

A young child with a joyful expression is the central focus, holding a vibrant, multi-colored light stick high in the air. The child is wearing a light-colored t-shirt with a floral pattern. The background is a dark night scene filled with out-of-focus, colorful bokeh lights in shades of blue, green, and orange, suggesting a festive or outdoor event. In the top left corner, there is a white rounded rectangle containing the Philips logo, and a dark blue rounded rectangle below it containing the text 'Circular economy'. At the bottom, the words 'Circular Lighting' are written in a large, white, sans-serif font, with 'Lighting' being significantly larger than 'Circular'. Below this, the phrase 'Sustainability & beyond' is written in a smaller, white, sans-serif font.

PHILIPS

Circular economy

Circular
Lighting

Sustainability & beyond

“One day soon,
a circular economy
will be business
as usual.”

Bart Goetzee, Head of circular economy program, Royal Philips

The time is **now**

Employees and stakeholders—everyone has a part to play.

The true benefits of a circular economy will be made possible by each and every one of us—Philips employees and stakeholders—by embracing the opportunity it presents for a new way of working and doing business.

By becoming circular economy entrepreneurs, everyone who works with or for Philips can contribute their individual skills and develop new ones to make the circular economy a reality.

Philips has started the move to a circular economy.

Commit, collaborate, and join the journey to rethinking the future.



**“Change your
perspective and
you create new
opportunities”**

Thomas Rau, Turntoo.

The global trends that make a circular economy a business necessity for now and the future

Challenges

Resource availability and pricing

We are at the end of the era of cheap oil and materials. A lack of fossil fuels and finite natural resources across the spectrum, coupled with an increased consumer demand, results in challenges to manage our commodities. Simply using less is no longer enough. And with this, increased resource price volatility dampens economic growth, discouraging businesses from taking resource-related risks.



Increase of middle-class consumers

The world has experienced two great expansions of the middle class since 1800 and we are living through the third. In Asia alone, 525 million people can already count themselves as middle class; more than the total population of the European Union*. Over the next two decades, it is estimated that the middle class will expand by another three billion people, coming almost exclusively from the emerging world, driving demand and, ultimately, waste.

* Source: Ernst & Young, 2014, Driving growth - Middle class growth in emerging markets



Big data

The emergence of big data has shifted the manner and scale in which problems can be solved, providing deeper market knowledge and increasing consumer-focused solutions. It also offers the intelligence of knowing where things are within the economy, what they are made from and what status they are in, making refining and optimizing possible, and enabling additive rather than subtractive manufacturing.

Changing legislation and governance

More and more companies are responding to new, sharper legislation and governance models by introducing innovative designs for their products. These are increasingly inspired and triggered by topics which were previously seen as challenges, such as toxicity levels in different materials or landfill

Opportunities



Changing models of consumer consumption

We have seen the emergence of a different type of consumer, who is interested in different ownership and business models, characterized by phenomena such as Airbnb, Zipcar and Spotify. These consumers are more driven by access and performance than by ownership. Services and not goods are helping to redefine the relationship between objects and consumers.



Moving from transaction to relationship

The multi-channel world has also led to new levels of engagement and connectivity with consumers looking for relationships with brands that go beyond the transactional.

Online interaction via Facebook, Twitter, YouTube and brand websites is a growing global phenomenon that will be the new path to relationships for both empowered customers and companies.

Companies such as Dell and Starbucks help turn consumer ideas into reality by using online platforms to generate ideas. Airline company KLM maintains a constant Twitter dialogue with its consumers, providing 24/7 service in ten languages.





Our vision is to make the world healthier and more sustainable **through meaningful innovation**

As part of this commitment, we have been applying some of the principles of circular economy. Philips has operated refurbishment and recycling programs for over 25 years.

The immediate business case for fast-tracking the move to a circular economy and closing the materials loop became vitally clear after Philips and the Ellen MacArthur Foundation shared their common vision for a resource-efficient and, ultimately, regenerative circular economy.

“For a sustainable world, the transition from a linear to a circular economy is essential. A circular economy aims to decouple economic growth from the use of natural resources by using these resources more effectively.

As a leader in innovation, we have long believed in an approach which integrates systems thinking and looks beyond the linear ‘take, make, dispose’ model to a circular model of regenerative product design, new business models, reverse logistics and enabling communication technologies.

