



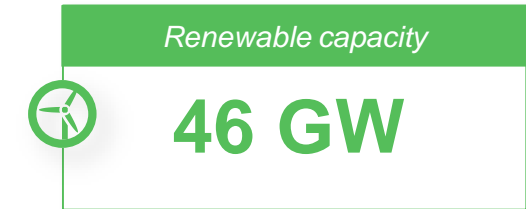
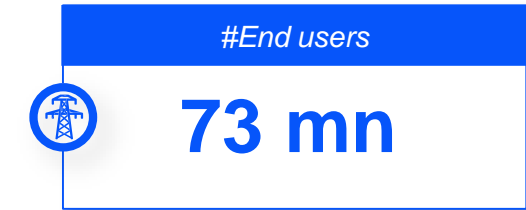
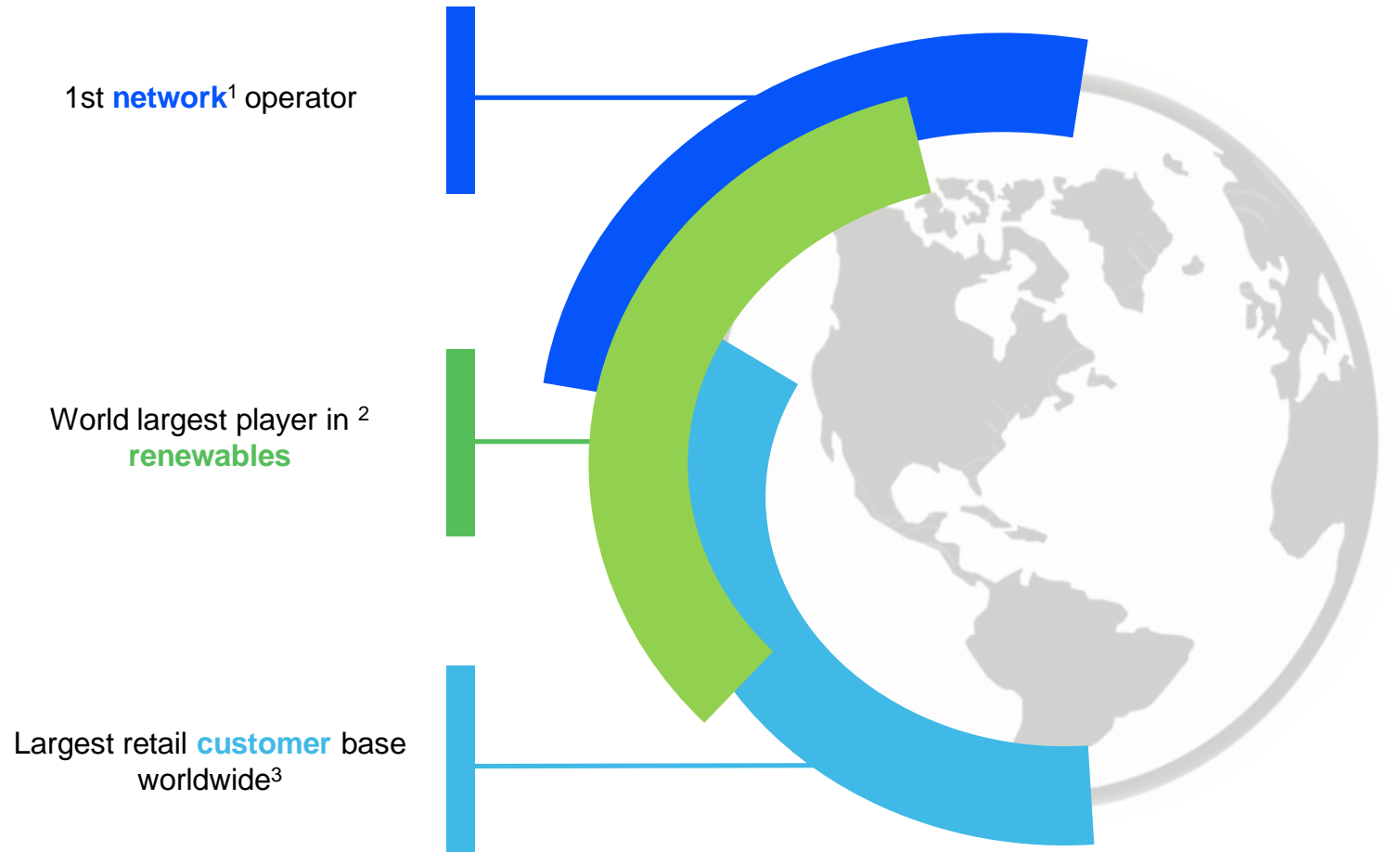
Circular Economy

