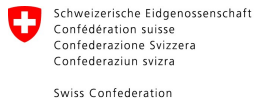




CE-RISE | CIRCULAR ECONOMY RESOURCE INFORMATION SYSTEM

CRISTINA GUERREIRO | NILU



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**

nilu



**Funded by
the European Union**

Project Information

Grant agreement ID 101092281

01. Jan.2023 to 31. Dec.2026

HaDEA – European Health and Digital
Executive Agency

Cluster 4: Digital, Industry and Space

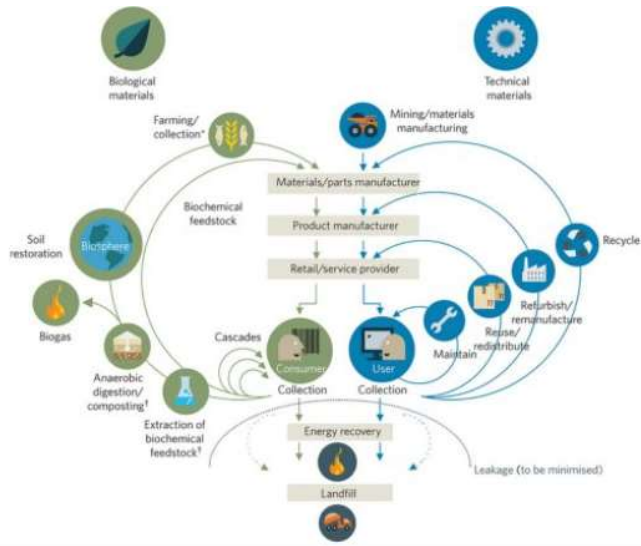
Total cost: € 9 120 689

EU contribution: € 7 651 440



Horizon Europe (RIA): Circular and low emission value chains through digitalisation

Circular value chain



Resource efficiency

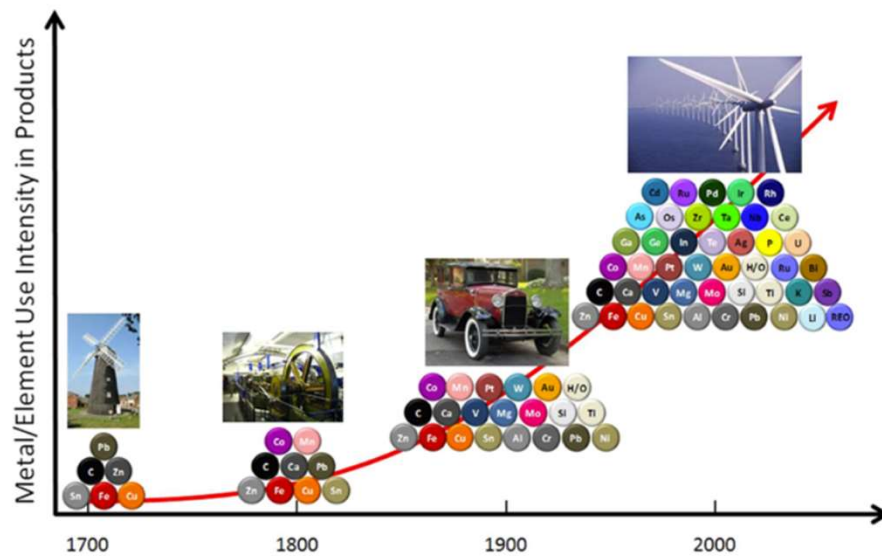
Low emission



Low environmental footprint

Critical Raw Materials (CRM)

CRMs are of high importance to the EU economy and of high risk associated with their supply (they are closely linked to modern and clean technologies)



The need for elements found within the Earth's crust, as technology advances. Source: Markus A. Reuter, Ilkka V. Kojo, Outotec Oy, Materia2/2012

Challenges in linear economy



- Material loss along value chains
- Material loss in waste stream (**REEs recycling < 1%**)
- Information does not flow with material
- Unharmonized information along value chains
- Lack of stakeholder communication along value chains
- Lack of transparency

Critical Raw Materials for the EU
(reported by the European Commission)

