

FROM LINEAR ECONOMY TO CIRCULAR ECONOMY

Madrid, 25th of May 2022



Leading the *circular*
transformation

Juan Carlos Orozco
Chief Strategy & Sustainability Officer
CELSA Group



- CELSA IS ALREADY LOW CARBON -

CELSA IS CIRCULAR

2021 year



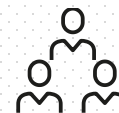
5.283

Revenues € MM



6.3

Mt of sold steel



9.912

Employees

CELSA GROUP™ IS THE SECOND LARGEST MANUFACTURER OF LONG STEEL PRODUCTS IN EUROPE, BEING THE MOST DIVERSIFIED AND VERTICALLY INTEGRATED



35%

Upstream Vertical integration



20%

Downstream Vertical integration



- CELSA IS ALREADY LOW CARBON -

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% OF RECYCLED MATERIAL



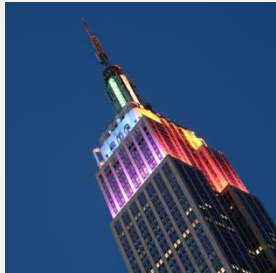
CELSA IS **CIRCULAR**

OUR **SUSTAINABILITY** IN FIGURES:

Compared to producing the same amount of steel (7Mt) as a blast furnace, with its circular and low-emission steelmaking system, CELSA Group™ annually avoids:

The extraction and consumption of **6.4 million m³** of natural resources

Equivalent to the volume of 6 buildings such as the Empire State Building



The consumption of **11.4 million m³** of water

Which is comparable to that of a city of 236,000 inhabitants in a year



The consumption of **9,500 GWh/year** of electricity

The equivalent of the consumption of a city of 2.5 million inhabitants in a year



The emission of **13.6 million tons** of CO² into the atmosphere

Comparable to those generated by 3 million cars running for a year (24/7).



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8M

TONS OF
SCRAP
ANNUALLY



1.5M

OF
CO-PRODUCTS
VALUED PER
YEAR



100,000

TONS OF
NON-FERROUS
METALS



5,000

TONS OF
PLASTICS



- CELSA IS ALREADY LOW CARBON -

CELSA IS **CIRCULAR**

WE ARE **SUSTAINABLE INVESTMENT**

(according to EU Taxonomy)



×

93%

OF THE RAW
MATERIAL

We use in production
comes from
recycled material



×

THE STEEL
MANUFACTURED IS

100%

RECYCLABLE

An infinite
amount of times



×

90%

OF THE WASTE
GENERATED BY OUR
PRODUCTION PROCESSES

is valued and converted into
new products, like
for example, steel arid



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CELSA OBJECTIVES

1

- CIRCULAR INDUSTRY -

100%

CIRCULARITY IMPROVING
VALORIZATION

2

- DECARBONIZATION -

70%

REDUCTION OF SCOPE 1 AND 2
EMISSIONS vs 2015



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by 2025

To become

NET POSITIVE

by

2040

CELSA IS **CIRCULAR**

THE TWO **BIGGEST SYSTEMIC** RISKS OF OUR PLANET



×

THE RISK OF **DEPLETION** OF **NATURAL** **RESOURCES,**

derived, on the one hand, from the incessant growth of the population and, on the other, from the validity of the "linear economy" model.



×

THE RISK OF **CLIMATE** **CHANGE**

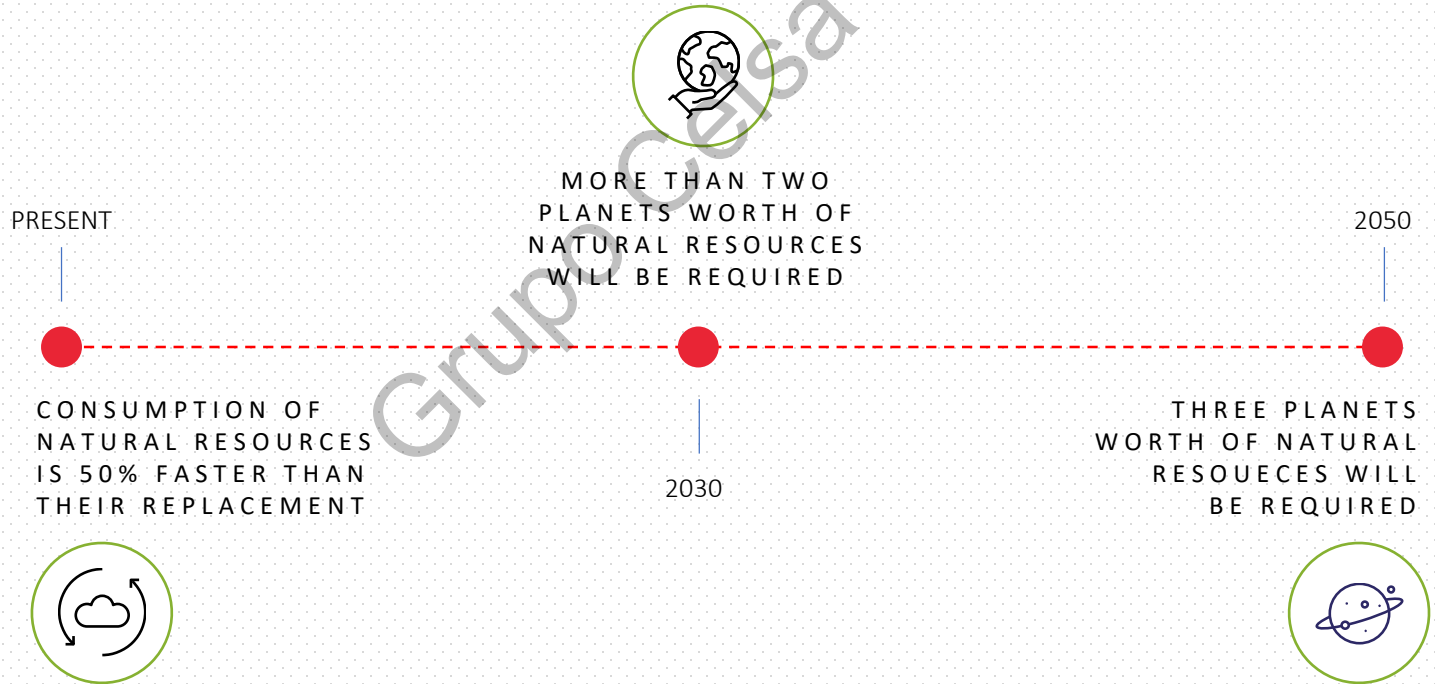
with all the consequences derived from it, which, in turn, feeds the risk of resource depletion.



