



Circular Economy
Initiative
Deutschland

Circular Economy Initiative Germany

Initiative for a circular industrial model "Made in Germany"

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www.circular-economy-initiative.de



Our current value chains are characterized by considerable structural waste and losses - examples



Circular Business Models

1

9 years

average usage of products (28 years including buildings).

Only **5%**

of the average raw material value is restored after the first use.



Mobility & Batteries

2

25%

of the costs of a battery can be attributed to the costs of metallic materials. Only fractions are currently retrieved in high quality.

2x

The demand for cobalt is expected to more than double by 2025, mainly due to the sale of electric vehicles.



Plastics & Packaging

3

Only **2%**

of the global plastic packaging waste is recycled into high-quality materials.

€ 70-105 billions

(~ 95% of value) are lost every year.

Source: SYSTEMIQ, McKinsey Center for Business and Environment, Ellen MacArthur Foundation & SUN (2018), McKinsey Basic Materials Institute (2018)

The Circular Economy is increasingly entering the public debate



“Governments can include natural capital in measures of economic performance and promote a circular economy.”
UN Secretary-General Antonio Guterres at the launch of a UN Environment Programme (UNEP) report “Making Peace with Nature.”



EINE WELT OHNE MÜLL

Jede Verpackung – egal, woher sie stammt – hat einen Wert. Bis 2030 will Coca-Cola weltweit für jede verkaufte Flasche oder Dose eine zurücknehmen und recyceln



BlackRock C.E.O. Larry Fink: Climate Crisis Will Reshape Finance



Source: Web research

The Circular Economy offers a new perspective for many economic and societal challenges



Direction and stability in a phase of industrial change

- Resource productivity is the missing link to achieve the climate goals and to streamline the commitments from industry.
- An „industrial transition“ towards resource productivity will facilitate the successful transition in the transport and energy sectors.
- A Circular Economy speeds up digitalization and the application of new technologies, providing a socially relevant objective.
- It boosts the development of new business models as well as innovative and efficient production and consumption patterns.

Entrepreneurial balance amidst tensions between cost and quality

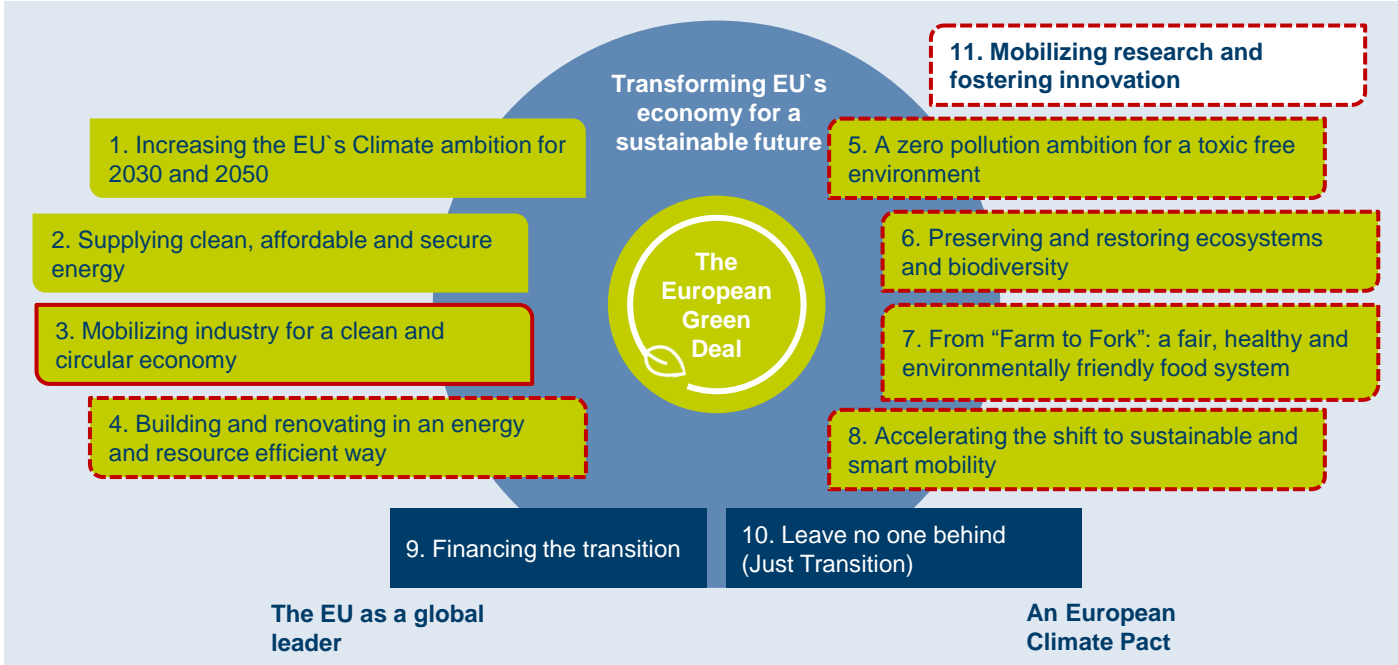
- In a circular context, the German philosophy of quality („Made in Germany“) can be re-established – gaining an important **distinguishing feature** through resource productivity.
- Circular material management reduces risks and dependencies on resource imports.

