# Der Digitale Produktpass

Thomas Ebert

Policy Analyst – Seconded National Expert

DG CONNECT, European Commission

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# Global Risks

## Top 10 risks

WORLD
ECONOMIC
FORUM

"Please estimate the likely impact (severity) of the following risks over a 2-year and 10-year period."

### 2 years

| | |
|---|---|
| 1st | Misinformation and disinformation |
| 2nd | Extreme weather events |
| 3rd | Societal polarization |
| 4th | Cyber insecurity |
| 5th | Interstate armed conflict |
| 6th | Lack of economic opportunity |
| 7th | Inflation |
| 8th | Involuntary migration |
| 9th | Economic downturn |
| 10th | Pollution |

### 10 years

| | |
|---|---|
| 1st | Extreme weather events |
| 2nd | Critical change to Earth systems |
| 3rd | Biodiversity loss and ecosystem collapse |
| 4th | Natural resource shortages |
| 5th | Misinformation and disinformation |
| 6th | Adverse outcomes of AI technologies |
| 7th | Involuntary migration |
| 8th | Cyber insecurity |
| 9th | Societal polarization |
| 10th | Pollution |

**Risk categories**   ▮ Economic   ▮ Environmental   ▮ Geopolitical   ▮ Societal   ▮ Technological

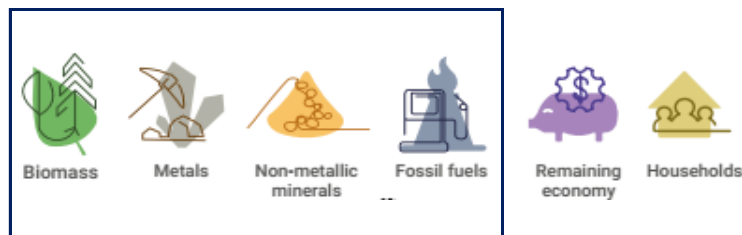Source: WEF Global Risk Perception Survey 2023-2024

- half of the top 10 risks seen by global experts from academia, business, government, the international community and civil society on a 10-year horizon relate to Environmental Risks

(World Economic Forum)

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# Resource consumption drives triple crisis

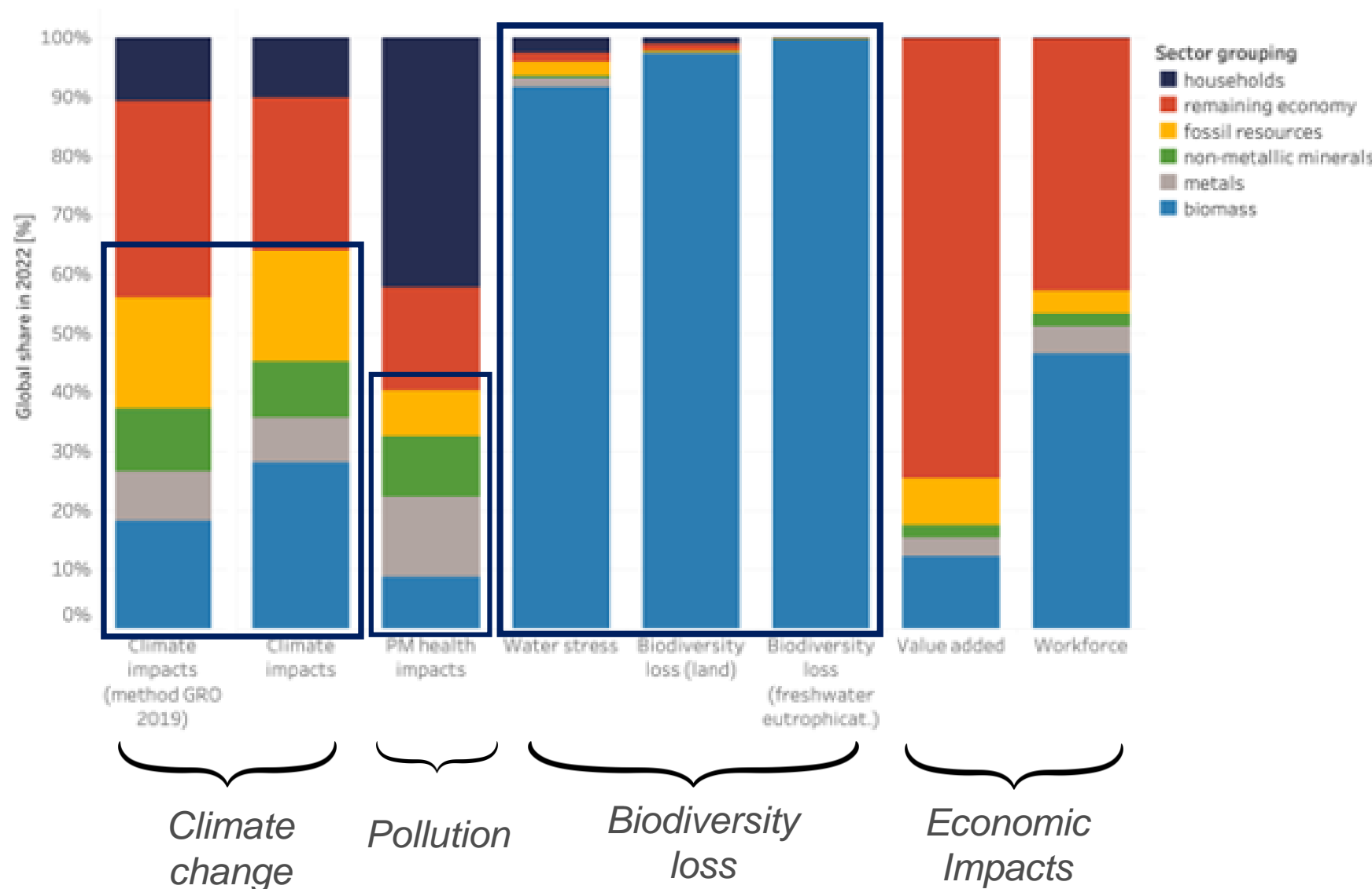*Environmental impacts of materials in the value chain in extraction and processing phase*



