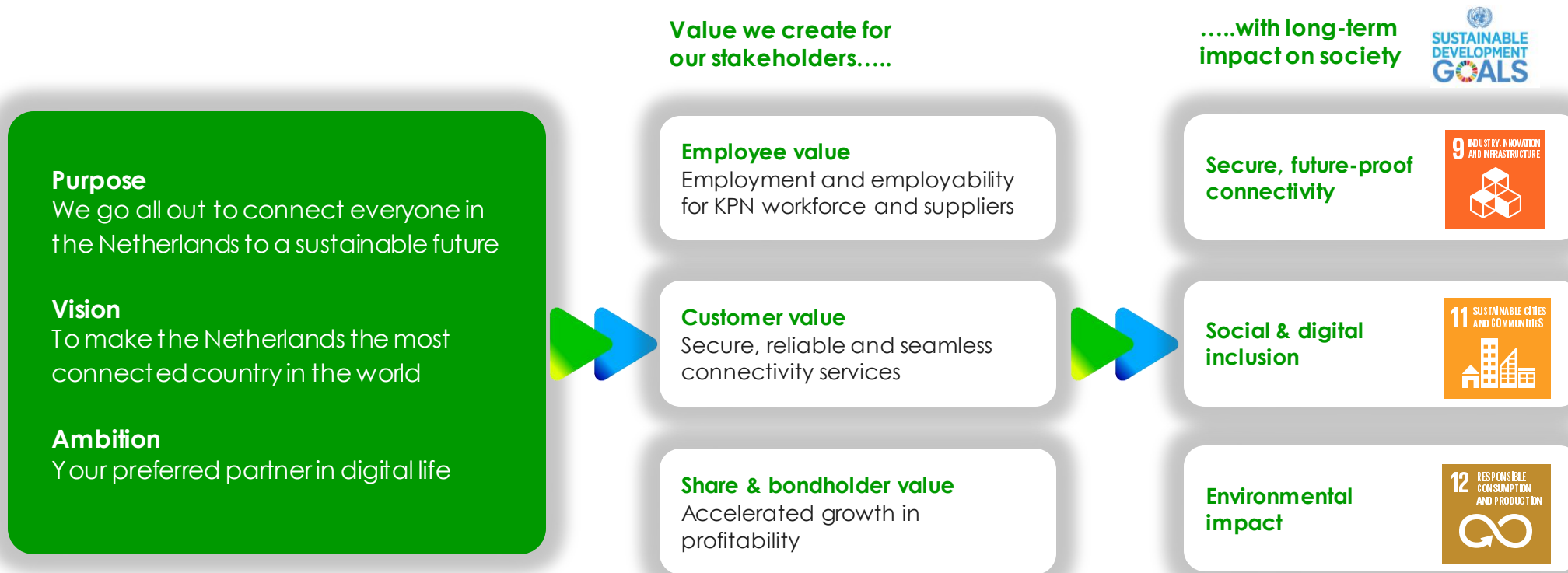


# The road to circularity



# Strategic framework

We go all out to connect everyone in the Netherlands to a sustainable future





# ESG milestones and ambitions towards net zero emissions by 2040

## Important milestones crossed...

Management  
incentivized  
2011 ✓

Carbon neutral  
for own operations  
2015 ✓

2011 ✓  
100%  
green  
energy

2020 ✓  
>30% gender  
diversity at  
Board level

2021-22 ✓  
Sustainable  
Linked  
Finance

>30% women  
in senior  
management  
2023

all lease car  
renewals use  
non-fossil fuel  
2025

2025  
~100%  
circular

30% reduction  
scope 3 emissions  
v.s. 2014  
2030

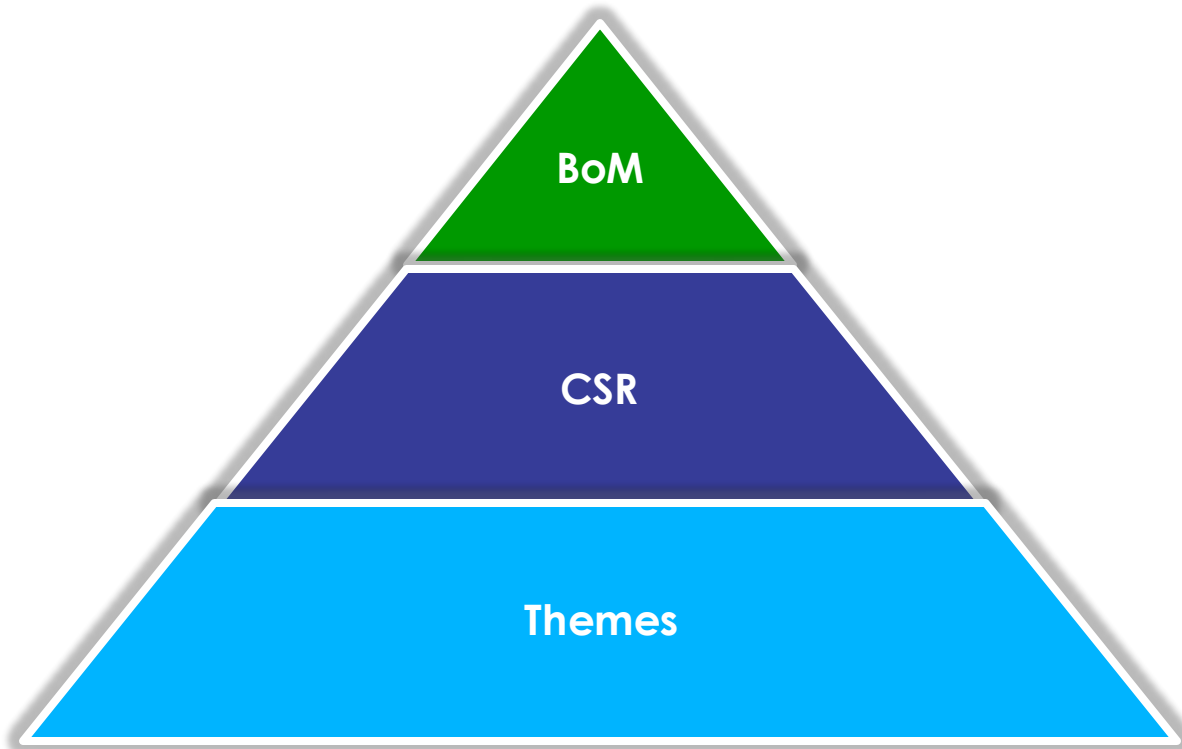
2030  
-55% energy  
consumption v.s.  
2010

