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Digital Product Passport – Perspective of the European Commission

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Commission Priorities (2019-2024)



- **A European Green Deal**
- **A Europe fit for the digital age**
- *An economy that works for people*
- *Protecting our European way of life*
- *A stronger Europe in the world*
- *A new push for European democracy*

*‘..a once-in-a-generation opportunity to ensure Europe leads the way on the **twin ecological and digital transitions**.’*

Green & digital transition to new prosperity models



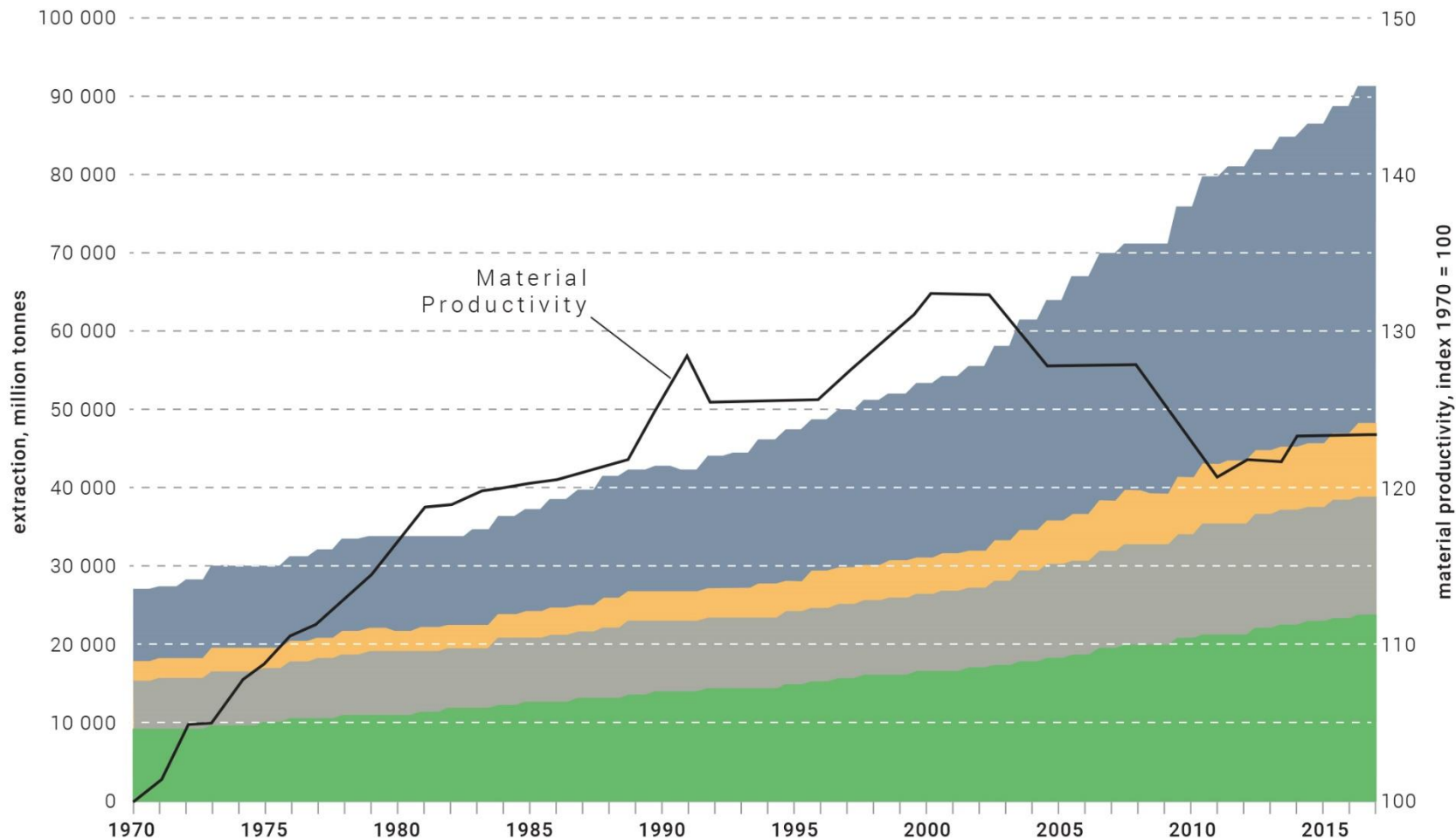
The prosperity model in the past decades took a strong advantage from the low prices of the main production factors. It has showed its limits due to public health, climate, pollution and biodiversity emergencies and geopolitics regarding critical raw materials.

