KEYNOTE

From Circular Economy to Industrial Strategy

Building Europe's Resource Sovereignty

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PLM Road Map™ & PDT EMEA 2026
AI in PLM: A Disruptive Opportunity and Challenge
Turning AI disruption into enterprise value:
Strategic insights for the PLM professional
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PRO Circularity Alliance

Who we are

We are a Brussels-based European industry membership association to unite Producer Responsibility Organisations (PROs) - across waste streams and across Member States. We are EPR. We are PROs.

Our Mission

- Represent the collective interests of PROs from all waste streams
- Engage proactively with EU institutions on EPR policy and regulatory initiatives
- Enable knowledge exchange and technical collaboration
- Provide members with insight and influence
- Working groups, policy monitoring, and coordinated advocacy



THE QUESTION

> “When we talk about geopolitics, industrial competitiveness, and strategic autonomy, how often do we think about the **materials that are already sitting inside the products which we have manufactured, sold, and put into use**?

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1. The Geopolitics of Waste

2. The Take-Back Solution

3. And the Way Forward

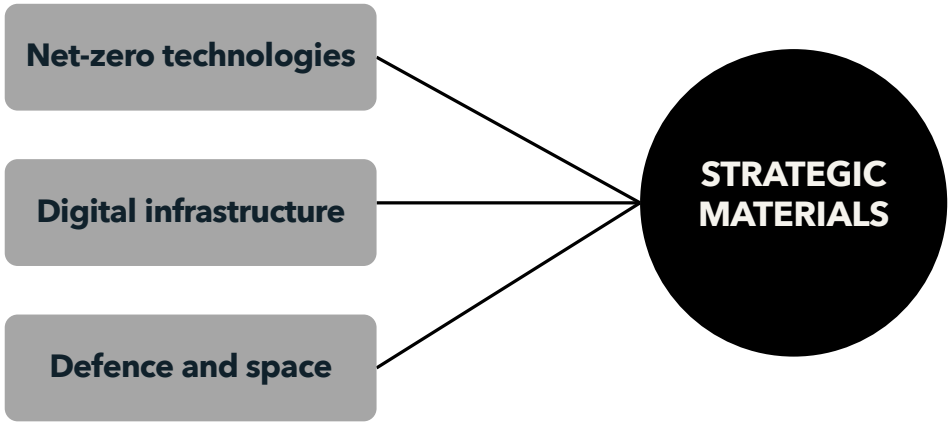
1.

The Geopolitics of Waste

THE GAP

Europe’s industrial ambitions have a materials problem

Net-zero, digital, defence, and space all compete for the same strategic materials.



The policy signal

The Critical Raw Materials Act links resilience to capacity along the full value chain.

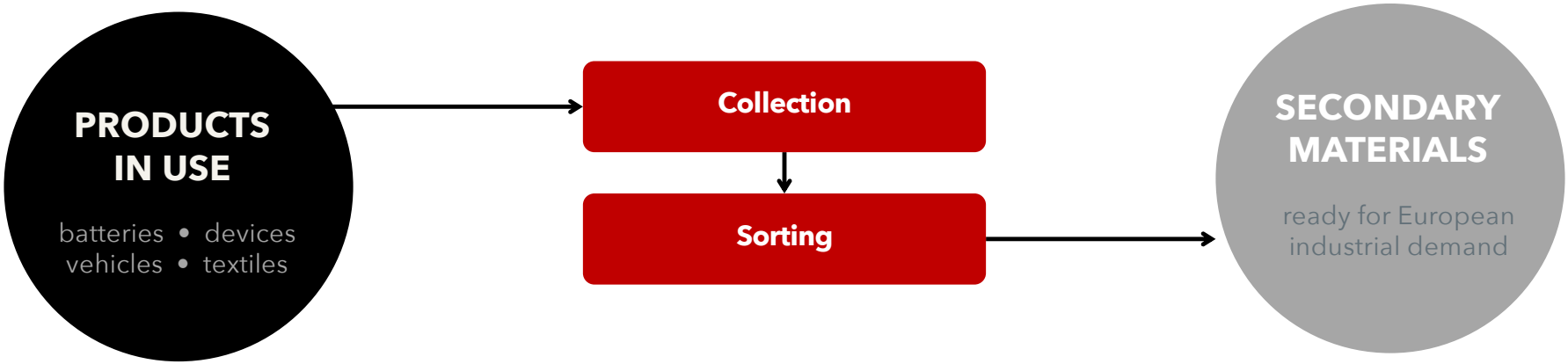
Supply risk is not a single point of failure. It accumulates across extraction, processing, components and recovery.