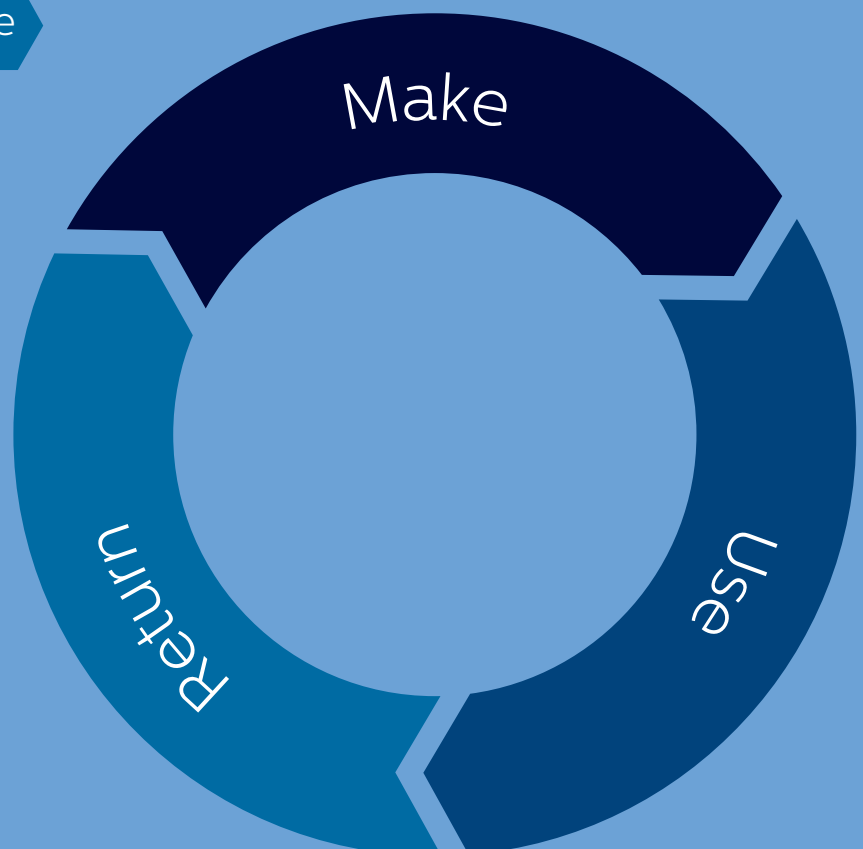
By definition, a circular economy is a driver for innovation in the areas of material, component and product reuse, as well as new business models such as solutions and services. In a circular economy, the more effective use of materials enables to create more value, both by cost savings and by developing new markets or growing existing ones.”

Frans van Houten, CEO, Royal Philips

The linear economy



The circular economy



The closed loops of a circular economy for Philips

Inspired by the interactive system diagram*, applying the principles of a circular economy throughout Philips means reconsidering every element of our design, manufacture and supply process, while aiming for maximum use of renewable energy.

For our business, we see the move from linear to circular in four returning loops:



Service

Selling a service, not a product; maintenance and repair agreements; service support; technology upgrades to extend the life and make re-use possible.



Refurbish

Replacing or repairing major components in existing products.



Parts harvesting

Recovering components from existing products to create new or repurposed products.



Recycle

Recovering valuable materials from waste to be reused in new products.

The four enablers for a circular economy



Business models

Attractive value propositions that will enable an optimal capture of the economic opportunities of a circular economy—for example through further emphasis on access over ownership.



Design

Designs that enable multiple lifecycles with minimal loss of value, quality and energy impact, and that can also be mined for materials and components that can be reused.