This Commission has set itself the objective of making a new sustainable prosperity model of the **EU that builds on and benefits from the green and digital transitions and their synergy.**

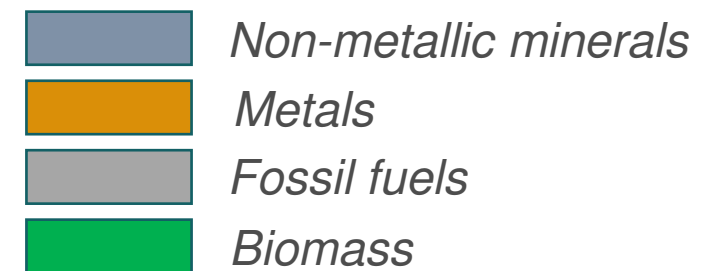
European businesses need to harness the benefits of the green and digital transitions, for example by moving **to new sustainable and circular business models** that are enabled by digitalisation and deliver concrete benefits to our economy, society and environment.

Material Productivity

Global material extraction and material productivity, 1970 - 2017



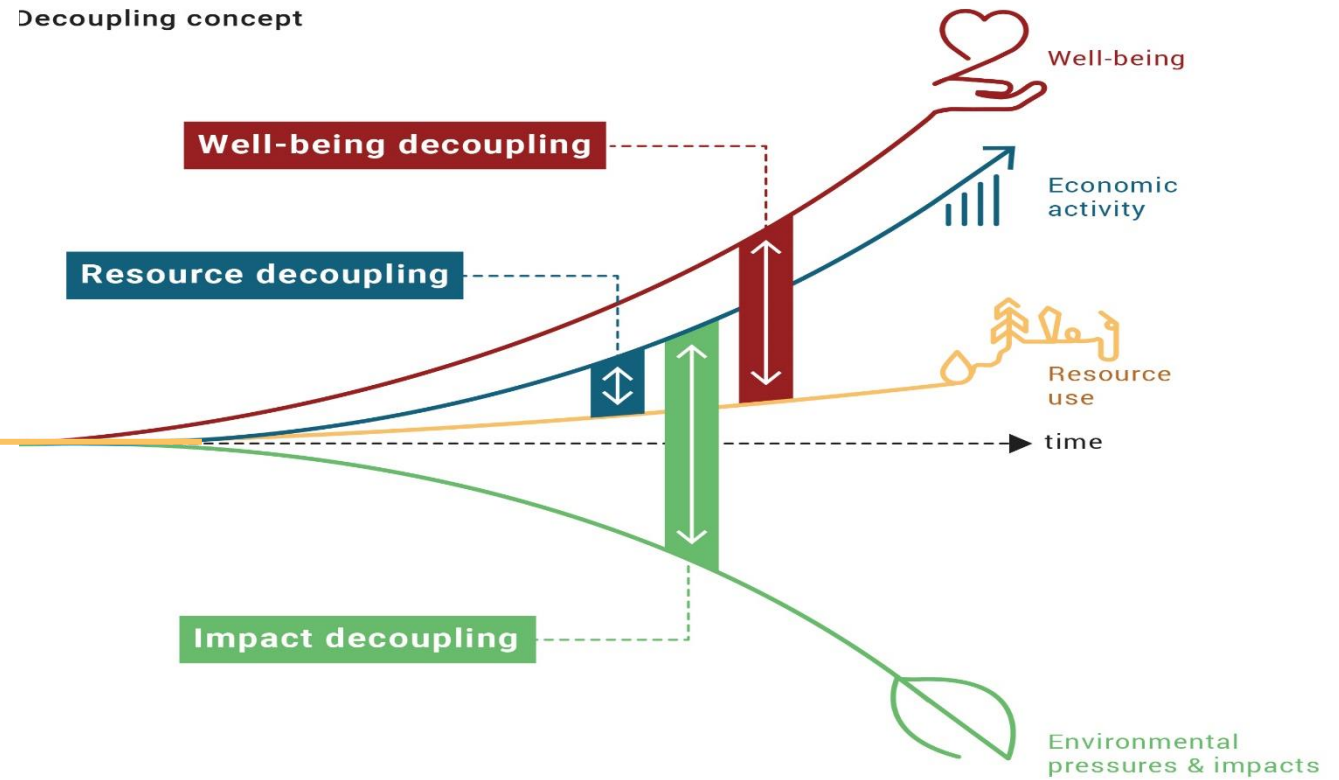
- *Global material use has more than tripled since 1970*
- *Global material demand per capita grew from 7.4 tons in 1970 to 12.2 tons per capita in 2017*
- *Material productivity started to decline around 2000 and has stagnated in the recent years*