THE REALITY

Europe’s overlooked resource base

The materials embedded in products already in use form a strategic stock.

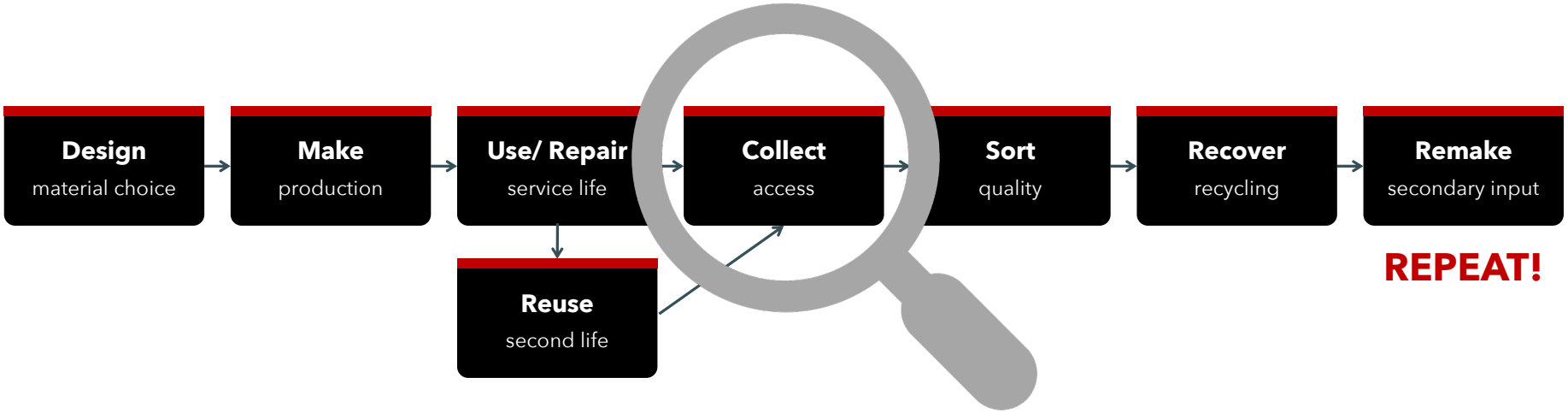
The question is whether Europe can recover their value?



THE BLUEPRINT

Circular Economy as an industrial value chain

The loop only creates sovereignty when every link has capability, investment, and a market.



Industrial capability: To retain the knowledge, equipment, and buyers needed to use it again.

THE STATISTICS

12%*

*) Circularity rate

Measures the contribution of recycled materials in the overall use of materials.