Enel perspective

COP 25, Madrid – 11th of December 2019



Enel's leadership in the new energy world



1. By number of end users. Publicly owned operators not included
2. By installed capacity. Includes managed capacity for 3,4 GW
3. Including customers of free and regulated power and gas markets

Agenda



Circular Economy overview



Enel strategy, initiatives, ecosystem



Metrics

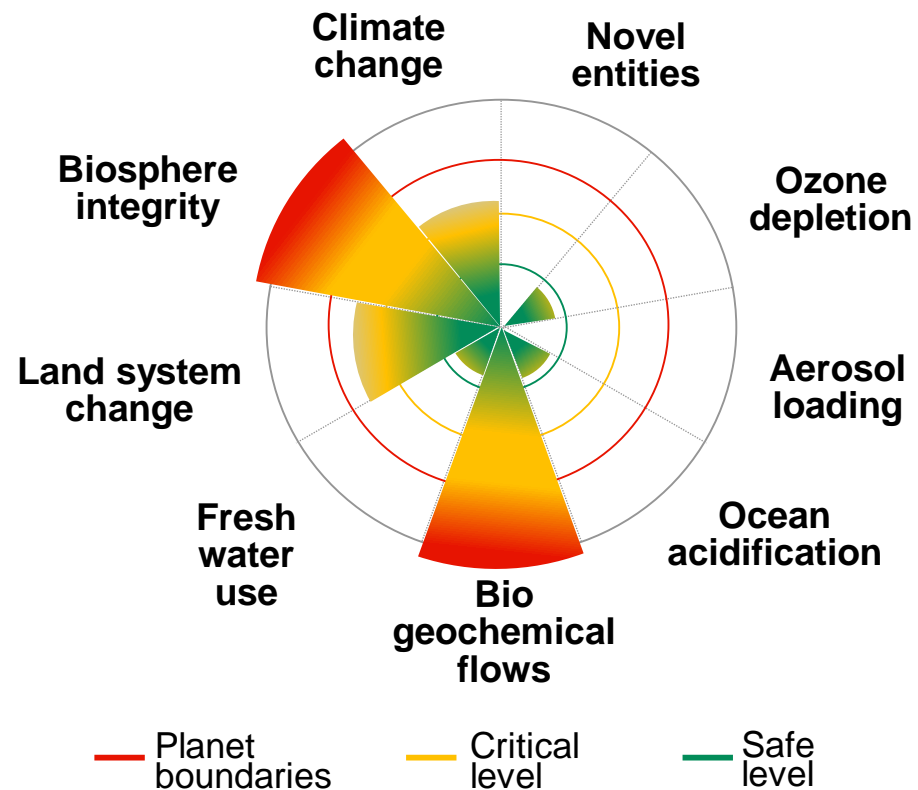


Conclusions

Where we are today



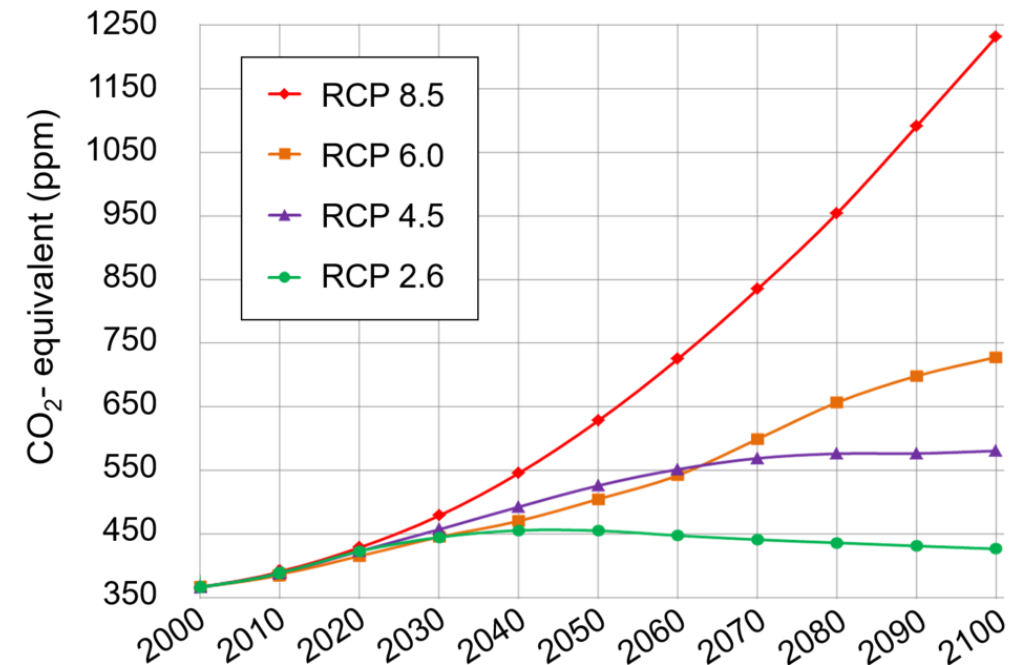
Planet Boundaries...



