com/a-w/about/environmental-social-governance/environmental/circular-economy.html

Want to learn more?

KPMG

Arnoud Walrecht
Circular Economy Global Lead
KPMG International
walrecht.arnoud@kpmg.nl

Carlijn van Dam
Manager
KPMG in the UK
carlijn.vandam@kpmg.co.uk

Helena de Boer
Senior Consultant
KPMG in the Netherlands
deboer.helena@kpmg.nl

Philips

Harald Tepper
Head of Philips Circular Economy,
EcoDesign & ESG Transformation

Sophie Thornander
Program Director for Circular Economy,
EcoDesign & ESG Transformation

Anthony Salvatoriello
Manager for Circular Economy,
EcoDesign & ESG Transformation

philips.sustainability@philips.com

This paper has been finalized in August 2024. Any developments that have led to updates to the case study described have not been covered in this paper.

kpmg.com

Designed by Evalueserve.
Publication name: Driving circularity in a multinational
Publication number: 139484-G
Publication date: September 2024