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A **TRADITIONAL BUSINESS MODEL** GENERATES TOO MUCH PRODUCTION AND CONSUMPTION



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EUROPEAN CONTEXT

To meet its clean energy goals, Europe will require **35 times more lithium** and **7 to 26 times the amount of rare earth metals** in 2050 compared with today. It will also need **1.5mn tonnes of copper** (an increase of 35% from today) and **400,000 tonnes of nickel** (a 100% increase).



31%



WHAT % OF FOOD IS WASTED IN THE VALUE CHAIN?



46%



WHAT % OF THE EDIBLE MASS OF FRUITS AND VEGETABLES IS WASTED?



30%



WHAT % OF THE ORIGINAL VALUE OF STEEL IS LOST AFTER IT IS FIRST RECYCLED?



60-70%



WHAT % OF THE ORIGINAL VALUE PET, CARDBOARD PAPER THAT IS LOST AFTER THE FIRST USE RECYCLE?



92%



WHAT % OF TIME WE DO NOT USE OUR CARS?



60%



WHAT % OF OFFICE SPACE THAT IS NOT USED DURING OFFICE HOURS?



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LINEAR BY **DESIGN**



2.8 MILLION BC

TODAY

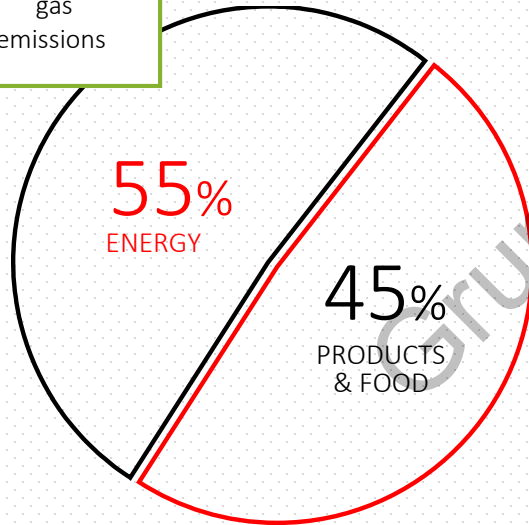


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COMPLETING THE PICTURE: TACKLING **THE OVERLOOKED EMISSIONS**

Total current
global
greenhouse
gas
emissions



How the
circular
economy
Helps
tackle
climate
change



×

DESIGN OUT WASTE AND
POLLUTION **TO REDUCE
GHC EMISSIONS** ACROSS
THE VALUE CHAIN



×

KEEP PRODUCTS AND
MATERIALS IN USE **TO
RETAIN THE ENERGY
EMBODIED** WITHIN THEM



×

REGENERATE NATURAL
SYSTEMS **TO SEQUESTER
CARBON** IN SOIL
AND PRODUCTS



Source

Ellen MacArthur Foundation
Material Economics, Completing the Picture: how the circular
economy tackles climate change (2019)

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CIRCULAR ECONOMY PRINCIPLES



DESIGN

Design out waste and pollution



USE

Keep products And materials in use



SYSTEM

Regenerate natural systems

If carried out extensively, the circular economy could potentially, **reduce consumption of new materials by 32% within 15 years, and by 53% by 2050**



The Transition towards a circular economy is estimated to represent a

\$4.5 trillion

global growth opportunity by 2030, while helping to restore our natural systems

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Studies show that the circular economy presents a **\$4.5 trillion USD opportunity**, may boost GDP by 1.1%, create more jobs and make the economy more resilient



ACCELERATE GROWTH

> GENER8 <

Create additional revenue from existing products and services

> INNOV8 <

Spur innovation of new products and services

> MODER8 <

Reduce operating costs



ENHANCE COMPETITIVENESS

> CAPTIV8 <

Enhance customer and employee relationships

> DIFFERENTI8 <

Distinguish from competition

> INTEGR8 <

Align corporate strategy with mission



MITIGATE RISK

> ACCLIM8 <

Adapt business models and value chain relationships

> INSUL8 <

Mitigate linear risk exposure

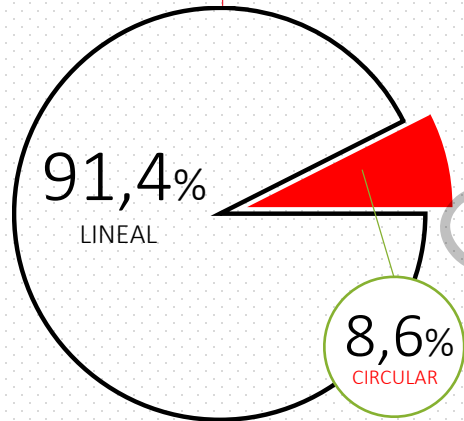


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HOW CAN CIRCULAR ECONOMY FOSTER DECARBONISATION?