...and Climate change

IPCC AR5 Greenhouse Gas Concentration Pathways

Representative Concentration Pathways (RCPs) from the fifth Assessment Report by the International Panel on Climate Change



Driver of Circular Economy



ENVIRONMENTAL AWARENESS

Environmental
impact as
**fundamental
driver**



NEW BUSINESS MODELS

Performance
economy, **Cradle**
to cradle,
Upcycling,
Subscription
economy, etc



INNOVATION

Innovation
enables
circularity
acceleration



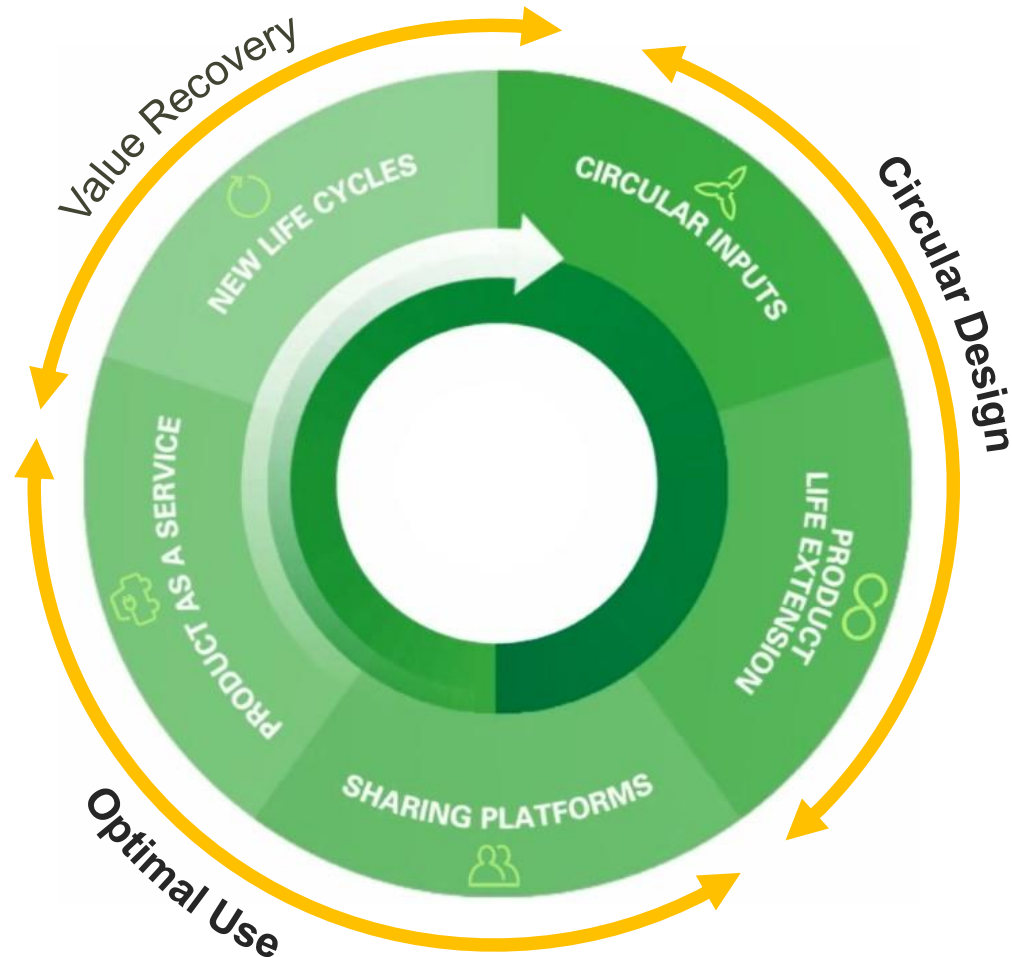
INSTITUTIONAL FOCUS

Strong
Institutional
focus
worldwide

Circular Economy: Enel's vision



The Enel's five pillars of Circular Economy



Circular inputs: from renewable, reuse, recycle



Product Life extension: Extending life through design, maintenance and repair



Sharing platforms: increase utilization rate through shared use/access/ownership

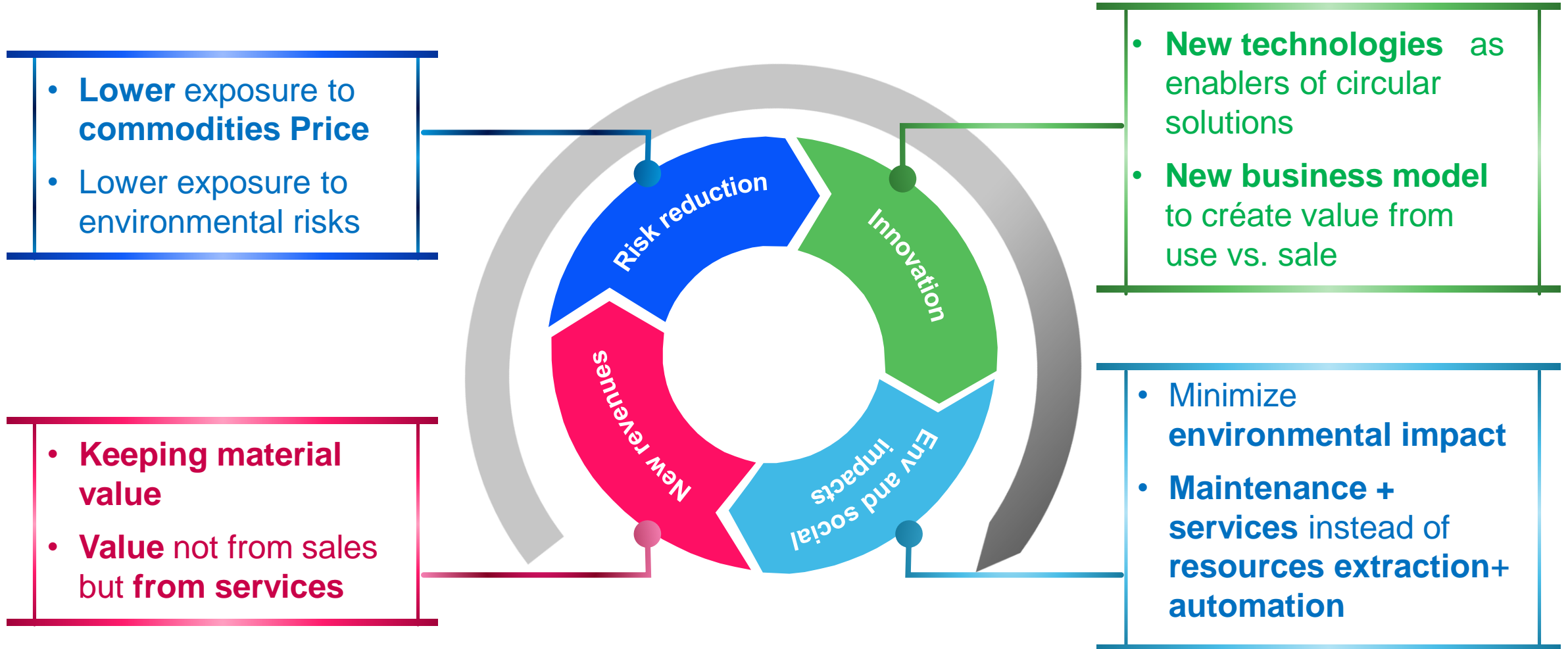


Product as a service: sell to clients a service instead of a product



New life Cycles: maintain value through upcycling, reuse and recycling

Circular Economy opportunities



Institutional focus



GLOBAL INSTITUTIONS

Growing **integration** between **decarbonization** and **circular economy**



EUROPEAN UNION

After Circular Package 2015, EC as pillar of the **New Green Deal**



GOVERNMENTS

Definition of **national strategies** on CE



CITIES AND COMMUNITIES

