Ecodesign come leva di competitivita’

Serenella Sala

European Commission Joint Research Centre

VII Conferenza Annuale ICESP “Buone pratiche di Ecodesign”, Roma, 12 dicembre 2024

ICESP Italian Circular Economy Stakeholder Platform

The Joint Research Centre of the European Commission

As the science and knowledge service of the European Commission, the Joint Research Centre's mission is to **support EU policy-making with independent evidence throughout the whole policy cycle.**

Anticipate

Looking ahead and seeing more clearly what's coming to us to be better prepared and react more efficiently to new challenges.

Integrate

Connecting the dots and disentangling cross-overs thanks to multi-disciplinary and analytical capability.

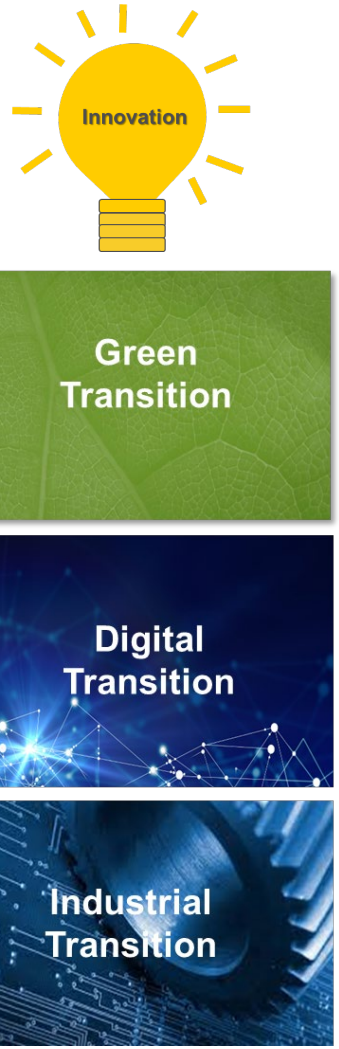
Impact

Measuring the impact of EU policies, supporting the design and monitoring of policies and performance indicators.

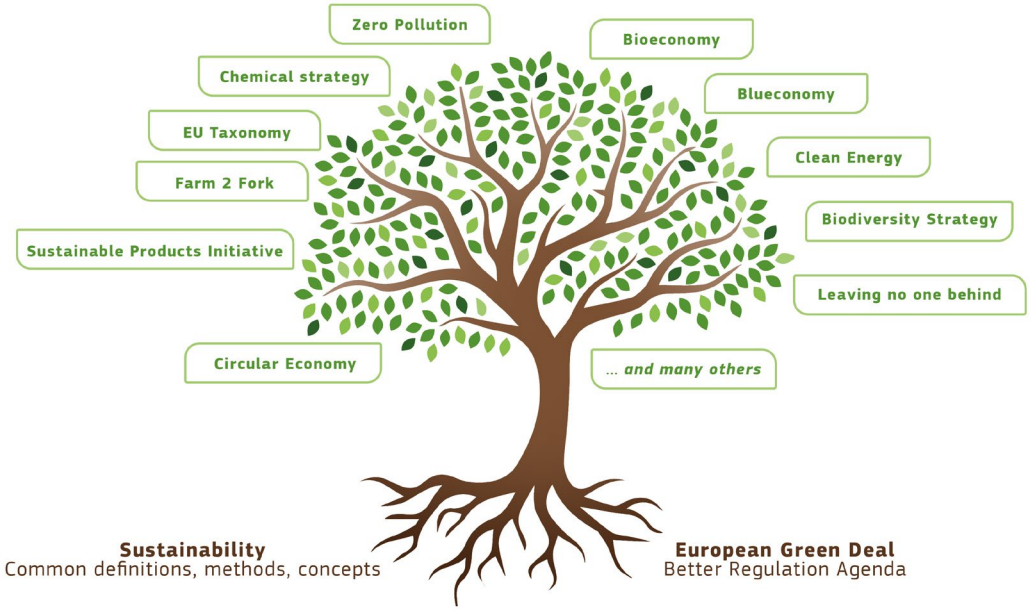
https://joint-research-centre.ec.europa.eu

The policy landscape for green transitions

- **Green Transitions** are part of the **competitiveness agenda** of the European Commission
- JRC is supporting the policy priorities via **actions spanning from system level** analysis down to **sectors, products, materials** and **individual chemicals/substance**
- Research is combining **territorial assessment** with **value chains considerations**



Observe to understand
Understand to impact



Key JRC research activities for circular and bio-based economy, from raw materials, to products and waste

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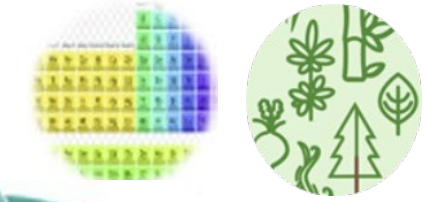
Natural resources and raw materials