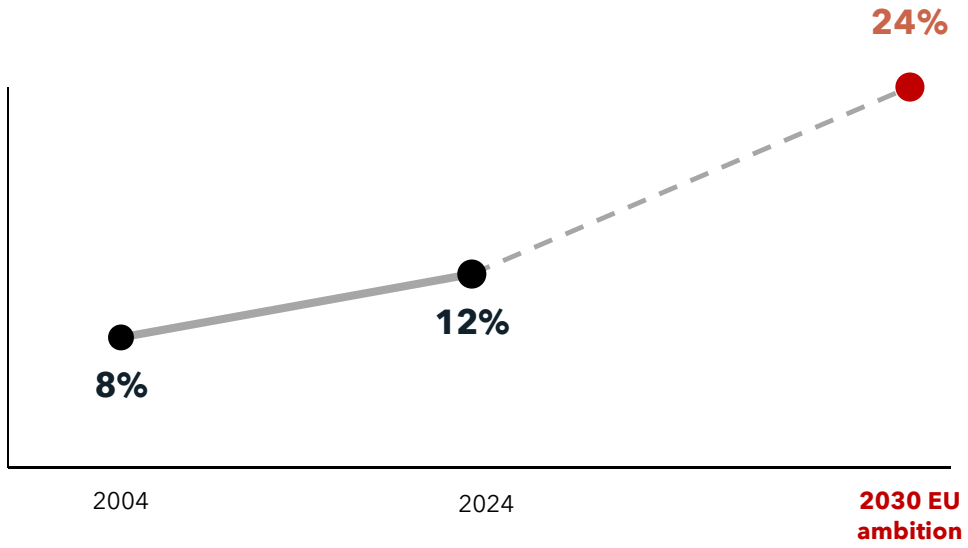
THE BIGGER PICTURE

Europe recirculates only a small share of its material input

The EU circular material use rate reached 12% in 2024, four percentage points above 2004.

12%

Circularity rate

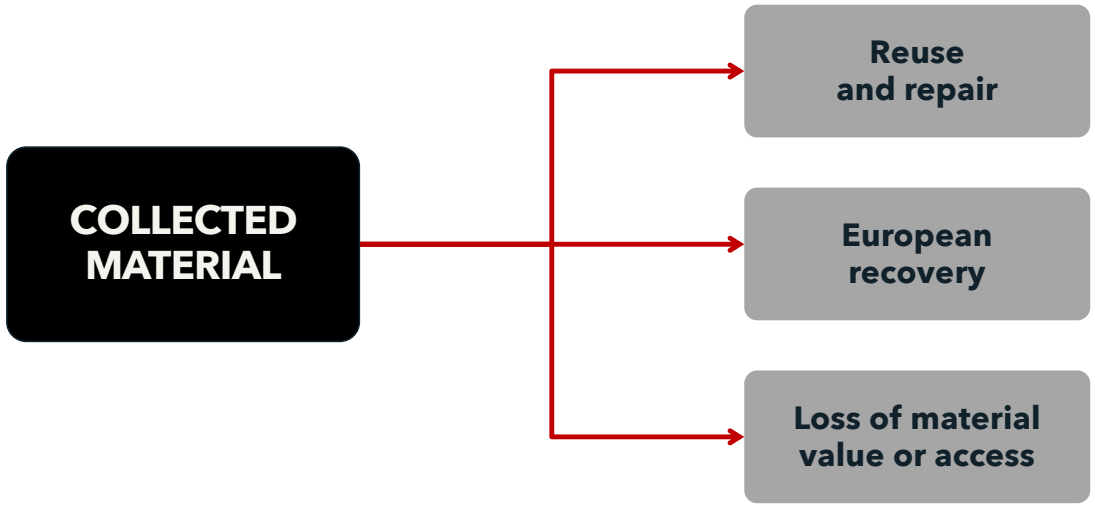


THE ANSWER

Collected in EU does not (always) mean recovered for EU

Collection is essential. It is also the start of a much harder system-design question:

Where does the material go next?



The strategic gap

Collection targets alone cannot guarantee secondary materials for European industry.

Quality, traceability, movement across the Single Market, and local demand determine the outcome.

THE BUSINESS CASE

Circularity must be economically competitive

Secondary materials compete in real procurement decisions. The system needs to make them a credible industrial choice.