EC as a **framework vision** within which to define all initiatives

Agenda



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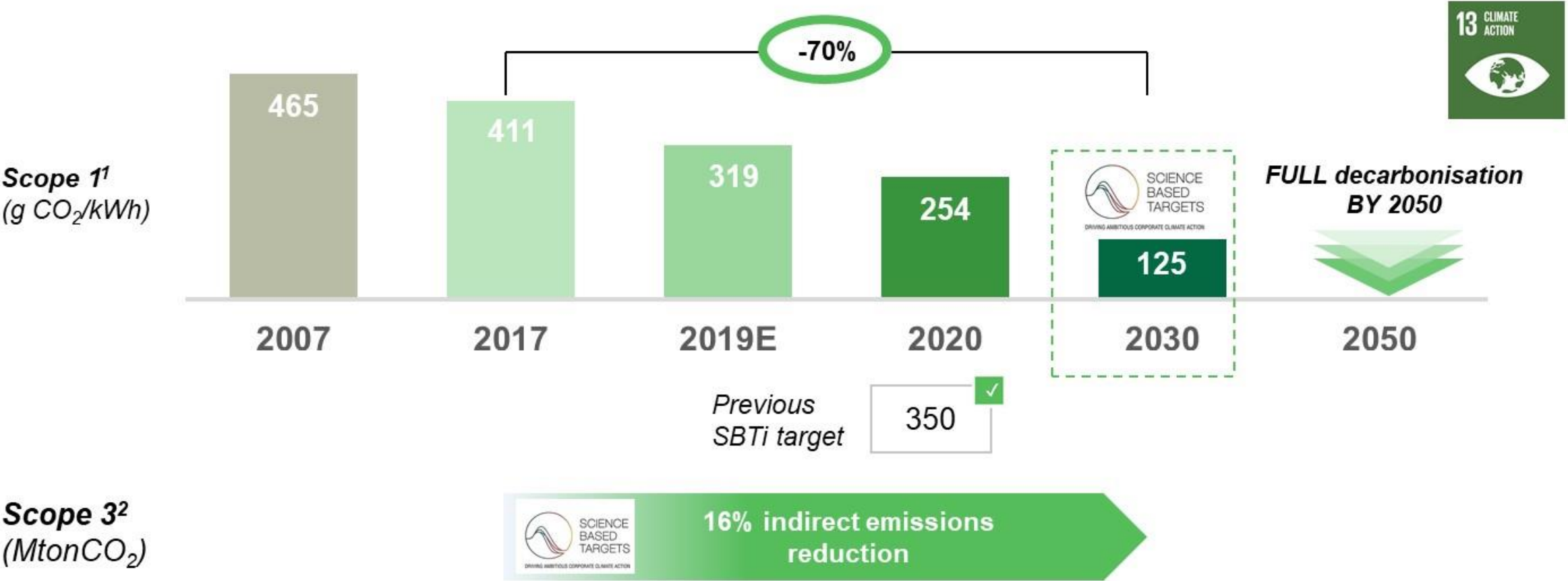


Conclusions

Strategy strongly supports our path towards full decarbonisation by 2050



Scope 1 & Scope 3 CO₂ emissions evolution



✓ Target achieved

1. Scope 1 by 2030, consistent with the Well Below 2C pathway of the Science Based Target Initiative and the IEA B2DS scenario
2. Scope 3 related to gas retail activities by 2030, consistent with the 2C pathway of the Science Based Target Initiative

Main focus of the business lines



SUPPLIERS



CIRCULAR PROCUREMENT PROJECT

Measure, improve and coinnovate



ASSET



VALUE LOOPS

New life cycles for assets and material, circular design, natural based solutions



CLIENTS



ACCELERATOR

Improve client circularity through products, metrics and new business models

CITIES



CIRCULAR CITIES

Develop and position an overall Enel vision for the cities of tomorrow

Circular Procurement



Strategy

1 DEFINITION OF METRICS AND KPIS

Circular Economy Initiative for
ENEL supplier engagement

2 IMPLEMENTATION OF K FACTORS

Rewarding the suppliers through tender
specific instrument for their **commitment**
in transition toward the Circular
Economy.

3 CO-INNOVATION

The metrics defined in the EPD project
allow to launch **co-innovation projects**
together with suppliers