Safe and sustainable by design

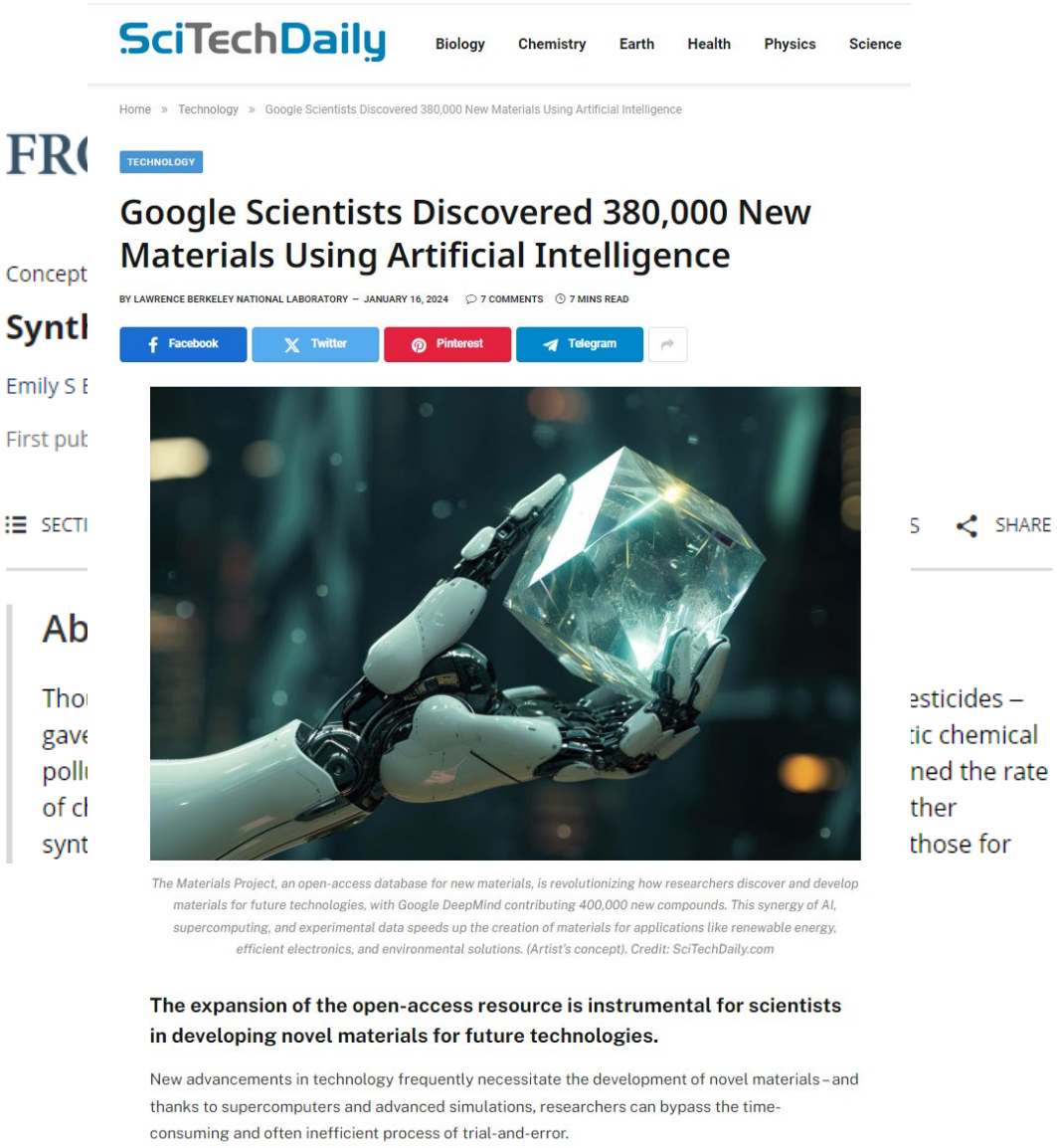


Production and consumption modelling/system modelling

Waste management and circularity of materials

Green and sustainable products

Ecodesing at all levels



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TECHNOLOGY

Google Scientists Discovered 380,000 New Materials Using Artificial Intelligence

BY LAWRENCE BERKELEY NATIONAL LABORATORY – JANUARY 16, 2024 7 COMMENTS 7 MINS READ

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The Materials Project, an open-access database for new materials, is revolutionizing how researchers discover and develop materials for future technologies, with Google DeepMind contributing 400,000 new compounds. This synergy of AI, supercomputing, and experimental data speeds up the creation of materials for applications like renewable energy, efficient electronics, and environmental solutions. (Artist's concept). Credit: SciTechDaily.com

The expansion of the open-access resource is instrumental for scientists in developing novel materials for future technologies.

New advancements in technology frequently necessitate the development of novel materials – and thanks to supercomputers and advanced simulations, researchers can bypass the time-consuming and often inefficient process of trial-and-error.

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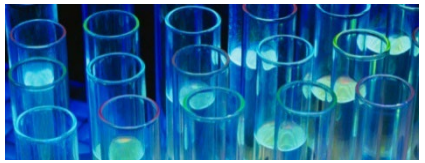
New substances



New products

New materials

New services

New processes and tech

New infrastructures

Ecodesign to address natural resources availability, resource efficiency and security of supply

