

DPP IMPLEMENTATION IN EUROPE AND BEYOND CHALLENGES AND OPPORTUNITIES

1 SEPTEMBER | 15:00-18:00 CEST | VAREMBÉ CONFERENCE CENTRE (CCV)

CE-RISE Annual Event taking place in the framework of WRF'25



AGENDA

Time	Title	Speaker
15:00-15:10	CE-RISE Information System Introduction	Cristina Guerreiro, Project Coordinator, NILU
15:10-15:20	Measuring the Applicability of Circular Strategies	Francesco Barill, Research Scientist, Empa
15:20-15:30	Socio-Economic, and Environmental (SEE) Impacts	Sónia Cunha, Assistant Professor, Leiden University
15:30-15:45	Viessmann Case Study	Andreas Wade, Director Sustainability & ESG, Viessmann Climate Solutions
15:45-16:00	Data Interoperability	Riccardo Boero, Senior Scientist, NILU
16:00-16:10	Questions	
16:10-16:30	Coffee Break	
16:30-18:00	Panel Discussion on the Implications and Opportunities of the Implementation of DPPs in Europe and Outside Europe	Rembrandt Koppelaar (EcoWise & Cirpass-2 global DPP & EU regulatory observatory), Catherine Chevauché (Circular Economy Director, Veolia), Reyna Ubeda (ITU-T SG5 Engineer: Environment, EMF, Climate Action and Circular Economy, ITU), Colette van der Ven (Founder & Director, TULIP Consulting), Maxime Furkel (Head of Government Affairs, Lexmark)
18:00-19:00	Networking Drinks	



THE CE-RISE PROJECT

Circular Economy Resource Information System (Grant Agreement ID [#101092281](#))

Cristina Guerreiro | Project Coordinator | Nilu



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Federal Department of Economic Affairs,
Education and Research EAER
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Research and Innovation SERI

EU Framework Programmes

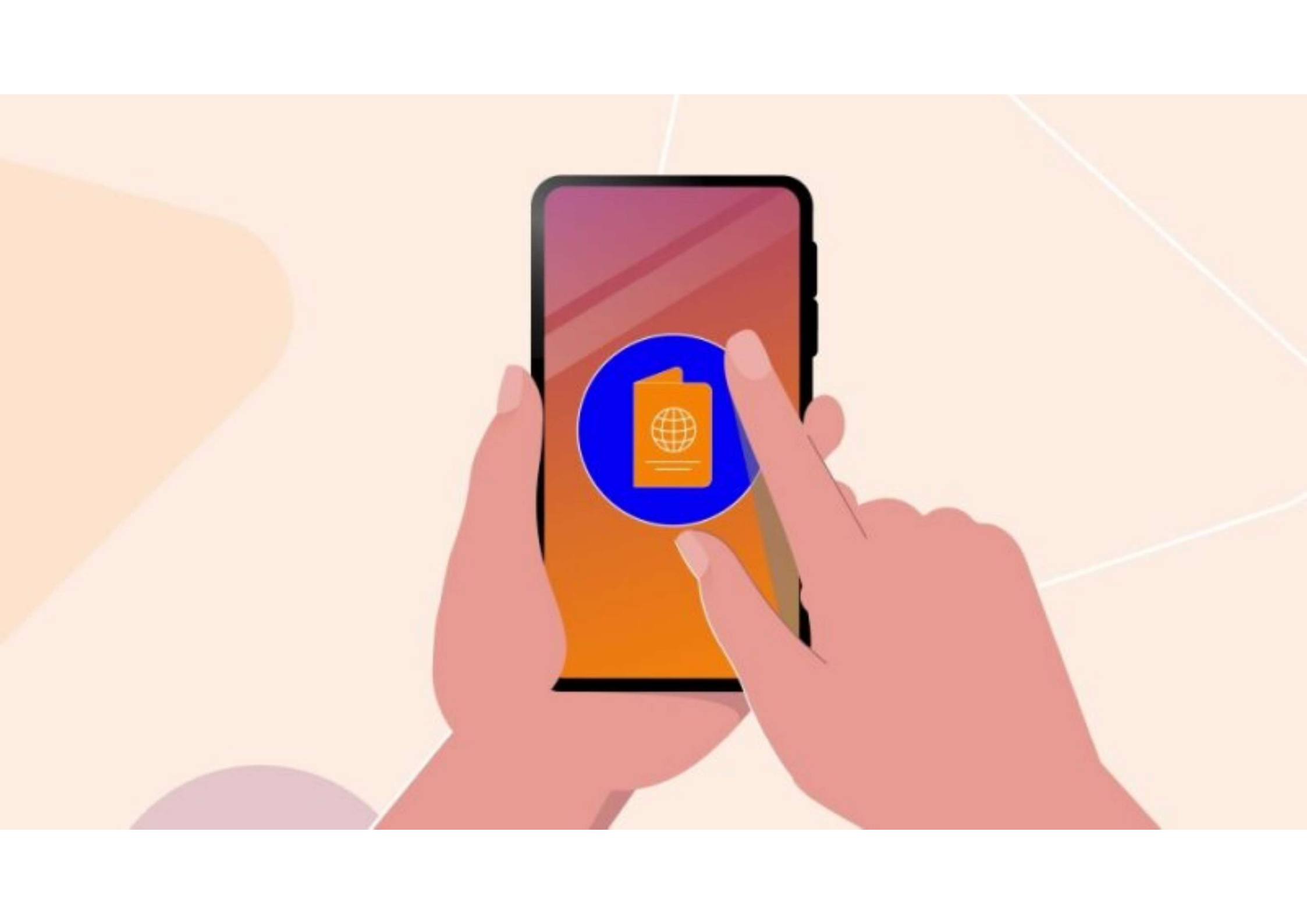


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the European Union



FOSSIL FUEL INTENSIVE ECONOMY

Powered by coal, oil, gas



RENEWABLE ENERGY & DIGITALIZED ECONOMY

Enabled by intensive use of raw materials ⚠️



Transition towards
electrification and
digitalization



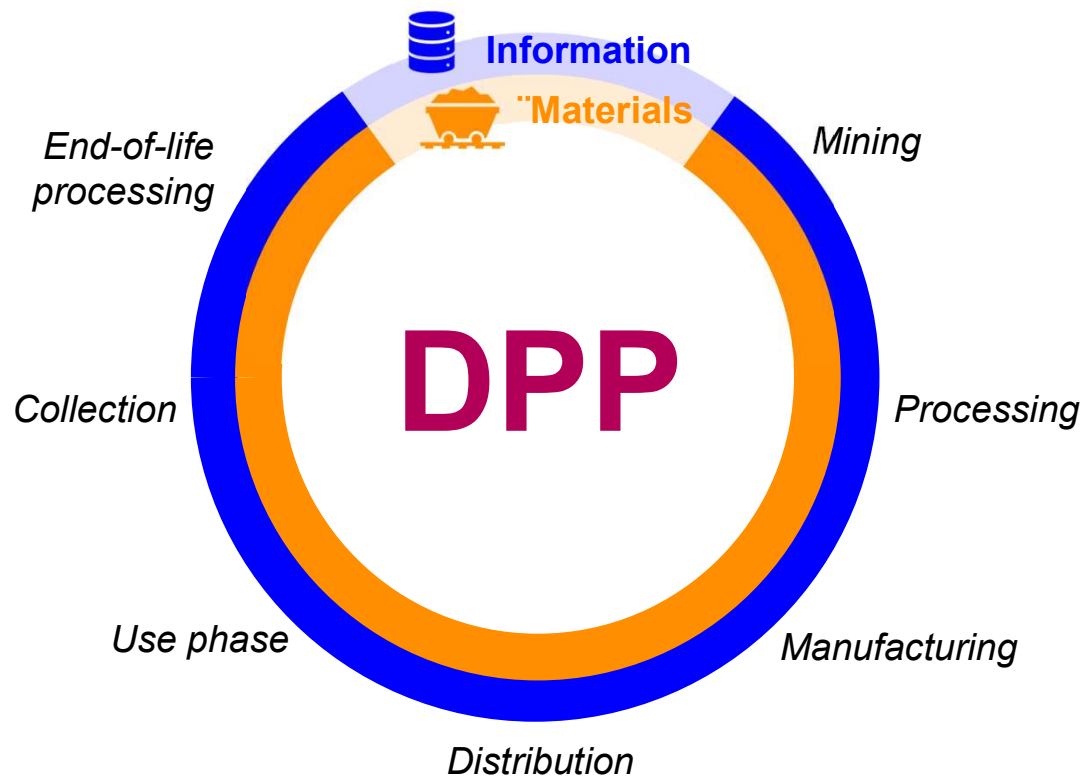
Limited supply of key raw materials

**CRMs
strategy**

Improve supply chain resilience and
security

**Promote sustainability and
circularity of raw materials**

CIRCULAR ECONOMY ACTION PLAN (CEAP) & ECODESIGN FOR SUSTAINABLE PRODUCTS REGULATION (ESPR)



Make products more sustainable and environmentally friendly throughout their lifecycle.

Increase resource efficiency **Boost sustainable production**

Need for information

Digital Product Passport

CE-RISE: VISION & GOALS

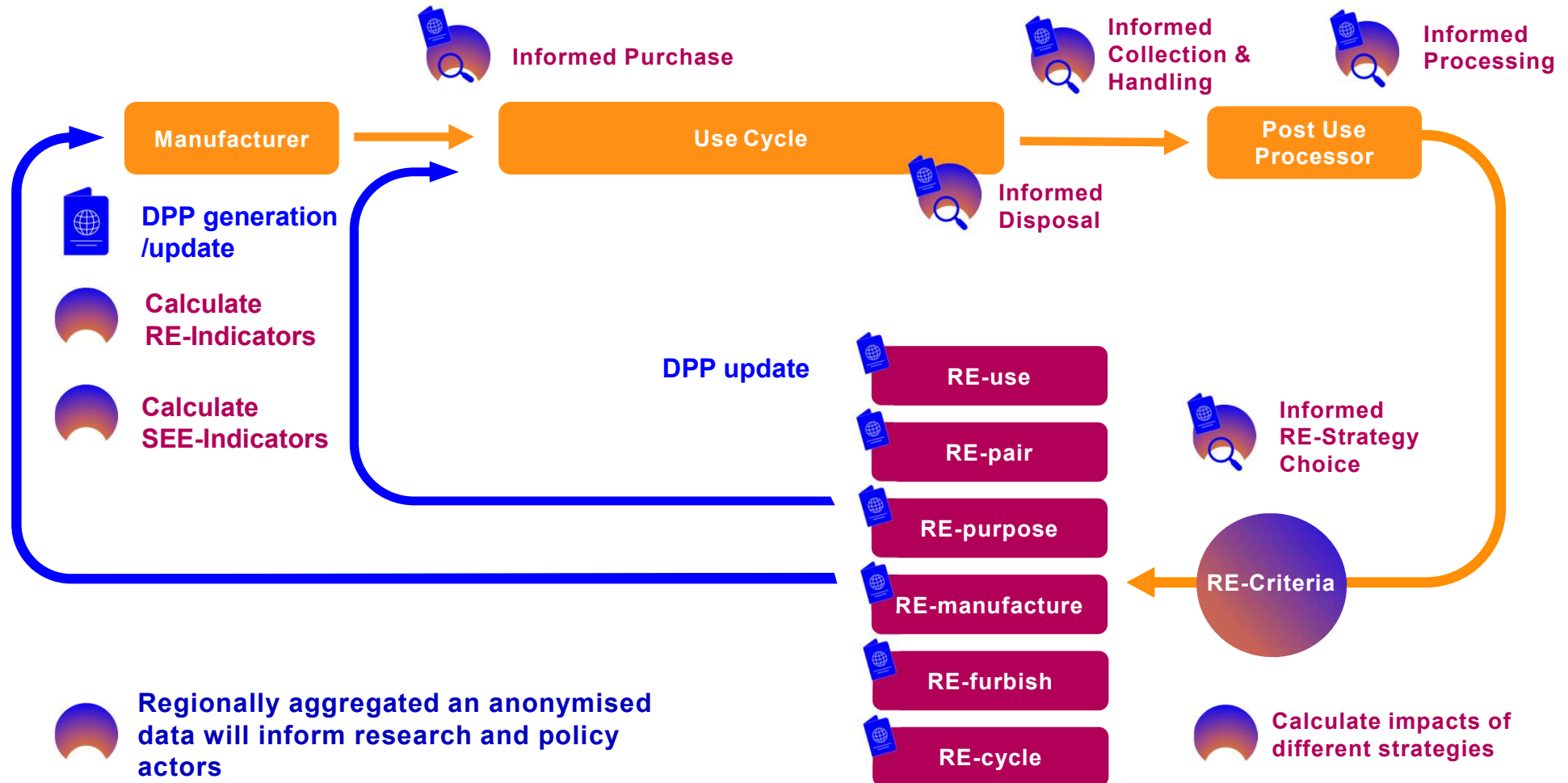


Accelerate circular economy practices to enhance material efficiency, reduce environmental impacts, and foster new business opportunities, ultimately **contributing to a more equitable, resilient, and sustainable society.**

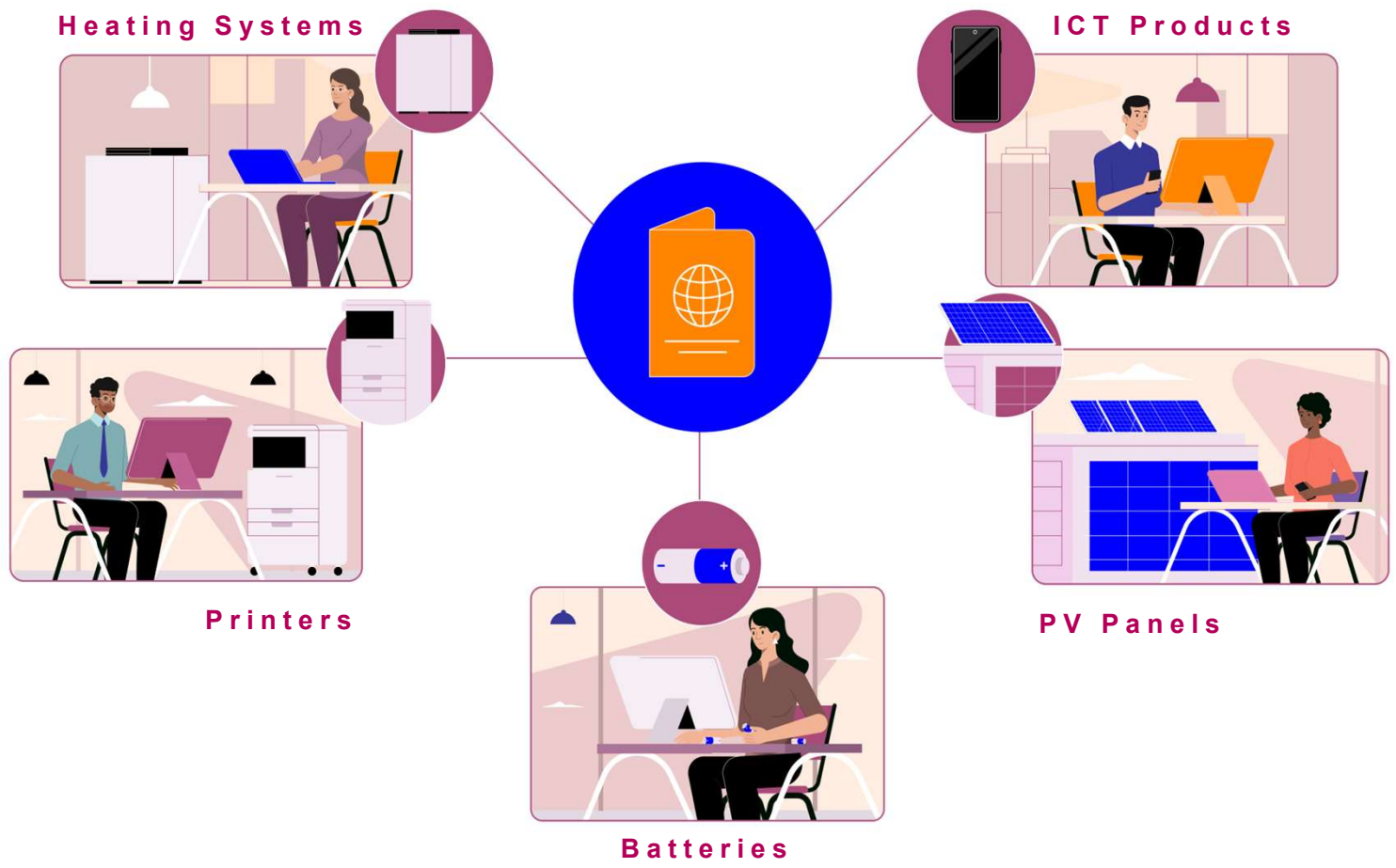


- Develop a Resource Information System
- **Integrate DPP information** into Circular Strategies and SEE-Impact Assessments
- Improve **confidential information sharing**
- Provide **open-access software** supporting sustainable and circular products

CE-RISE: THE INFORMATION SYSTEM



CASE STUDIES





WHY?

HOW?

WHAT?

WHO?