2040  
Net zero  
CO<sub>2</sub>e emissions  
in value chain

## ...and an ambitious agenda



# Organizational alignment: ESG part of management remuneration



» ESG themes defined and approved by Board of Management, including ambitions

» Responsible for overall reporting, approach and cohesion

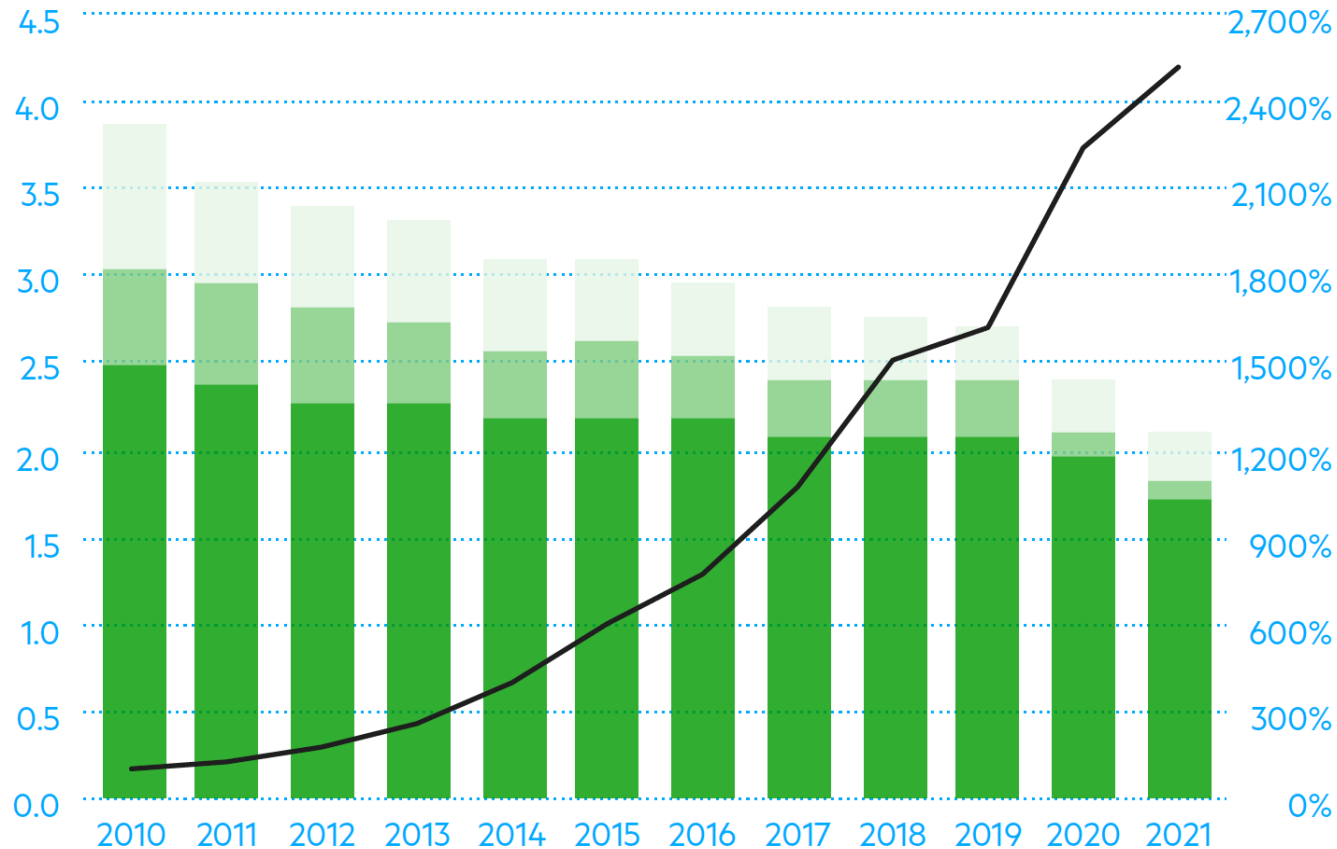
» Three dedicated themes assigned by BoM:  
- Industry, innovation & infrastructure (SDG9)  
- Social & Digital Inclusion (SDG 11)  
- **Energy & Circular Economy (SDG 12)**

## ESG integral part of management remuneration

- 30% STI based on NPS and Broadband Base (15% each)
- 30% LTI based on Diversity and **Circularity (15% each)**

# Own energy usage declines, whilst **data traffic increases exponentially**

Petajoule



**Since 2010, our data usage increased 24-fold, while energy consumption reduced by 45%**

- Network modernization
- Simplification
- Copper switch off
- Network function virtualization
- Office space reduction
- Fleet transformation

**Trade-off: energy efficiency vs circularity**

- Network
- Cars
- Offices and Stores
- Data communication growth

# Collaborating towards a sustainable value chain towards net zero

Overview of own emissions (scope 1 and 2), value chain emissions (scope 3) and Savings by ICT  
(kTon CO<sub>2</sub>e)