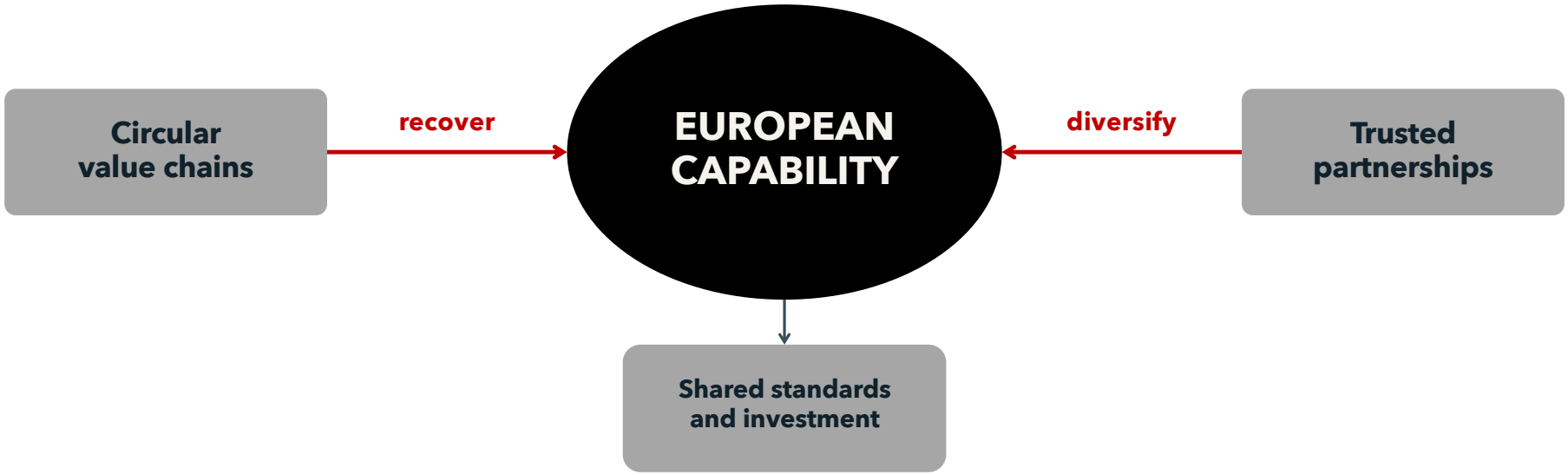


Rules, contracts and infrastructure shape each of these conditions.

THE SOLUTION

Strategic autonomy and partnership

Resilience grows when EU combines domestic capability with diverse, trusted international relationships.



THE NUMBERS

Circularity has moved from waste policy to competitiveness.

It links lower resource dependence with a market for secondary materials and a growing economic base.

4.3m

people employed
in circular economy sectors

€316bn

gross value added
per year

€131bn

investment
per year

Double the circular material use rate to 24% by 2030; build supply and demand for high-quality recycled materials.

THE EU POLICY

EU rules now span product design, EPR, and recovery markets.

Horizontal waste framework reinforced by product-specific rules, plus circular economy law in preparation.