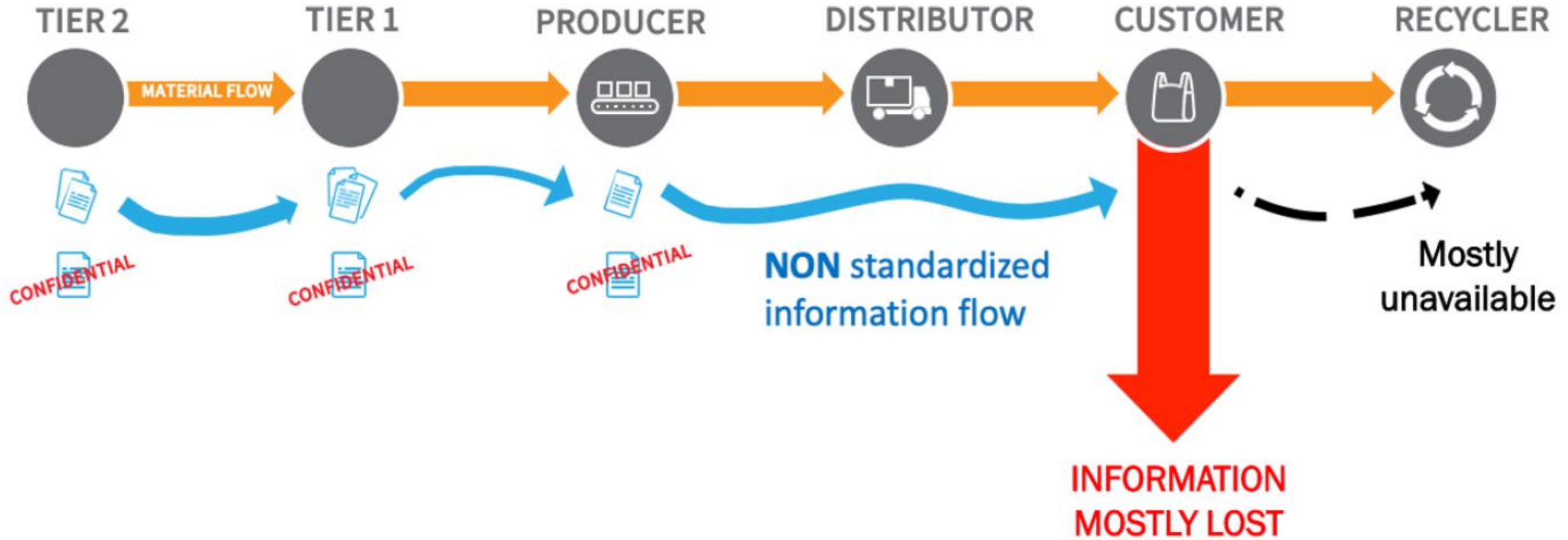
Sustainability is not only about GHG emissions reduction