Click icon to
add partner
logo



Jan 2023 – Dec 2026 | €7,65M | 27 Partners from 11 countries

Project Coordinator: **nilu**

**INDUSTRY
PARTNERS**



Lexmark

VIESSMANN
Climate Solutions



ALUDYNE



Hydro

MORROW

NIKKELVERK
A GLENCORE COMPANY

Vianode

**REFURBISHING AND
RECYCLING PARTNERS**



**ACADEMIA,
RESEARCH, AND
TECHNICAL PARTNERS**

Ansys



nilu



**CONSULTING AND EXTENDED
PRODUCER RESPONSIBILITY
ORGANISATIONS**



Contact details



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Oslo, Norway

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nilu



MEASURING THE APPLICABILITY OF CIRCULAR STRATEGIES

Francesco Barilli | Research Scientist | Empa



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Empa

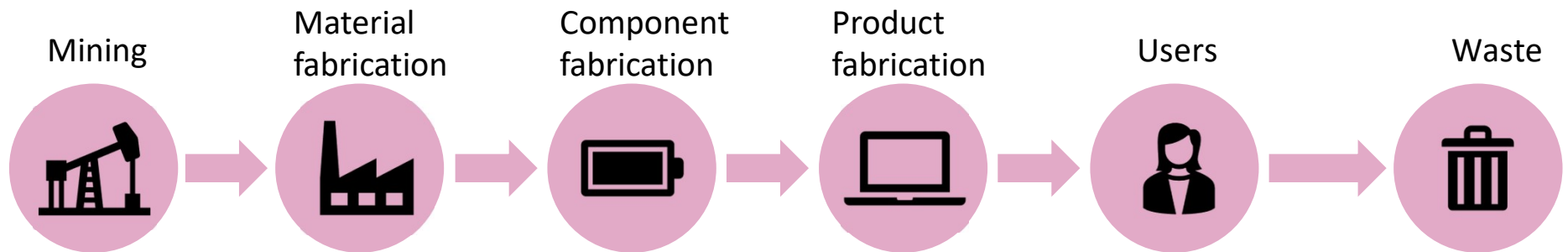
Materials Science and Technology



Funded by
the European Union

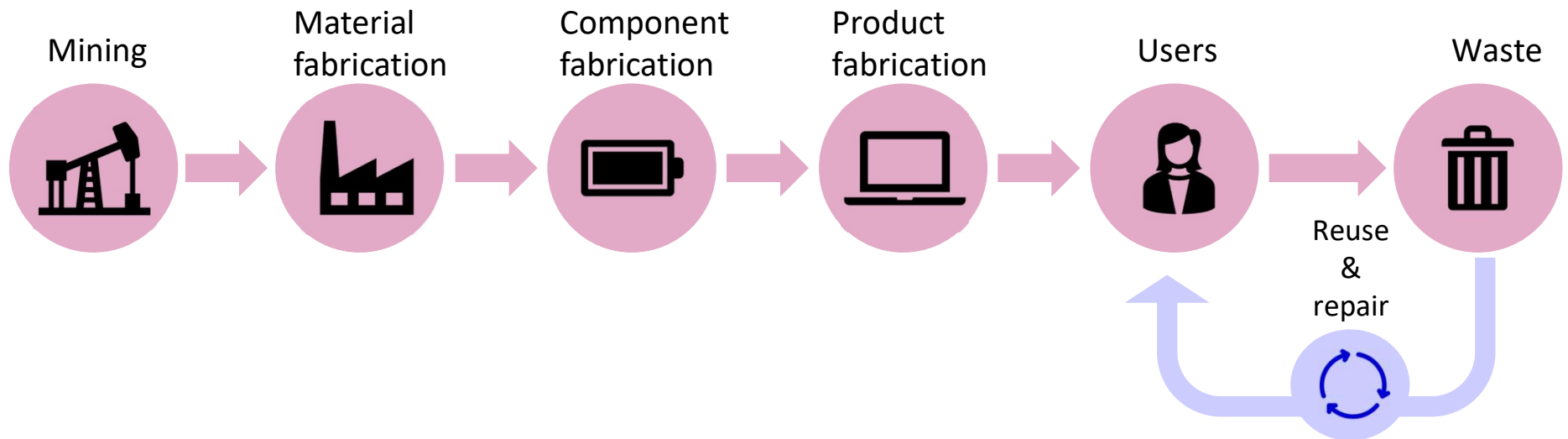
Circular strategies:

Transitioning from linear to circular economy



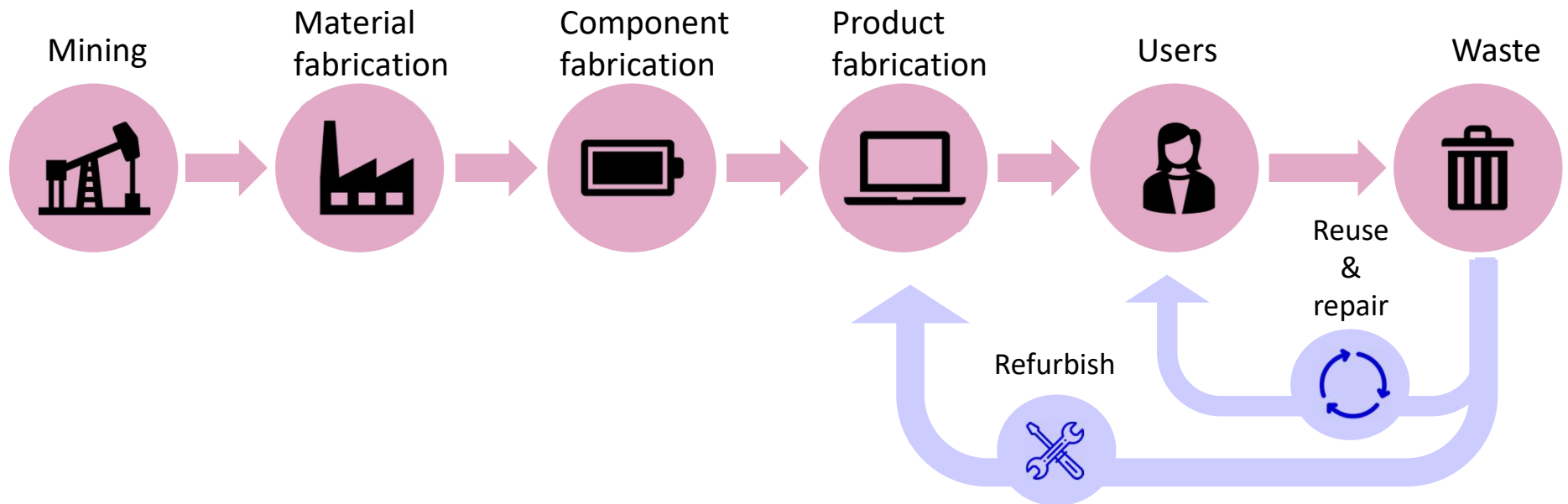
Circular strategies:

Transitioning from linear to circular economy

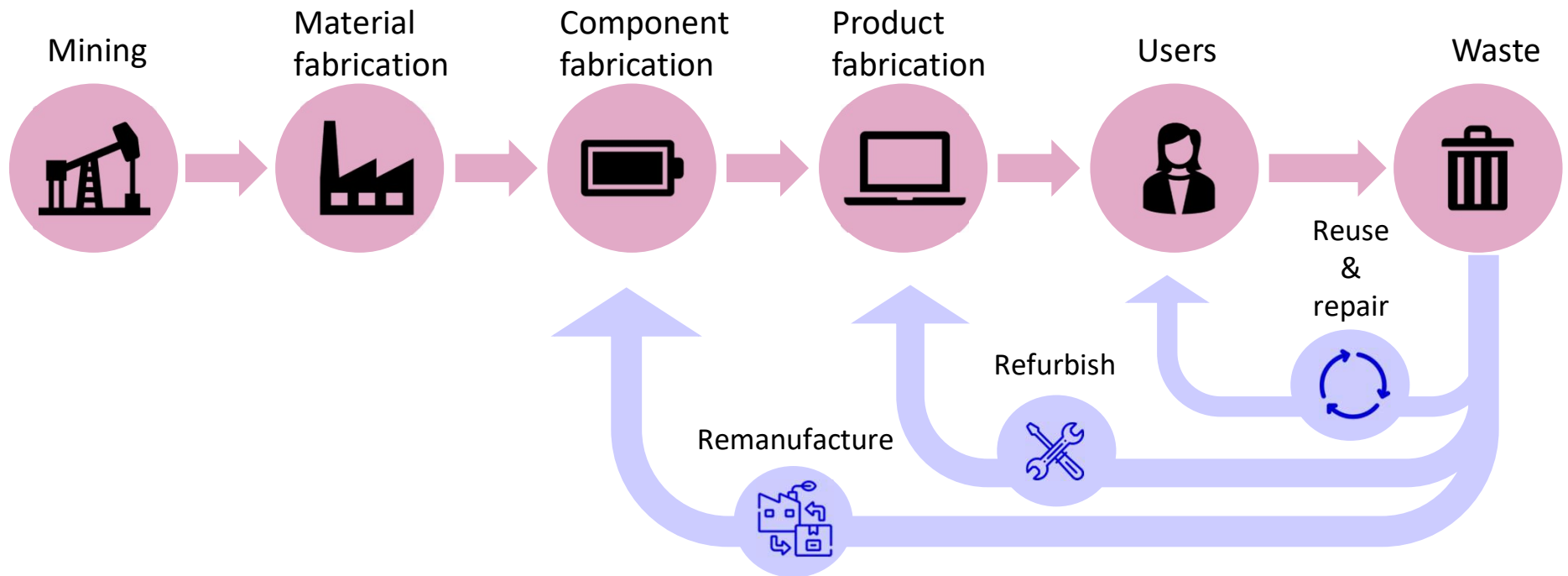


Circular strategies:

Transitioning from linear to circular economy

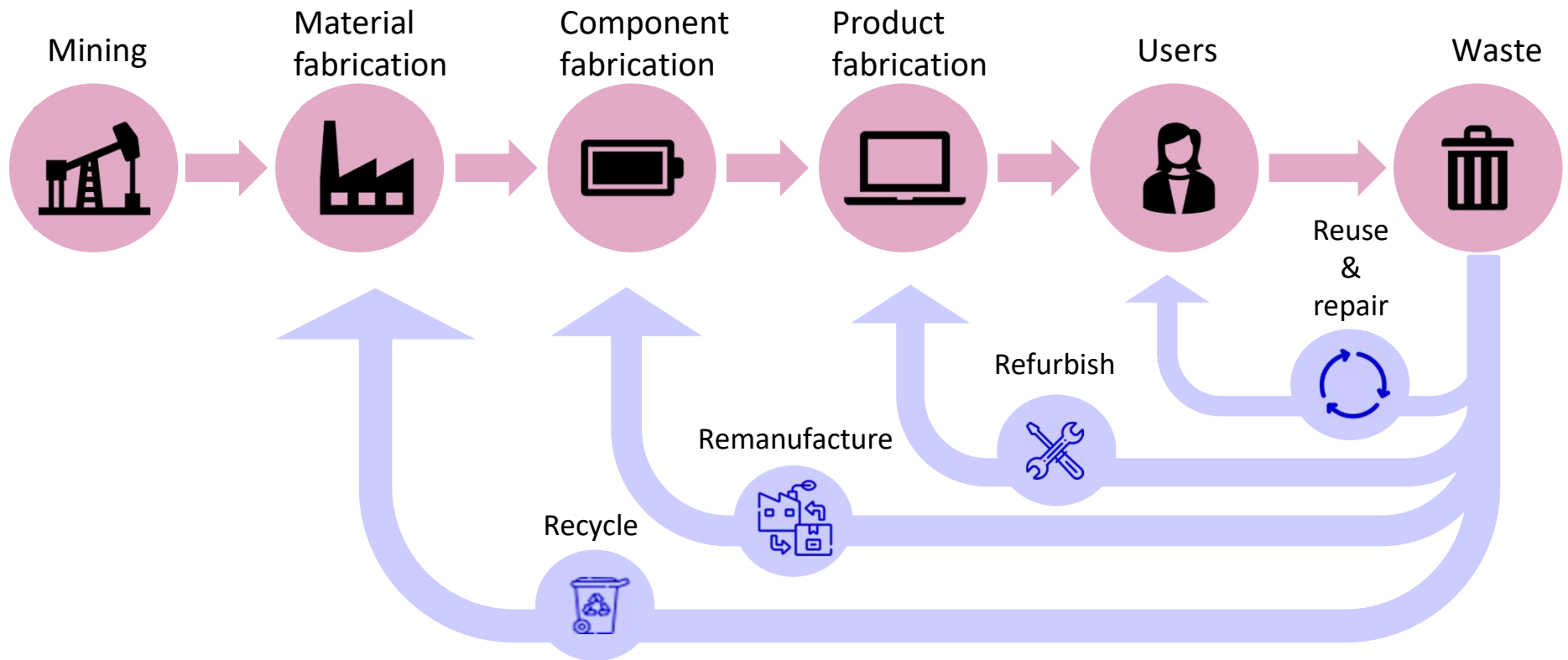


Circular strategies: Transitioning from linear to circular economy

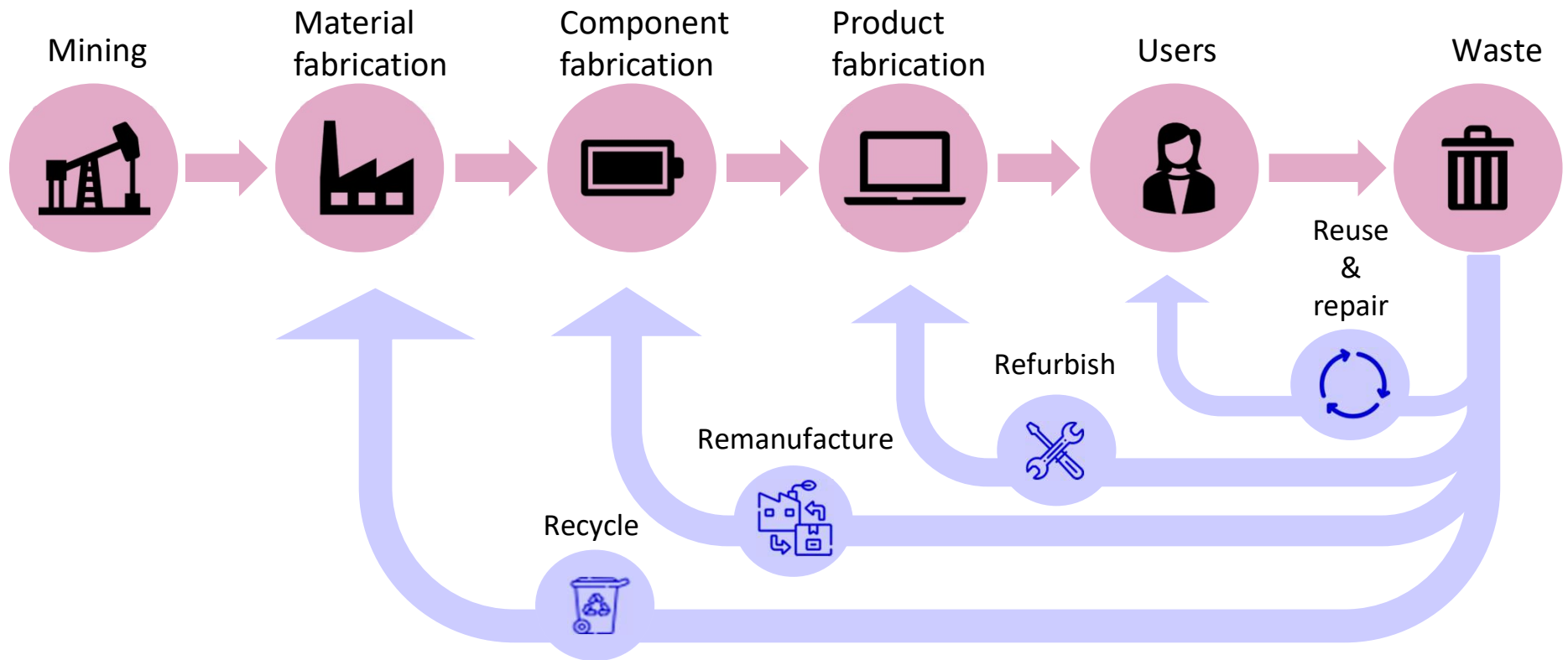


Circular strategies:

Transitioning from linear to circular economy

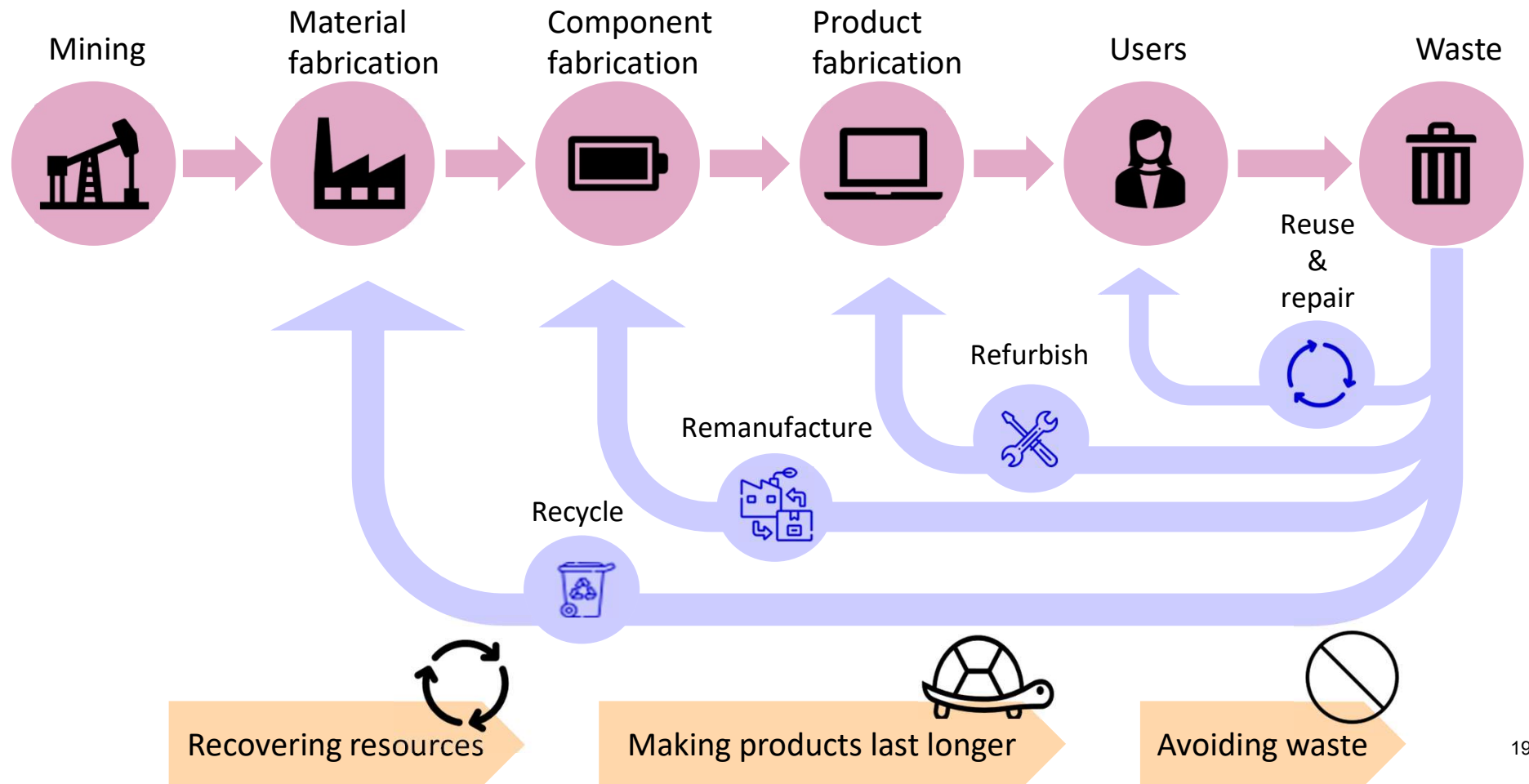


Circular strategies: Transitioning from linear to circular economy



Strategic actions are needed to strengthen product circularity

Circular strategies: what do we achieve?



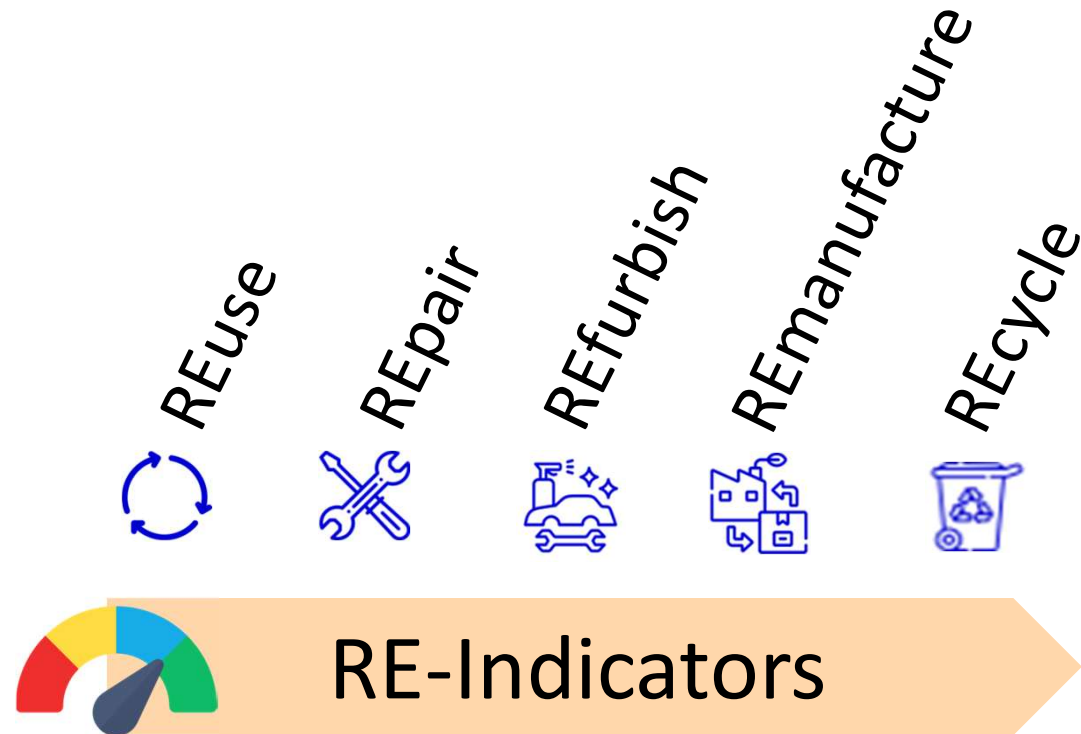
Circular strategies:

How can we achieve?