SCIENCE  
BASED  
TARGETS

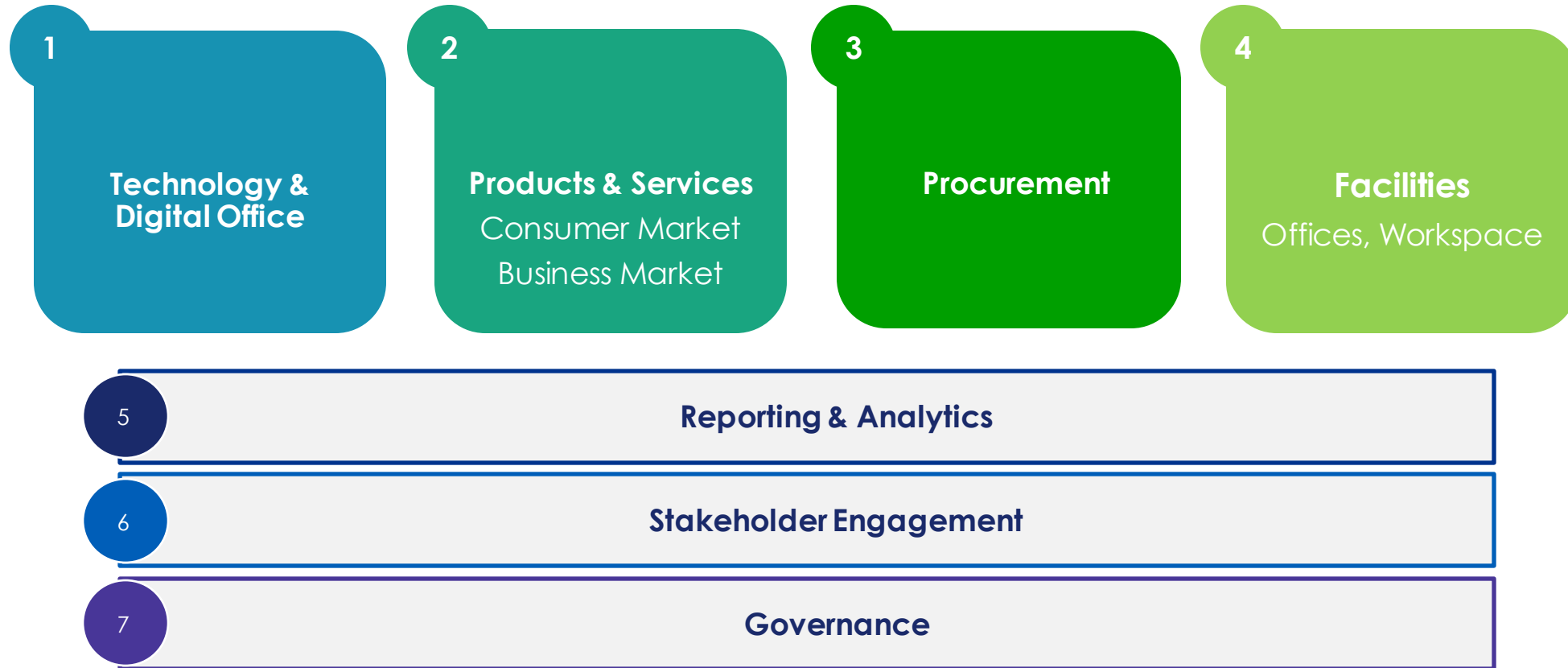
DRIVING AMBITIOUS CORPORATE CLIMATE ACTION



## How?

- Engaging with suppliers in value chain on energy efficiency & circularity
- Selecting vendors based on sustainability criteria
- Reducing impact of materials via circular economy principles
- Introducing energy savings features using in-home equipment
- Reviewing international and local transport modes
- Engaging with key suppliers in collaboration with telecom bodies like JAC, GSMA, ETIS etc

# Circular Economy programme structure



# How do we define circularity towards our goal of zero waste

Materials flowing-in must be recyclable and preferably based on recycled content

## INFLOW

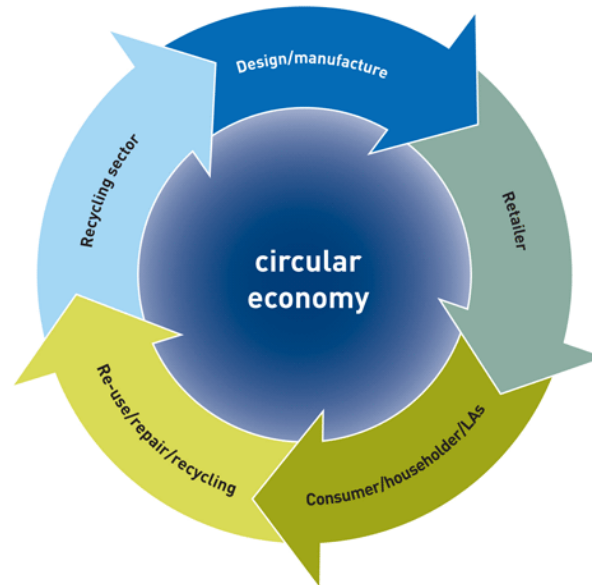
### Product design

1. Recyclability
2. Recycled content

### KPI Score 2021

12 products with recycled content  
(Target: 15 products by 2022)