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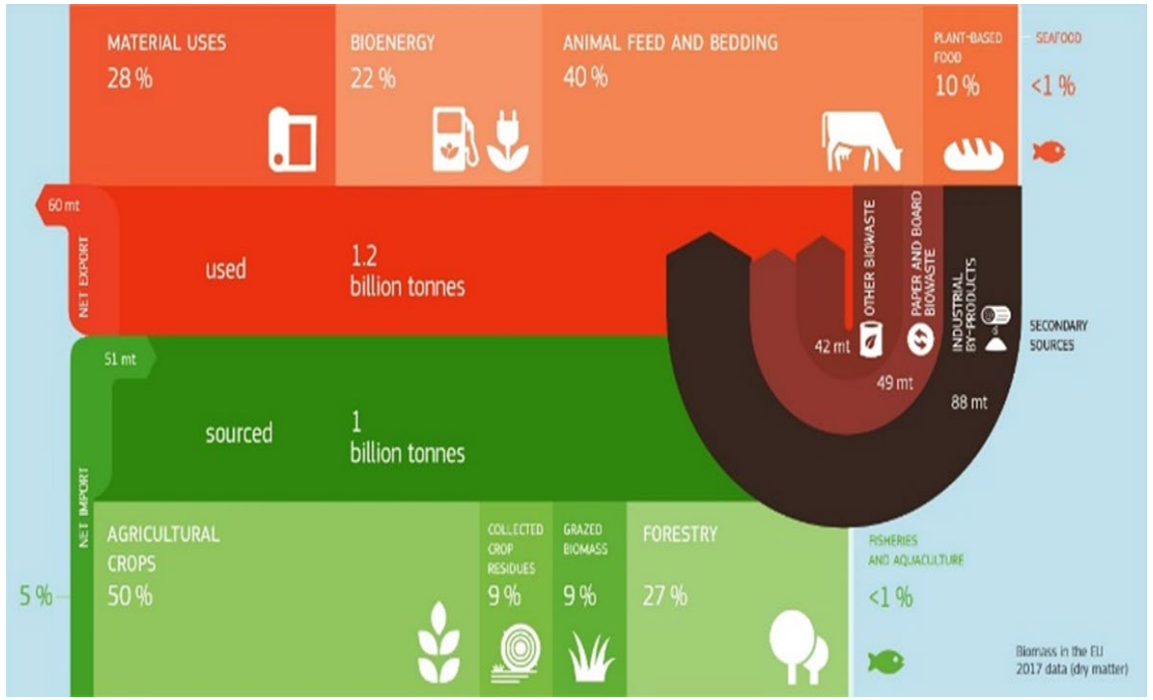
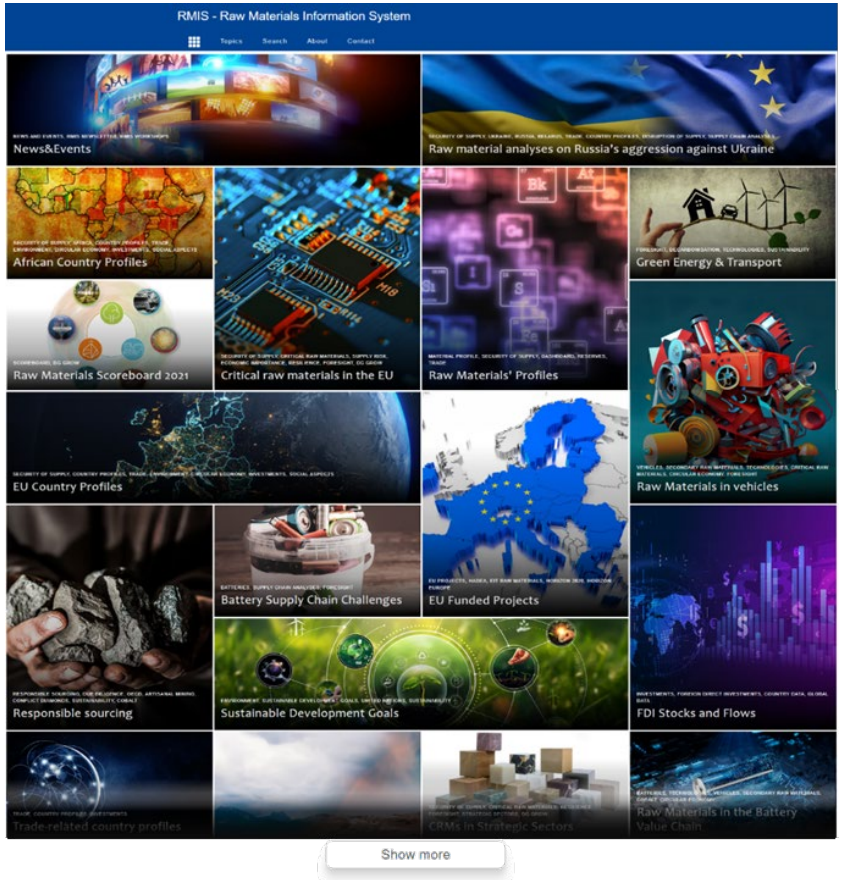
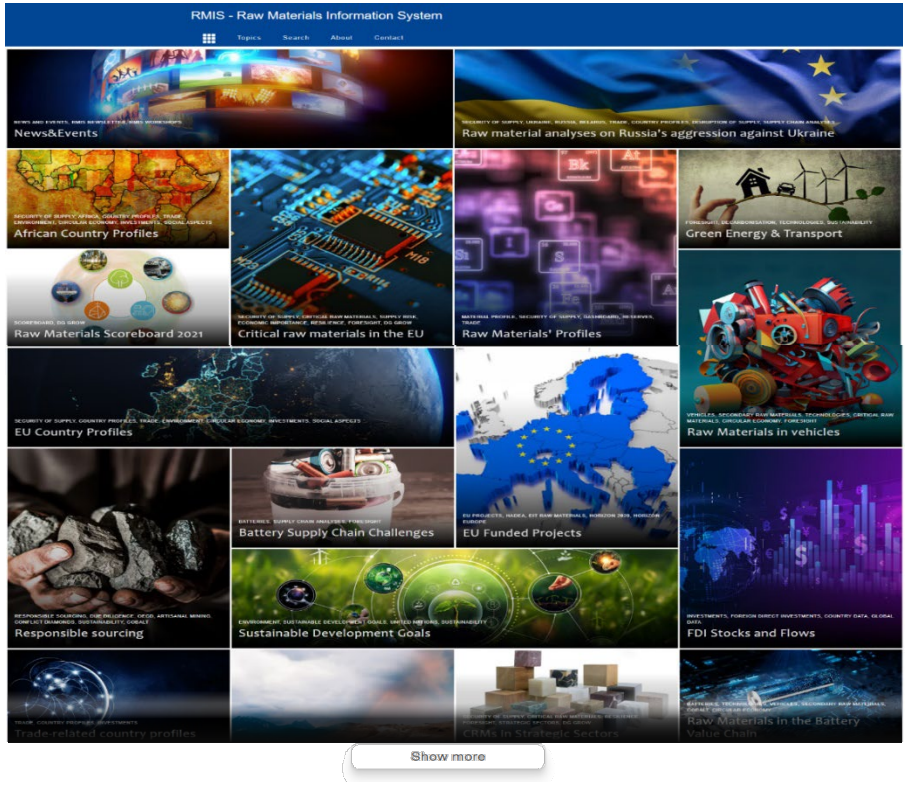
BIOTIC: JRC Biomass mandate