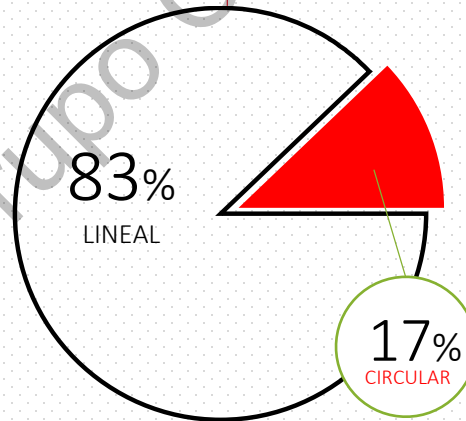
ACTUAL

WORLD WIDE
2021 GDP



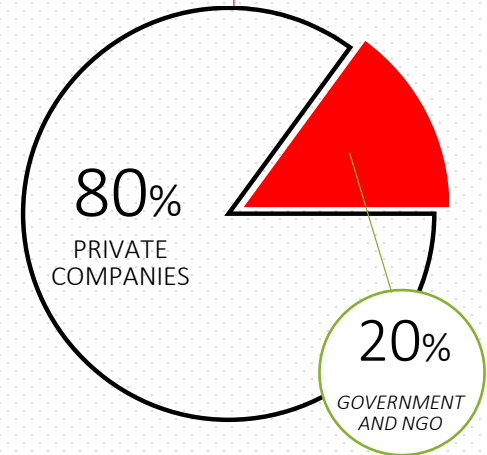
TARGET

WORLD WIDE
2030 GDP



WHO CAN DO IT?