DESIGN & MARKET

Ecodesign for Sustainable Products Regulation
Regulation (EU) 2024/1781

EPR FRAMEWORK

Waste Framework Directive
Articles 8 and 8a

PRODUCT STREAM RULES

WEEE · batteries · packaging
Textiles · end-of-life vehicles

RECOVERY & DEMAND

Critical Raw Materials Act
Secondary materials policy

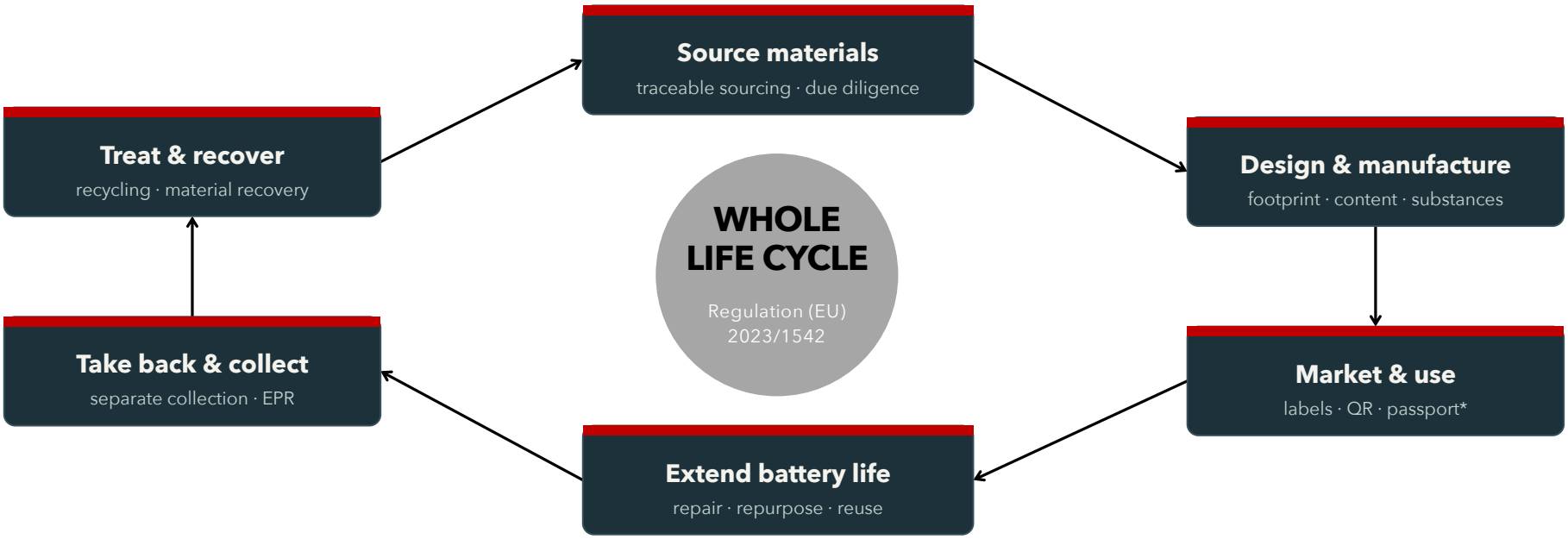
IN DEVELOPMENT

Circular Economy Act – due for adoption in 2026; intended to strengthen the single market for secondary raw materials.

THE LIFE CYCLE

The EU Batteries Regulation follows the whole life cycle.

Material sourcing, second use and recycling, sustainability and recovery rules apply at different stages.



IT'S CRITICAL

The CRMA turns recovery into capacity planning.

By 2030, EU capacity benchmarks cover extraction, processing and recycling of strategic raw materials.

10%

EXTRACTION

of annual EU consumption

40%

PROCESSING

of annual EU consumption

25%

RECYCLING

of annual EU consumption

≤65%

maximum supply from one third country for a strategic raw material

EPR and PRO systems can contribute to the recycling pillar by making recoverable material available at known quality and scale.

KEY TAKEAWAY: 1. THE GEOPOLITICS OF WASTE

Europe's waste is a strategic resource

The challenge is turning materials already in use into reliable inputs for European industry.

2.

The Take-Back Solution

THE STATISTICS

39%*

*) WEE Collection Rate

The percentage of e-waste collected in the EU, based on the total Put-on-Market.

THE CONTEXT

Europe collects far less e-waste than its target implies.

The gap is not a small operational miss. It is a system design question.