Collaboration

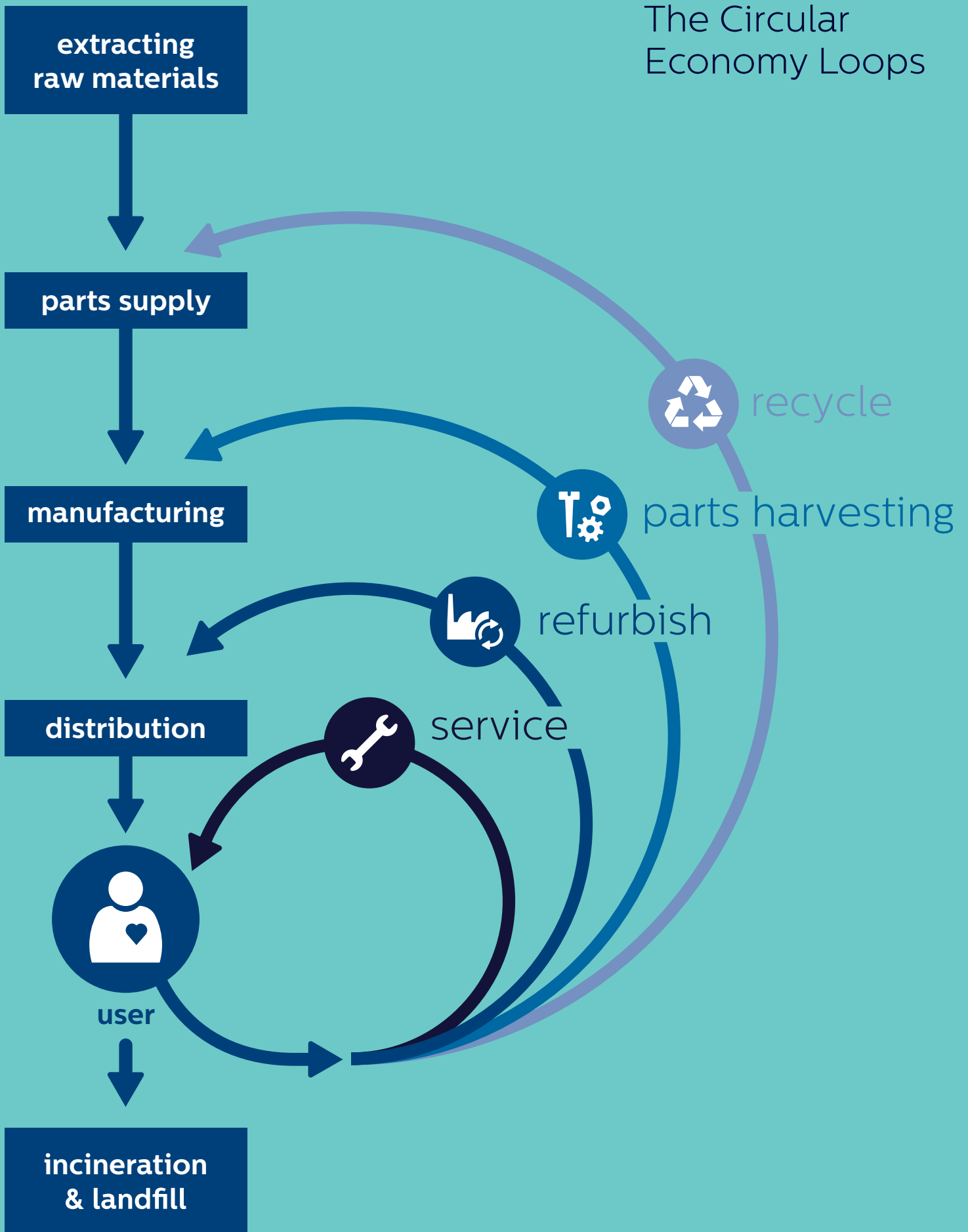
Cross-value chain and cross-sector collaboration is essential. Networks and knowledge-sharing schemes that facilitate the large-scale establishment of a circular economy, as well as policy mechanisms that enable their creation need to be implemented.



Reverse logistics

All operations related to the recovery and reuse of products and materials. Essentially the strategies, processes and infrastructure to enable the cost-effective collection, treatment and redeployment into the market of products, components and materials at high quality and high volume.

The Circular Economy Loops



Circular Lighting

A partnership beyond sustainability

Ever since we started using lighting, we have used it in the same way: we purchase lamps and light fittings we find attractive or functional, and when we no longer need them we get rid of them. But why don't we continue to reflect on the way we use our light? Because things could be different. And much more sustainable. Philips is convinced of the circular economy principle and is therefore changing the way we use light. Introducing Circular Lighting.