WORLD WIDE
2021 GDP

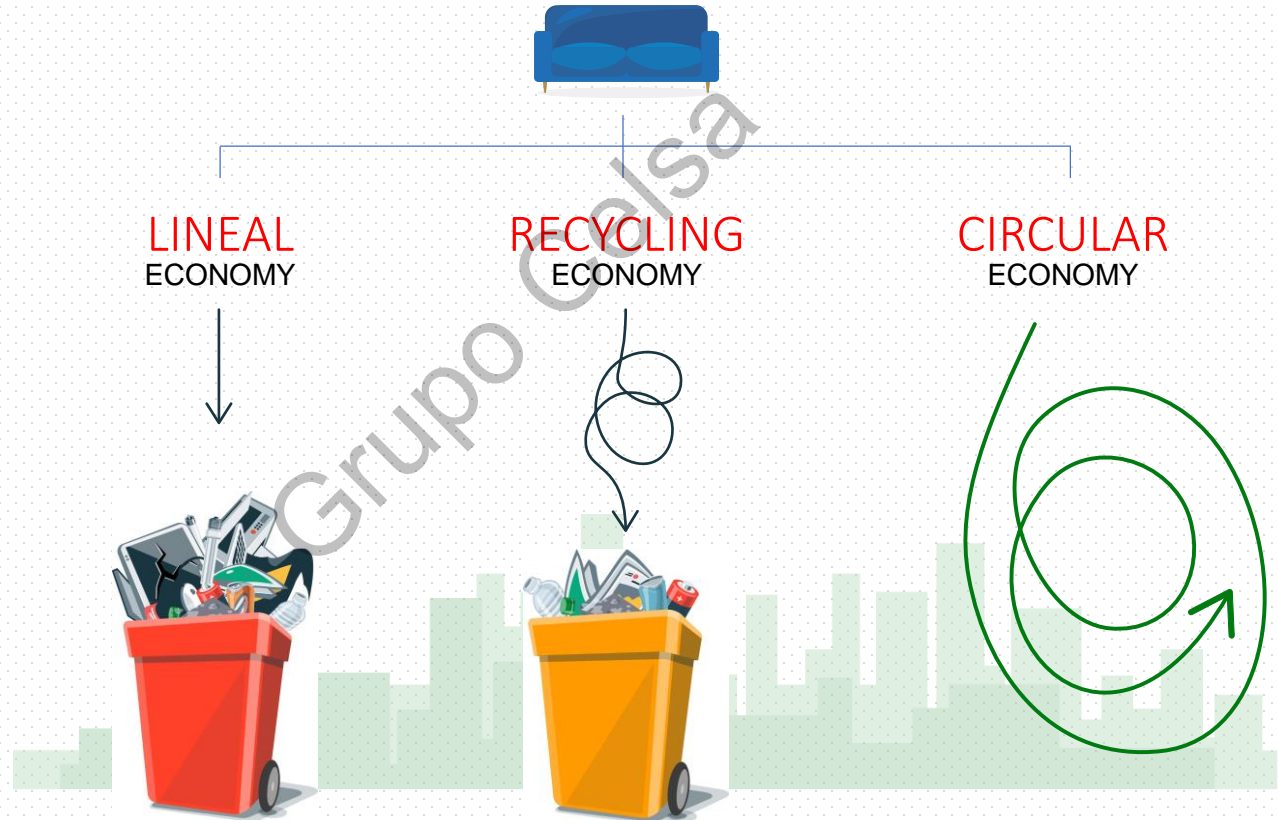


CO₂ EMISSION: **-39%**
NATURAL RESOURCES: **-28%**



- CELSA IS ALREADY LOW CARBON -

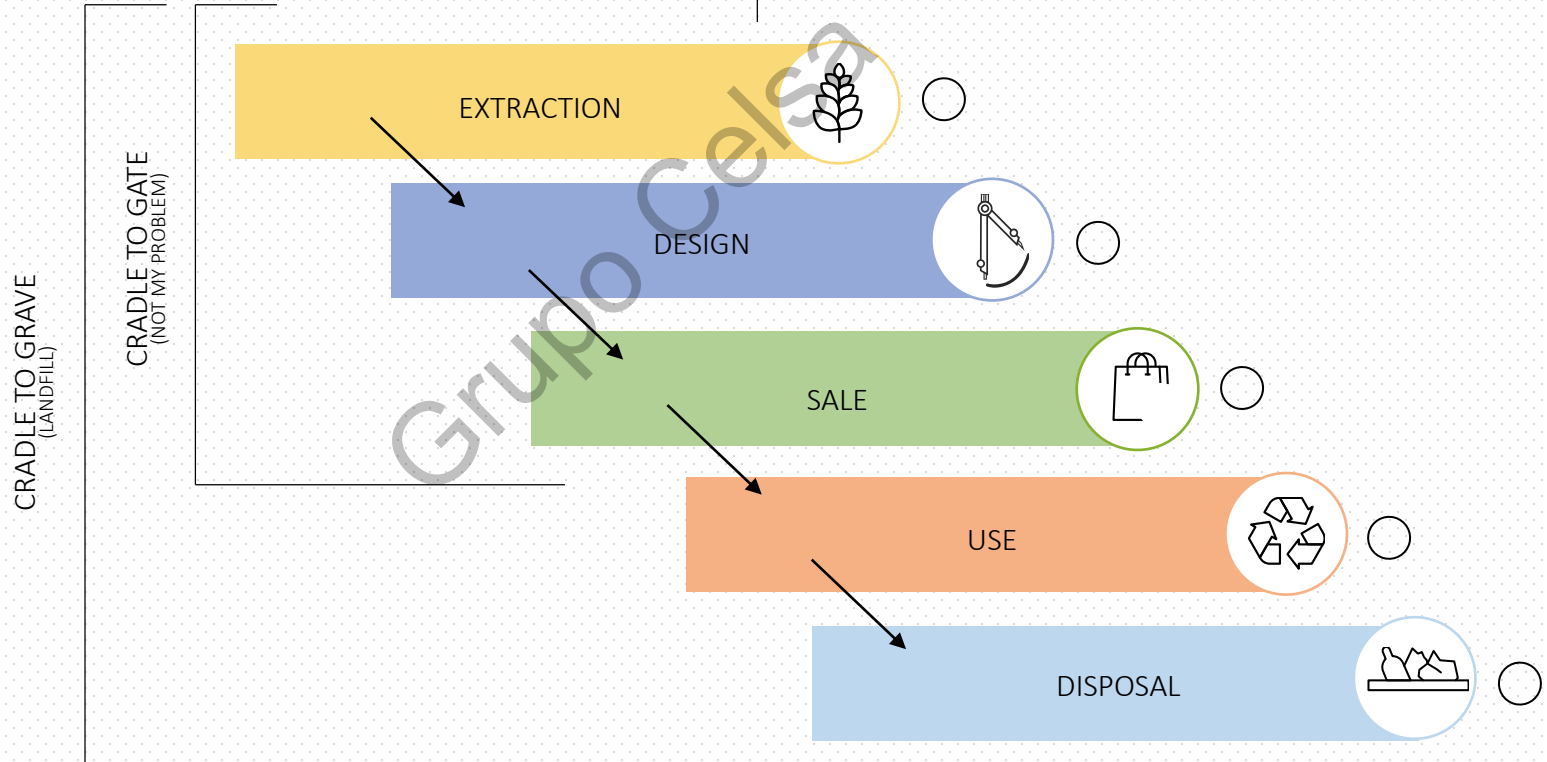
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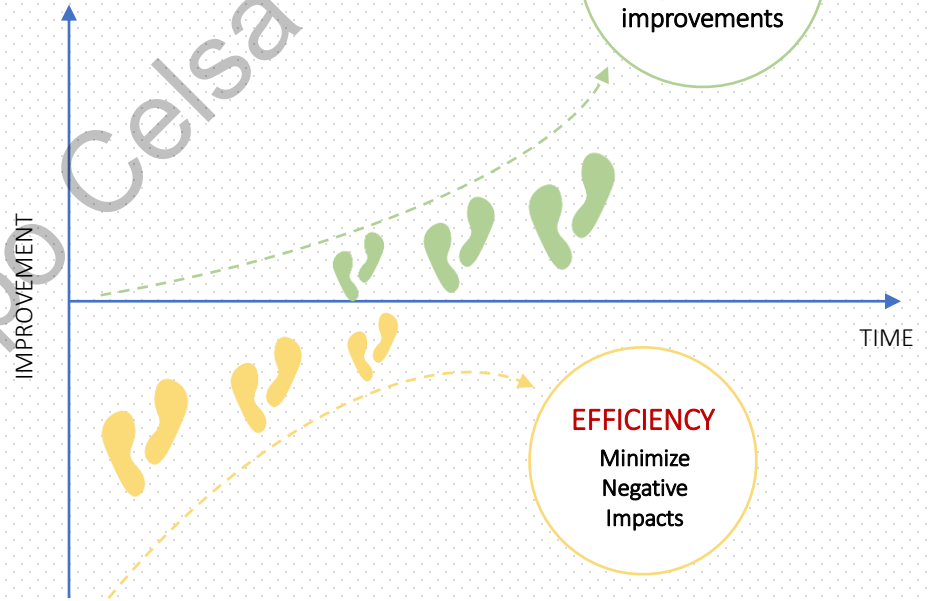
LINEAR ECONOMY **MISGUIDED LIFECYCLE UNDERSTANDING**



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CIRCULAR **TRANSITION**

- **RETHINK**
Innovation new uses 
- **REUSE**
with high quality 
- **UPCYCLE**
Quality improvement 
- **RECYCLE**
Downcycling 
- **REDUCE**
Incremental reduction 