Implementation

PROJECT
LAUNCHED

2018

First wave

- Solar PV
- Wind Turbines,
- Insulators,
- Smart Meters,
- Switches

INTERNAL
PROTOCOL
AND WEBTOOL

2019



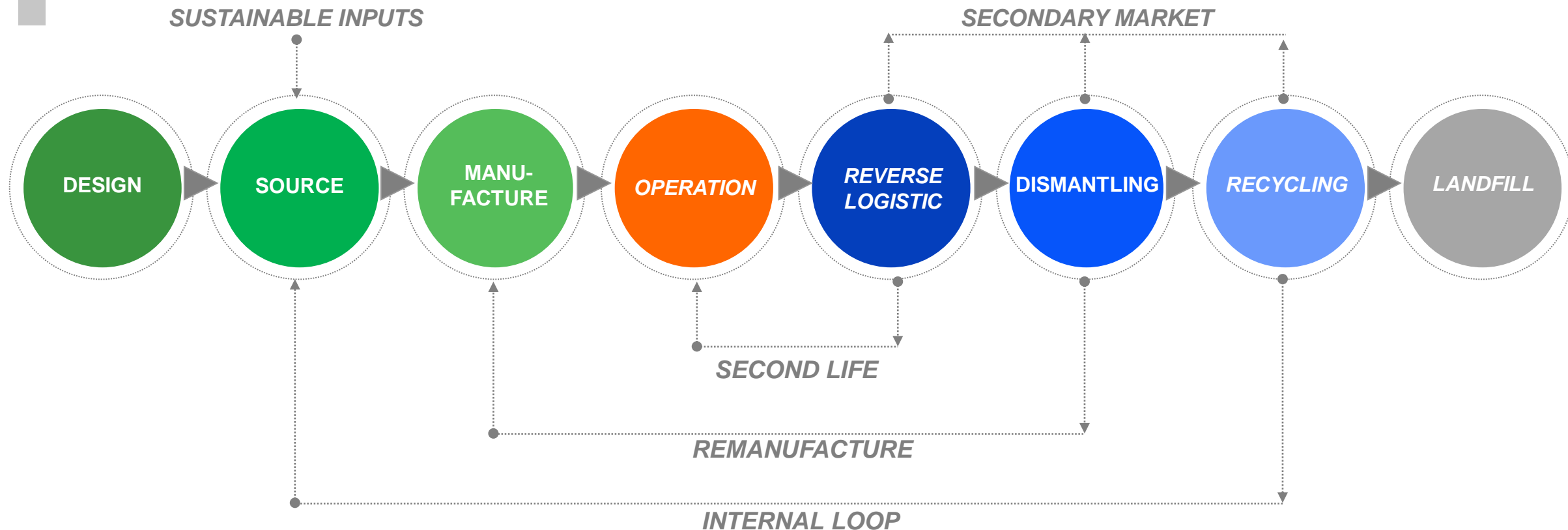
Second wave

- Storage
- Cables
- EV charger stations
- Transformers,
- Home appliances
- Public lightning
- Electrical panels