Circular strategies:

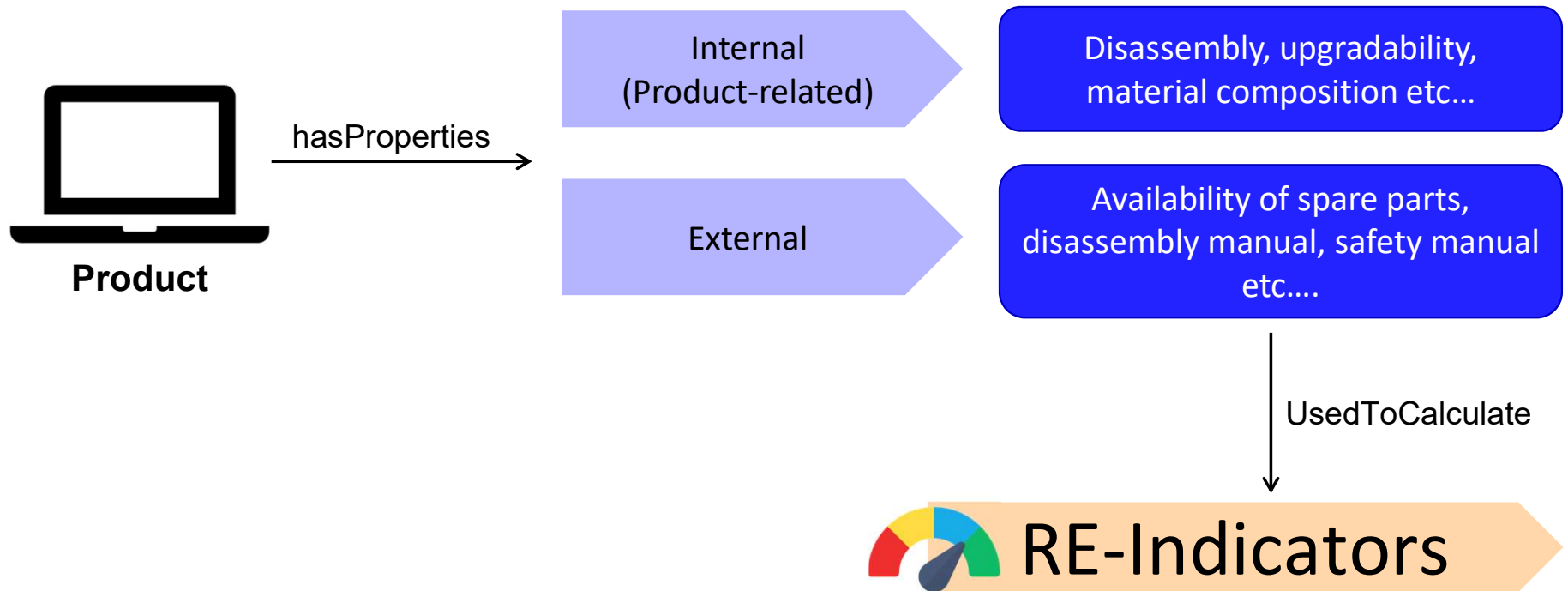
How can we achieve?



RE-INDICATOR : Semi-quantitative metric of the applicability of a circular -strategy

RE-Indicators

RE-INDICATOR : Semi-quantitative metric of the applicability of a circular -strategy



RE-Indicators

REpairability example





Mobile phone A



Mobile phone B



RE-Indicators

REpairability example

	 Mobile phone A	 Mobile phone B
--	---	---

RE-Indicators



REpairability example

	 Mobile phone A	 Mobile phone B
Disassembly	Score A.1	Score B.1



RE-Indicators

REpairability example

	 Mobile phone A	 Mobile phone B
Disassembly	Score A.1	Score B.1
Tools	Score A.2	Score B.2



RE-Indicators



REpairability example

	 Mobile phone A	 Mobile phone B
Disassembly	Score A.1	Score B.1
Tools	Score A.2	Score B.2
Availability of spare parts	Score A.3	Score B.3



RE-Indicators



REpairability example

	 Mobile phone A	 Mobile phone B
Disassembly	Score A.1	Score B.1
Tools	Score A.2	Score B.2
Availability of spare parts	Score A.3	Score B.3
Disassembly manual	Score A.4	Score B.4



RE-Indicators

REpairability example

	 Mobile phone A	 Mobile phone B
Disassembly	Score A.1	Score B.1
Tools	Score A.2	Score B.2
Availability of spare parts	Score A.3	Score B.3
Disassembly manual	Score A.4	Score B.4
Total REpairability score	Score A	Score B



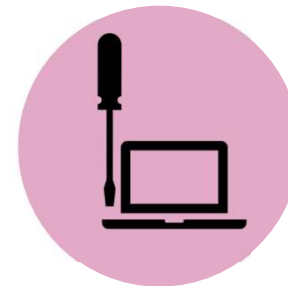
RE-Indicators

The RE-indicators is relevant for multiple stakeholders across the value chain:

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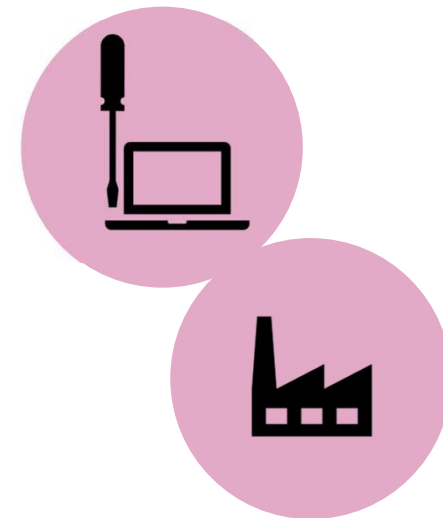
- **For remanufacturers**, accessing information on which parts are critical, how to access them, which tools to use, and whether spare parts are available.



RE-Indicators

The RE-indicators is relevant for multiple stakeholders across the value chain:

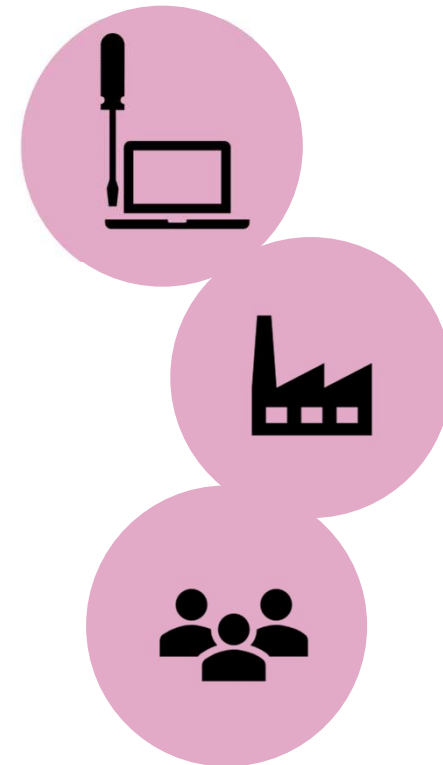
- **For remanufacturers**, accessing information on which parts are critical, how to access them, which tools to use, and whether spare parts are available.
- **For product designers**, providing guidance on where to act in design and production to improve product circularity and overall performance.



RE-Indicators

The RE-indicators is relevant for multiple stakeholders across the value chain:

- **For remanufacturers**, accessing information on which parts are critical, how to access them, which tools to use, and whether spare parts are available.
- **For product designers**, providing guidance on where to act in design and production to improve product circularity and overall performance.
- **For consumers**, serving as an understandable measure of the product's repairability and sustainability.



Coming Soon

Methodological foundations of the CE-RISE – Indicators

Smriti Anand Jha, Salgam setenay, Joana Francisco Morgado, Kirsten Remmen, Patrick Wäger

Wednesday, September 3rd

2A Measuring and Advancing Circularity in Consumer & Industrial Goods

Scientific Session

🕒 11:00 AM – 12:15 PM

📍 Salle 4

CONSUMER/IND GOODS

Contact details



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Leveraging DPPs for the calculation of: **SOCIOECONOMIC AND ENVIRONMENTAL (SEE) IMPACTS**

Sónia Cunha | Assistant Professor | Leiden University

Berend Mintjes | PhD Student | Leiden University



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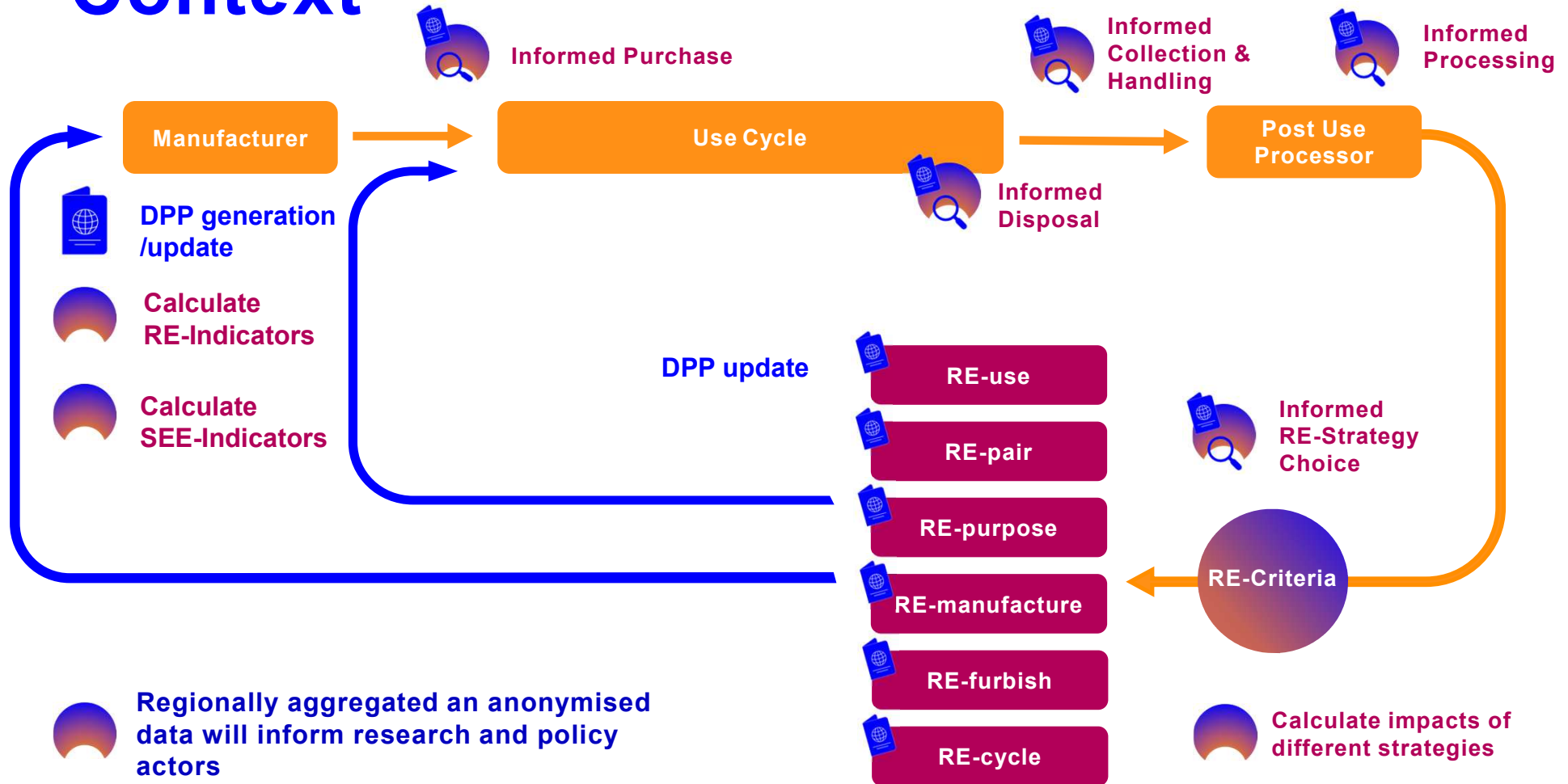


Universiteit
Leiden

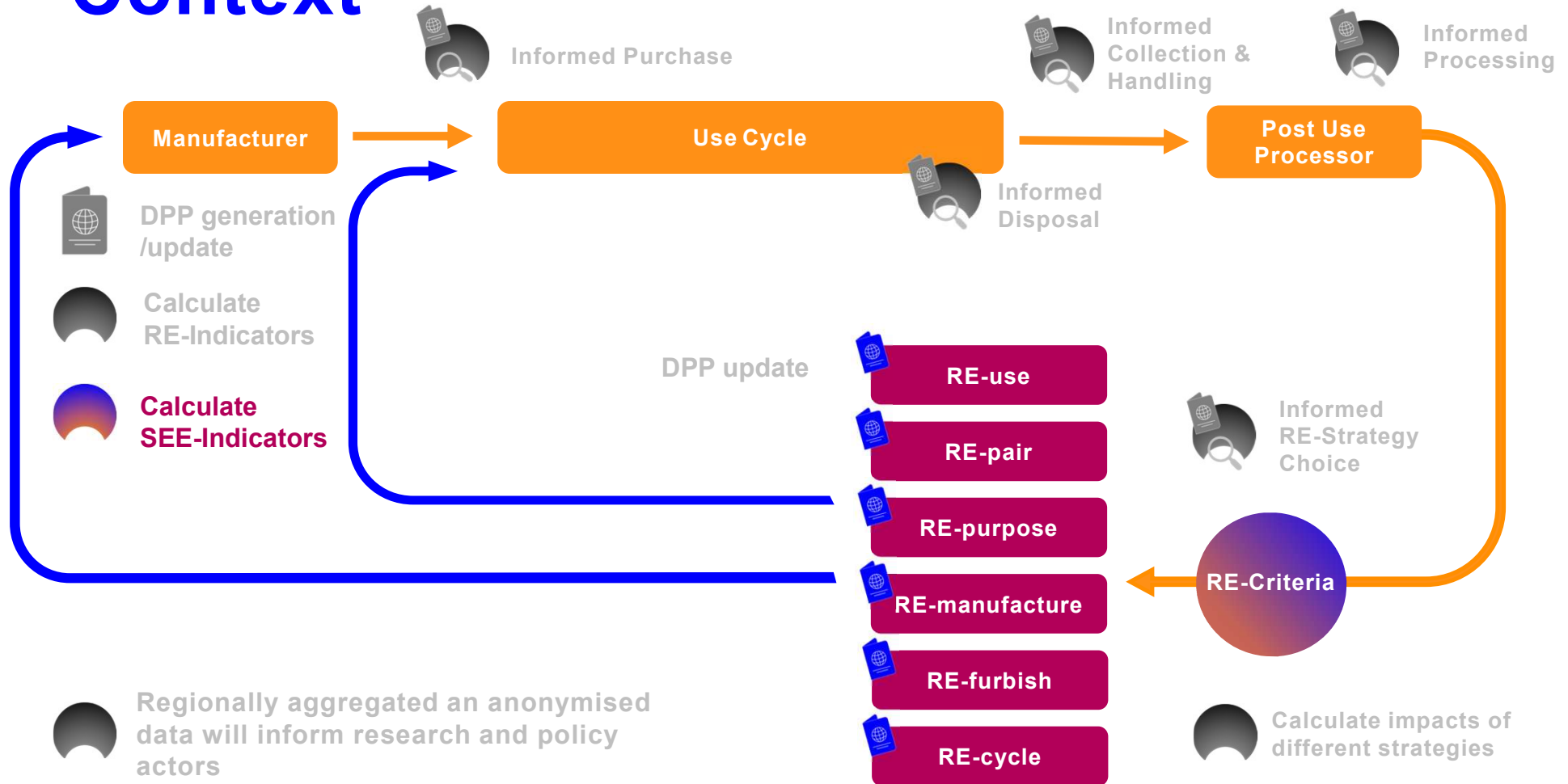


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Context



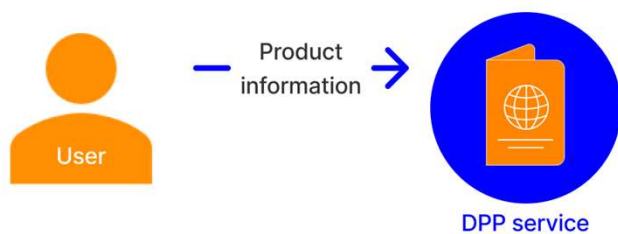
Context



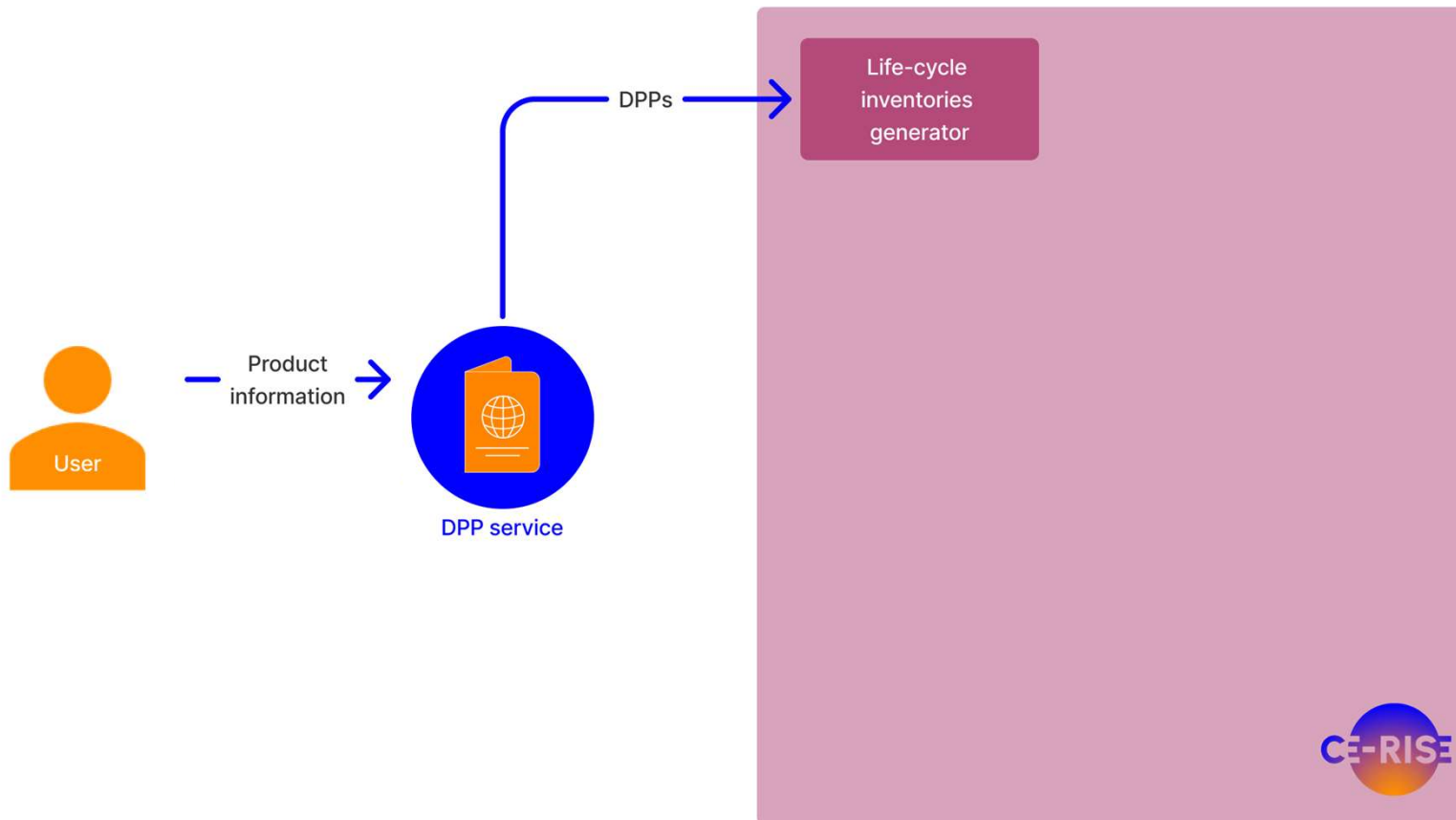
Context

- The DPP is used for data sharing anyway, so why not share data on the inputs, outputs and impacts of your own processes?
- By sharing process data through the DPP, less data gathering is needed.
- You provide information on **your own process only** and can use linked DPP processes for impact assessment across their full value chain.