In the European Green Deal, the Circular Economy plays a central role in achieving the goal of greenhouse gas neutrality by 2050



Overview of the European Green Deal (EGD)

» Remarks



- "The old growth model based on fossil fuels and pollution has outlived its purpose. What is needed now is a strategy for growth that gives back more than it takes. The European Green Deal is our new growth strategy" - Ursula von der Leyen (EU Commission President)
- The circular economy plays a central role in achieving the goal of greenhouse gas neutrality by 2050

Topics of the Circular Economy Initiative: Combination of overarching topics with industry deep dives



II. Working Group Traction Batteries

Group Leaders:
Prof. Kwade/TU
Braunschweig and Dr.
Hagelüken/Umicore

- Target vision 2030

Pilot projects:

- Knowledge of battery life cycle
- Model-based decision platform for EoL use
- Battery dismantling network

I. Working Group

Circular Business Models and Digital Technologies

Group Leaders: Prof. Hansen/ Uni Linz and Mr. Wiedemann/ RLG

Business model typology – digital technologies – regulatory framework conditions



Circular Economy Roadmap for Germany

- Policy recommendations on technology development and regulatory framework
- Macroeconomic analysis of contribution to reduced material input and GHG emissions
 - Target vision 2030/2050



III. Working Group Packaging

Group Leaders:
Prof. Elsner/
Fraunhofer ICT and
Prof. Müller-
Kirschbaum/Henkel

- Target vision 2030

Pilot projects:

- Non-Food – HDPE bottle
- Food – PET tray

The aim of the Circular Economy Initiative Germany is to accelerate the system change to circular value creation in politics and business.



Aims of the Circular Economy Initiative Germany



- All major stakeholders agree on a **common goal for circular value creation** in Germany.
- The roadmap provides quantitative indications of the achievable resource productivity through the use of circular instruments.
- Necessary **adjustments to the regulatory framework** for the implementation of circular economy business models will be identified.
- For essential functional systems and materials, **activities in research and development as well as in the concrete entrepreneurial implementation** will be fostered.

The CEID is well equipped to drive the transformation towards a Circular Economy in Germany and beyond



50+

Over 50 members:

3 ministries, 20+ companies, 20+ scientific institutions and other relevant organizations from civil society to make the transition to a Circular Economy happen: **Collaboration along the value chain including all relevant stakeholders**

CEID
in
numbers

3

3 content deep dives:

Research questions of high political relevance

I. Circular Business Models: the role of digital technologies and regulatory frameworks as enablers for sustainability

II. Traction Batteries: resource-light scale-up of battery systems for electric mobility

III. Packaging: future-proof solutions for a circular plastic packaging industry

4

4 publications:

Until Q1 2021, we will synthesize the insights into actionable measures to support the transition to a Circular Economy and we will disseminate the results:

- **collaboratively:** establishing value-creation networks
- **concrete:** case studies provide relevant insights about incentives and barriers
- **innovative:** science-based recommendations on research gaps to support the transition

Overview CEID: 3 ministries, 24 companies, 22 scientific institutions and other relevant organizations from civil society



Politics

 Bundesministerium für Bildung und Forschung
 Bundesministerium für Umwelt, Naturschutz und nukleare Sicherheit
 Bundesministerium für Wirtschaft und Energie

CEID office

 acatech
 DEUTSCHE AKADEMIE DER TECHNIKWISSENSCHAFTEN
 SYSTEMIQ

Industry

 BOREALIS
 Keep Discovering
 DAIMLER CLARIANT
 ALPLA
 FIWARE
 Open APIs for Open Minds
 AFB
 social & greenIT
 ACCUMOTIVE
 Ein Unternehmen der Daimler AG
 cirplus
 SCHWARZ
 S&B
 Kaufertel
 covestro
 Henkel
 Hochland
 interseroh
 zero waste solutions
 BMW
 TRUMPF
 PEM MOTION
 RLG
 REVERSE LOGISTICS GROUP
 pacoon
 strategie + design
 Stiftung GRS Batterien
 SIEMENS
 Ingenuity for life
 RECENSO
 Recycling and Energy Solutions
 SAP
 SIEGWERK
 umicore