TARGET

2021

Key Asset



Power Plant equipment



Meters



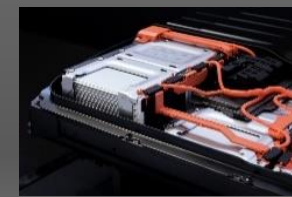
PV panels



Wind plants



EV charging infrastructure



EV Batteries

Circularity for customers

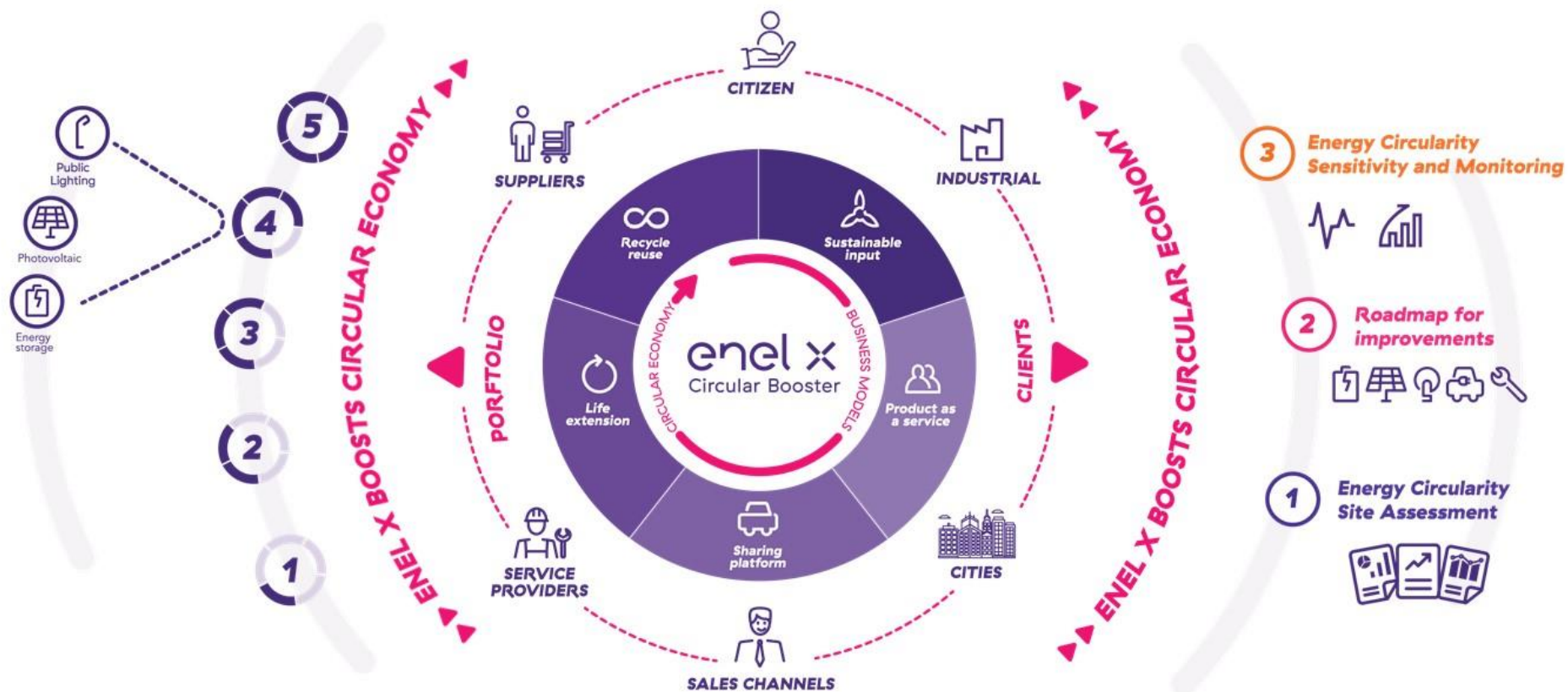


CLIENTS



**CIRCULAR
ECONOMY
SCORING**

**CIRCULAR
ECONOMY
REPORT**



Circular Solution Score
Validated by RINA



Circular Economy Report