Decoupling concept

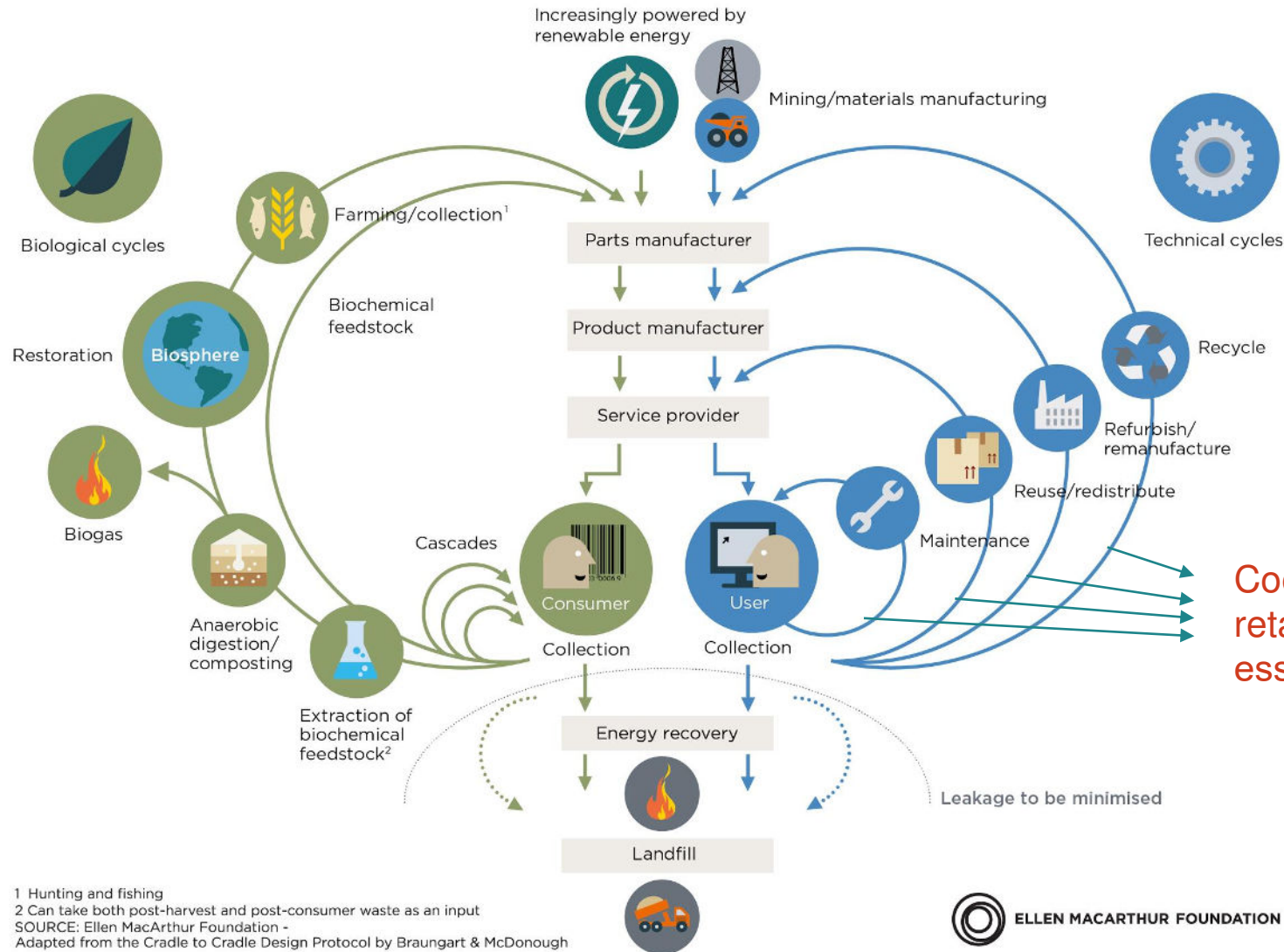


Information Flow in a Linear Economy



Circular Economy

CIRCULAR ECONOMY - an industrial system that is restorative by design

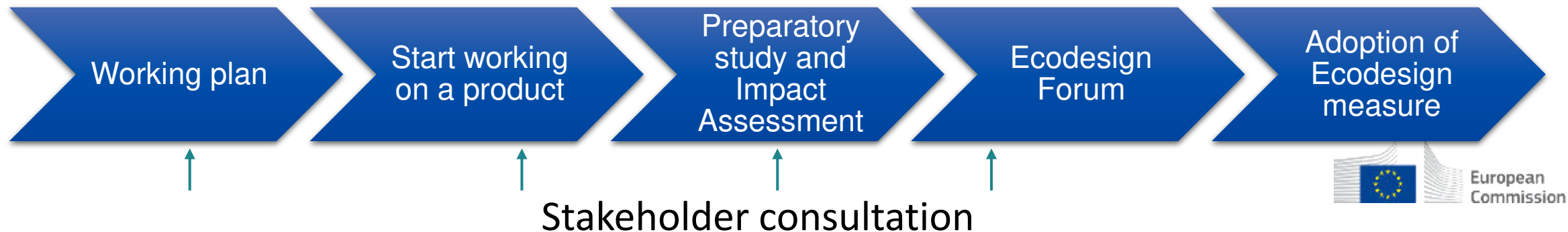


Cooperation among manufacturers, retailers, repairers, recyclers, is essential to enable these 'circles'

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

Building on the Ecodesign Framework

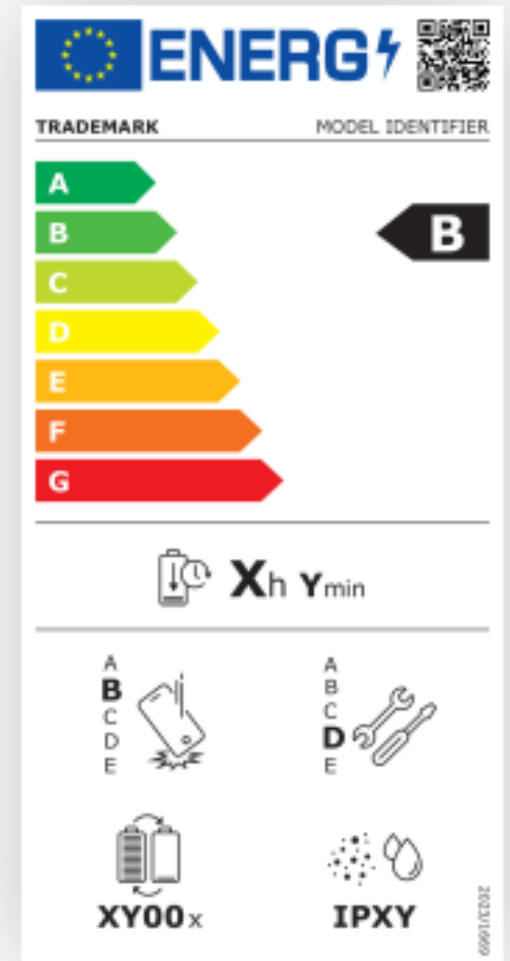
- **Key features of the Ecodesign Directive approach maintained:**
 - ✓ **Framework legislation:** a new Regulation on Ecodesign for sustainable products
 - ✓ Regularly updated **multiannual working plans** setting out priorities
 - ✓ **Product-specific measures** based on dedicated impact assessment



Ecodesign and Energy Label for mobile phones & tablets

Ecodesign requirements

- extending the lifetime of all smartphones in the EU by one year would save **2.1 million tonnes of CO₂ per year by 2030**, the equivalent of taking a million cars off the roads.
- to improve circularity (e.g. durability, reparability, refurbishment, recycling)
- resistance to accidental drops or scratches and protection from dust and water
- batteries have to retain at least 80% of initial capacity after 800 cycles
- rules on disassembly and repair, including obligations for producers to make critical **spare parts** available within 5-10 working days, and **for 7 years**
- non-discriminatory access for professional repairers to any software or firmware needed for the replacement
- availability of **operating system upgrades** for **at least 5 years**