1	H																18	
2	Li	Be															He	
3	Na	Mg																
4	K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
5	Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe
6	Cs	Ba	La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Ti	Pb	Bi	Po	At	Rn
7	Fr	Ra	Ac	Rf	Db	Sg	Bh	Hs	Mt	Ds	Rg	Cn	Nh	Fl	Mc	Lv	Ts	Og
			La	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	
			Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr	

Legend:
 Listed as CRMs in 2011
 Listed as CRMs in 2014
 Listed as CRMs in 2017

EU Green Deal: Make EU carbon neutral by 2050 (10¹² Euros)

Circular Economy Action Plan (CEAP): Policy framework

Empowering
consumer



Reduce waste



Sustainable Product Initiative: Regulation binding for EU members

Sustainable
Products



Right to repair



Ecodesign for Sustainable Product Regulation
(ESPR)

Introduktion of extensive ecodesign acts and requirements



Ecodesign
Directive
(2009)



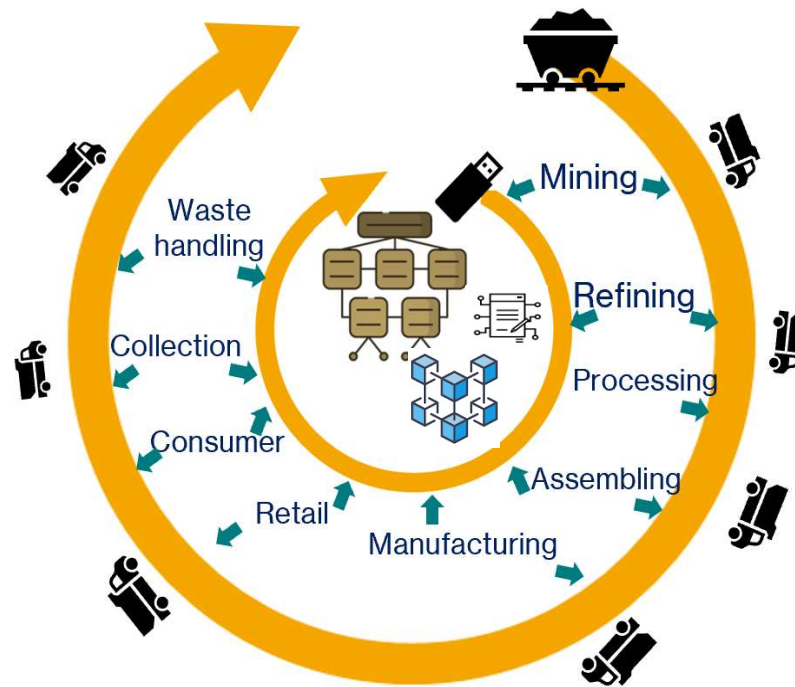
Digital Product Passport

These passports will share information from across the value chain, from raw materials through design and production to reuse and recycling.

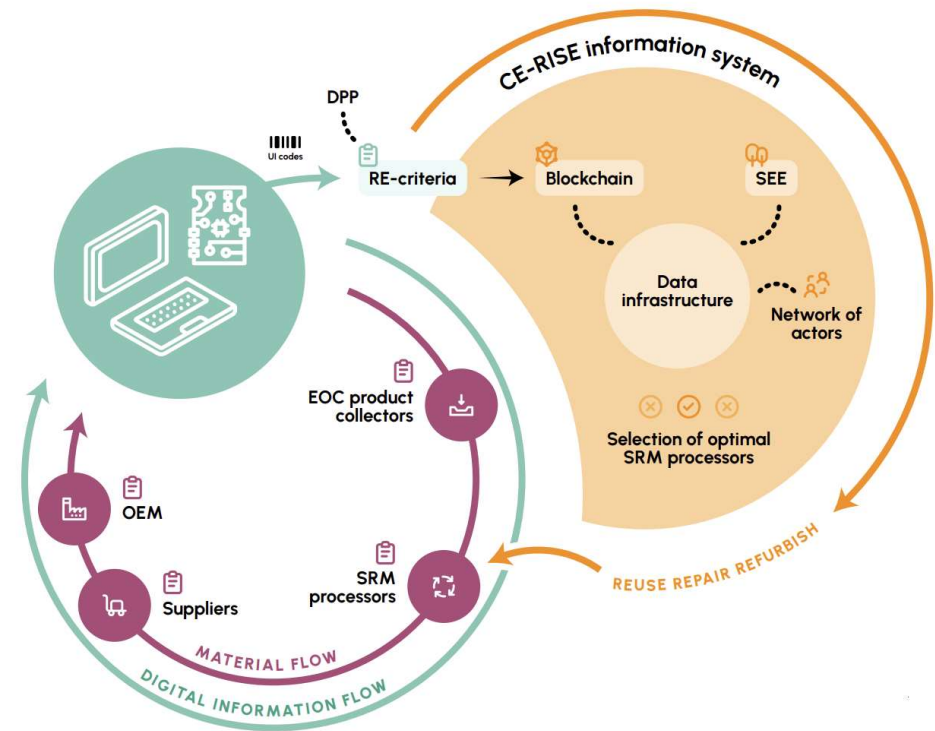
The CE-RISE project aims to create an information system and integrate digital product passports, that will share detailed information on electronic products.