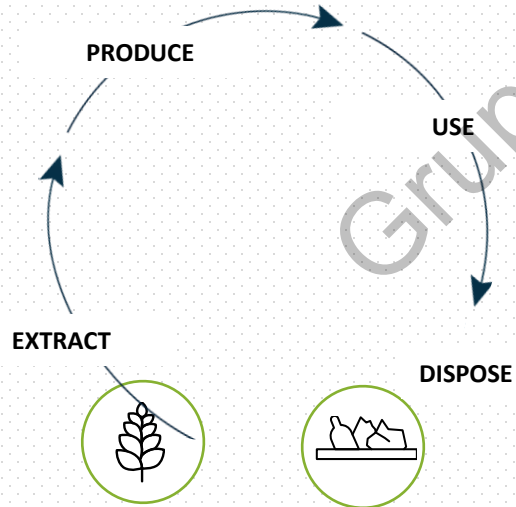


IMPACT **REALISATION**

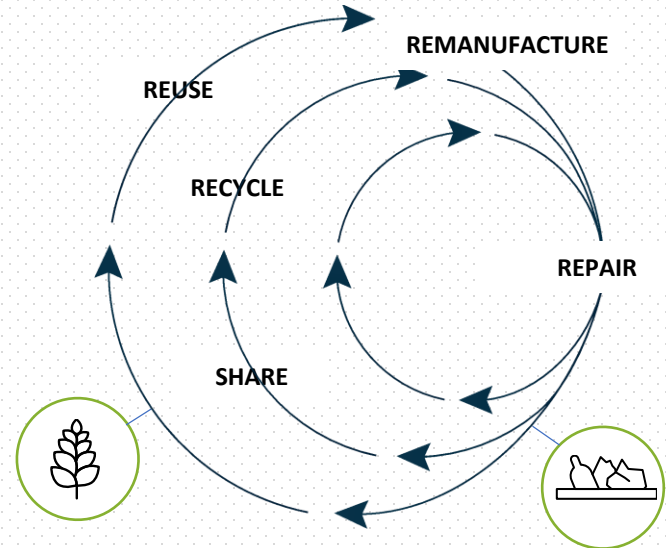
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LINEAR MODEL



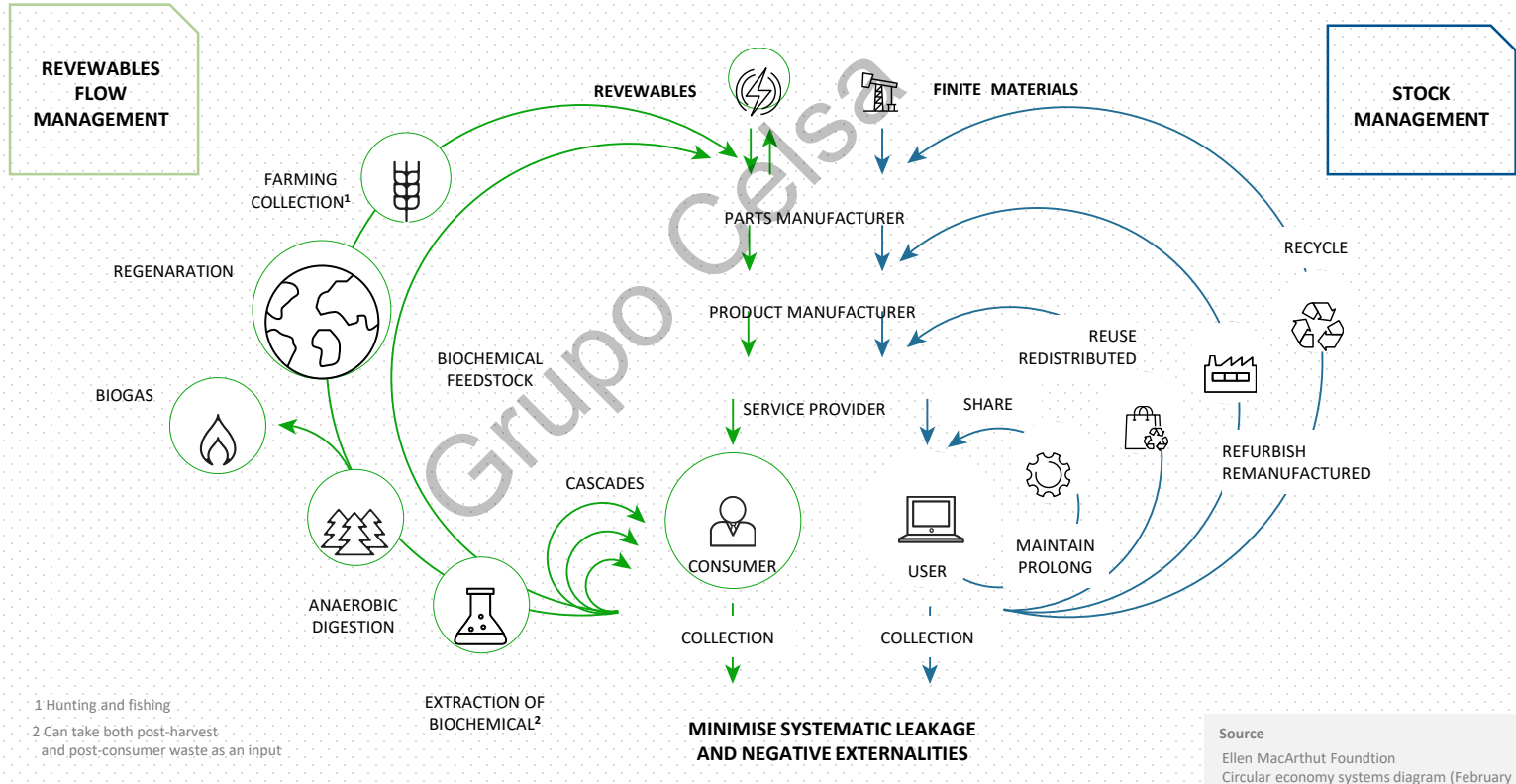
CIRCULAR MODEL



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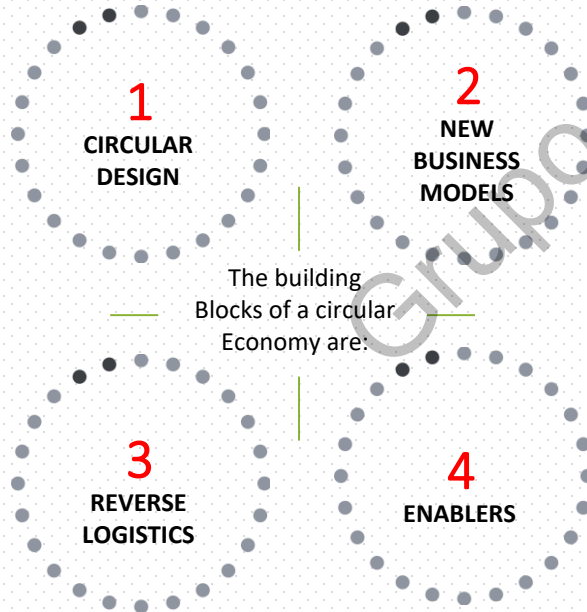
NATURAL CYCLE AND CIRCULAR ECONOMY SIMILARITIES