MINERALS/METALS: Raw Materials Information System



EC's Raw Materials Information System (RMIS)



ADVANCED MATERIALS AFRICA ARTISANAL MINING AUTONOMY BATTERIES
CIRCULAR ECONOMY CLIMATE CHANGE COUNTRY DATA
CRITICAL RAW MATERIALS DECARBONISATION DUE DILIGENCE EMPLOYMENT
ENVIRONMENT EU PROJECTS FOOTPRINT FOREIGN DIRECT INVESTMENTS
FORESIGHT GLOBAL DATA GOVERNANCE HEALTH DEVICES HORIZON 2020 HORIZON EUROPE
INDUSTRIAL EMISSIONS INVESTMENTS LAND USE LEGISLATION LIBRARY
LIFE CYCLE ASSESSMENT MATERIAL AND COUNTRY PROFILES
MATERIAL SYSTEM ANALYSIS MEMBER STATES MINERAL INVENTORY MINES LOCATION MONITORING
OPEN STRATEGIC AUTONOMY POLICY POLLUTION RESILIENCE RESPONSIBLE SOURCING
SCOREBOARD SECONDARY RAW MATERIALS SECTORS SECURITY OF SUPPLY
SOCIAL ASPECTS STRATEGIC MATERIALS SUPPLY CHAIN ANALYSES
SUSTAINABILITY SUSTAINABLE DEVELOPMENT GOALS
TECHNOLOGIES TRADE VEHICLES

Critical Raw Material Act

Sustainable Development Goals, Principles, Partnerships, Sustainable Management, Policies, Knowledge Systems

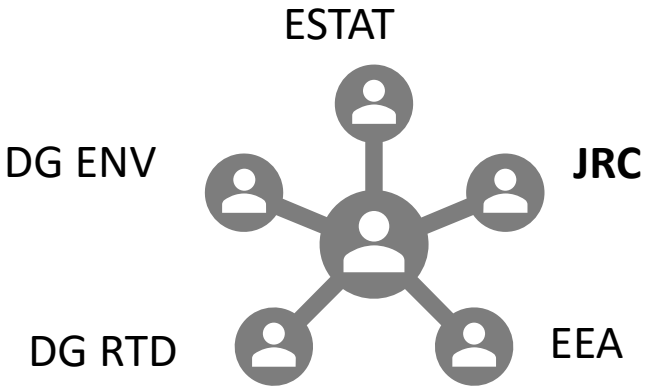
Circular Economy and Value Chains Supply risk analyses, Recycling and Ecodesign

Environmental Performance Environmental Assessments and Footprints, Life Cycle Assessments

Social dimension Life cycle social assessments, Responsible Sourcing, Due Diligence, Conflicts

https://rmis.jrc.ec.europa.eu/

The Integrated system for Natural Capital Accounting (INCA)

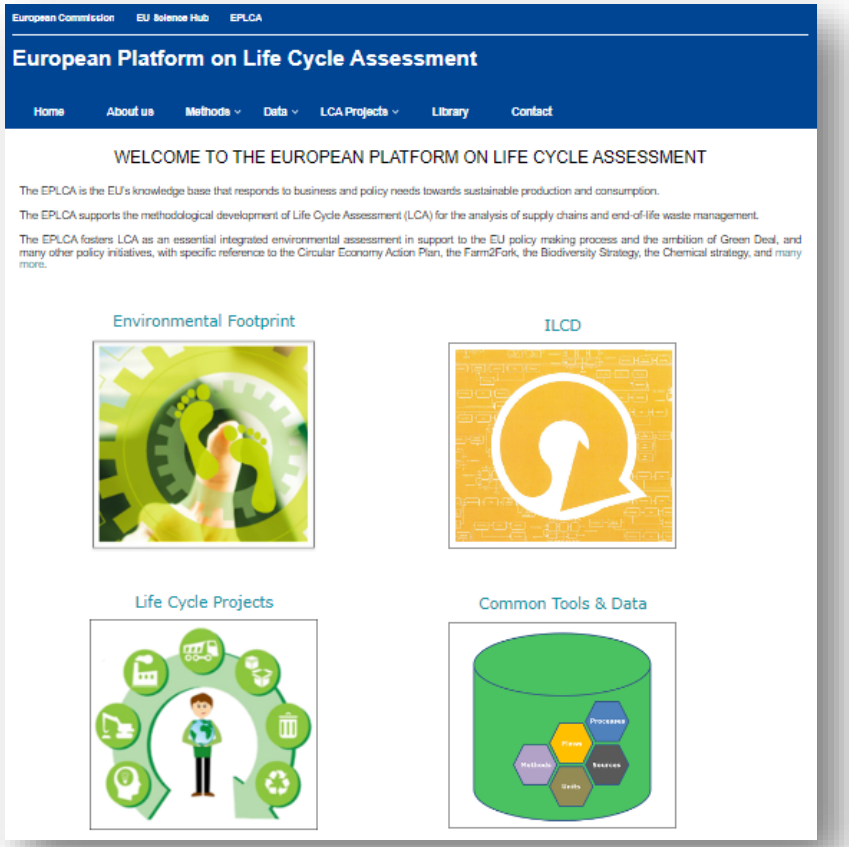


Biophysical assessment and monetary valuation of ecosystem services for Europe

How ecosystems support economy and society?