Implement company level reporting  
based on Circular Transition Framework



## OUTFLOW

### Waste in kilos

Reuse & Recycling  
(all inclusive)

### KPI Score 2021

Reuse & Recycling 84%  
Incineration 14%  
Landfill 2%

(Target 82%)

## Collection Rate Equipment

*Optimising processes to next maturity level*

### Inhome Equipment (86%)

- Closed Loop Supply Chain
- No Fault Found (Swaps)
- Self installation or repair
- Customer Awareness

### Mobile Phones (4%)

- Emptying drawers
- Trade-in propositions
- Mobile Repair/Insurance
- Customer Awareness



# Measuring product circular & carbon impact

Prioritization based on carbon & circular insights

A Circularity Score for your product  
as an indication

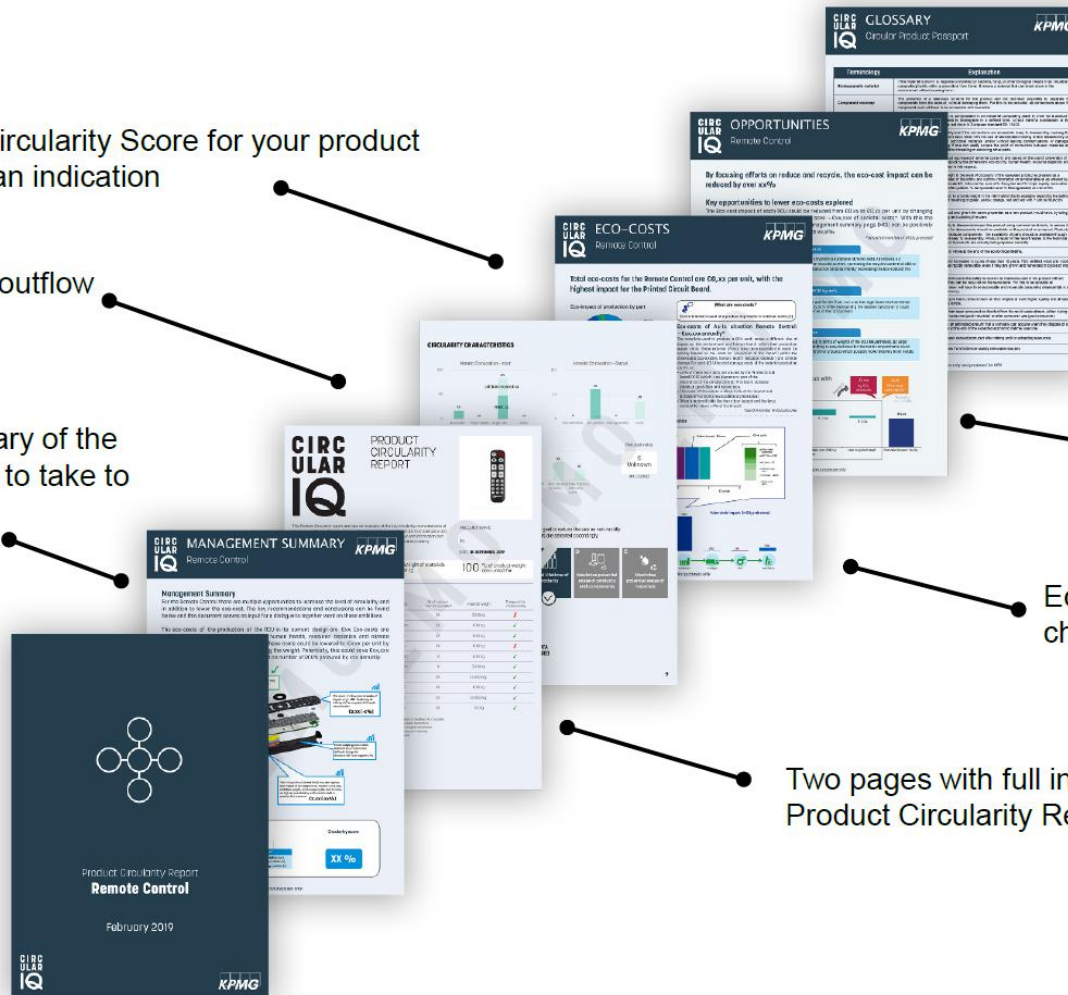
Circular inflow and outflow  
characteristics