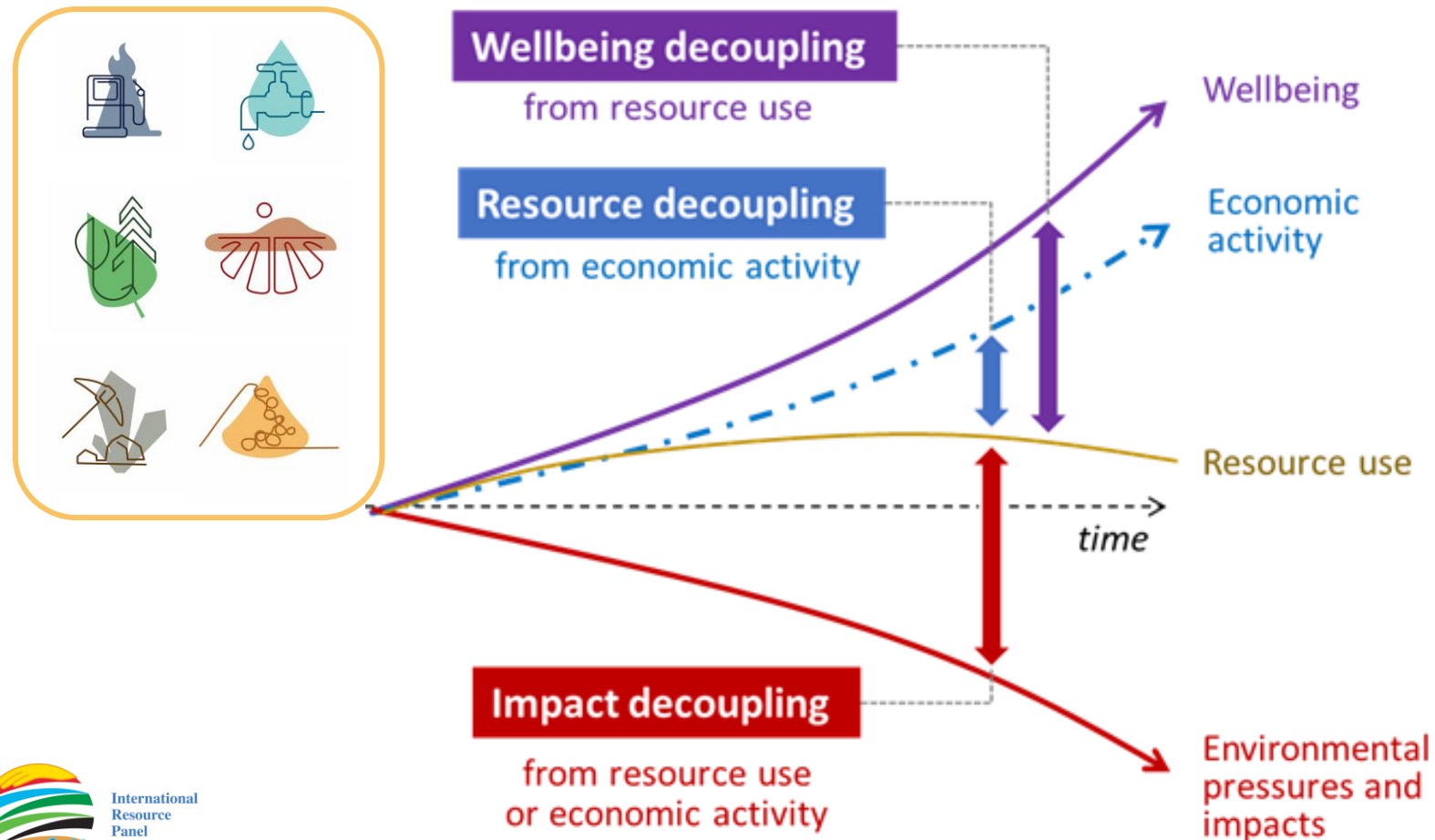*60% of global climate change impacts including land use change*