https://ecosystem-accounts.jrc.ec.europa.eu/

European Platform on Life Cycle Assessment
to support supply chain analysis



https://eplca.jrc.ec.europa.eu/

JRC supports EU policies and the development of methods to improve robustness and wide applicability of value chains assessment via **life cycle assessment**

Embracing all steps of the value chains	Fostering comprehensiveness	Unveiling trade offs

- Support **throughout the policy cycle**
- Research and **application** tools
- Continuous **exchanges** with **scientists** from environmental, social, and economic domains and **stakeholders**

Ecodesign for Green and sustainable products

- JRC scientific support since 2008 for defining life cycle based rules for the measurement and communication of the **Environmental Footprint** of products and organisations (being the basis of EC Recommendations 2279/2021)
- The Environmental Footprint allow companies to account for inputs of materials and energy across the life cycle, improving **resource efficiency** (through circular economy strategies, as durability, recycled content, recyclability) and **decreasing overall impacts**
- The Environmental Footprint serves a growing number of legislation as:

  Green Claims Directive,

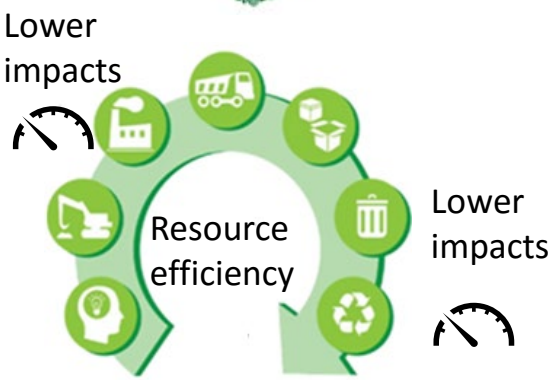
  Taxonomy and sustainable finance

  Ecodesign Directive (revised MEErP),

  Ecodesign for Sustainable Products,

  Battery Regulation proposal,

  Ecodesign implementing act (as for PV panels).



https://eplca.jrc.ec.europa.eu/

Ecodesign for Sustainable Product Regulation

the new sustainability & ecodesign approach

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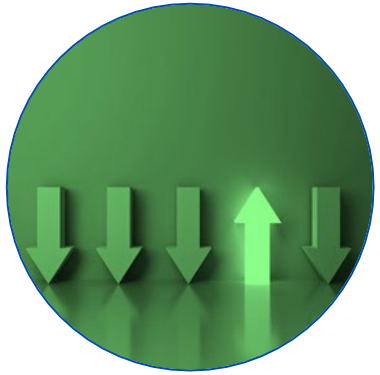
Broad scope

Moving beyond energy-related products to a **wide product scope including components and intermediate products**



New sustainability & ecodesign aspects

e.g. **performance requirements** - durability, CO_2 footprint, recycled content

Green Public Procurement

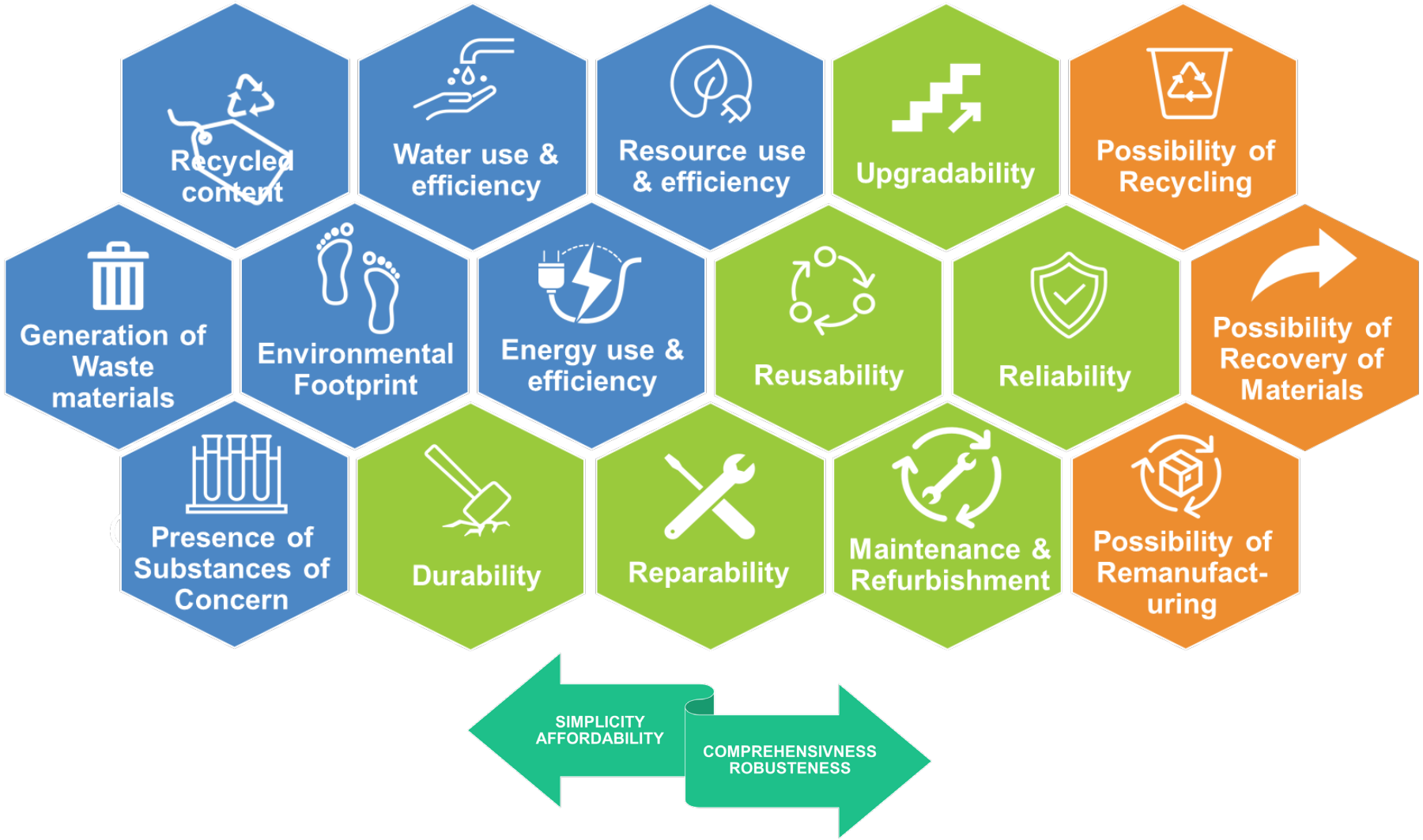
Mandatory GPP **requirements** for contracting authorities or contracting entities