A Management Summary of the  
most important actions to take to  
improve your product

Opportunities to improve the eco-  
impact of your product

Eco-cost analysis, including a value  
chain approach

Two pages with full insight into the  
Product Circularity Report



# Measuring product circularity

Use case: Fairphone 3 has a material circularity score of 50%

Fairphone 3 designed for disassembly, considering refurbish program and high levels of product reuse and component recovery

73% materials used in Fairphone 3 can be recycled

54% copper used comes from a recycled source

Fairphone consciously chooses to source Fairtrade Certified Gold to actively improve highly polluting and dangerous conditions under which it is mined. Sourcing from well-established recycled gold market would save

**1.24kg CO<sub>2</sub>e** per unit

Moving to 100% recycled polycarbonate yields another carbon footprint reduction of

**0.1kg CO<sub>2</sub>e** per unit

## Score breakdown

Outcome / 2  
= circularity score

Inflow (27)<sup>1</sup>

%oRecycled (27)  
%oVirgin rapidly renewable (0)

+

Outflow (73)\*

%oRecyclable (73),  
%oCompostable (0),  
%oBiodegradable (0)

## Material circularity score

**50%**

<sup>1</sup>See page 5 for input / output graphs

Want to know more?

See **press release with full report and podcast**

<https://www.overons.kpn/nieuws/kpn-stimuleert-circulariteit-met-product-circulariteit-rapport/>