*40% of air pollution health impacts*

*More than 90% of water stress and global land and water eutrophication related biodiversity loss*
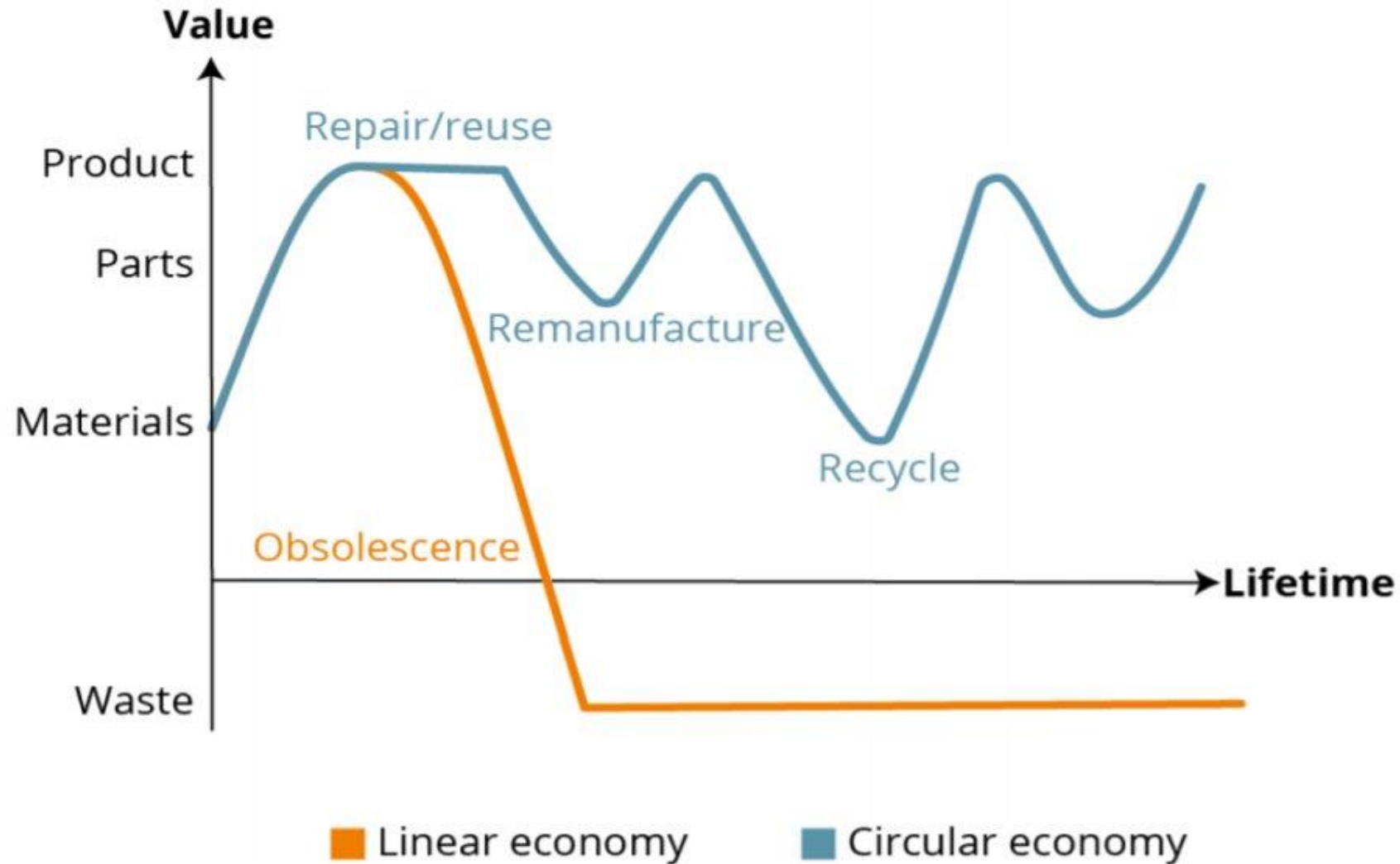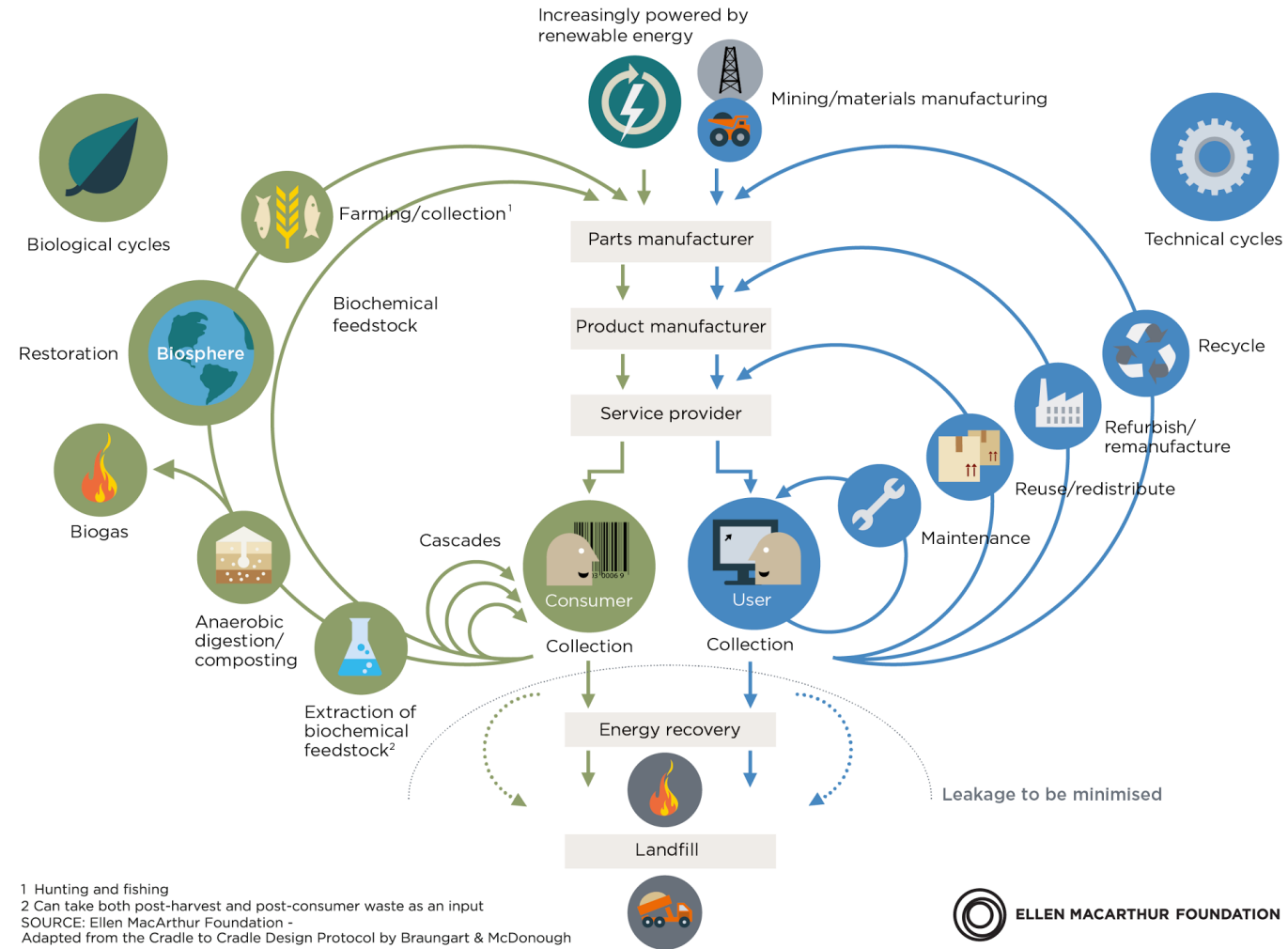
# Concept of Decoupling