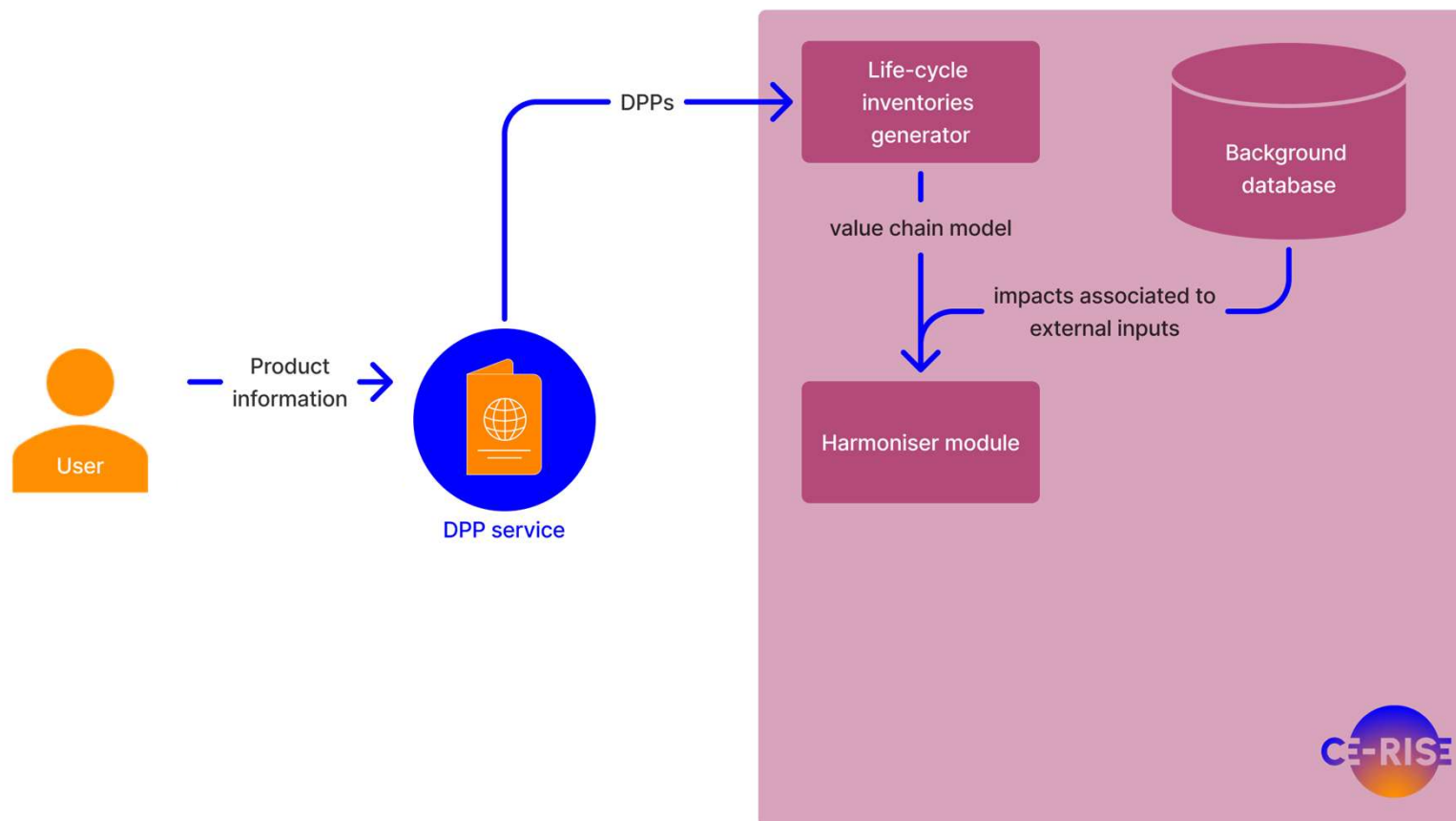
Method



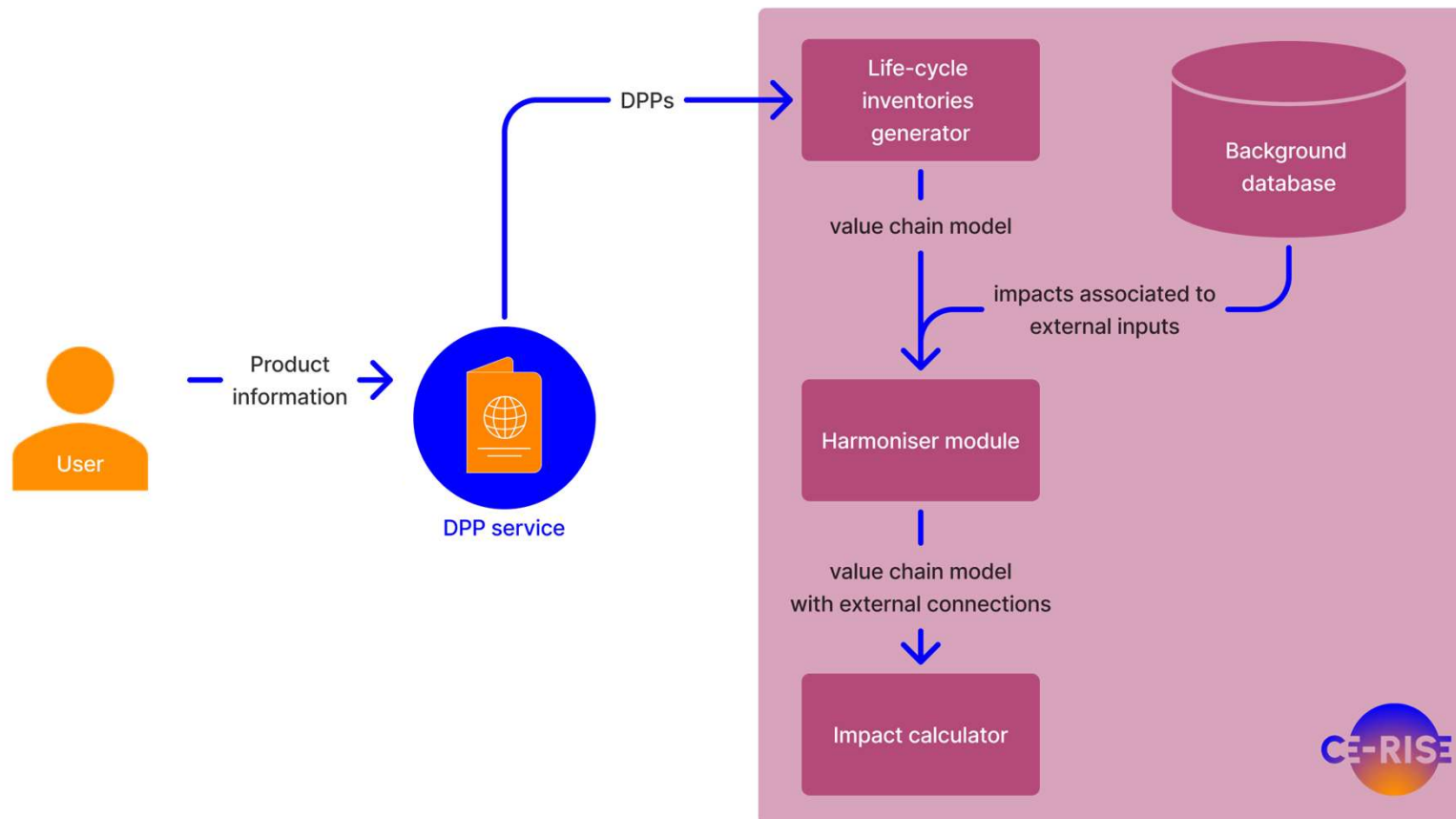
Method



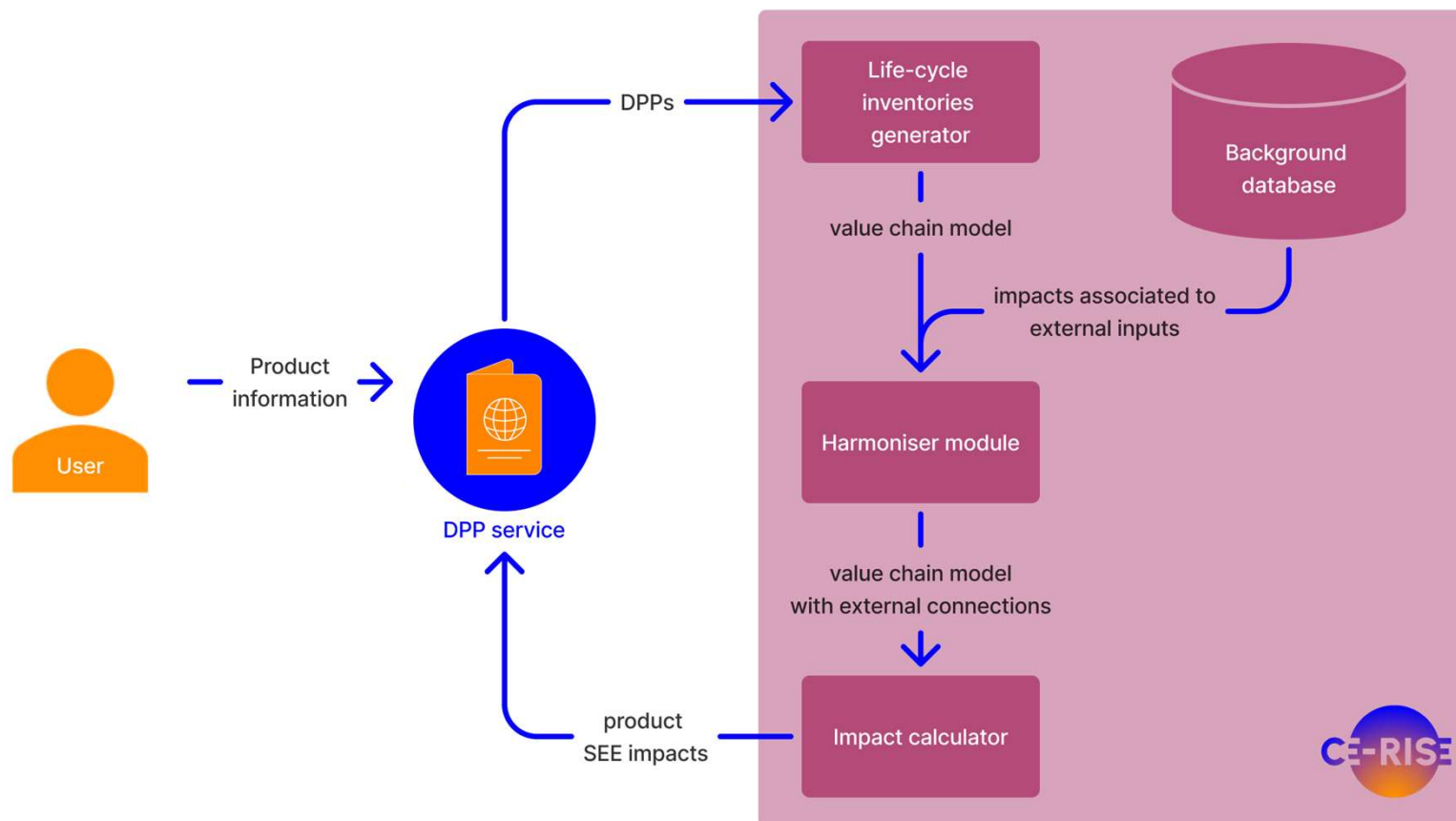
Method



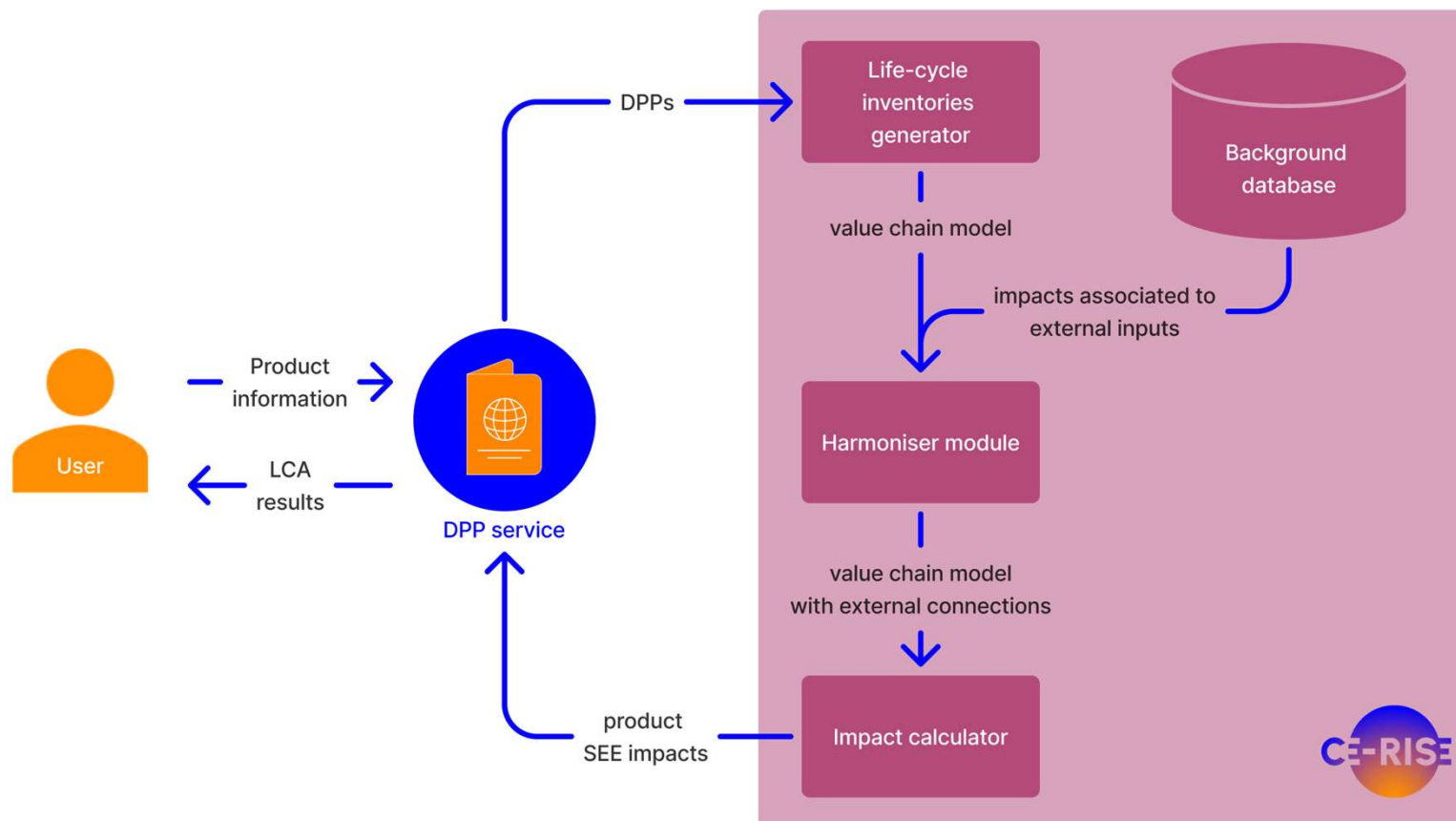
Method



Method

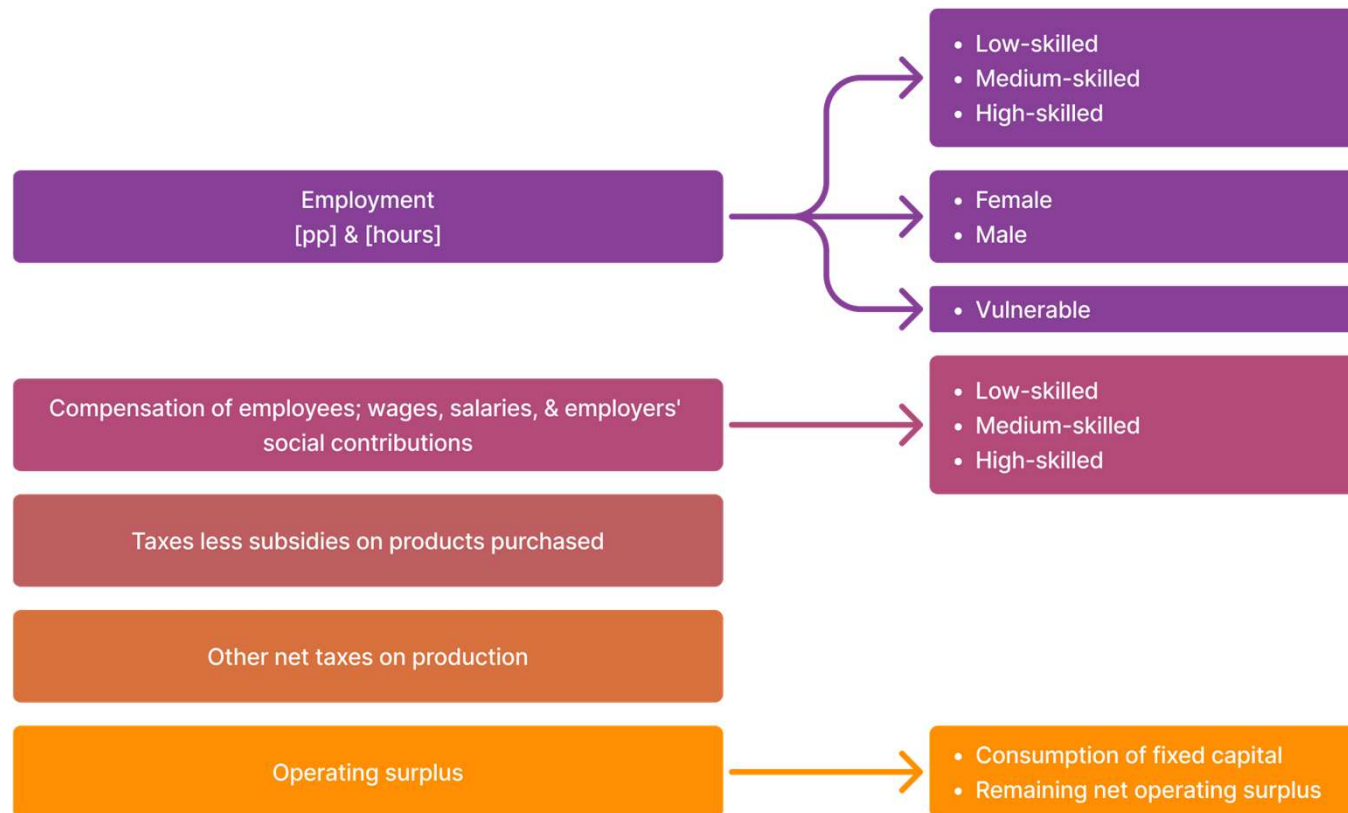


Method



Results – Socioeconomic impacts

- Socioeconomic impact categories covered:



Results – Environmental impacts

- Product Environmental Footprint compliant impact assessment results – 16 categories:



Climate change



Ozone depletion



Human toxicity, cancer



Human toxicity, non-cancer



Particulate matter



Ionising radiation, human health



Photochemical ozone formation, human health



Acidification



Eutrophication, terrestrial



Eutrophication, freshwater



Eutrophication, marine



Ecotoxicity, freshwater



Land use



Water use



Resource use, minerals and metals

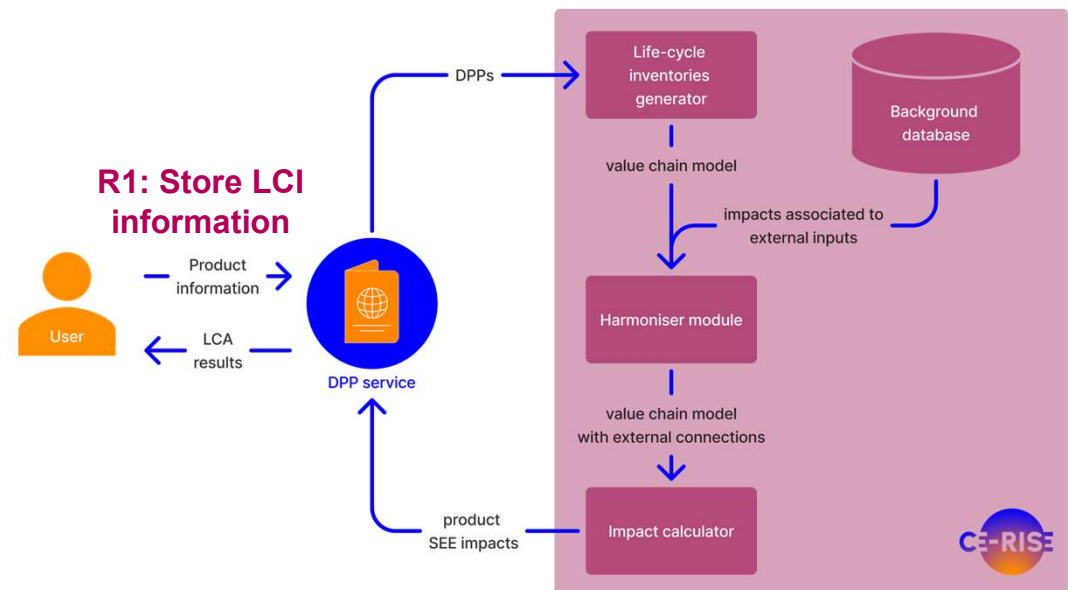


Resource use, fossils



Discussion

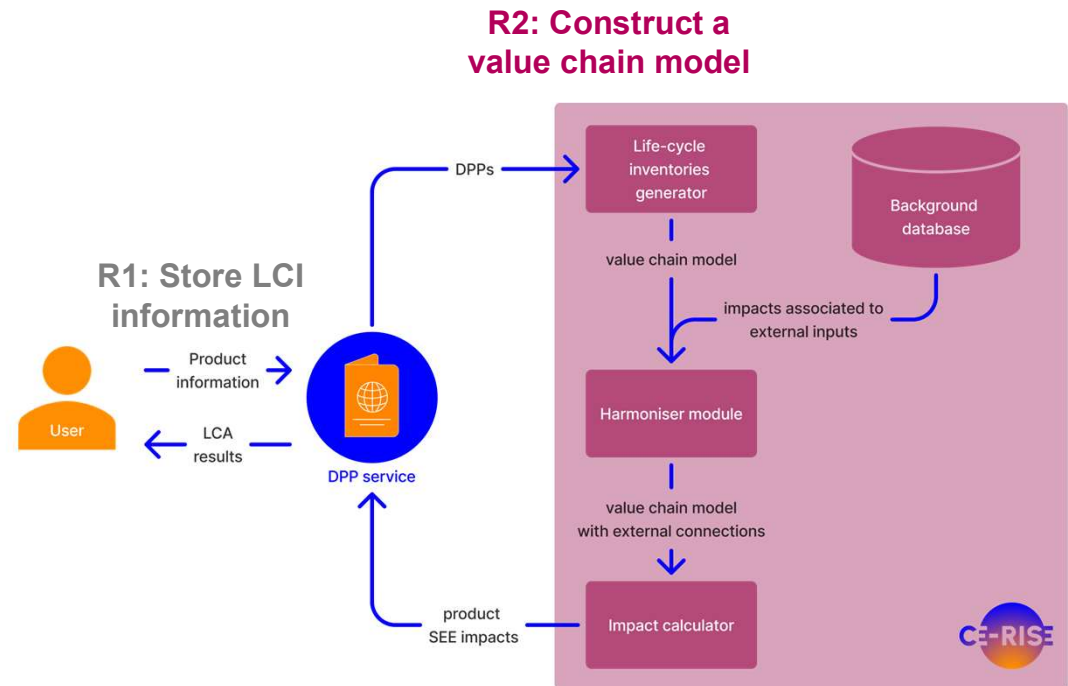
- **Confidentiality:** Process data is more sensitive than the impact assessment results, in our system, the software service has access to anonymised process data, but other actors do not have this
- Reduced data gathering burden



Discussion

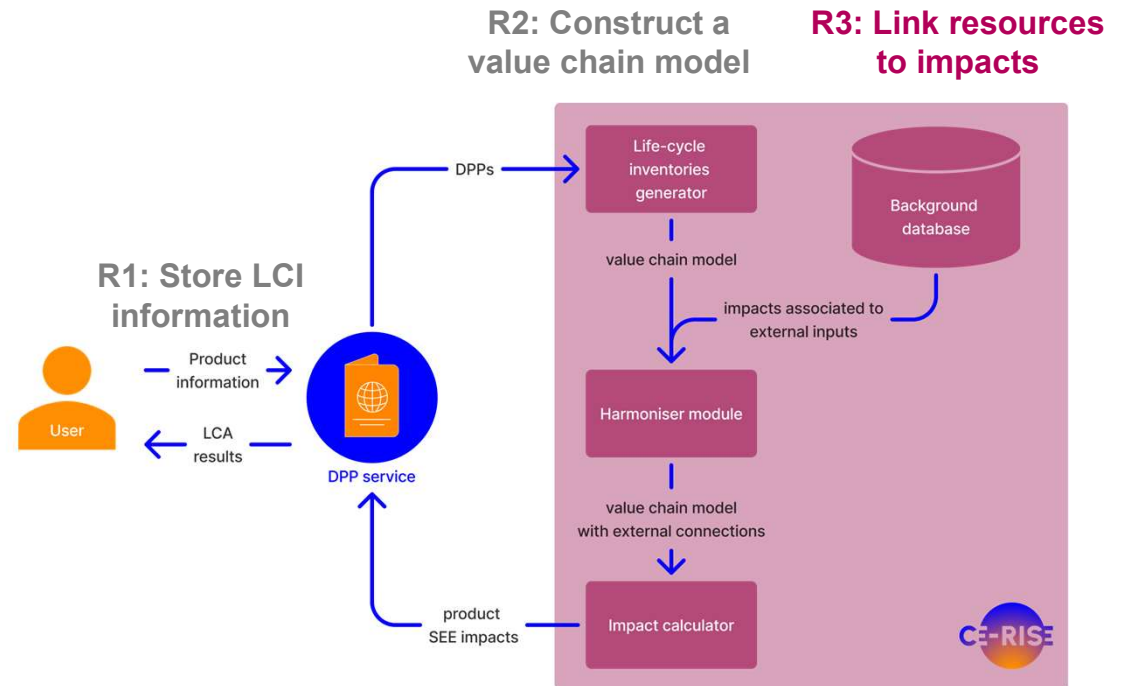
Use phase data

- a full (cradle-to-grave) impact analysis by an OEM requires data on phases after manufacturing which is not in the DPP yet
- a full-scale analysis outside the system requires gathering or modelling this data as well, and the system still reduces the data gathering burden for component manufacturing and resource use.



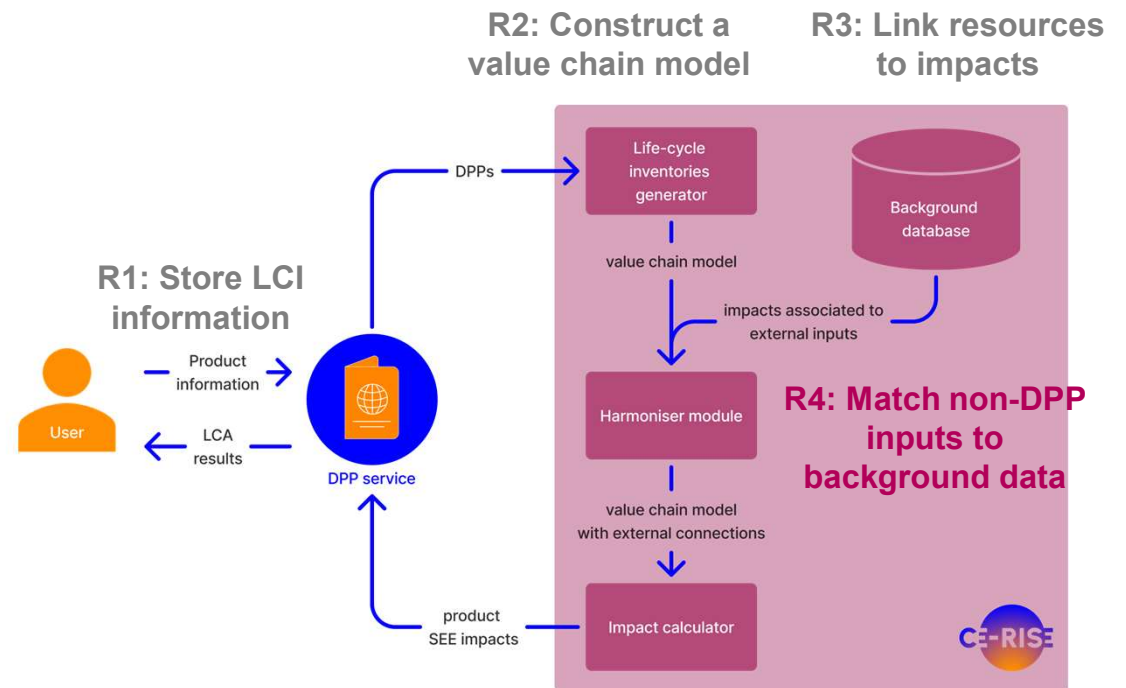
Discussion

- Reduced data gathering burden
- Ensures comparability and PEF compliance



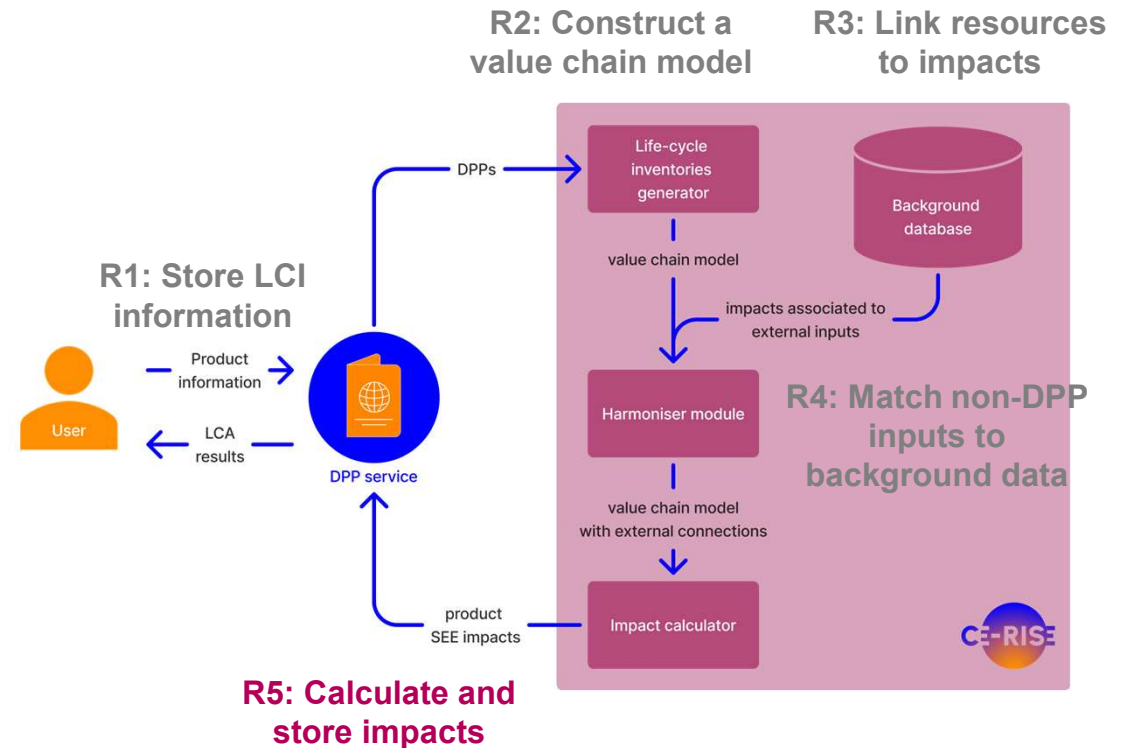
Discussion

- Machine learning, or
- Correspondence tables, or
- User uses known classifications



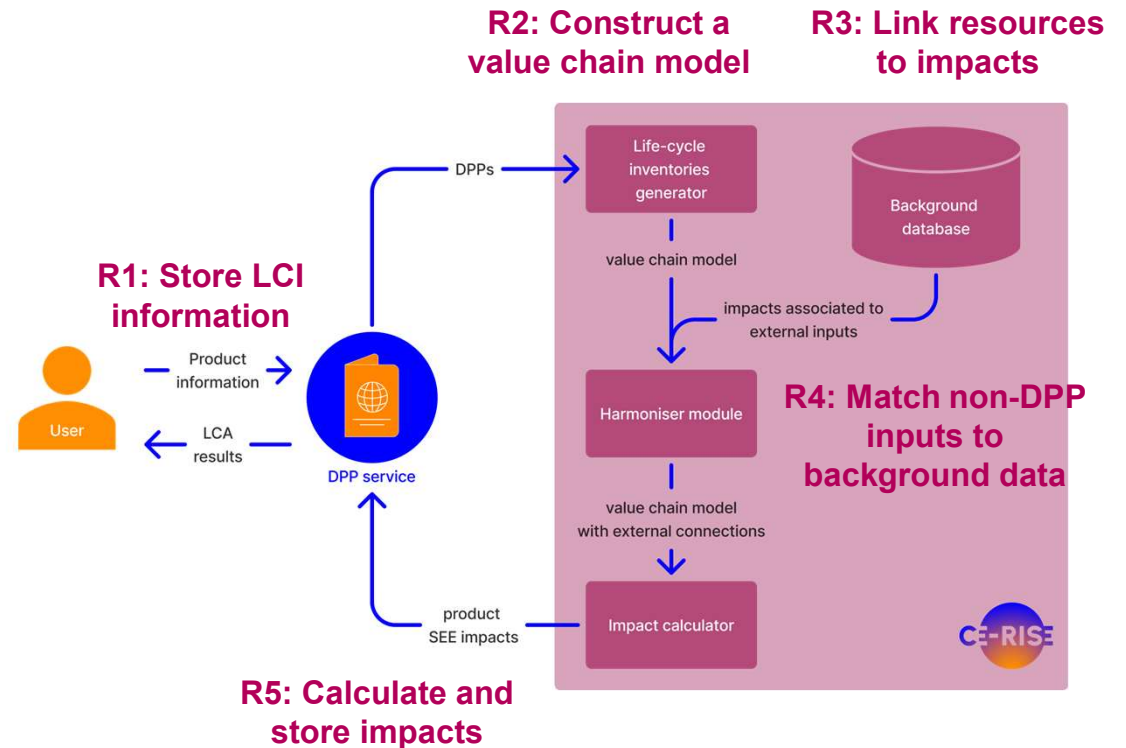
Discussion

- In system calculations ensure that impacts are calculated in a standardised and comparable way
- User has access to product specific impacts by only providing and having access to its own data



Discussion

- The integration of the DPP with the CE-RISE system for impact calculation provides users with a streamlined process that reduces data gathering and calculation burden while providing comparable and standardized SEE results.
- Challenges: use phase data and and category matching



Coming Soon:

Enhancing sustainability assessments? The role of digital product passports in industrial ecology

Yanan Liang, Sónia Cunha, Berend Mintjes, Robert Istrate -
Leiden University

Tuesday, September 2nd

1H Innovation, Design & Digital Solutions

Scientific Session

🕒 6:00 PM – 7:00 PM

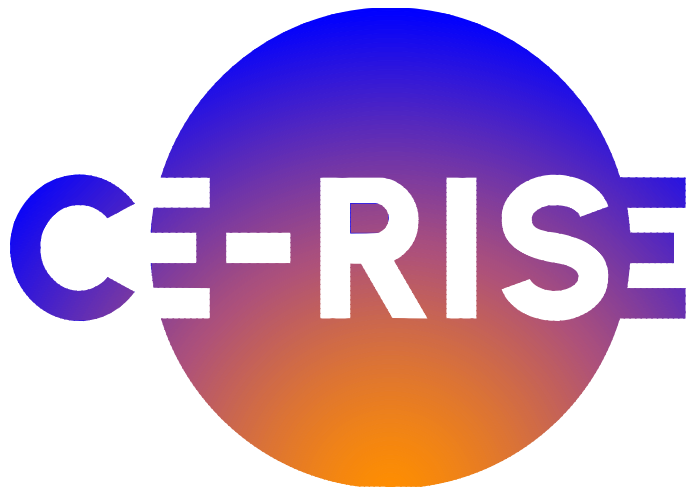
📍 Salle 1

BUILT ENVIRONMENT

CONSUMER/IND GOODS

EXTRACTIVE SECTOR

Contact details



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Universiteit
Leiden



VISSMANN CASE STUDY

Combining green energy, circularity and digitalization

01.09.2025 | Andreas Wade | Viessmann Climate Solutions

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VISSMANN Climate Solutions



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Vitocal 250-A Heat Pump



Deconstruction to DPP level



1. Buffer tank
2. Diaphragm vessel
3. Motor
4. Water pump

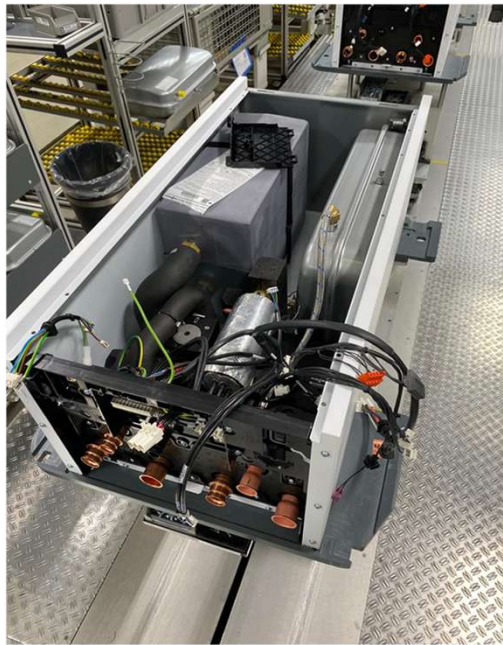
Indoor unit



1. Accumulator
2. Fan
3. Refrigerant circuit containing:
 - a. 2 heat exchangers
 - b. Accumulator
 - c. Compressor
 - d. Electronic inverter
 - e. Copper pipes
 - f. Aluminum heat sinks
 - g. Thermoplastics
 - h. Insulation
4. Metal sheets (outer covering)