# Circular Transition Framework

Consumer Market currently estimated at ~60% circular\*

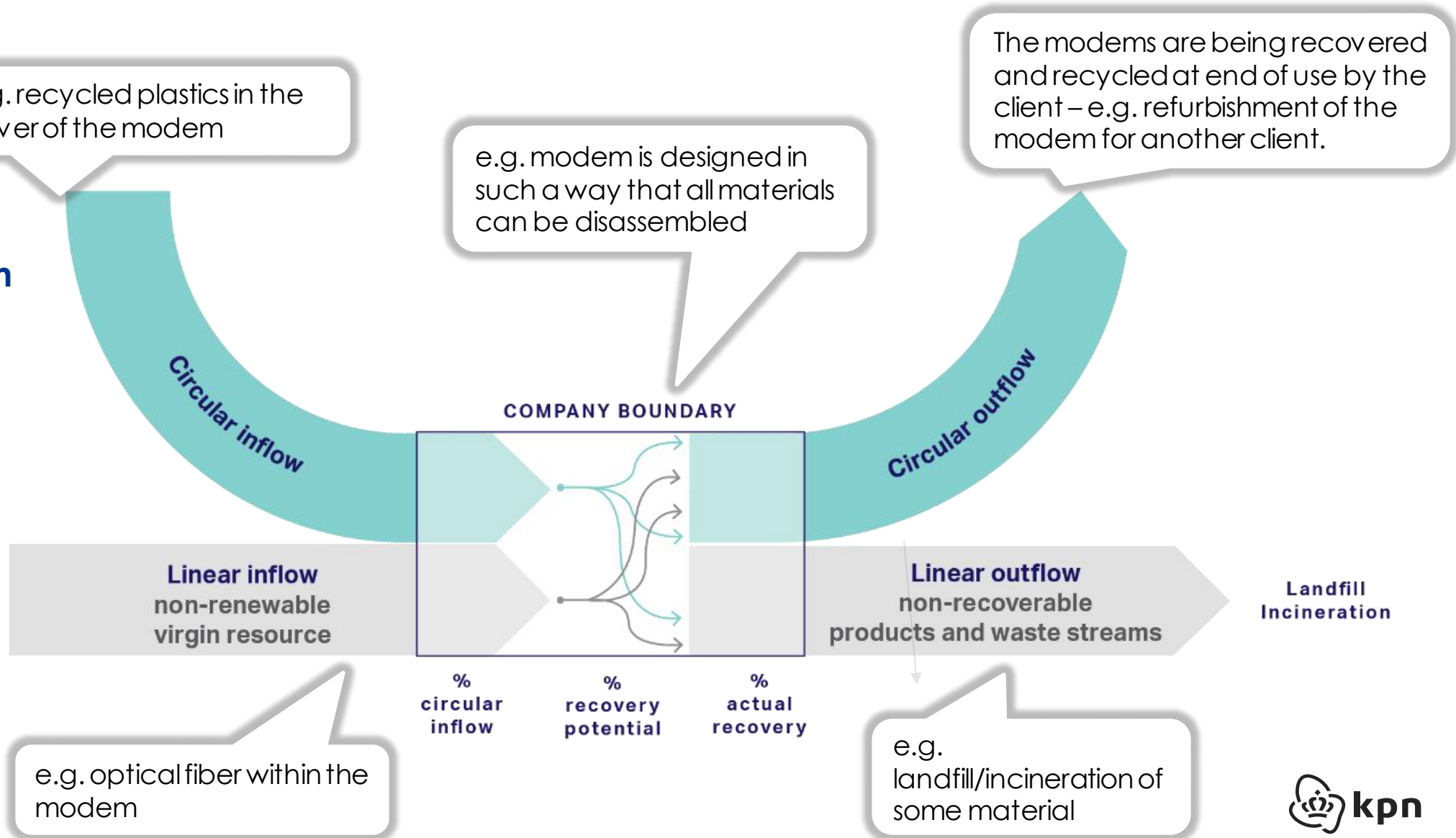