EU WEEE COLLECTION RATE

39%

ACTUAL, 2024

65%

TARGET



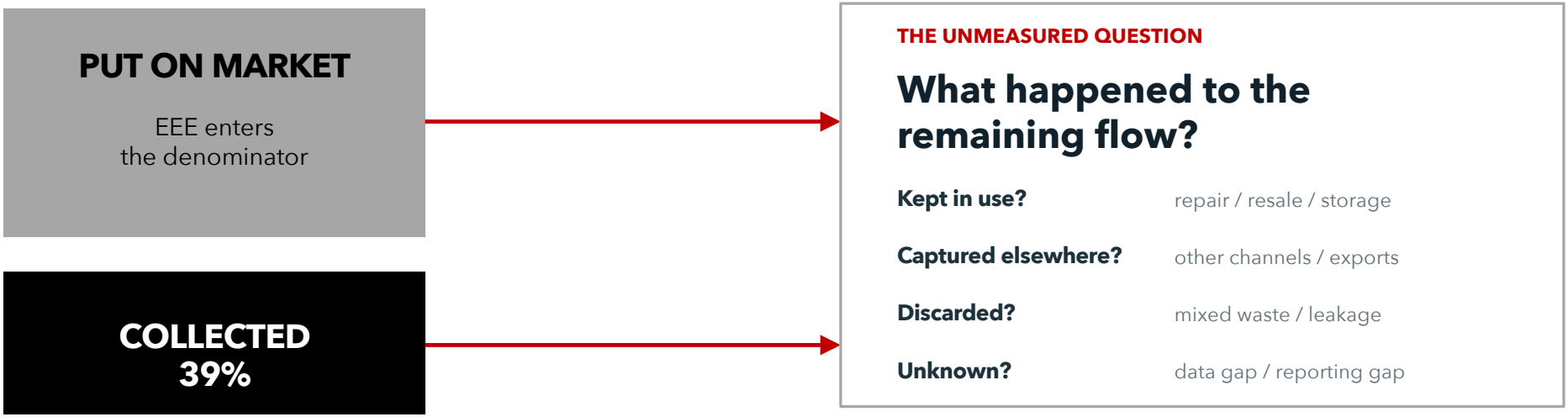
= 26 percentage-point gap

A collection metric tells us what entered the measured system. It does not reveal every product's fate.

THE INVESTIGATION

39% tells us what was collected, but not where the rest went.

A performance metric has a boundary. The first job is to make that boundary visible.



The collection metric does not reveal product fate. Investigate the pathway.

THE OPINION

Who should pay when a product reaches end-of-life?

“End-of-Life” and “Waste” are linear vocabulary. We should talk about “Resource Recovery”.

A	B	C	D
PRODUCER	**CONSUMER**	**MUNICIPALITY**	**TAXPAYER**

And what if the owner keeps the product (e.g. a mobile phone) in a drawer for ten years?

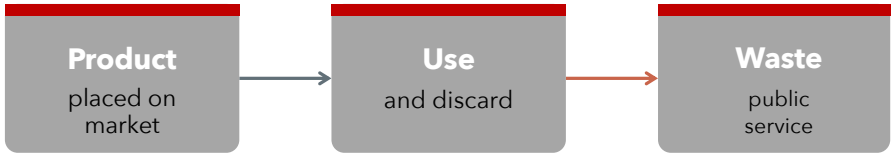
(Also consider the hidden costs: collection access, sorting, treatment, resource recover, and information/ reporting obligations.)

THE COMPARISON

EPR brings end-of-life responsibility into the product system

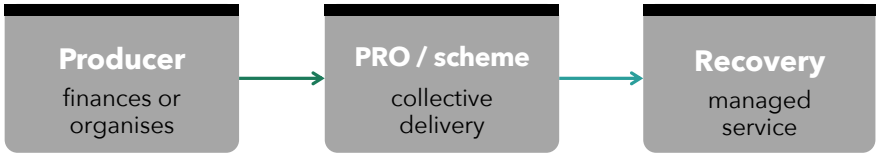
Aligns product markets, waste services and recovery investment around a defined producer obligation.

WITHOUT AN EPR SYSTEM



Costs, service levels and material outcomes can sit outside product decisions.