Circular Lighting

Circular Lighting not only changes our light consumption—it also breaks away from the traditional way of doing business. Use, not ownership, is now the key element. You no longer need to purchase products which provide light, merely the light itself. This revolutionary way of doing business has

great benefits: you don't invest in equipment, you just purchase light. Philips takes care of the management, maintenance and innovation, so there's no need to worry. Management includes the entire financial process, and it's ideal that it's backed by a reliable partner. Circular Lighting also means

the maximum re-use of equipment and the greatest possible conservation of resources. And by implementing the most innovative technology, you can benefit from huge savings right away.



Use light

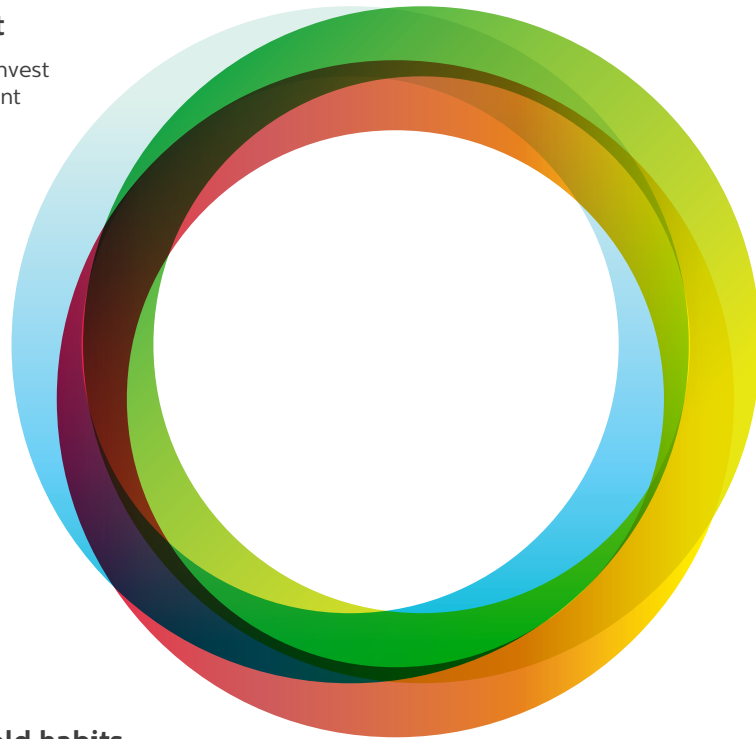
and don't invest
in equipment

Have no worries

about your infrastructure,
Philips is your partner,
supporting and innovating

Latest technologies

enable opportunities for savings
and innovation



Be assured

of maximal waste reduction
and the most effective use of
raw materials possible

Break with old habits

when doing business, thanks to
the unique business model used by Philips

Philips has pioneered lighting performance contracts that create a unique value proposition in the market and employ circular economy principles.