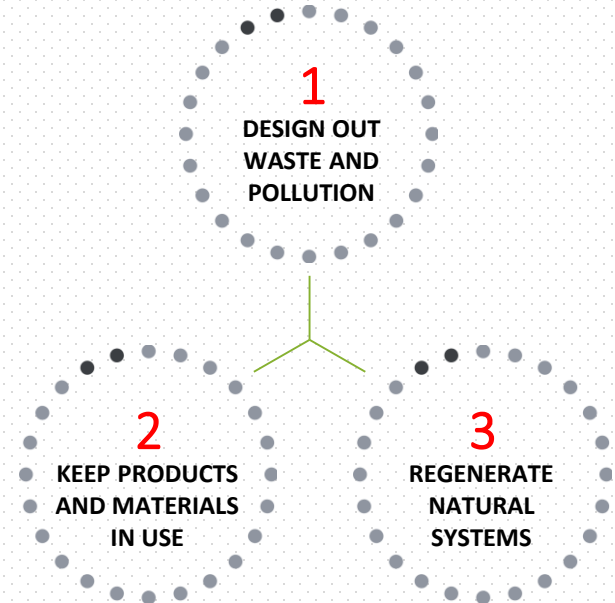
Source
Ellen MacArthur Foundation
Circular economy systems diagram (February 2019)
www.ellenmacarthurfoundation.org

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THE CIRCULAR ECONOMY FRAMEWORK