## Example – modem



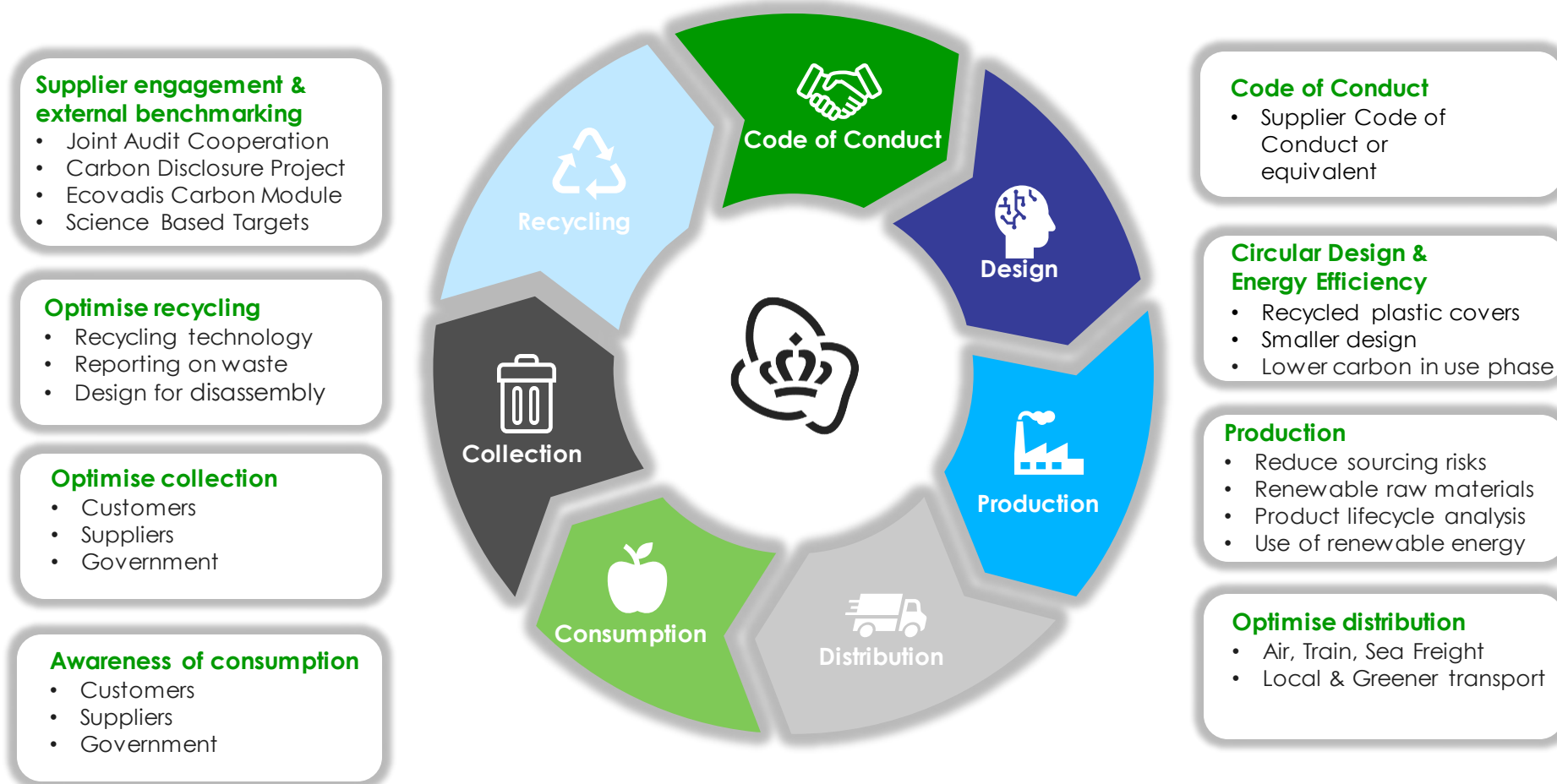
e.g. recycled plastics in the cover of the modem