# Circular Economy on the Product Level



(European Commission DG Environment)

# Circular Economy – Key for Sustainability



1 Hunting and fishing
2 Can take both post-harvest and post-consumer waste as an input
SOURCE: Ellen MacArthur Foundation -
Adapted from the Cradle to Cradle Design Protocol by Braungart & McDonough

The Butterfly Diagram: Visualising the Circular
Economy (ellenmacarthurfoundation.org)

# Circular Economy – Key for Sustainability



Increasingly powered by renewable energy

Mining/materials manufacturing

Biological cycles

Farming/collection[1]

Biochemical feedstock

Restoration

Biosphere

Technical cycles

Recycle

Parts manufacturer

Product manufacturer

Service provider

Refurbish/remanufacture

Reuse/redistribute

Biogas

Maintenance

Anaerobic digestion/composting

Cascades

Consumer

User

Collection

Collection

Extraction of biochemical feedstock[2]

Energy recovery

Leakage to be minimised

Landfill

**Cooperation** among manufacturers, retailers, repairers, recyclers, is **essential to enable** these 'circles'

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ELLEN MACARTHUR FOUNDATION

The Butterfly Diagram: Visualising the Circular Economy (ellenmacarthurfoundation.org)

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# Sustainable Products Initiative



Complementary sectoral rules on construction and other product categories (e.g. batteries, chemicals, packaging)

**Strategy for Sustainable and Circular Textiles**
→ Binding eco-design requirements, incl. durability, reparability, and recycled fiber content
→ Stop microplastics pollution
→ Tackle fast fashion, textile waste, and the destruction of unsold products
→ Accurate green claims
→ Sustainable global value chains

**Ecodesign Working Plan 2022-2024**
→ Higher energy efficiency and circularity for energy-related products
→ New rules for consumer electronics (smartphones, tablets, solar panels)

**Ecodesign for Sustainable Products Regulation**
→ Performance and information requirements for greener products
→ Tackle the destruction of unsold goods
→ Waste prevention and reduction
→ Mandatory criteria for green public procurement
→ Digital Product Passport and new labelling rules
→ Stronger market surveillance

**New rules to empower consumers for the green transition**
→ Protection against greenwashing and the deliberate planning or design of products with limited lifespans
→ Information on product durability and reparability

**Support for circular business models**
→ European circular business hub
→ Guidance to businesses

**Global action**
→ Global sustainable consumption and production forum
→ Corporate sustainability due diligence

**COM webinar on ESPR (22.05.2024):**

https://commission.europa.eu/energy-climate-change-environment/standards-tools-and-labels/products-labelling-rules-and-requirements/sustainable-products/ecodesign-sustainable-products-regulation_en

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COM/2022/140 final

# The political context

- The objective of the DPP is to simplify digital access to relevant product-specific information in the area of **sustainability**, **circularity**, and **legal compliance**. It is **not** a track & tracing tool, but it will allow to also include traceability information when appropriate.