Outdoor unit

Deconstruction to DPP level

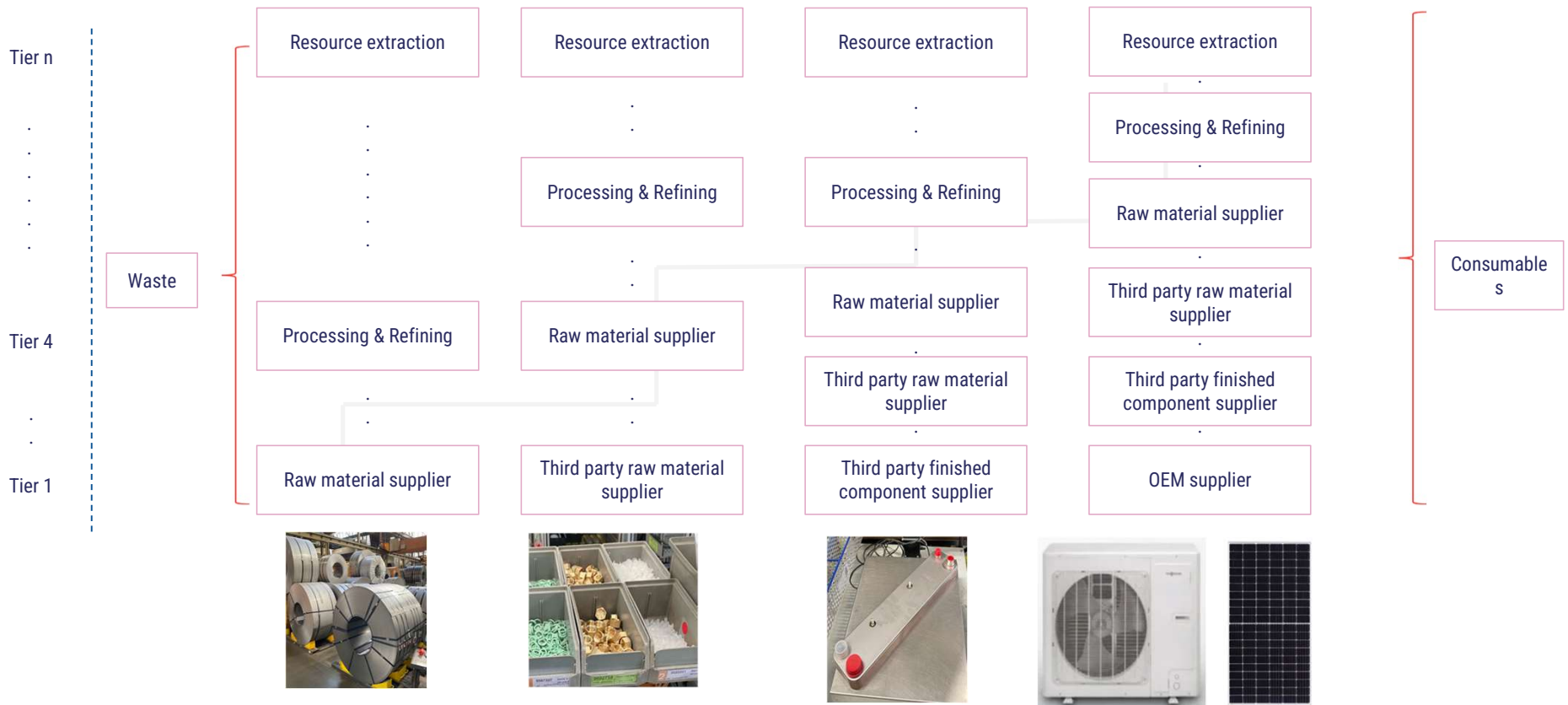


Indoor unit

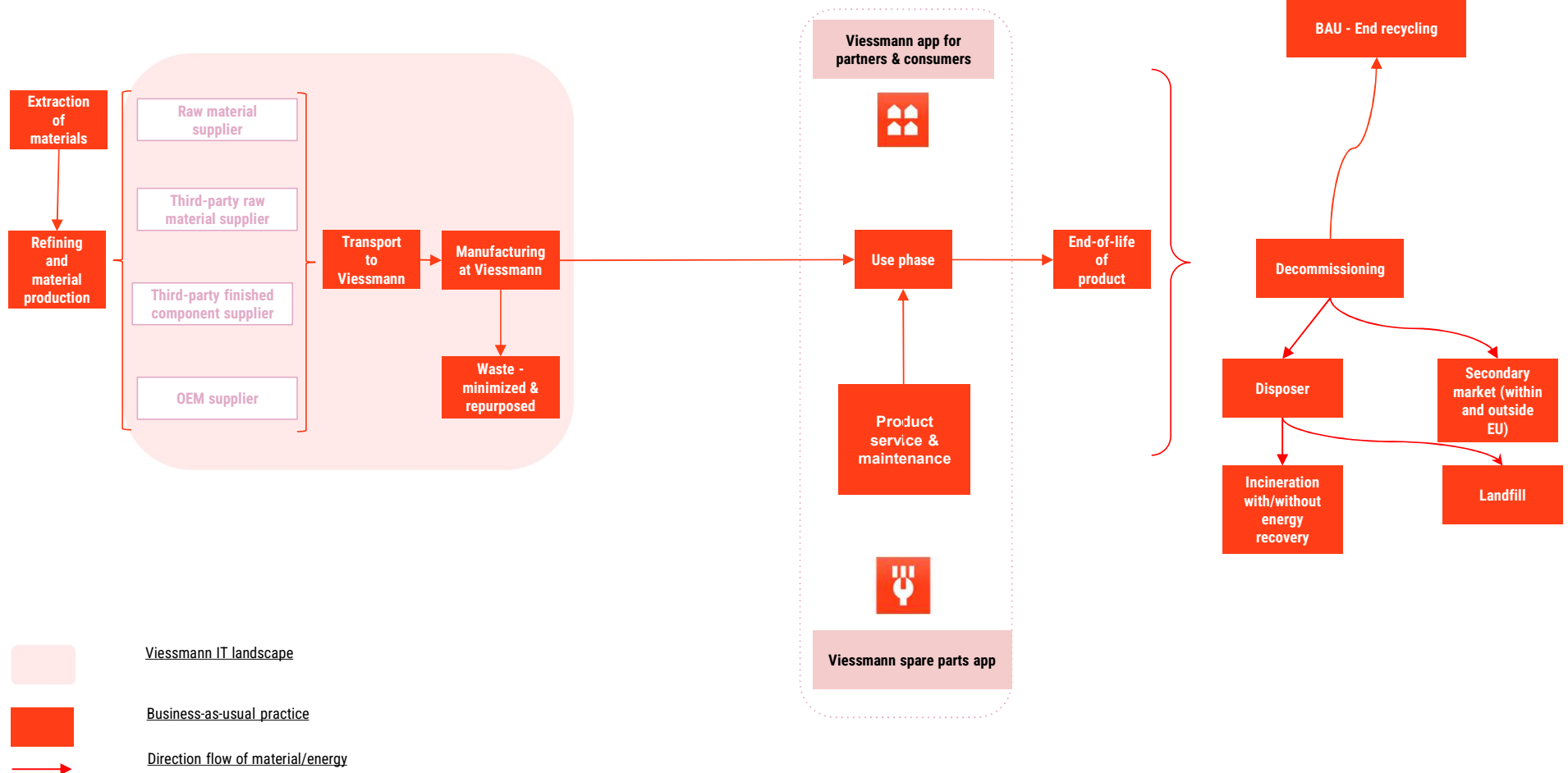


Outdoor unit

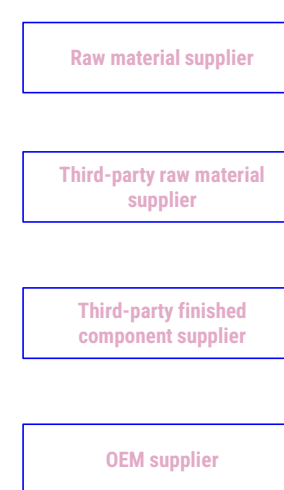
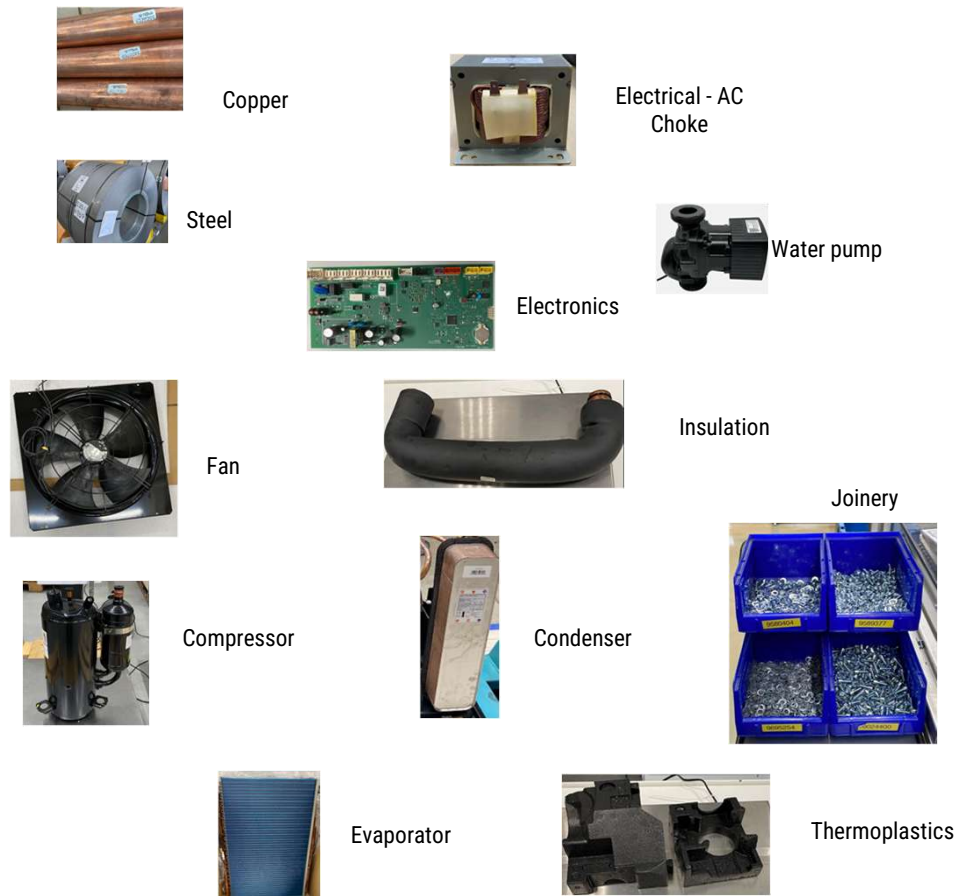
Supply Chain Challenge (Cradle to Gate)