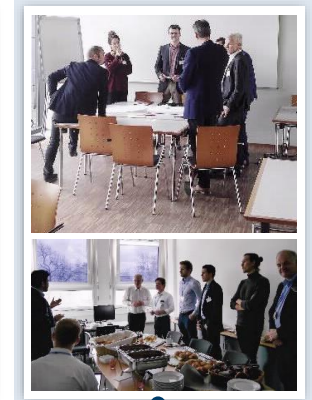
Science

 Fraunhofer ICT
 Fraunhofer UMSICHT
 Technische Universität Braunschweig
 Öko-Institut e.V.
 Institut für angewandte Ökologie
 Institute for Applied Ecology
 KIT
 Fraunhofer IPK
 TU Clausthal
 INSTITUT PRODUKTIONSANLAGEN UND KONSTRUKTIONSTECHNIK
 TUM
 Technische Universität München
 TECHNISCHE UNIVERSITÄT KAISERSLAUTERN
 JYU
 JOHANNES KEPLER UNIVERSITÄT LINZ
 ESCP EUROPE BUSINESS SCHOOL
 LEUPHANA
 UNIVERSITÄT LÜNEBURG
 FH JOANNEUM
 University of Applied Sciences
 Helmholtz-Institut Freiberg für Ressourcentechnologie
 HELMHOLTZ ZENTRUM DRESDEN ROSSENDORF
 TU BERGAKADEMIE FREIBERG
 hhu
 Heinrich Heine Universität Düsseldorf
 ETH Zürich
 UNIVERSITÄT BONN
 Borderstep Institut für Innovation und Nachhaltigkeit
 TECHNISCHE UNIVERSITÄT HEMNITZ
 Wuppertal Institut
 TECHNISCHE UNIVERSITÄT DRESDEN
 UH
 Universität Hamburg
 DER FORSCHUNG | DER LEHRE | DER BILDUNG
 Technische Universität Berlin
 RWTH AACHEN UNIVERSITY

Civil society and other organisations

 WWF
 European Climate Foundation
 Agora Verkehrswende
 WORLD ECONOMIC FORUM
 Geschäftsführung von  KLIB
 Kompetenznetzwerk Klima-Industrie-Bildung
 NPM
 NACHHALIGE PRODUKTION ZWISCHEN NACHHALIGKEIT
 SUN Institute
 Environment & Sustainability
 Leopoldina
 Nationale Akademie der Wissenschaften
 acatech
 DEUTSCHE AKADEMIE DER TECHNIKWISSENSCHAFTEN
 UNION DER DEUTSCHEN AKADEMIE DER WISSENSCHAFTEN
 Energiesysteme der Zukunft

Achievements of the CEID: Milestones on the path of the Circular Economy Initiative Germany



Sep 2018 – Munich
Kick-off meeting of the
Circular Economy
Initiative Germany

Juli 2019 – Berlin
11st Steering
Committee meeting
Publication of Pre-study

Status quo
4 Steering Committee
meetings, 10+ Working Group
meetings with the participation
of 3 Ministerien and 20+
companies and scientific
institutions each

Herbst/Winter 2020
Publication of the
Working Group
Reports –
WG TB¹ and WG
BM² already
published

Q2 2021
Publication of the
central report
“Circular Economy
Roadmap for
Germany”

1 TB = Traction Batterien // 2 BM = Business Models

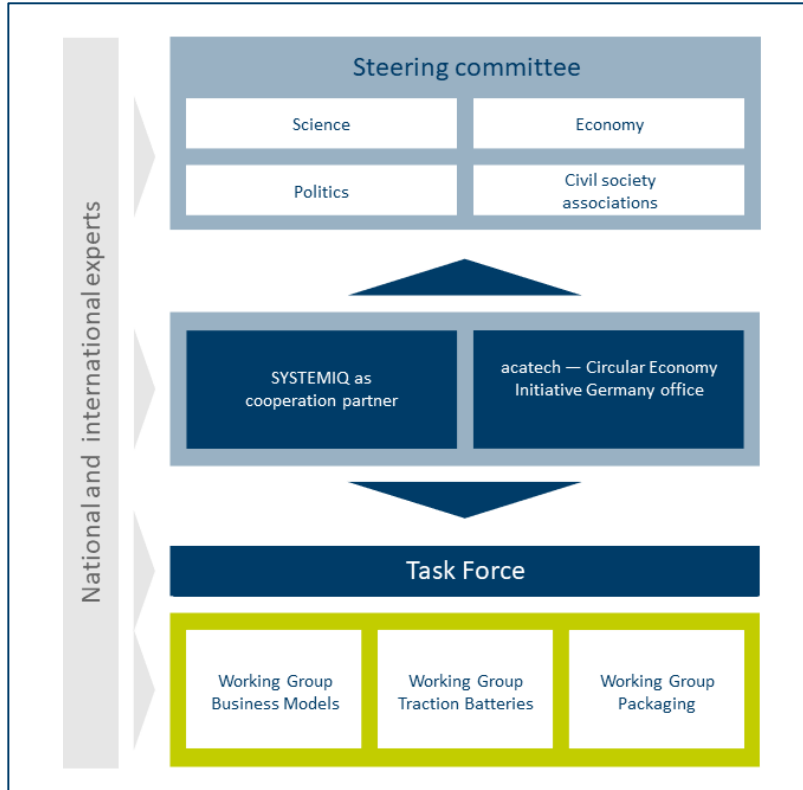


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Annex



Organizational chart and content focus



WG Business Models: Circular Business Models and Digital Technologies as innovation driver

WG Traction Batteries: Value-webs in the use case “Traction Batteries”

WG Packaging: Value-webs in the use case “Packaging”

*The results of the WG’s will be summarized by the Task Force in the **Circular Economy Roadmap**.*