- There is a (growing) number of EU policies which will rely on DPP or element of it in order to make digitally available product related information:
  - ESPR ([COM/2022/142 final](#); [EUR-Lex - PE_106_2023_REV_1 - EN](#)),
  - Batteries Regulation **([EU 2023/1542](#))**,
  - Toys regulation ([COM/2023/462 final](#)),
  - Detergents regulation ([COM(2023) 217 final](#)),
  - Construction Products Regulation ([COM(2022) 144 final](#)),
  - Critical Raw Material Act ([COM(2023) 160 final](#)),
  - End-of-life vehicles ([COM(2023) 451 final](#))

- The DPP-system shall build on <u>existing</u> best practices at international level, while also allowing the possibility of using new technologies and approaches

- The DPP is an important deliverable in the Commission strategy to digitalise our economy (green & digital). Many DGs are actively contributing to its design and deployment (CNECT, DIGIT, ENER, ENV, GROW, JRC, TAXUD,…)

# Building on the Ecodesign Framework

- **Key features of the Ecodesign Directive approach maintained:**

  ✓ **Framework legislation**: a new Regulation on Ecodesing for sustainable products

  ✓ Regularly updated **multiannual working plans** setting out priorities

  ✓ **Product-specific measures** based on dedicated impact assessment

Working plan → Start working on a product → Preparatory study and Impact Assessment → Ecodesign Forum → Adoption of Ecodesign measure

Stakeholder consultation
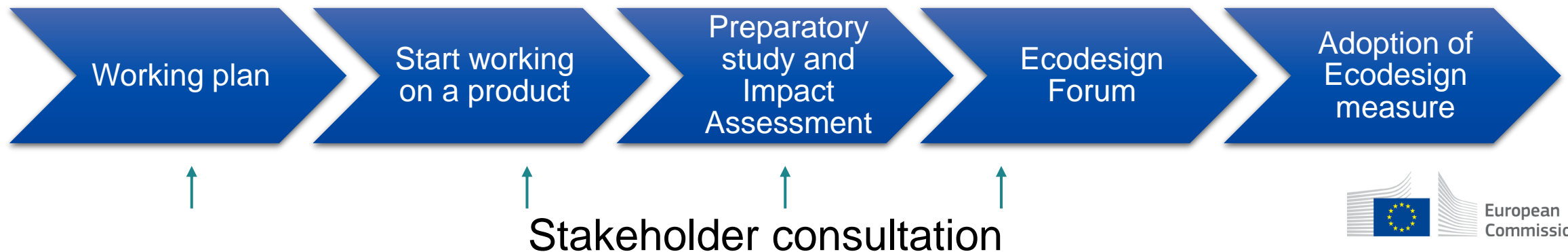
# ESPR Working Plan

- The Commission will adopt an **ESPR Working Plan**. Adoption is expected within 9 months after the entry into force of ESPR (i.e., around Q1-Q2 2025).

- The co-legislators have pre-identified a number of product groups the Commission should prioritise:
  - Iron & steel
  - Aluminium
  - Textile, notably garments and footwear
  - Furniture, including mattresses
  - Tyres
  - Detergents
  - Paints
  - Lubricants
  - Chemicals
  - Energy related products
  - ICT products and other electronics

Preperatory study working plan:

https://susproc.jrc.ec.europa.eu/product-bureau/product-groups/635/documents

- The Commission retains the right to add or remove product groups from the ESPR working plan, but it should provide a justification for each decision.

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# ESPR: tentative timeline & milestones