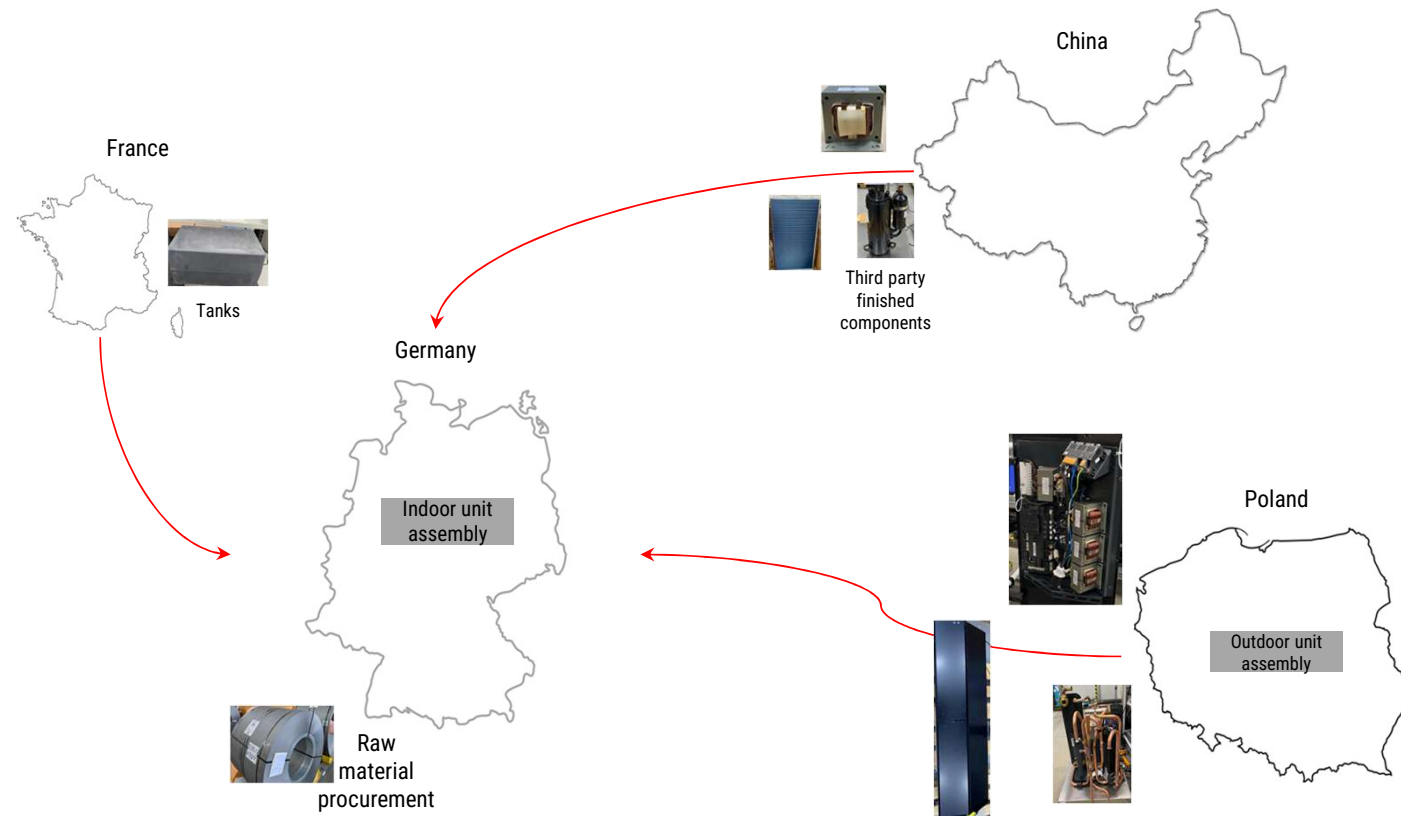
Life Cycle



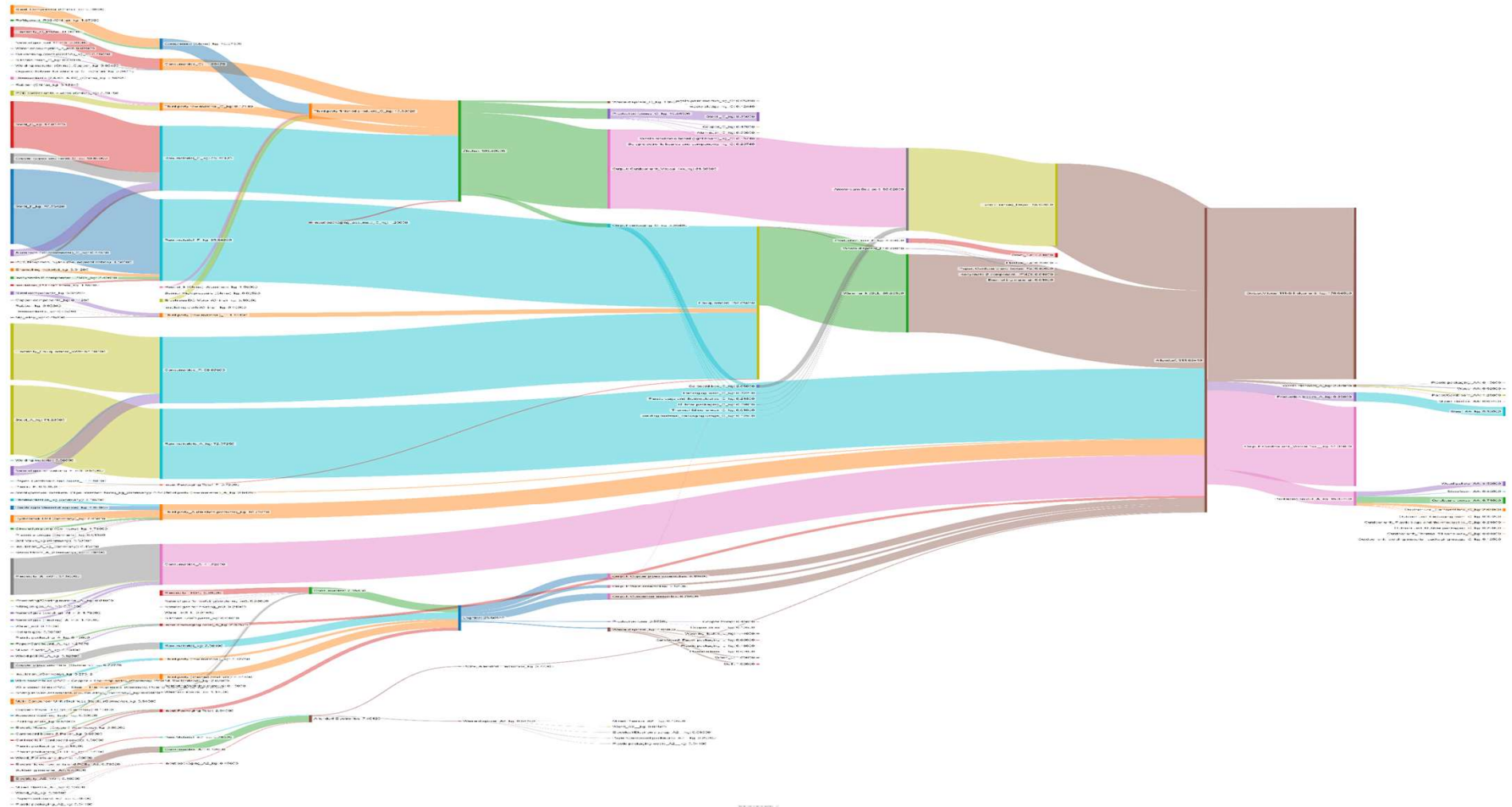
Upstream Value Chain



Upstream Value Chain

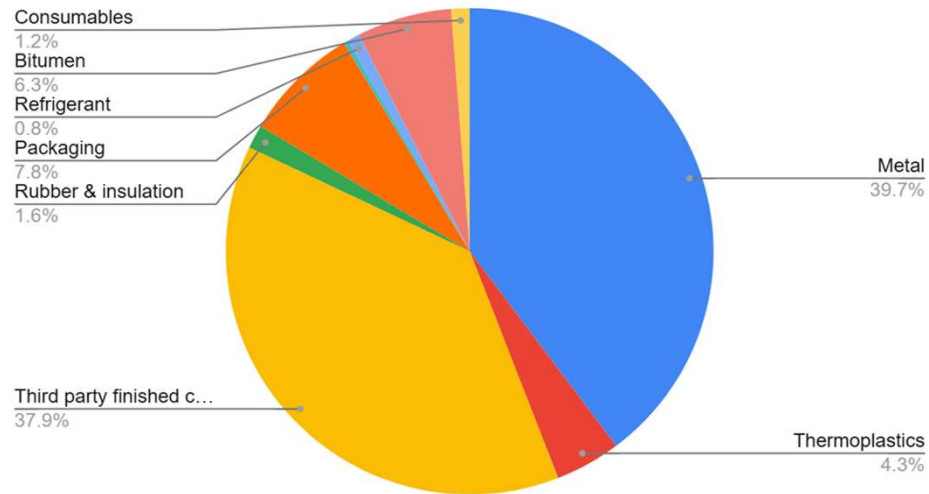


Upstream Value Chain



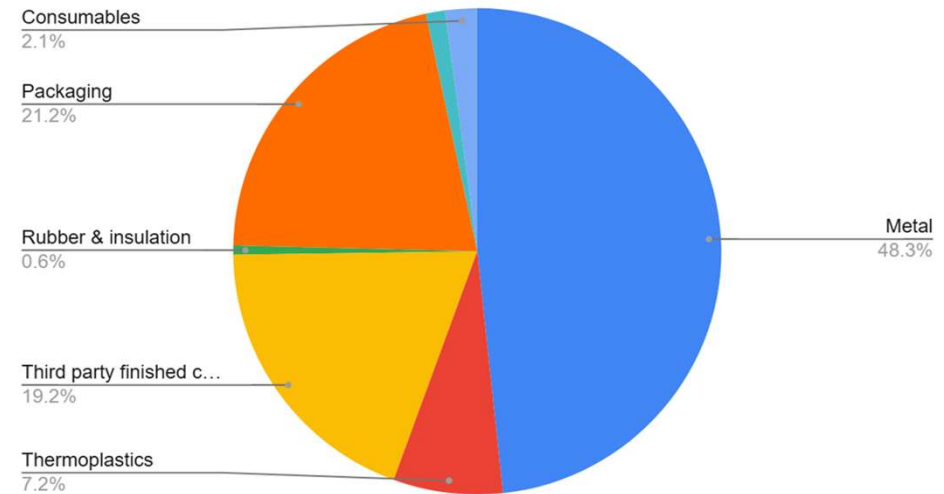
Mass Share – Vitocal 250-A

Mass share in outdoor unit



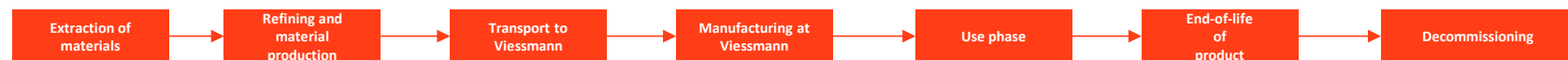
244 kg

Mass share in indoor unit

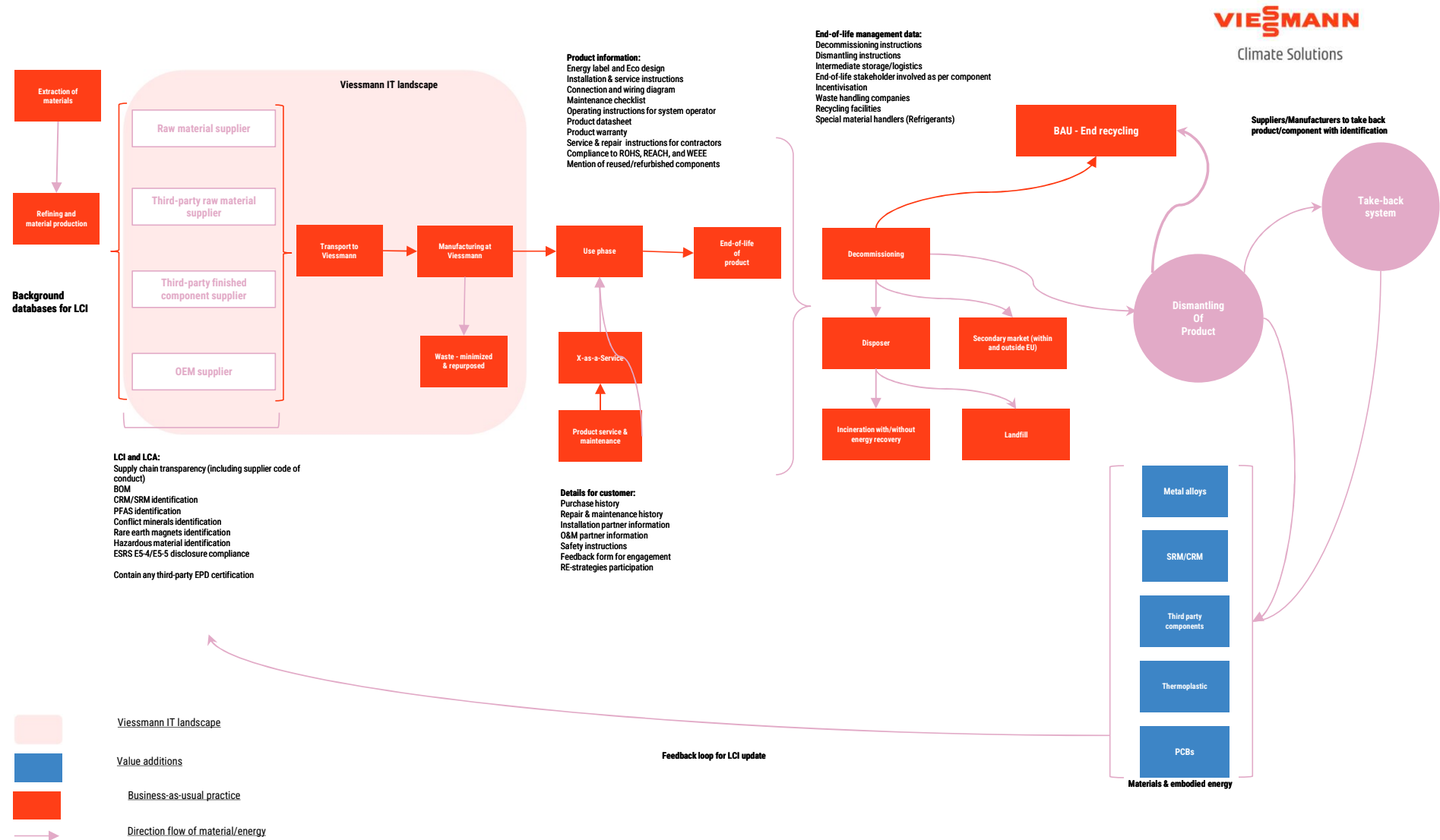


54 kg

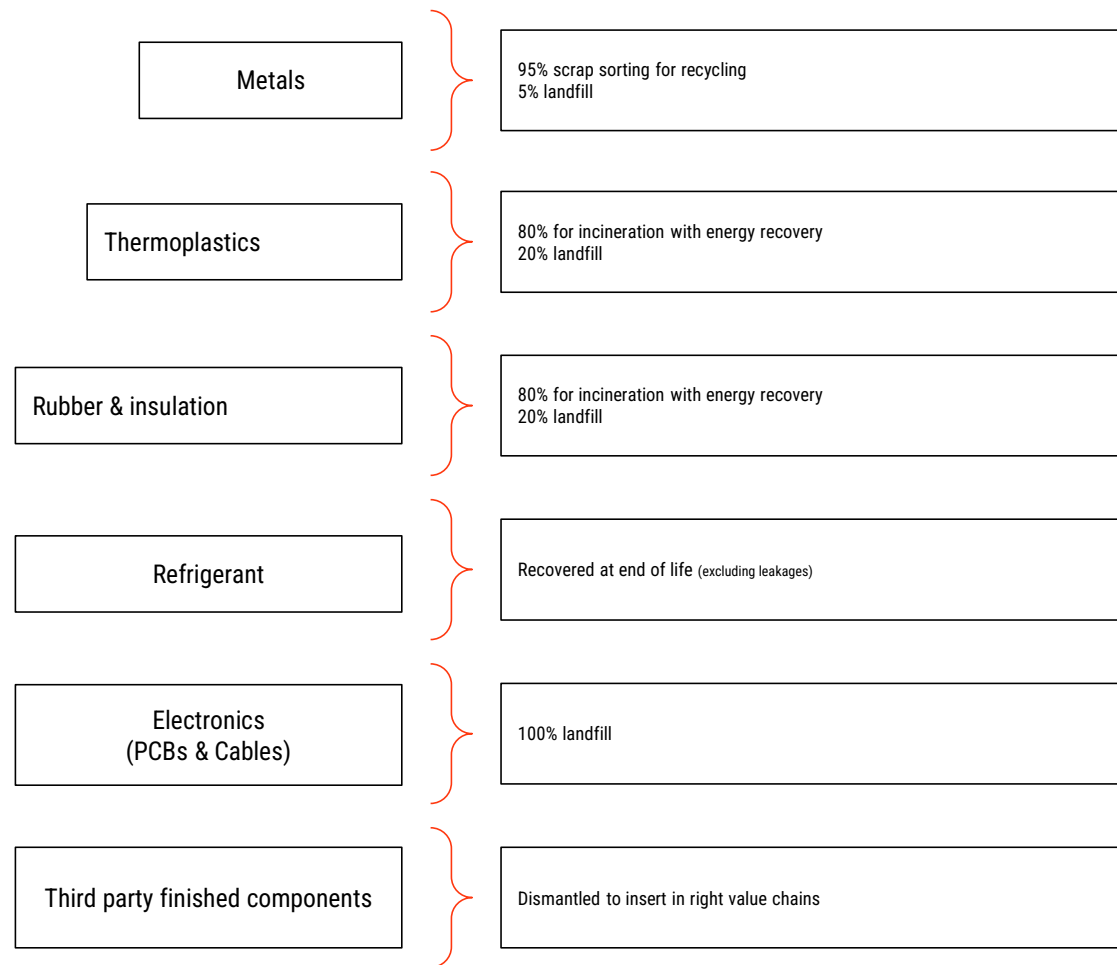
CE-RISE Value Proposition



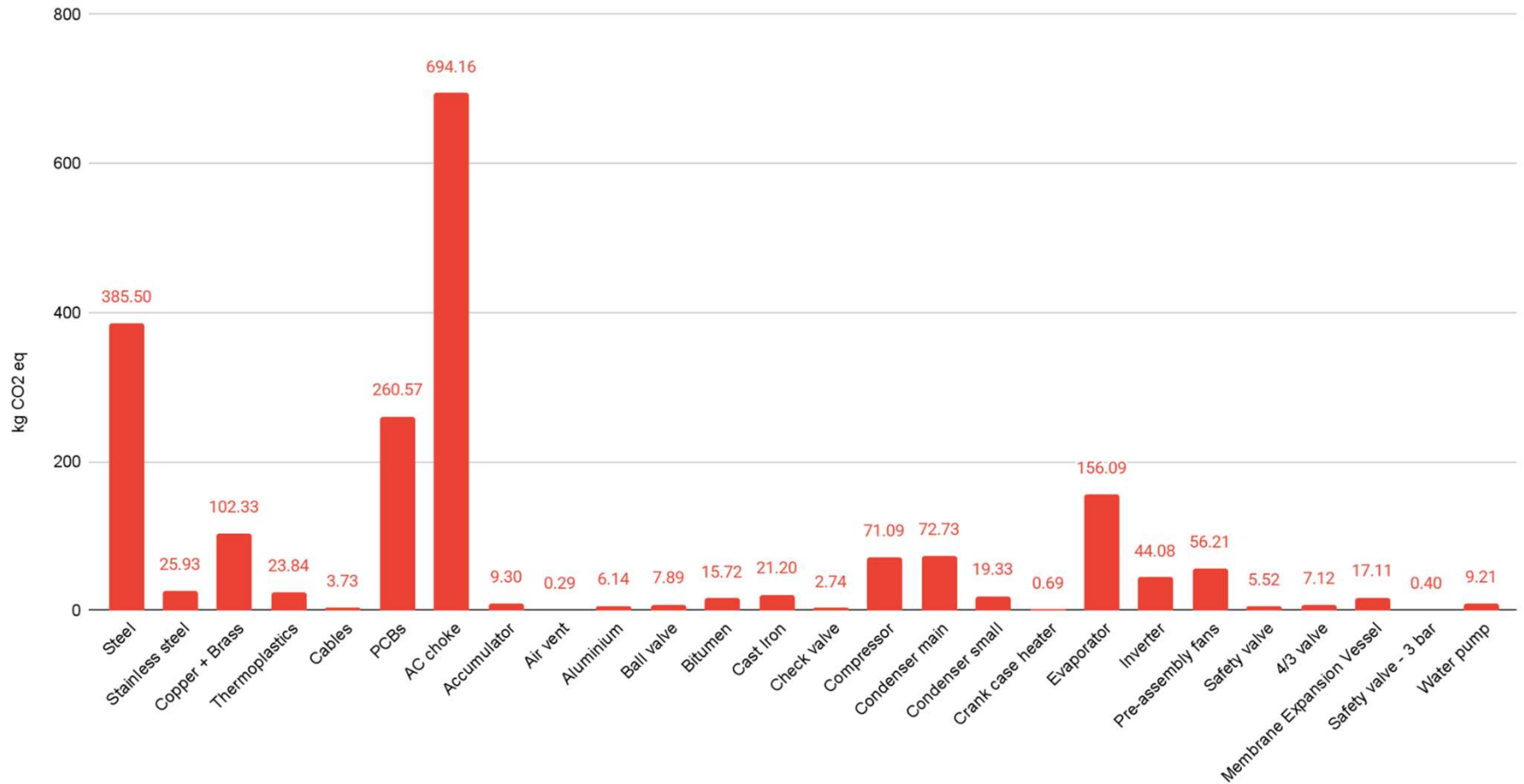
It aims to support sustainable industrial ecosystems through digital tools and data-driven decision-making.



Downstream Value Chain



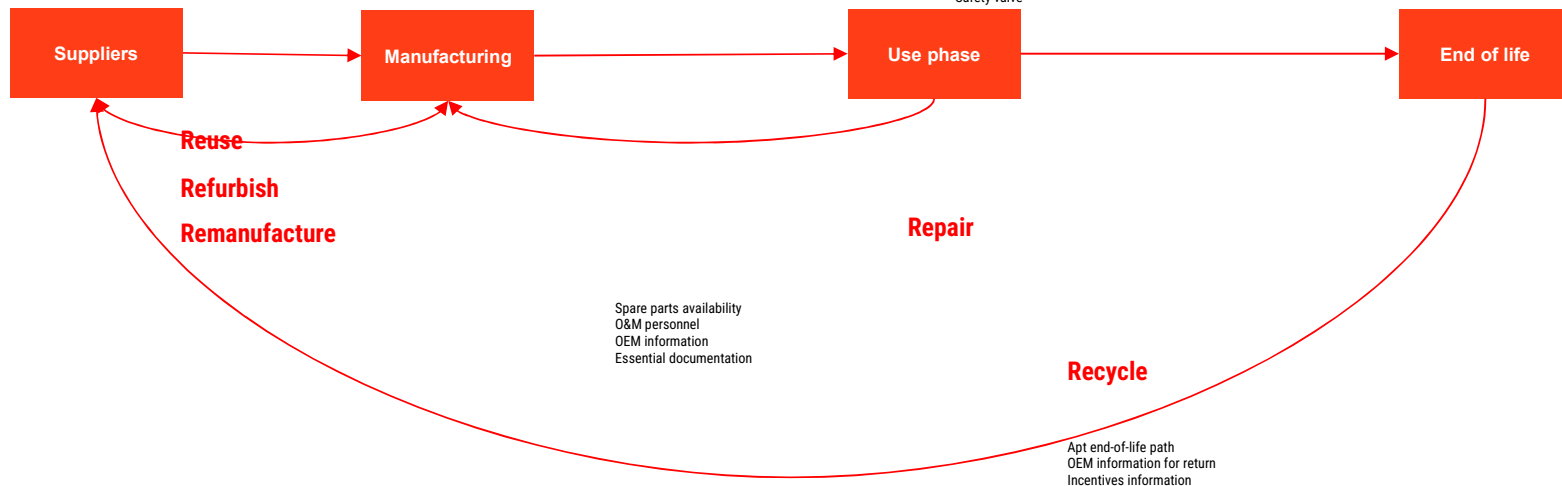
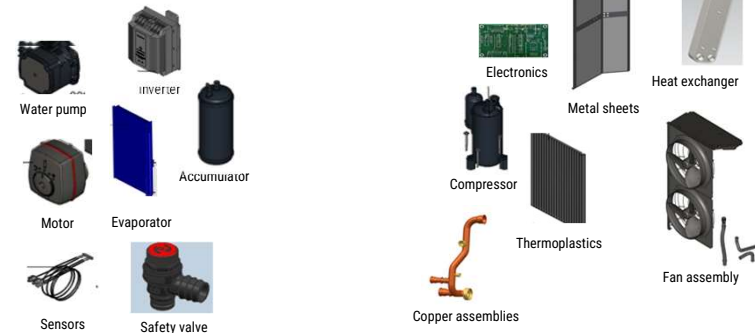
Embodied Carbon – Vitocal 250-A