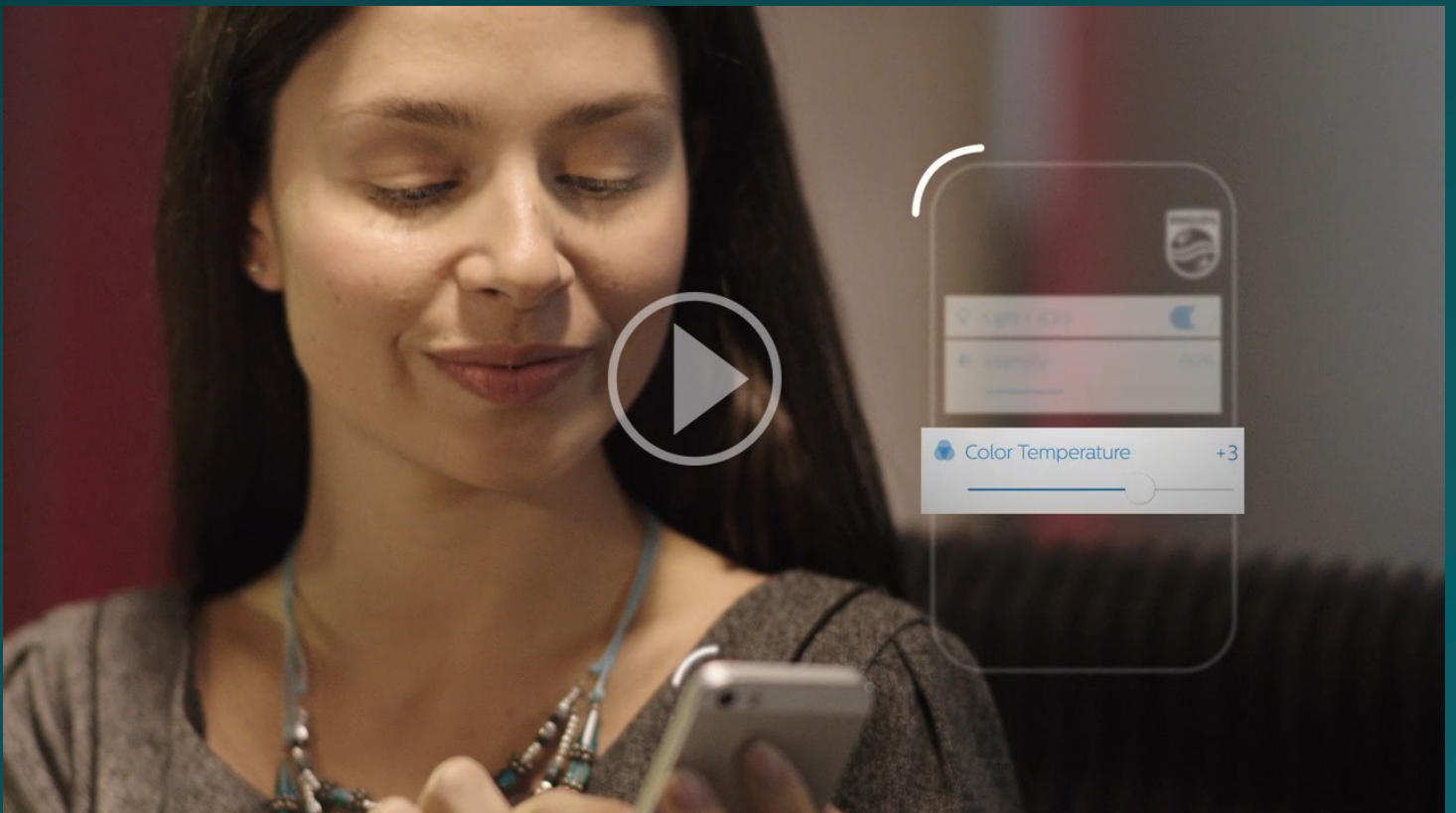
By shifting from 'one-time sale' to 'Circular Lighting,' Philips retains ownership of the materials. Similarly, managed services extend the lifetime and performance of products. This allows the customer to take full advantage of the newest LED lighting solutions, increase energy efficiency and reduce operational costs.

Exploring possibilities from a second-hand market enables Philips to capture new

value from used parts and luminaires and co-creation with like-minded companies creates a platform for innovation. And, at the end of the service period, lighting products can be returned to the production process and gain a new life in the refurbish, parts harvesting or recycle loop.

Sustainability

Circular Lighting is all about the latest **technology, performance & services**



Dynamic & connected lighting

Smart systems for optimal usage and personal preferences

High performance, best-in-class products

Only quality can live for life

High-level services

Turnkey projects and continuous operation and improvement



Circular Lighting **High-level services**

- 10 year full warranty on services: a complete working lighting solution which guarantees light levels, functionalities and esthetics
- Project management on the full process, from design to delivery, by Philips experts: audit, design, installation, delivery and maintenance
- Installation and deployment of the solution
- User training on location at delivery
- Yearly system health check combined with upgrading and optimization advice
- Remote and on-site support during the contract
- Reverse Logistics services at end-of-life



Philips Circular Lighting explained

The four enablers for a circular economy are applied, leading to rethinking the way Philips offers lighting solutions.



New business model

Unique partnership and contract terms apply on an innovative and fundamentally changed service model



Reverse logistics

Philips Lighting applies the circular economy principles for end-of-life lighting systems and products.