**25 April 2024**
EP Plenary voted on final ESPR text

**June 2024**
Publication of ESPR in the OJ

**Q3 2024**
Establishment of Ecodesign Forum; calls for membership

**March 2025**
Adoption of the 1st ESPR **Working Plan** (9m after entry into force)

**Late 2025**
**Acts on DPP** registry, service providers, data carriers, digital credentials

**18.02.2027**
**First DPP required** for 'large' batteries (2023/1542)

**22 May 2024**
Council endorsed ESPR

**July 2024**
ESPR **entry into force**

**Late 2024/2025**
**First meeting** of the **Ecodesign Forum**

**Mid 2025**
Acts on **unsold goods** destruction ban & exemptions (12m after entry into force)

**2026**
**Adoption** of the **first ESPR measures** (e.g. textiles/steel)

**2027/2028**
**First** ESPR product **requirements** start to apply (inkl. DPP).

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# Information Flow in a Linear Economy
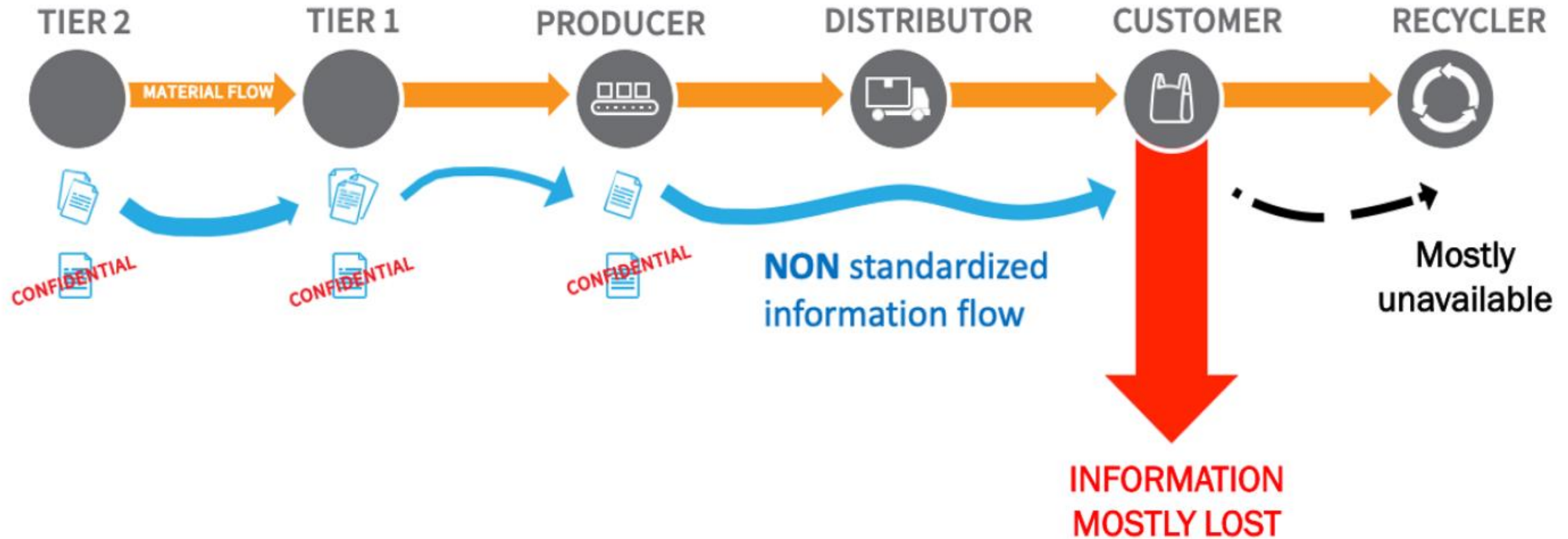
# Digital Product Passport – Expected Benefits

Tracking of **raw materials extraction/production**, supporting due diligence efforts
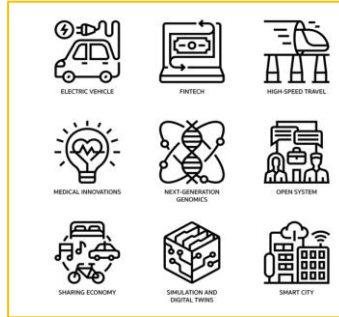
Enable **manufacturers** to link products **digital twins**, embedding all the information required

Tracking the life story of a product, enabling services related to its **remanufacturing, reparability, re-use/re-sale/second-life, recyclability**, new business models

Benefit **market surveillance authorities and customs authorities**, by making available information they would need to carry out their tasks

Make available to **public authorities and policy makers** reliable information. Enable to link **incentives** to **sustainability performance**

Allow **citizens** to have access to **relevant and verified information** related to the characteristics of the products they own or are considering to buy/rent (e.g. using apps able to read the identifier)

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# Digital Product Passport – Design

DPP-system

← → (the arrows)

Digital Product Passport

DPP-data

*(the "**HOW**". To be developed horizontally for all product groups and legislations)*

*(the "**WHAT**". To be developed through **product-group specific** <u>dedicated legislation</u>)*

- **The DPP registry**

- **All standards and protocols related to IT architecture:**
  1. Unique identifiers
  2. Data carriers and links between physical product and digital representation
  3. Access rights management, information security, and business confidentiality
  4. Interoperability (technical, semantic, organisation)
  5. Data processing , data exchange protocols, and data formats
  6. Data  storage, archiving, and data persistence
  7. Data authentication, reliability, integrity
  8. APIs for the DPP lifecycle management and searchability

Information to be included in the DPP will be **product-group specific** and identified in delegated act process.