CE-RISE Enabled RE-Strategies

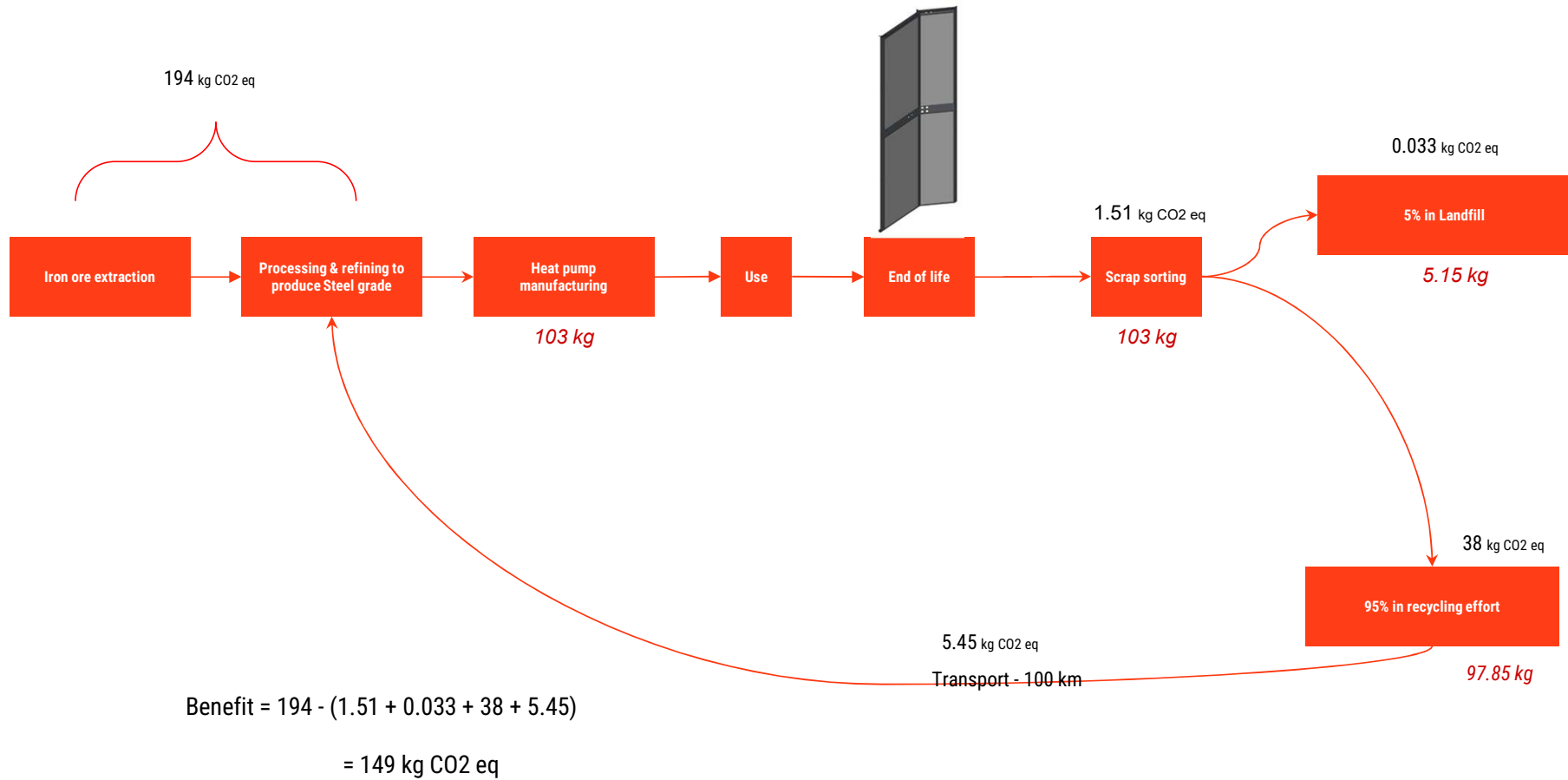


Product information
Regulatory declarations

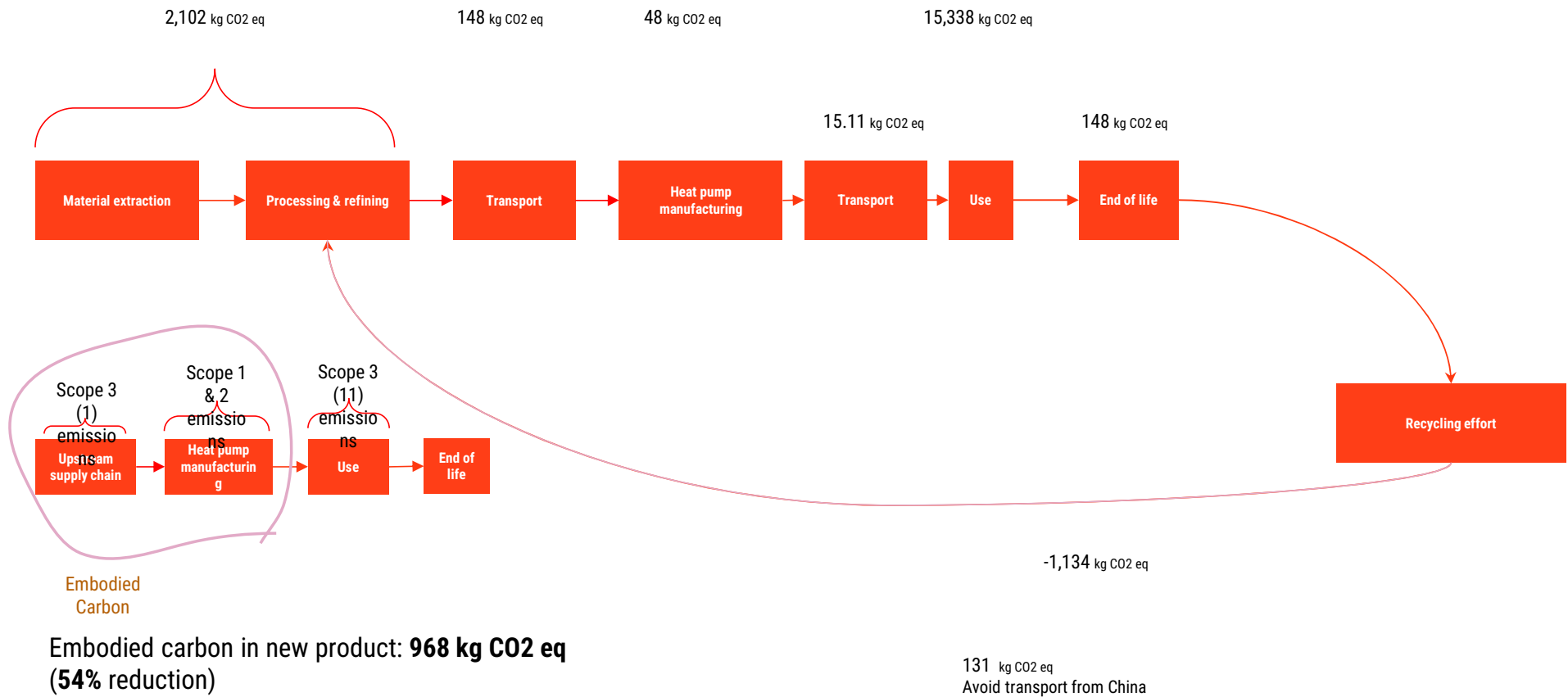


CE-RISE information system

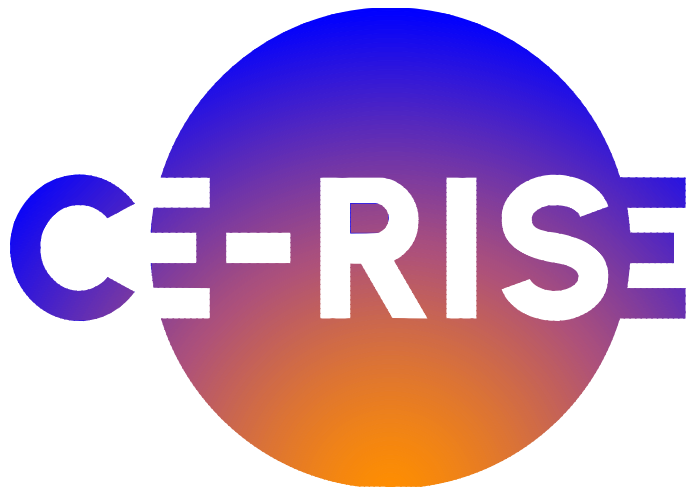
Circularity Benefit - Steel



Circularity Benefit – Heat Pump



Contact details



Andreas Wade
Viessmann Climate Solutions
Berlin, Germany
wdan@viessmann.com





DATA INTEROPERABILITY

Riccardo Boero | Senior Scientist | NILU



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Swiss Confederation

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Why Interoperability


 **Data ownership:** allow sharing while respecting who controls the information


 **Data quality:** ensure reliable data when data is migrated from siloed private systems

 **Semantic alignment:** common meaning of terms is essential for information to be understood and compared


 **Scalability & flexibility:** allow the DPP system to grow across sectors and adapt over time

Key Challenges


 **Data ownership:** no clear rules (nor expectations) on how to maintain ownership in the DPP system

 **Data quality:** current reality is siloed, proprietary solutions with little incentive or capacity to migrate data


 **Semantic alignment:** lack of metadata and machine-readable open standards prevents common interpretation


 **Scalability & flexibility:** closed, fragmented solutions cannot scale across sectors or adjust to new requirements

Expected Benefits

 **Data ownership:** the cost of sharing is paid off through collective benefits in resource efficiency and circularity


 **Data quality:** richer, comparable data improves decision-making, also for managing data itself

 **Semantic alignment:** understand (machine-readable) information and reuse it for automation and analytics (including green tape)

 **Scalability & flexibility:** enable data-driven innovation, even across value chains

Our (CE-RISE) Approach

 **Data ownership:** open science approach for the transition from private data to shared value while maintaining control

 **Data quality:** scientific methods to migrate and harmonize heterogeneous data, making outputs transparent and reusable

 **Semantic alignment:** open-source, machine-readable standards to ensure a common understanding of information

 **Scalability & flexibility:** open data standards + a modular foundation that adapts and fosters system-wide innovation

Coming Soon:

Quantifying the Potential of Digital Innovations to Advance Circular Economy in Consumer and Industrial Goods

Riccardo Boero, Miguel Las Heras Hernandez, Cristina Guerreiro | NILU

Tuesday, September 2nd

1H Innovation, Design & Digital Solutions

Scientific Session

🕒 6:00 PM – 7:00 PM

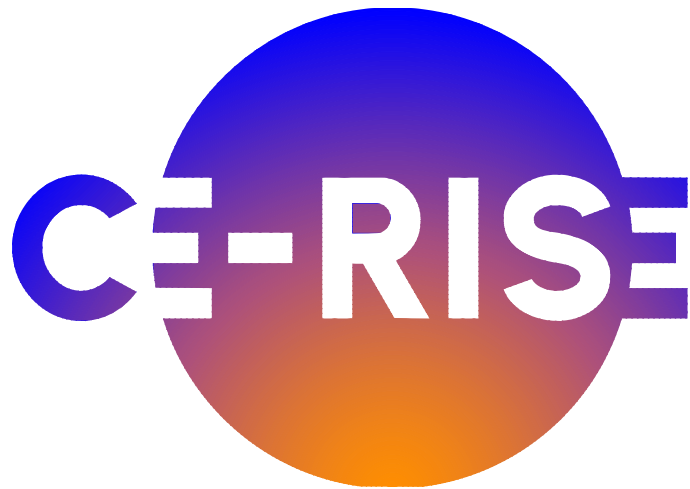
📍 Salle 1

BUILT ENVIRONMENT

CONSUMER/IND GOODS

EXTRACTIVE SECTOR

Contact details



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Thank you !

ce-rise.eu



CE-RISE Project

*Register as a stakeholder for updates
and event invitations!*



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Confederation

Federal Department of Economic Affairs,
Education and Research EAER
State Secretariat for Education,
Research and Innovation SERI

EU Framework Programmes



UK Research
and Innovation

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Funded by
the European Union

COFFEE BREAK 16:10-16:30

**How can we better
communicate the
value of circularity -
like repair, reuse and
remanufacturing - to
build customer trust?**

CE-RISE Consumer Survey (5 minutes)



PANEL DISCUSSION



Catherine Chevauché

Circular Economy
Director, Veolia



Reyna Ubeda

ITU-T SG5 Engineer:
Environment, EMF,
Climate Action and
Circular Economy, ITU



Colette van der Ven

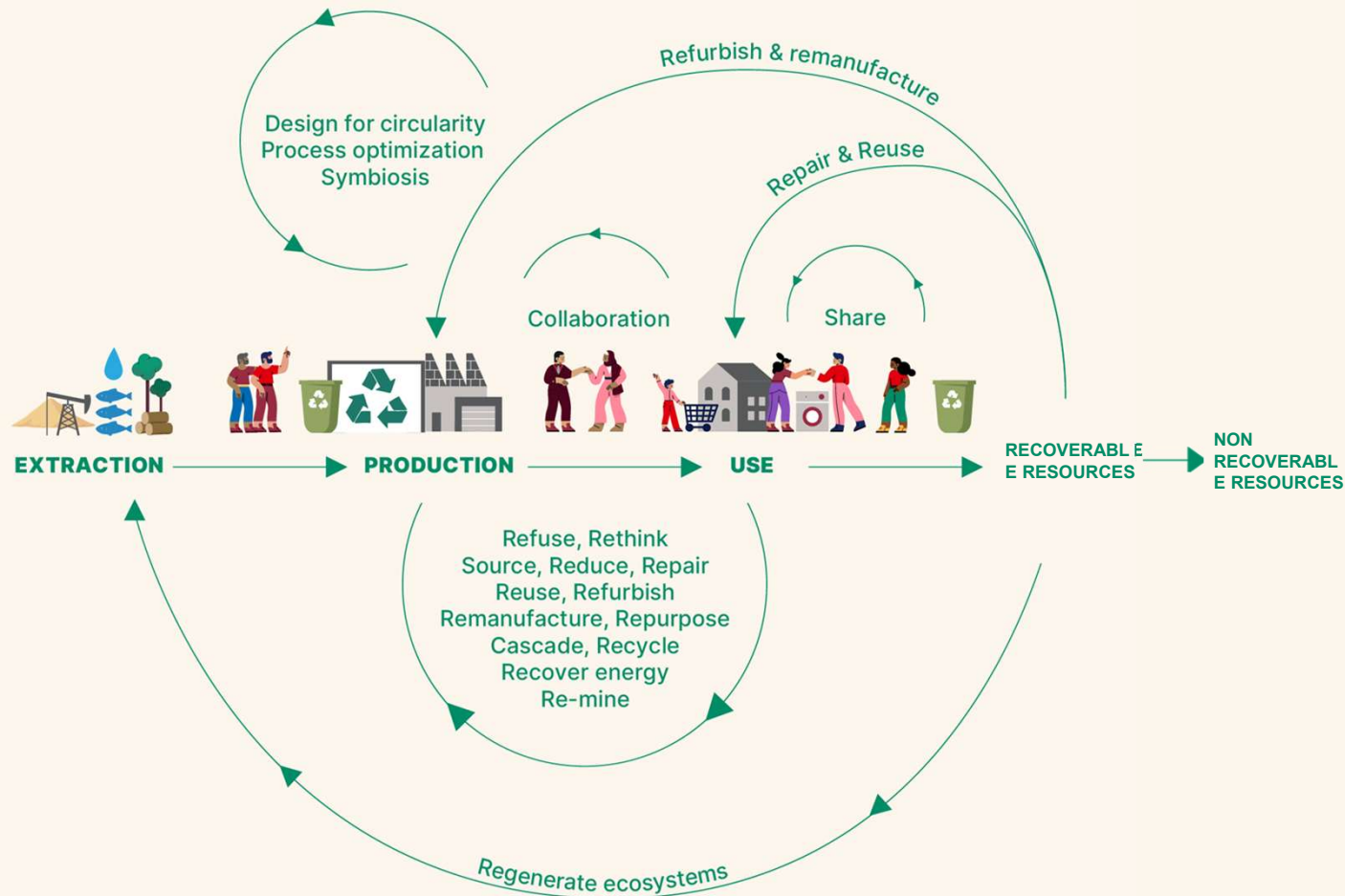
Founder & Director,
TULIP Consulting



Maxime Furkel

Head of Government
Affairs, Lexmark

ISO 59000 Circular economy family of standards includes the Product Circularity Data Sheet



ISO 59004 - Vocabulary, principles and guidance for implementation

ISO 59010 - Guidance on the transition of business models and value networks

ISO 59020 - Measuring and assessing circularity performance

ISO 59014 - Sustainability and traceability of secondary materials recovery – Principles, requirements and guidance

ISO 59040 - Product Circularity Data Sheet

Ease circular economy data exchange to better maintain and recover product value:

- Material inputs,
- Circular production,
- Durability and extended lifetime,
- Circularity at end of product use period.



Digital Product Passport



ITU is the United Nations specialized agency for ICTs



ITU-T SG5 supports Environment, EMF, Climate Action & Circular Economy

- Framework & Guidelines
- Reduction
- Recycling
- Batteries
- Environmental Assessment
- Circular Economy
- User Device Sustainability Solution
- Stakeholder Engagement and Awareness
- Supply Chain
- **Digital Product Passport**

▪ ITU definition

Digital Product Passports: Structured collection of product-specific data conveyed through a unique identifier



Jointly developed with





Coalition for
Digital Environmental Sustainability

IMPACT INITIATIVE Digitalization 4 Circular Economy

A Framework for Digital Product Information Systems

1 Phase 2024

a) Data Assessment & Technical overview

- Value proposition
- Identified potential data categories and framework outline

b) Consultations:

- Over 40 countries and over 200 organizations
- Global South engagement
- New partners

2 Phase 2025

c) Pilot testing

- High-impact sectors: ICT and textiles.

d) Draft Framework

- Moving from technical to political conversation to get buy in.

3 Phase 2026 and onwards

e) Launch and promote adoption/use on a voluntary basis by Member States and stakeholders

- High level political forums: UNEA, HLPF, UNGA, etc.

Standard under development

L.DPIS - Guidelines for a modular and scalable data system design for Digital Product Information Systems (DPIS) for ICT goods



Colette van der Ven



Background: International trade lawyer (Harvard JD); Executive Director of TULIP Consulting, an impact-driven firm that advises the public sector on the trade, environment, and development nexus; Visiting Lecturer, International Economic Law, Graduate Institute



Focus of work: external dimension of green trade instruments, including the Ecodesign for Sustainable Products Regulation which sets out the DPP requirement



Sector-specific approaches to DPP:

Studies that focus on ecodesign and DPP requirements on the textiles and apparel sector (SITRA; Center for Trade and Investment Law in India);

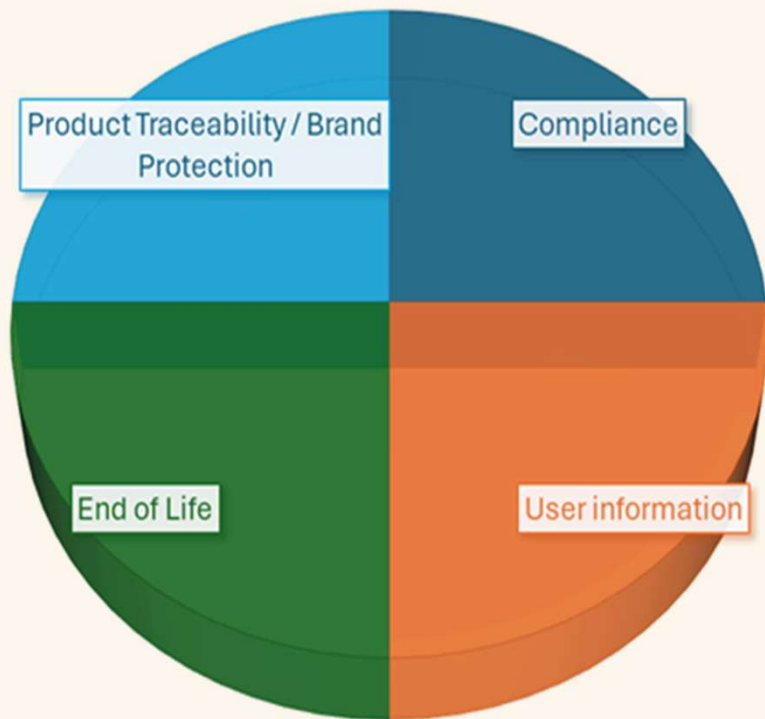
Study focused on eco-design/DPP and its impact for steel in India



Trade facilitation: focus on interoperability through trade agreements to prevent DPPs from becoming a barrier to trade

Xerox|Lexmark: Four Pillars of the Digital Product Passport

DPP FOR XEROX/LEXMARK



End-of-Life Management

DPP emphasizes our circular economy commitment, appealing to ESG-conscious buyers.

At our circularity hub, DPPs can make manual-intensive remanufacturing better for EoL decisions.

Detailed device data speeds up EoL decisions, reduces shipments, and minimizes environmental impact.

Supports takeback programs and product-as-a-service models.

Helps recyclers dismantle and recycle devices efficiently.

User Information

Provides transparent lifecycle and sustainability data on devices and materials.

Boosts confidence in remanufactured products and informed purchasing decisions.

Verified data builds trust globally, especially in markets without mandatory DPP regulations.

Compliance

Early EU adoption could support future global framework compliance.

DPP workflows, informed by our circularity hub expertise, have the potential to balance scalability and customization.

Centralized digital DPP reduces labeling/packaging costs and enhances operational efficiency.

ISO/ITU standards can harmonize DPP requirements globally, supporting interoperability.

Product Traceability / Brand

Verified lifecycle data reinforces credibility and sustainability marketing.

Helps prevent misinformation and protect brand integrity.

DPP will support printer and cartridge collection programs.

Full device visibility supports new service models and circular economy practices.

Early adoption positions Xerox/Lexmark as innovative and sustainable leaders.

Remanufacturing workflow with the CE-RISE DPP



NETWORKING DRINKS 18:00-19:00

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