

# The European Commission's science and knowledge service

Joint Research Centre

## Critical Raw Materials and the Circular Economy - A Downstream Perspective

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# Raw Materials: Policy Context

**2008:** EU Raw Materials Initiative (RMI)

**2010-11:** Europe 2020 Flagship Initiatives

Sustainable growth - for a resource efficient,  
greener and more competitive economy;  
Resource Efficient Europe  
An industrial policy for the globalisation era

**2012:** European Innovation Partnership on Raw Materials (EIP-RM)

Commission is examining other barriers to the smooth circulation of waste in the EU. To improve the availability of data on secondary raw materials the Commission will further develop the recently initiated Raw Materials Information System and support EU-wide research on raw materials flows. It will also support the improvement of data reporting on

**2015:** Specific actions in Circular Economy COM focused on the key role of the critical raw materials and the RMIS (v2.0)



## Europe 2020: Seven flagship initiatives



Smart Growth	Sustainable Growth	Inclusive Growth
<b>Innovation</b> « Innovation Union »	<b>Climate, energy and mobility</b> « Resource efficient Europe »	<b>Employment and skills</b> « An agenda for new skills and jobs »
<b>Education</b> « Youth on the move »	<b>Competitiveness</b> « An industrial policy for the globalisation era »	<b>Fighting poverty</b> « European platform against poverty »
<b>Digital society</b> « A digital agenda for Europe »		



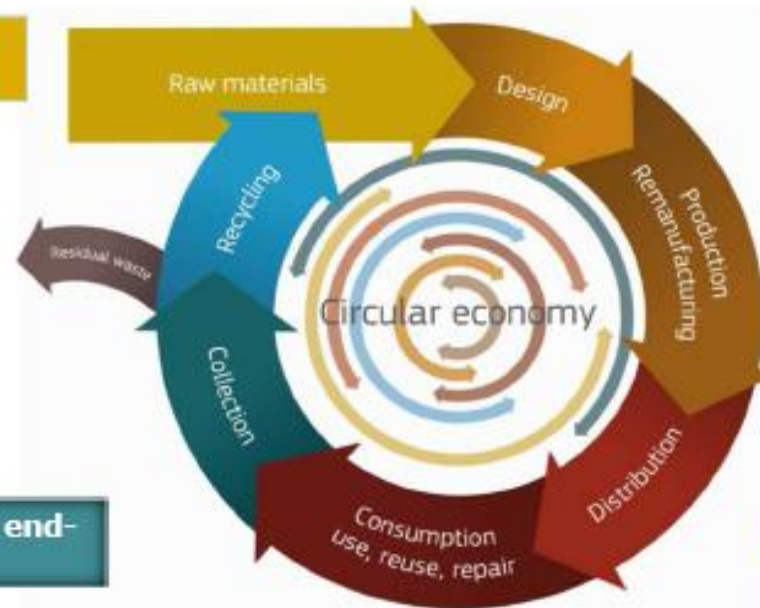
# Support to Circular Economy

**Biomass and bio-based products**

**Food waste**

**Water re-use**

**Chemicals in products at end-of-life**



**Critical Raw Materials**

- Methodology Development
- Materials efficiency
- Waste Management and Urban Mining of Raw Materials

**Environmental footprints**

**Testing scenarios towards a Circular Economy**

### Monitoring the Circular Economy

- EU Raw Materials Scoreboard
- EU Resource Efficiency Scoreboard (soil indicators)
- Raw Materials Information System and market for secondary raw materials