Design

Smart and sustainable products caring about the future and after end-of-life



Collaboration

Effective cross-chain and cross-sector collaboration are imperative for the large-scale establishment of a circular system





New business model



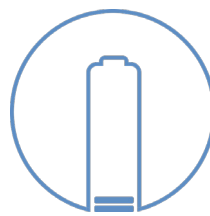
Philips keeps responsibility

- Flexible financing solutions, no Capex needed
- Ownership is not transferred to customer
- Philips is responsible for performance during the contract term
- Customer has the flexibility to upgrade the system



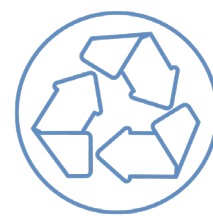
Hassle-free lighting performance

- Turnkey solution including audit, design, consulting, commissioning, maintenance and operation



Maximum sustainability

- Increased energy efficiency (reduced CO₂)
- Increased material efficiency (lower waste thanks to circular economy)



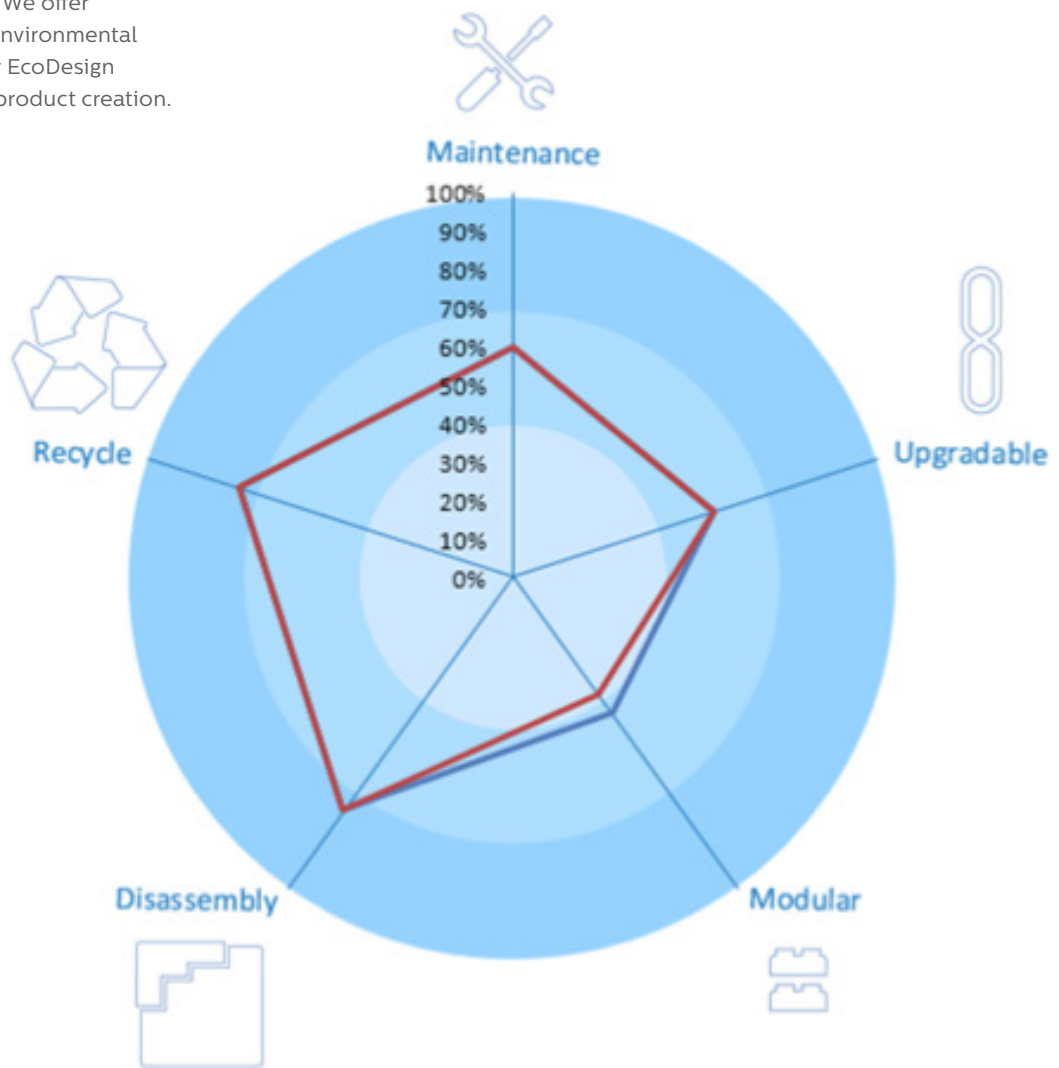
End-of-life contract options:

- Extension of the contract (upgrade or lifetime extension)



Design for circular economy

By closely applying the principles of the circular economy, we aim to reuse raw materials wherever possible. We offer products that have a better environmental performance by applying our EcoDesign procedures to all aspects of product creation.