WITH PRODUCER RESPONSIBILITY

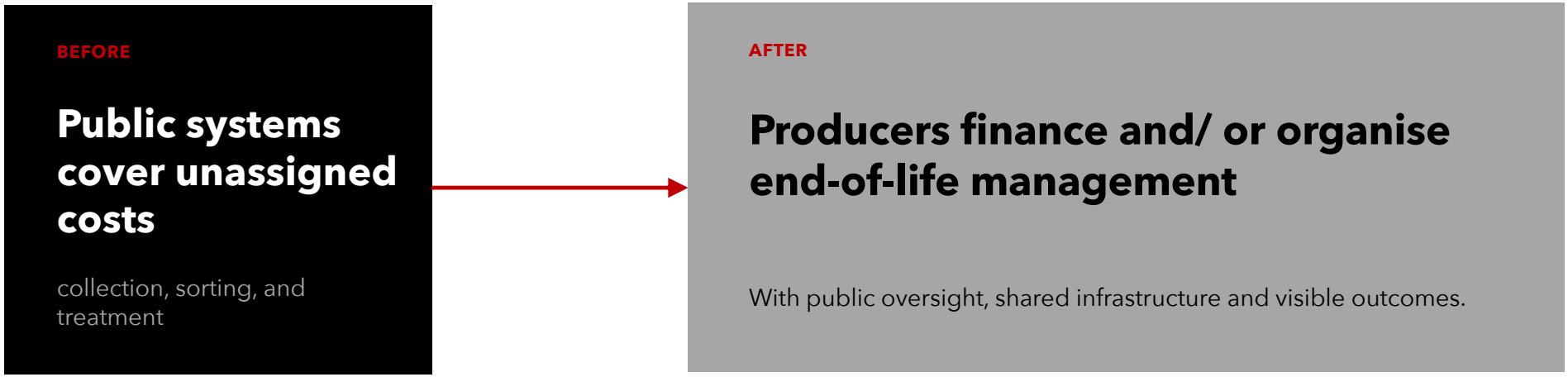


Defined costs and data can feed back into design, collection and treatment choices.

TAKING RESPONSIBILITY

EPR shifts end-of-life responsibility upstream.

EPR makes producers responsible for financing and/ or organising end-of-life management. Legal and operating models vary by product and country.



The idea: Allocate responsibility, finance service, report performance, and improve design.

THE ROLES

A PRO turns a legal obligation into an operating system

Its exact mandate varies, but the work usually spans scheme administration, procurement and performance.

A	**REGISTER & BILL**	Enroll producers, collect fees and check reported quantities
B	**PROCURE & COORDINATE**	Contract collection, sorting, treatment and recycling services
C	**REPORT & ASSURE**	Track flows, report to authorities and address free-riding
D	**IMPROVE THE SYSTEM**	Work with municipalities, retailers, operators and consumers

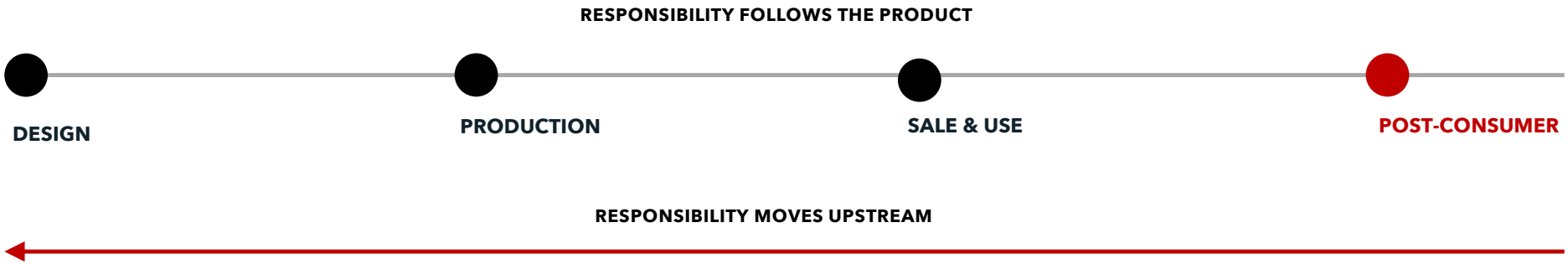
Boundary: PRO may contract recyclers, it is not necessarily the recycler, regulator, or owner of every asset.

THE DEFINITION

EPR extends producer responsibility to the post-consumer stage.

The OECD definition covers the whole product life cycle. It is broader than fees or PROs alone.