Strong focus on product information

Digital Product Passport, labels & **information requirements**

Key product aspects under ESPR

Article 5 – Ecodesign requirements



Ecodesign and waste management systems

Support to Waste policies, including the revision of Waste Framework Directive

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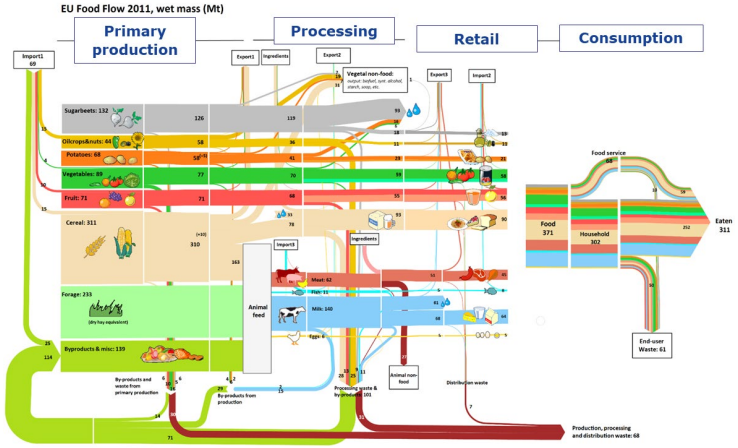
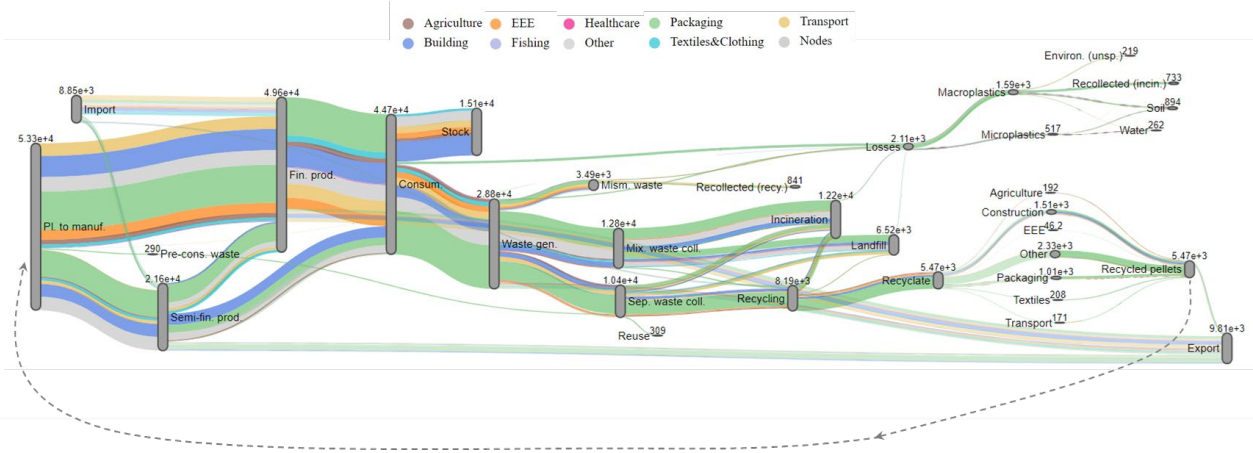
System analysis and LCA to support waste and circularity policies in key sectors:
Food, Textile, Construction and Demolition, Vehicles, Plastics

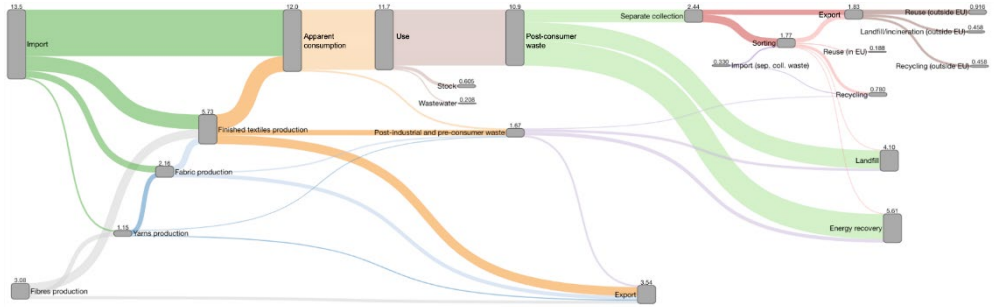
Food System analysis and waste quantification



Plastic System analysis and waste quantification, including littering



Textile System analysis and waste quantification



NEWS ANNOUNCEMENT | 13 July 2023 | Joint Research Centre

Innovative requirements could boost circular economy of plastics and critical raw materials in vehicles

New vehicles make up around 10% of plastic demand in the EU and the automotive sector consumes around half of the overall EU use share of some critical raw materials. Innovative policy measures may enhance circular economy of these materials.