THE THREE PRINCIPLES CIRCULAR ECONOMY



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RESTORATIVE SOLUTIONS

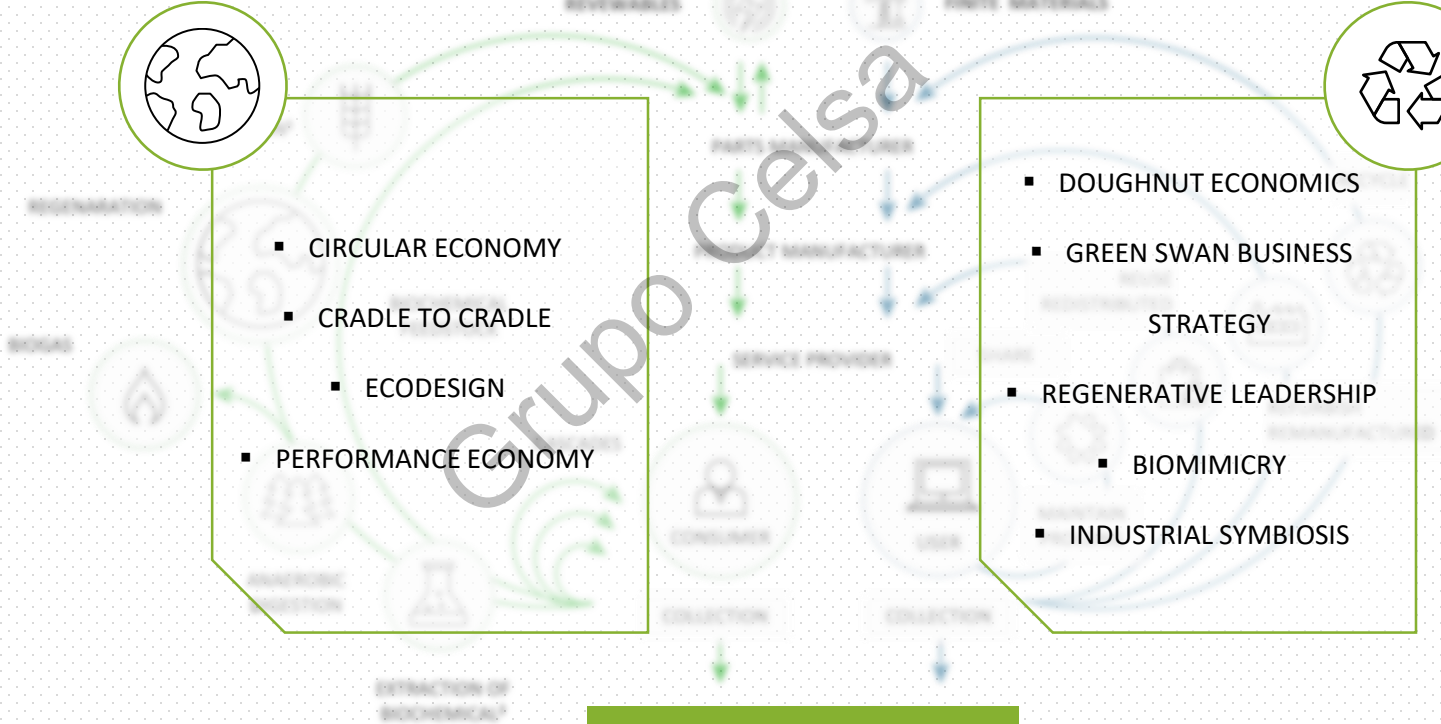


- CIRCULAR ECONOMY
- CRADLE TO CRADLE
- ECODSIGN
- PERFORMANCE ECONOMY



- DOUGHNUT ECONOMICS
- GREEN SWAN BUSINESS STRATEGY
- REGENERATIVE LEADERSHIP
- BIOMIMICRY
- INDUSTRIAL SYMBIOSIS

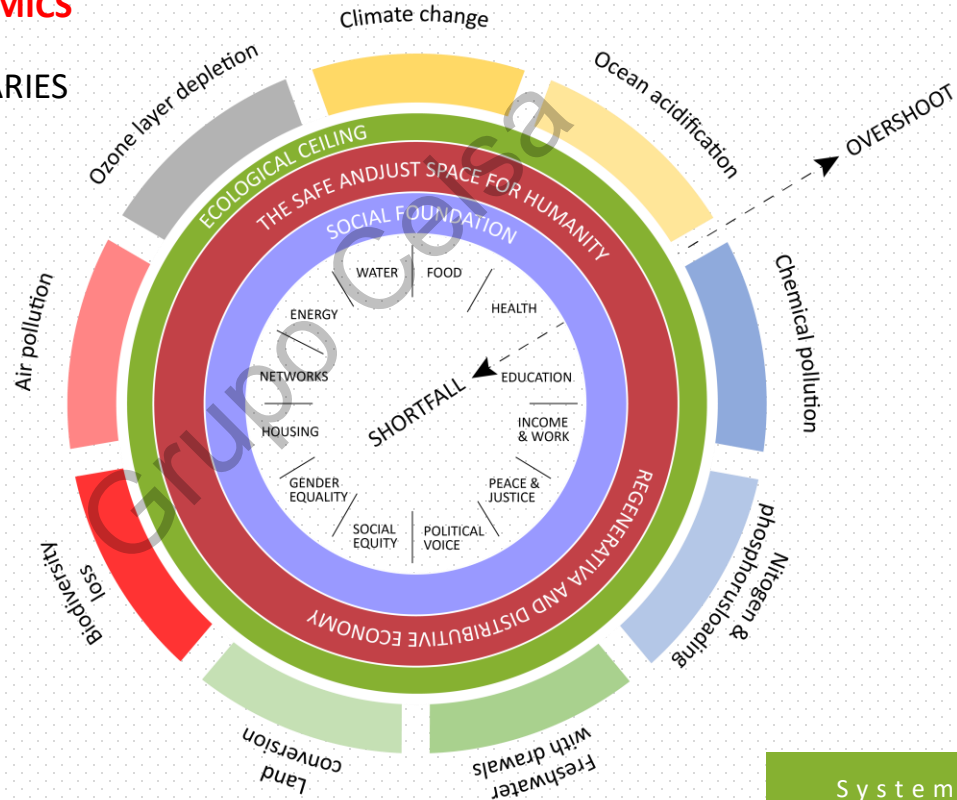
Systems Thinking
Lifecycle Performance



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DOUGHNUT ECONOMICS WITHIN SOCIETY & PLANETARY BOUNDARIES



System Thinking
Lifecycle Performance

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SOME NAMES IN THE **CIRCULAR** ARENA

EMF
Ellen MacArthur
Foundation



**BRAUNGART
& MCDONOUGH**

WBSCD
World Business
Council for Sustainable
Development



CIRCULTICS



Cradle to Cradle
(C2C)
Innovation Institute



PACE
Platform for
Accelerating the
Circular Economy



LCA

TCI



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FIVE KEY ENABLERS OF THE CIRCULAR ECONOMY:

1

INTERNET OF THINGS



2

IMPACT INVESTMENT



3

LEADERSHIP AND MANAGEMENT COMMITMENT



4

INFRASTRUCTURE



5

GOVERNMENT POLICY



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FOUR TYPES OF Circular Business Models

CLOSING

Materials and energy is recycled within the system, through reuse, remanufacturing, refurbishing, and recycling



SLOWING

The use phase of the product is extended, through long-lasting design, marketing, maintenance, and repair



INTENSIFYING

The use phase of the product is intensified through sharing economy solutions or public transport



DEMATERIALIZING

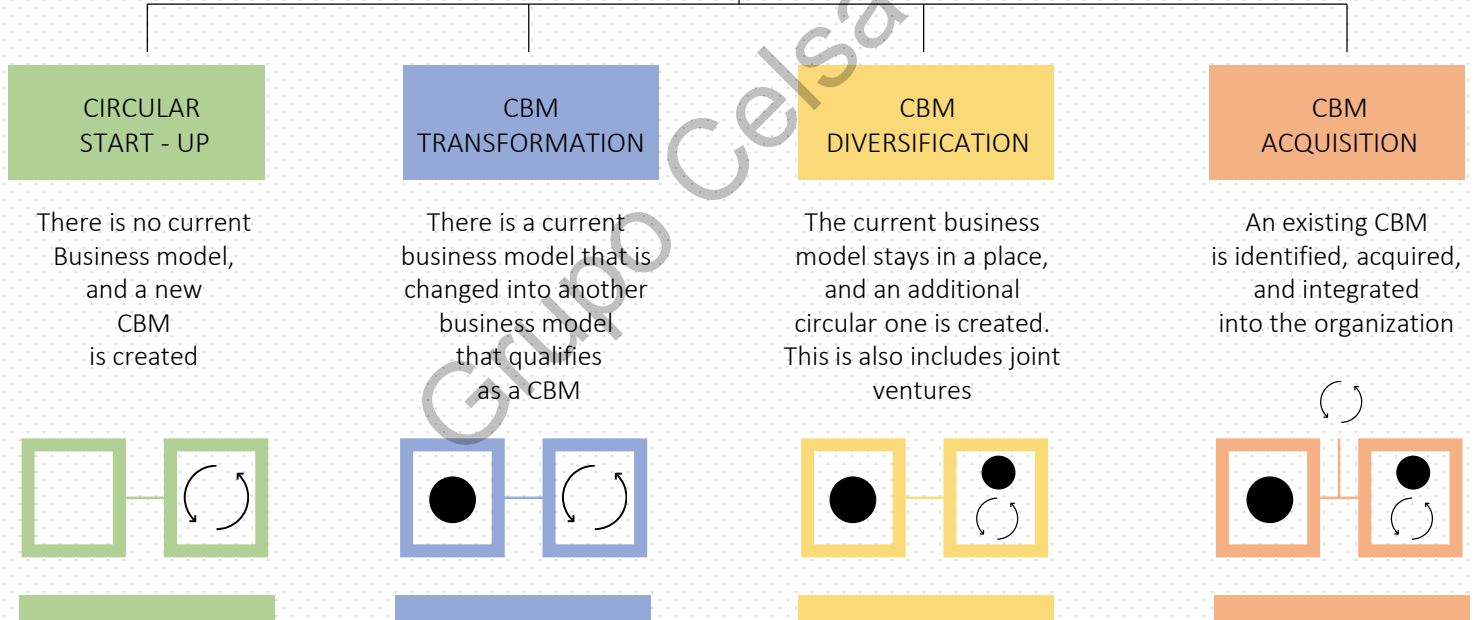
Product utility is provided without hardware through substitution with service and software solutions