e.g. modem is designed in such a way that all materials can be disassembled

The modems are being recovered and recycled at end of use by the client – e.g. refurbishment of the modem for another client.



# Engaging with our suppliers and customers on sustainability



# Circular Design Guidelines International Telecom Union (L.1023)

Standardised criteria to assess potential Margin of Improvement (1-4) and Relevance (1-4)

## Product Durability

- Software and Data Support
- Scratch Resistance
- Maintenance Support
- Robustness
- Battery for portable ICT goods
- Data Security

## Ability to Recycle, Repair, Reuse, Upgrade - Equipment Level

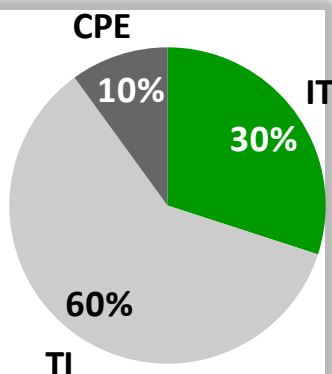
- Fasteners and Connectors
- Diagnostic support
- Material recycling compatibility
- Disassembly depth
- Recycled/renewable plastics
- Material identification
- Hazardous substances
- Critical Raw Materials
- Packaging recycling

## Ability to Recycle, Repair, Reuse, Upgrade - Manufacturer Level

- Service offered by manufacturer
- Spare parts distribution
- Spare parts availability
- Disassembly information
- Collection and recycling programmes
- Environmental footprint assessment knowledge available to improve the equipment material efficiency

Mix of hardware\*  
will evolve as  
technology  
advances

\*figures for  
illustrative purposes



*“Big data will play an integral role to facilitate value chain transparency”*

*Eg*

- Link available critical raw materials to smelters
- Transparency on human rights in mining countries
- Scenario modelling to deal with Supply Chain Risks
- Advance science & innovation on circular printed circuit boards



# KPN introduces products with improved circular design

Our goal: 15 products with circular design per end of 2022

Entry point internet  
25% less plastic



Deep sleep mode:  
80% less energy



Smaller design  
64% less plastic

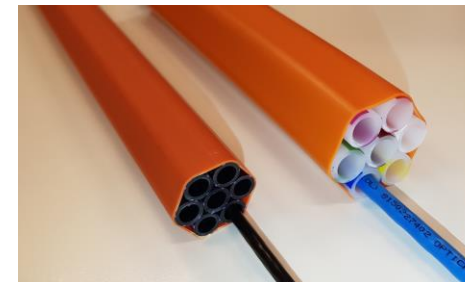
Black covers  
made of recycled plastic



Digitenne - cover  
recycled metal



Street cabinet  
900 >> 250 kilo



Pilot eco-slim  
fibre cable & duct



25% of  
base



Recycled plastic  
(in case e-sim not available)



Recycled material in clothing  
Engineers & Retail

# Introducing Circular Services with leading technology partners

B2B Customer gets our Smart Combinations, we take care of the rest



Premium  
WiFi



SD-WAN  
SD-LAN



Business  
Internet



Hardware  
as a  
Service



# Thank you



<https://www.overons.kpn.nl/kpn-voor-nederland/duurzaamheid>