> **"EPR is a policy approach that makes producers responsible for their products along the entire lifecycle, including at the post-consumer stage."**
>
> OECD, 2024



FINANCIAL AND/ OR PHYSICAL

Producers may carry some/ all of the end-of-life cost or operations.

DESIGN INCENTIVE

Reward producers for considering environmental impacts in product design.

THE EDGE

A fee sends a signal only when the producer can act on it.

OECD notes that simple material- or weight-based fees may create weak incentives for product redesign.

WEAK SIGNAL

- **Flat fee**
  same charge across products
- **No differentiation**
  design effort changes nothing
- **Low response**
  compliance becomes a cost of doing business

STRONGER SIGNAL

- **Differentiate**
  fee reflects a relevant design attribute
- **Make it measurable**
  criteria are clear and auditable
- **Close the loop**
  eco-design response is checked

Ask whether the fee rewards a product change or only sorts products into fee bands.

THE POLICY

Eco-modulation turns product criteria into a fee signal.

EU rules set the direction. Scheme design determines the criteria, evidence and size of each adjustment.

GENERAL EPR RULE

- Waste Framework Directive, Article 8a(4)(b): for collective schemes, fees are modulated where possible for durability, repair, re-use, recyclability and hazardous substances.
- TEXTILES: Directive (EU) 2025/1892 links fees to relevant Ecodesign for Sustainable Products Regulation criteria. Transposition is due 17 June 2027; the Commission must set harmonised fee criteria.

1 ASSESS THE PRODUCT

Verified attributes
durability, repairability
recyclability, substances

2 CALCULATE THE FEE

Base fee + modifier
Stronger design may pay less
Weak performance may pay more

3 FINANCE THE SYSTEM

Producer pays the PRO
Collection, reuse, sorting and recovery

4 CHECK THE RESPONSE

Producer can respond
Measure reuse and recovery
Review the fee criteria

OUTCOME DATA FEEDS THE NEXT FEE REVIEW

Design principle: Use measurable, environmentally meaningful criteria. Fee levels and rates vary by scheme; the diagram is illustrative.

KEY TAKEAWAY: 2. THE TAKE-BACK SOLUTION

EPR is more than a fee and a compliance tool

Well effective PROs connect EPR with collection, recovery, insights, and industrial demand.

3.

And the Way Forward

THE OPPORTUNITY

EPR as an industrial enabler

EPR turns a producer obligation into an organised end-of-life system with funding, data, and design feedback.



FUNDING

pays for collection and treatment

DATA

creates visibility over flows and performance

DESIGN FEEDBACK

links end-of-life costs back to product choices

THE INTERFACE

PROs connect end-of-life products with industrial demand

PROs can coordinate the hand-offs that determine whether material becomes industrial input.



THE DATA ANGLE

Digital Product Passports and material intelligence

A shared product record can reduce information loss that weakens repair, sorting, reuse and recovery.



THE INTELLIGENCE

AI can turn material data into operational choices

With trusted product and flow data, AI can support decisions across the circular value chain.



The governance condition: Traceable data and human judgement keep AI accountable for consequential decisions.

THE MIX

Priorities for a European resource sovereignty agenda.

A — Design for circular recovery

B — Build collection, sorting, and processing capacity

C — Make secondary materials competitive

D — Align EPR, PRO, data, and Single Market rules

E — Diversify trusted partnerships around CRMs

CRMA 2030 capacity benchmarks

10%
extraction

40%
processing

25%
recycling

Policy benchmarks for strategic raw materials, not current attainment

KEY TAKEAWAY: 3. AND THE WAY FORWARD

Build the system that can keep value in circulation

Industrial capacity, competitiveness, secondary materials, aligned policy, trusted data reinforce each other.

THE BOTTOM LINE

Circularity is industrial strategy.

1. Recover the resources

Turn products at end-of-life into valuable material flows

2. Build the system

Connect EPR, PROs, infrastructure, investment, and data

3. Secure the value

Make recovered materials competitive industrial inputs

The conversation continues in…

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The Strategic Role of Circularity for Industrial Competitiveness

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