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FOUR TYPES OF CIRCULAR BUSINESS MODEL INNOVATION



 Circular business model

 Circular or conventional business

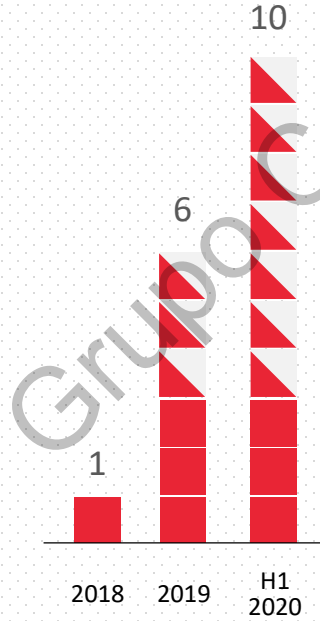
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NUMBER OF PUBLIC EQUITY FUNDS WITH A CIRCULAR ECONOMY FOCUS



- BlackRock
- BNP Paribas
- Candriam
- Comerstone Capital Group
- Credit Suisse (2funds)
- DECALIA
- Goldman Sachs
- NN Investment Partners
- RobecoSAM

- Sole focus on circular economy
- Partial focus on circular economy

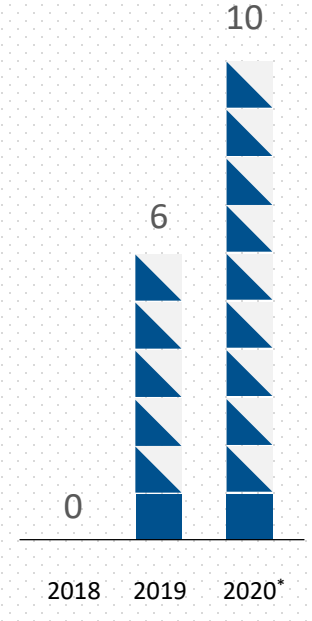


NUMBER OF OUTSTANDING CORPORATE BONDS WITH A CIRCULAR ECONOMY FOCUS

Conservative estimate

- Alphabet
- BASF
- Daiken Corporation
- Henkel
- Intesa Sanpaolo
- Kaneka Corporation
- MOWI
- Owens Corning
- Pepsico
- Philips

- Sole focus on circular economy
- Partial focus on circular economy



*Year to date through August 2020

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BARRIERS & SOLUTIONS



Lack of a **COMMON VISION**:

Between the public administration & the private sector
We talk mainly about recycling
From competition to collaboration

REGULATION & POLICY MAKING:

Fragmented regulation
Residue definition
Lack of legal obligations
Lack of incentives (positives or negatives)

CULTURE & TALENT:

Lack of Knowledge
Lack of eco-design training
Culture of collaboration

Lack of **MARKET INCENTIVES**:

B2C begins to feel the market pressure
B2B still does not feel the urgency
Negative perception of recycled products

SUPPLY & DEMAND:

Manufacturing & Logistics barriers
Dimension
Technology
Lack of brokerage



CHANGE OF MINDSET

COLLABORATIVE SPACES: work together

EXPERIEMENT & SHOWCASE: hubs

LEARN, SHARE & DEBATE

SUPPLY & DEMAND MATCHING:

- Brokerage
- Market place (very difficult)

LOBBY & INFLUENCE

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CHANGE OF MINDSET

NORMALLY WE ARE:

- **People:** Dominants, individualist
- **Companies:** independents
- **We** have risk aversion
- **We** compete
- **We** do not collaborate
- **We** want to win 5 - 0



Lorna Davis's speech
*Board Member and former CEO
of Danone North America*

“

Nobody knows how to do it.
Thus, this game is of trial & error.

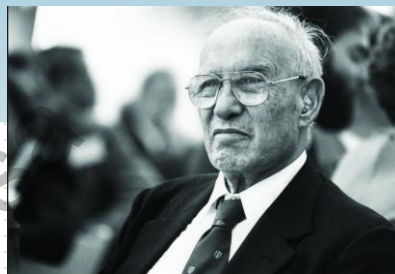
”

WE SHOULD BE:

- ✓ **People:** collaborative:
 - Do not confuse collaboration with delegation
 - Slow down.
 - Long meetings.
 - A lot of people and diverse people invited.
 - Listen more than talk.
- ✓ **Companies:** interconnected.
 - It will be easier if we do not start from scratch.
 - Work with others that have already started.
 - **Main partners:**
 - current suppliers
 - current customers
 - and our employees
 - **Other potential partners:**
 - investors
 - government, etc.

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“

In times of turmoil, the danger lies not in the turmoil, but in facing it with yesterday's logic.

- Peter Drucker -

”



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Leading the circular
transformation

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