Ecodesign of chemicals and materials

Safe and sustainable by design (SSbD) chemicals and materials

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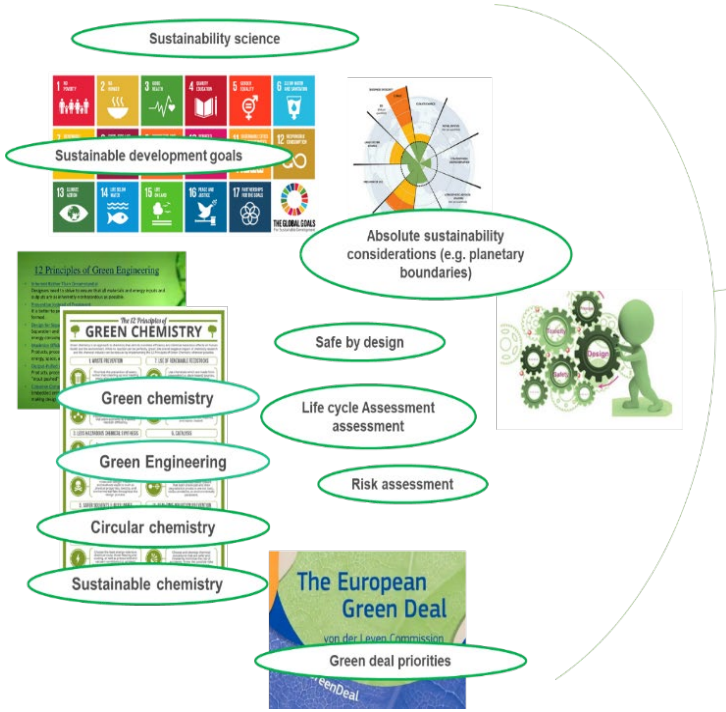
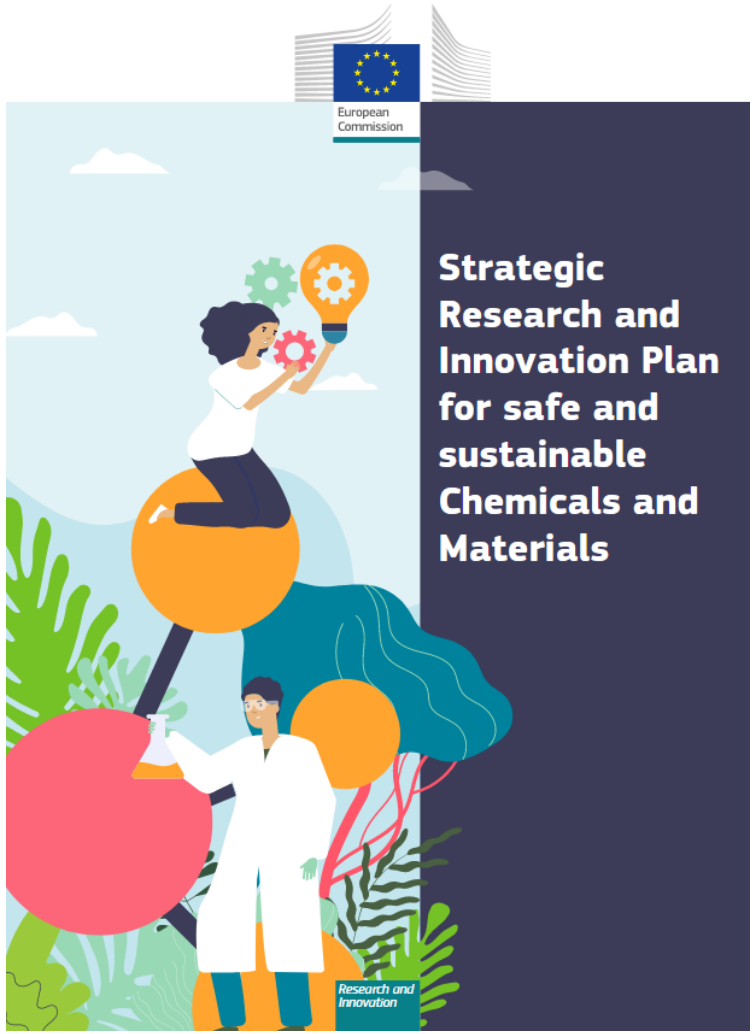


Safe and sustainable by design

REVIEW https://publications.jrc.ec.europa.eu/repository/handle/JRC127109
FRAMEWORK https://publications.jrc.ec.europa.eu/repository/handle/JRC128591
RECOMMENDATION https://research-and-innovation.ec.europa.eu/system/files/2022-12/Commission%20recommendation%20-%20establishing%20a%20European%20assessment%20framework%20for%20safe%20and%20sustainable%20by%20design.PDF
METHODOLOGICAL GUIDANCE JRC Publications Repository - Safe and Sustainable by Design chemicals and materials - Methodological Guidance (europa.eu)