[\(EU/2023/1669\)](#)

Key product value chains



Food, water & nutrients



Electronics and ICT



Batteries & vehicles



Construction & buildings



Packaging



Textiles



Plastics

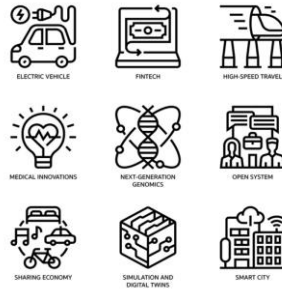
Digital Product Passport – Expected Benefits



Tracking of **raw materials extraction/production**, supporting due diligence efforts



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



Enable **manufacturers** to connect products' **digital twins** to their products, embedding all the information required.



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



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



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)

Digital Product Passport – Design

DPP-system



DPP-data

(to be developed before DPP deployment)

(to be identified when developing product-group specific secondary legislation)

Digital Product Passport

- All **standards** and **protocols** related to the IT architecture, like standards on:

- Data carriers and unique identifiers
- Access rights management
- Interoperability (technical, semantic, organisation), including data exchange protocols and formats
- Data storage
- Data processing (introduction, modification, update)
- Data authentication, reliability, and integrity
- Data security and privacy

- The DPP registry

Possible Track & Trace identifiers

- Economic operator's name, registered trade name
- Global Trade Identification Number or equivalent
- TARIC code
- Global location number
- Authorised representative
- Reference of the back-up data repository
- ...

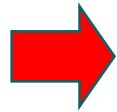
Example of potential attributes

- Description of the material, component, or product
- Recycled content
- Substances of concern
- Environmental footprint profile
- Classes of performance
- Technical parameters
- ...

DPP – Architecture

Decentralised system (information stays where it belongs)

Economic operator



- Product related data
- Circularity/sustainability information
- Supply-chain related information
- Certificates/manuals
- Identifiers (these go also to the registry)



Accessible by



- Market surveillance authorities
- Customs authorities via the EU Single Window Environment for Customs
- EC and Member States (statistical analyses)

- Unique product identifier (what)
- Unique operator identifier (who)
- Unique facility identifier (where)
- Additional information (when relevant)

- Better protection of confidential and sensitive information
- Size of a central database would be enormous and very difficult (and costly) to set up and manage
- Dynamicity of product-specific information can be better managed locally

Ongoing Work

- [StandICT](#): landscaping report on existing DPP-related standards
- [CIRPASS](#) (Cirpass.eu) :
 - Collect examples of existing DPP-like systems
 - Analysing the standards
 - Develop roadmaps and prototypes
- **Standardization request**
- **DPP Pilot** (2 value chains/product categories except batteries)
 - 6M€, simple grant - 50% funding
 - Deployed 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.

DPP in Legislation

- Battery regulation ([EU 2023/1542](#))

From 18 February 2027 each LMT battery, each industrial battery with a capacity greater than 2 kWh and each electric vehicle battery placed on the market or put into **service shall have an electronic record ('battery passport')**.

- Under negotiation:
 - Ecodesign for sustainable products regulation (ESPR; [COM/2022/142 final](#)): see working plan (textiles and footwear, iron and steel)
 - DPP and digital labelling in other proposals:
 - Construction Products ([COM\(2022\) 144 final](#)); Toys ([COM/2023/462 final](#)); Detergence and surfactants ([COM\(2023\) 217 final](#)); Packaging ([COM\(2022\) 677 final](#)); end-of-life vehicles ([COM\(2023\) 451 final](#))
 - Critical Raw Materials Act ([COM\(2023\) 160 final](#)); classification, labelling and packaging ([COM\(2022\) 748 final](#))

Thank you



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