Validated by RINA

Circular cities



Dimensions

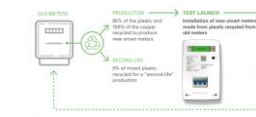
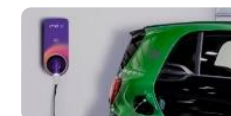
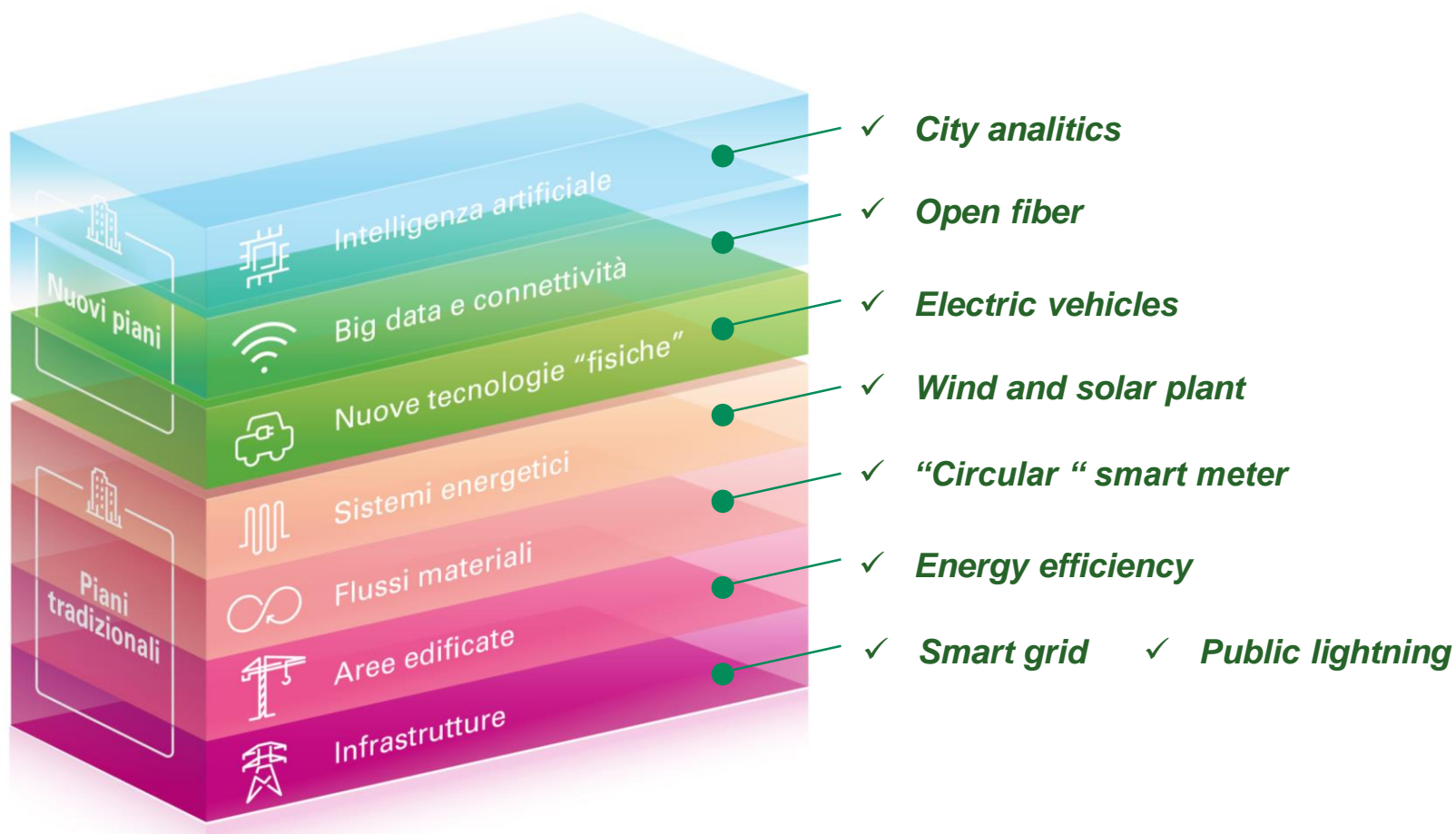
- ✓ **Circular approach**
Implementing CE pillars
- ✓ **Olistic vision**
Including all city dimensions
- ✓ **Open Governance**
Inclusions of all stakeholders
- ✓ **Tecnologie smart cities**
Technologies as enablers