SSbD as enabler of sustainability transition



https://ec.europa.eu/assets/rtd/srip/2022/REC-22-003-SRIP-chemical.pdf

Ecodesign for strategic autonomy
Communication on advanced materials

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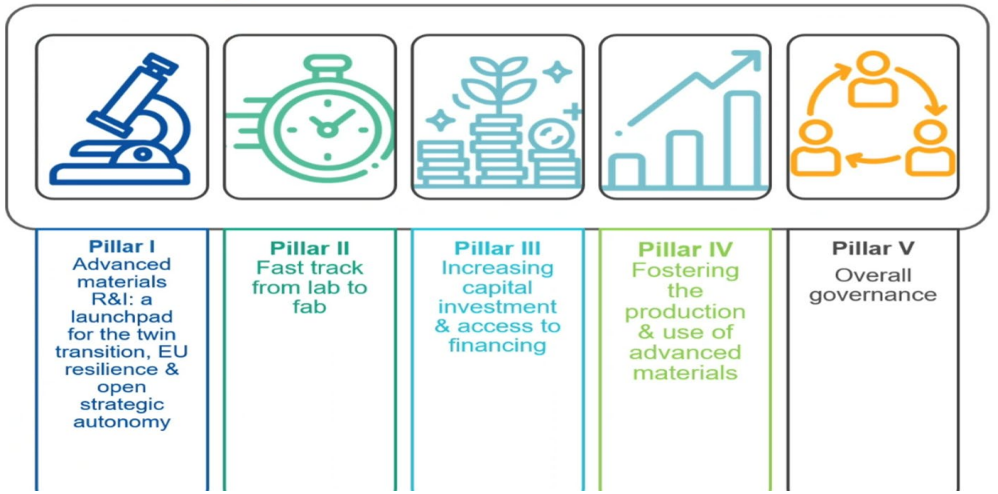
EUROPEAN COMMISSION

Strasbourg, 27.2.2024
COM(2024) 98 final

COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS

Advanced Materials for Industrial Leadership

The Strategy



- Critical raw materials (CRMs) substitution needs
- Advanced materials to be developed following EC recommendation on safe and sustainable by design chemicals and materials

Conclusions

- Ecodesign is more and more prominent in EU policies
- Most of the impacts we observe today due to production and consumption systems are related to the way products and systems were designed.
- The capacity to implement Ecodesign principles at all levels, from chemicals, to materials, products, and systems is essential for effective green transitions

Grazie per l'attenzione

Serenella Sala
European Commission
Joint Research Centre
Serenella.Sala@ec.europa.eu

@ICESPItalia

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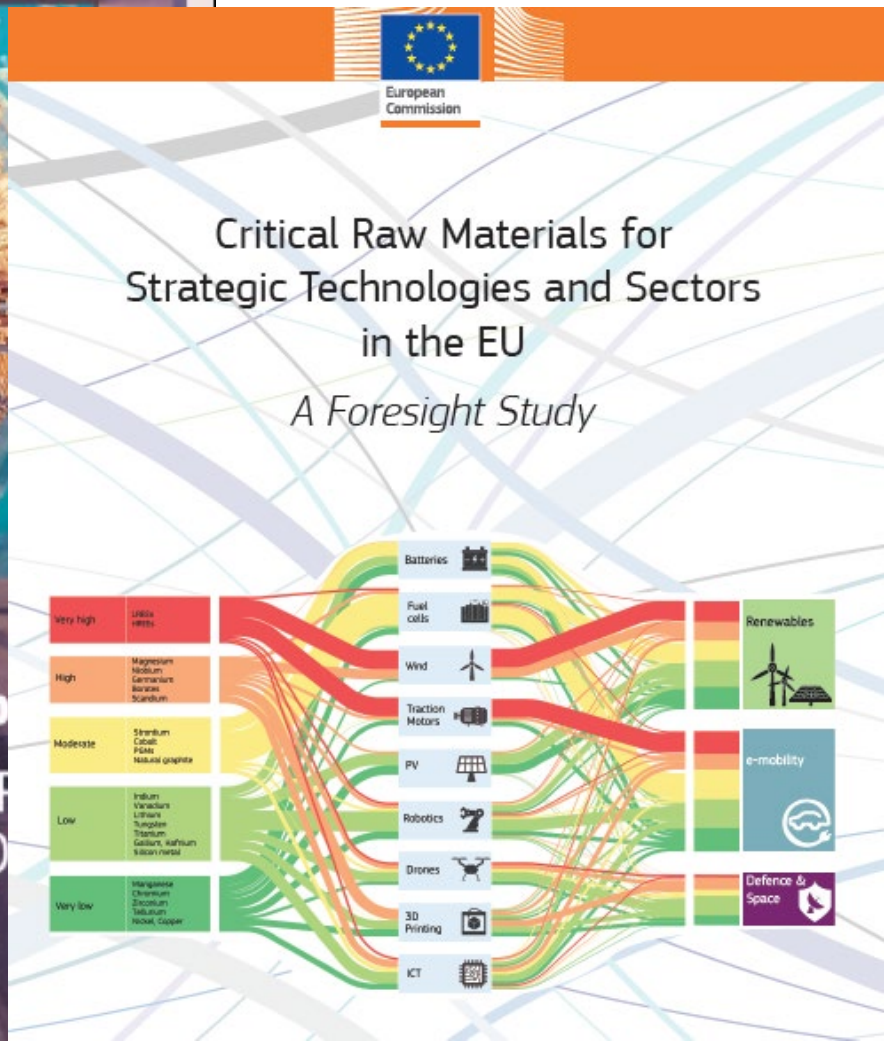
The EC **Strategic Foresight Report** aims to identify emerging challenges and opportunities to better steer the European Union's strategic choices.



The EC 2020 **Strategic Foresight Report** builds on insights and examples from the Report "**Critical Raw Materials for Strategic Technologies and Sectors in the EU - A Foresight Study**", which development was supported by the JRC.