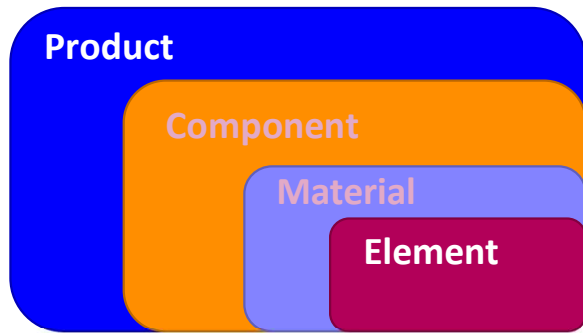
CE-RISE Information System



CE-RISE Vision



CE-RISE Digital Product Passport



CE-RISE Digital Product Passport

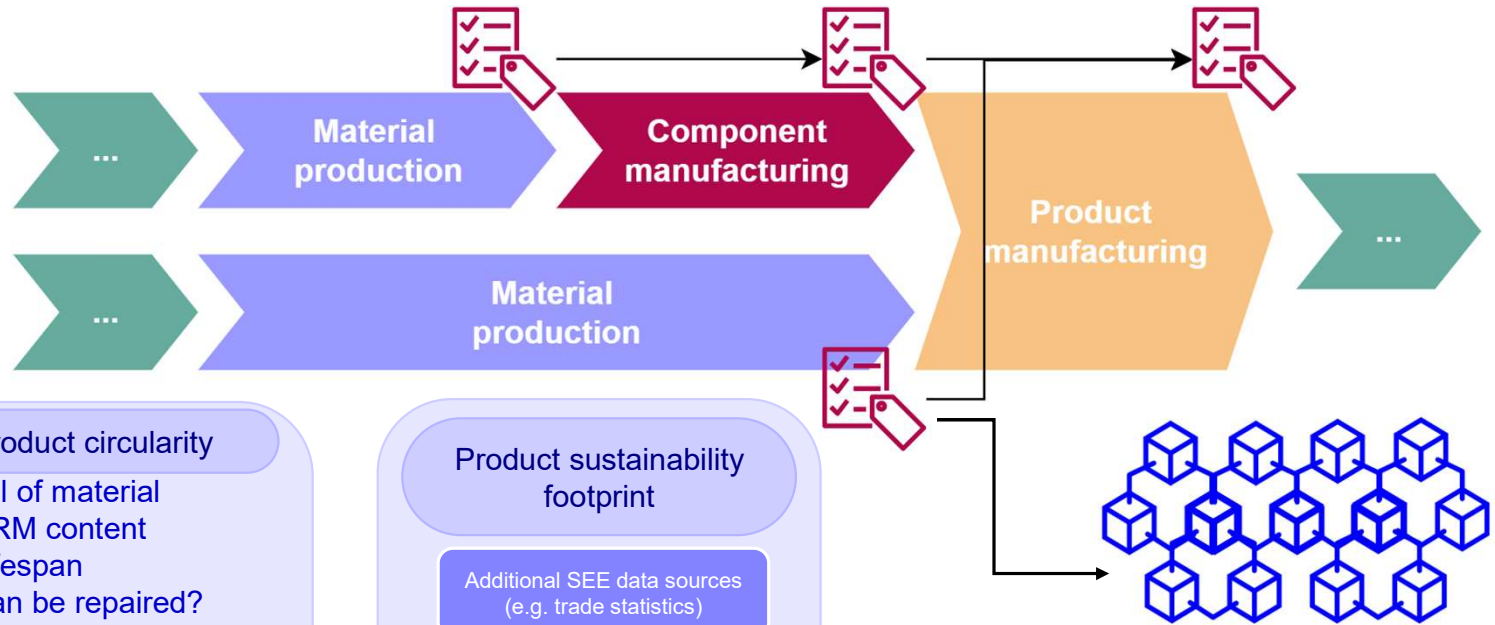
Product Socio-economic & Environmental Footprint 