Objectives

- **Economical** development
- **Environmental** sustainability
- **Social** inclusion



Circular Cities



Agenda



● Circular Economy overview



● Enel strategy, initiatives, ecosystem

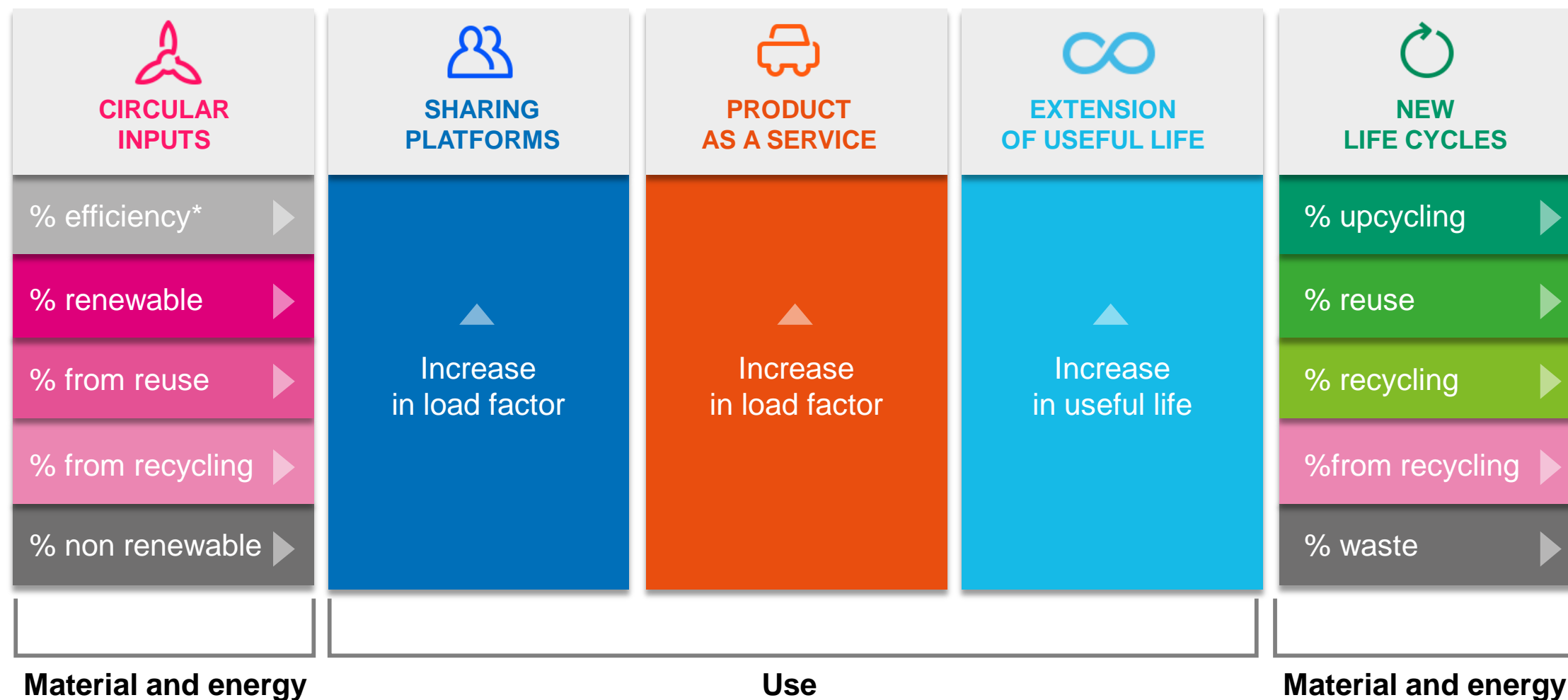


● **Metrics**



● Conclusions

Circulability model



Circularity data flow – Company wide



SUPPLIERS



Procurement



PRODUCTS

Enel X



SERVICES

CLIENTS



Works,
operation, ...

ASSET

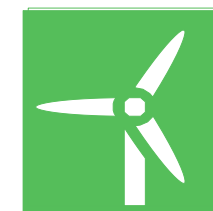
Thermal



I&N



Renewable



Agenda



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Metrics



Conclusions

Conclusions



- Circular Economy is a **driver to achieve decarbonisation target**
- Circular Economy has to be **implemented within core business activities** and in «end to end» vision
- **Collaboration** of the whole ecosystem **is the key**