Circular Economy Scorecard

	Service		Remake		Recovery	Weighted total
	Maintenance	Upgradable	Modular	Disassembly	Recycle	
Product 2	50%	65%	44%	25%	81%	51%
Product 2	58%		34%		38%	64%
Product 2	70%	65%	58%	75%		
	68%		67%			



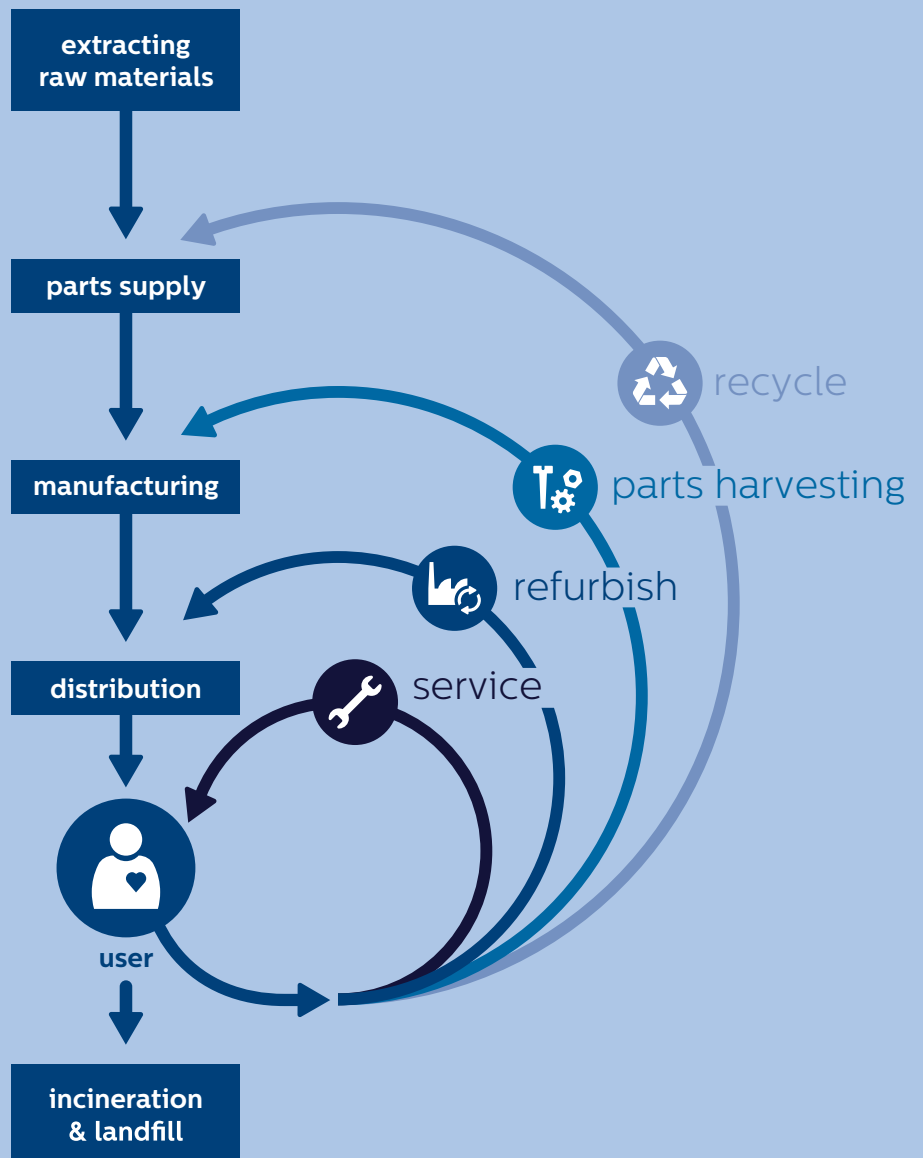
Reverse logistics

Philips Lighting applies the circular economy principles for end-of-life lighting systems and products.