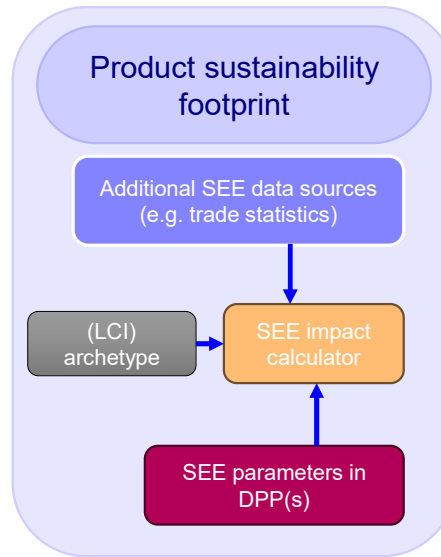
200 jobs



Data collection and storage



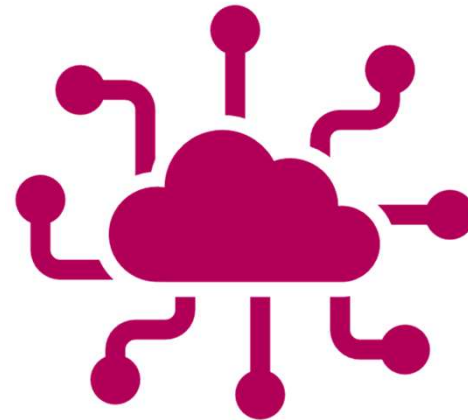
- Product circularity**
1. Bill of material
 2. CRM content
 3. Lifespan
 4. Can be repaired?
 5. Can be refurbished?
 6. Can be repurposed?
 7. Can be remanufactured?
 8. Can be recycled?
 9. What cannot be recycled?
 10. Content of recycled materials



CE-RISE products



- ✓ Define RE criteria
- ✓ Facilitate repair, refurbish...
- ✓ Transfer information on SEE
- ✓ Increase transparency
- ✓ Empower consumer



- ✓ Interoperable system
- ✓ Connecting stakeholders
- ✓ Identifying optimal processes for recovering of CRM



- ✓ Knowledge translation
- ✓ Increasing awareness
- ✓ Empower all actors to make evidence-based decisions

Case studies

The CE-RISE information system and products will be evaluated through five case studies where a Digital Product Passport will be developed for:



ICT products



Printers



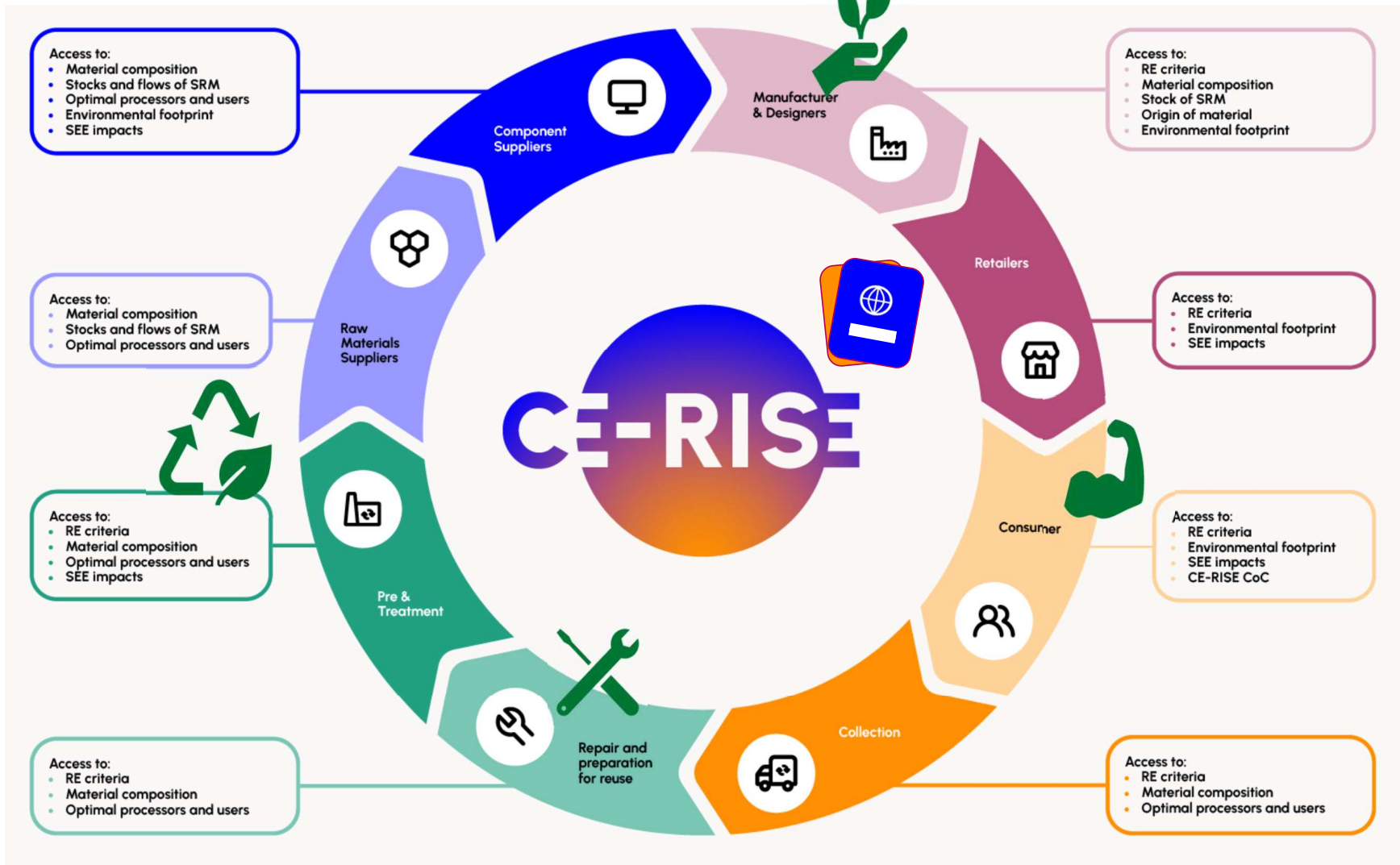
Solar panels



Batteries



Heating
systems



Project partners

nilu

Project coordinator

ALUDYNE

ANSYS

Geoscience for a sustainable Earth
brgm

cscp

CIRCULARISE

ECOLOGICON
circular economy & consulting

ecoreset

Empa
Materials Science and Technology

erion

EYDE CLUSTER
NCE EYDE Norwegian Center of Expertise Sustainable Process Industry

GreenIT
TECHNOLOGY THAT DOESN'T COST THE EARTH

Hydro

Lexmark™

MORROW

NIKKELVERK
A GLENCORE COMPANY

RECOSI
refresh IT

REPIC
WEEE | BATTERIES | PACKAGING

ROSI
return of silicon

berlin

unitar
United Nations Institute for Training and Research

UNIVERSITY OF OSLO

Universiteit Leiden

Vianode

VIESSMANN
Climate Solutions

weeeforum

Thank you!



CE-RISE Project



CE_RISE_Project



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
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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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