It may include information/data on one or more of the following areas:

- Technical performance
- Environmental sustainability performance
- Circularity aspects (durability, repairability, etc)
- Legal compliance
- Product-related information (e.g., manuals, other labels)

# Digital Product Passport – Design

- DPP is based on a **decentralised** approach for data storage.

- The DPP will be linked to a <u>product</u> or <u>component</u>.

- Access to data will take place through a **product unique identifier**, embedded in a **data carrier and** relying on a **look-up mechanism**.

- Access to DPP-data based on a **need-to-know** basis (there will be public and restricted data)

- **3** possible levels of **granularity**: (i) model, (ii) batch, (iii) item

- 4 unique identifiers will always be required:

  - Product identifier
  - Economic operator identifier

  - Facility identifier
  - Registration identifier (not public)

- Economic operators shall make also available a back-up copy of the DPP through a [certified] independent third-party DPP service provider

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# EU DPP (central) registry and web portal

**DPP registry**

- Product identifier
- Economic operator identifier
- Facility identifier
- Registration identifier (this will not be public)
- Commodity code
- Back-up reference
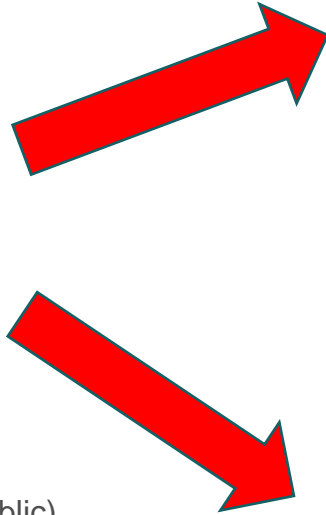
Link with **EU CSW-CERTEX** – This is an EU central operational system that already exchanges information with other EU partner DGs central systems for verification purposes. It will enable automatic verifications by the customs authorities on the existence and authenticity of the DPP.

It will be the "**entry point**" for the web portal(s) the Commission will have to set up to allow **search & compare** functions of the information included in the DPPs

Web portal for "restricted" data

Web portal for "public" data

Mostly to support Market Surveillance Authorities, customs authorities, governments, other agencies

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# Main requirements for companies

- Make sure that a product passport **exists**, and it is in compliance with essential requirements established in Articles 10 and 11

- Make sure that the product passport is **complete**, meaning it includes all the mandatory information listed in the corresponding product group-specific Delegated Act.

- Make sure that the information included in the passport is **authentic, reliable** and **verified** in accordance with requirements established in the corresponding product group-specific Delegated Act.

- A **back-up copy** of the DPP is stored by a [certified] third-party product passport service provider.

- Copy of the data carrier or unique product identifier are made available to **dealers** and **online market places** selling the corresponding product.

# Implementation work ahead

Many Commission services are actively contributing to its design and deployment (DGs CNECT, DIGIT, ENER, ENV, GROW, JRC, TAXUD)

- Rules and requirements to be followed by **DPP service providers**, including a certification scheme to verify such requirements (via delegated act).

- Procedures to issue and verify the **digital credentials of economic operators and other relevant actors** that shall have access rights to DPP information (via implementing act).

- Rules and procedures related to **unique identifiers and data carriers' lifecycle management** (via delegated acts)

- Design and set-up the **DPP registry**.

- Design and set up the **DPP web portal**.

- Definition of **standards** (by 31 December 2025).

# Ongoing Work

- **StandICT**: landscaping report on existing DPP-related standards

- **CIRPASS**:
    - Collect examples of existing DPP-like systems
    - Analysing the standards
    - Develop roadmaps and prototypes

- **Standardization request**

- **CIRPASS-2**
    - Deploy and validated at scale and real life setting Digital Product Passports
    - Report on further needs for standardisation and specifications to ensure interoperability, security, and acceptance by all the stakeholders.
    - Recommendations based on the lessons learnt.
    - Work package to support SMEs

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# Thank you

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