During contract term, Philips investigates ways of adapting circular economic loops to the lighting hardware.

It will take some years to fully implement these in all products and processes.

Philips is looking for partners who support this project to act as early innovators and launching customers.





Collaboration

Effective cross-chain and cross-sector collaboration are imperative for the large-scale establishment of a circular system

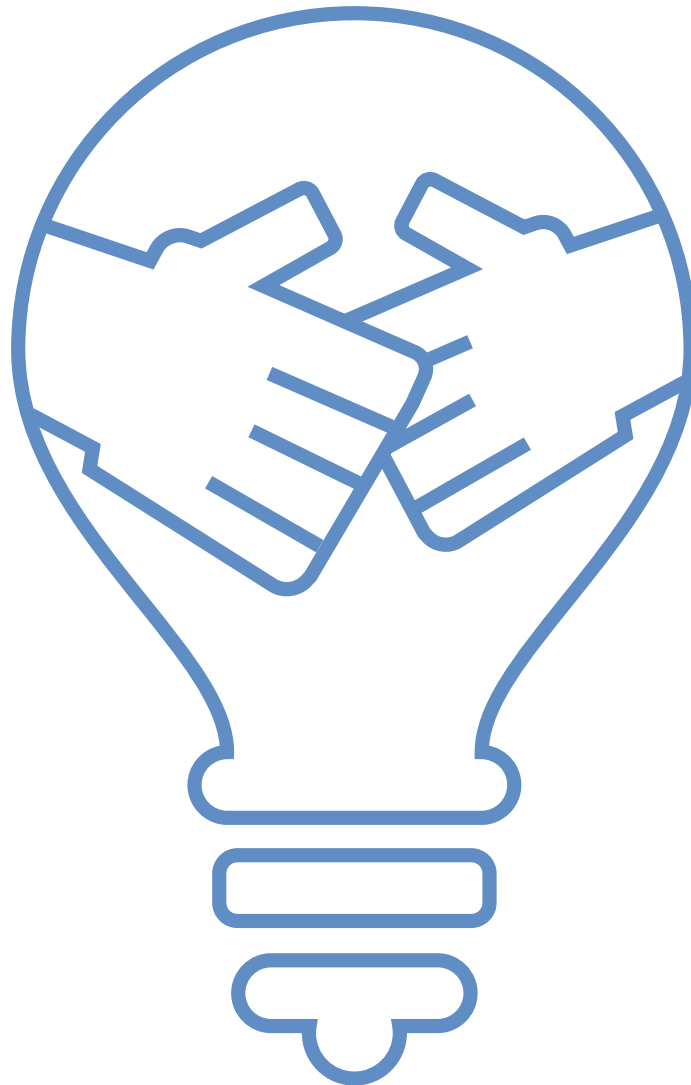
One of the key factors in making a circular model work is collaboration between several parties involved. First of all, the relationship between our customers and Philips changes dramatically—we become partners in delivering the best lighting solution while creating a more sustainable world. At the

same time, in order to deliver a continuous lighting solution and products for the entire contract lifecycle, Philips needs to collaborate with a number of partners. Philips works with technical and installation partners, architects and technical designers at the customer's site, and with suppliers and manufacturers in the

supply chain. Turntoo helps us find solutions for challenges we face in delivering a Circular Lighting solution to the market while our other collaboration partners spread the word and inspire us to walk the extra mile to create a more sustainable world and improve people's lives.



Philips as a unique **Circular Lighting Partner**



Innovating together for a more sustainable world

Philips wants to establish partnerships based on innovating lighting solutions and the circular business model. The result of this partnership should be the ultimate win-win situation for customers and the environment, delivering:

Ecological savings

- Lower energy consumption
- CO₂ reduction
- Increased material efficiency
- No waste on raw materials

Financial benefits

- No initial investment
- Annual savings on energy costs
- Reliable lighting performance
- Hassle-free lighting solution



**A partnership
beyond sustainability**