# RMIS 2.0: Concept & Architecture

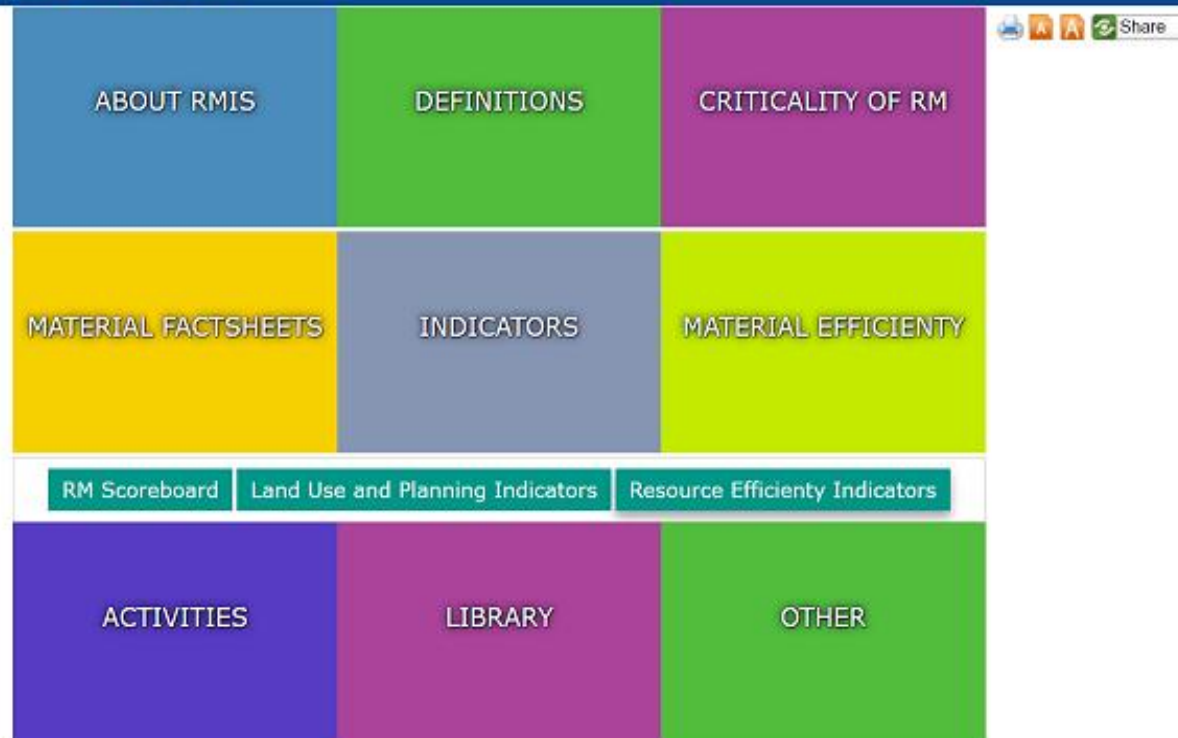
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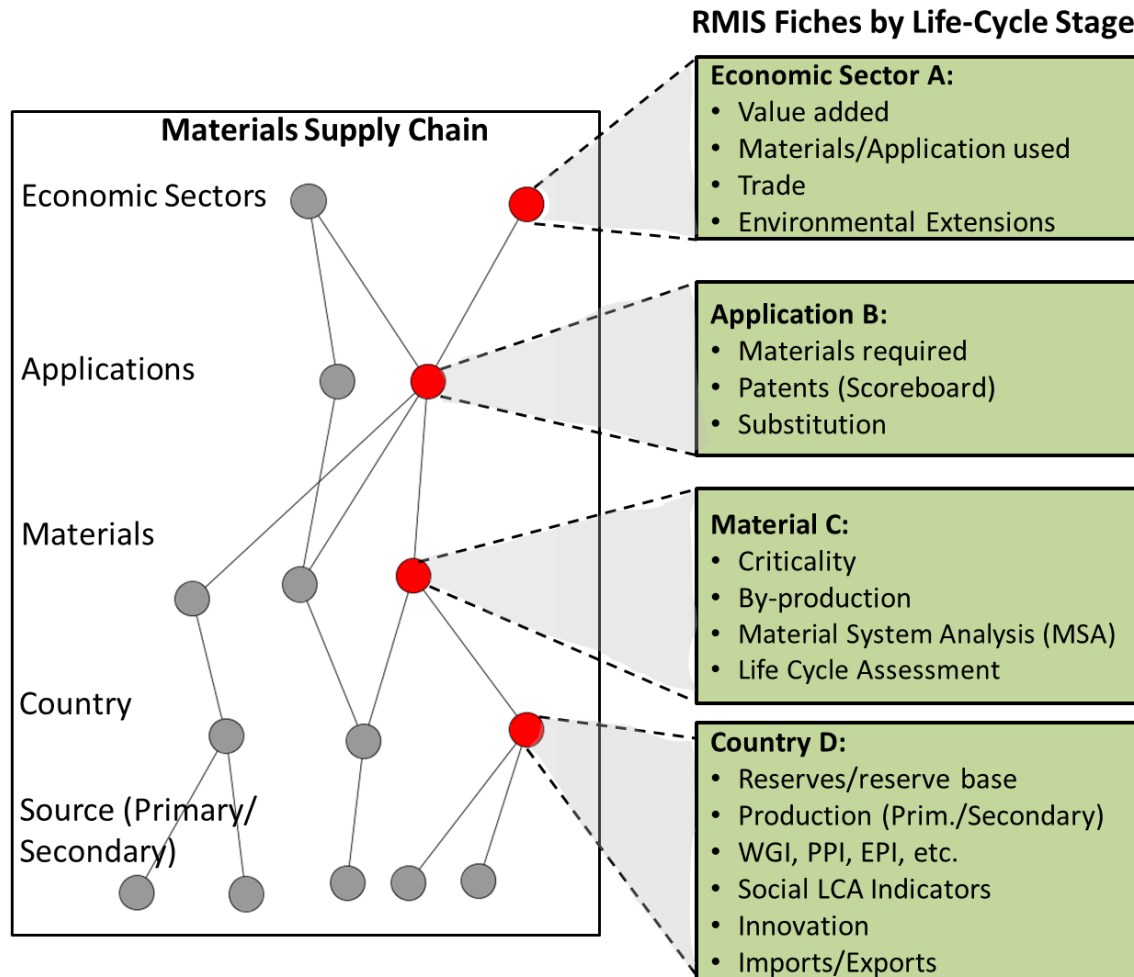
Raw Materials Information System (RMIS)

[European Commission](#) > [EU Science Hub](#) > [IES](#) > [RMIS](#) > [Home](#)



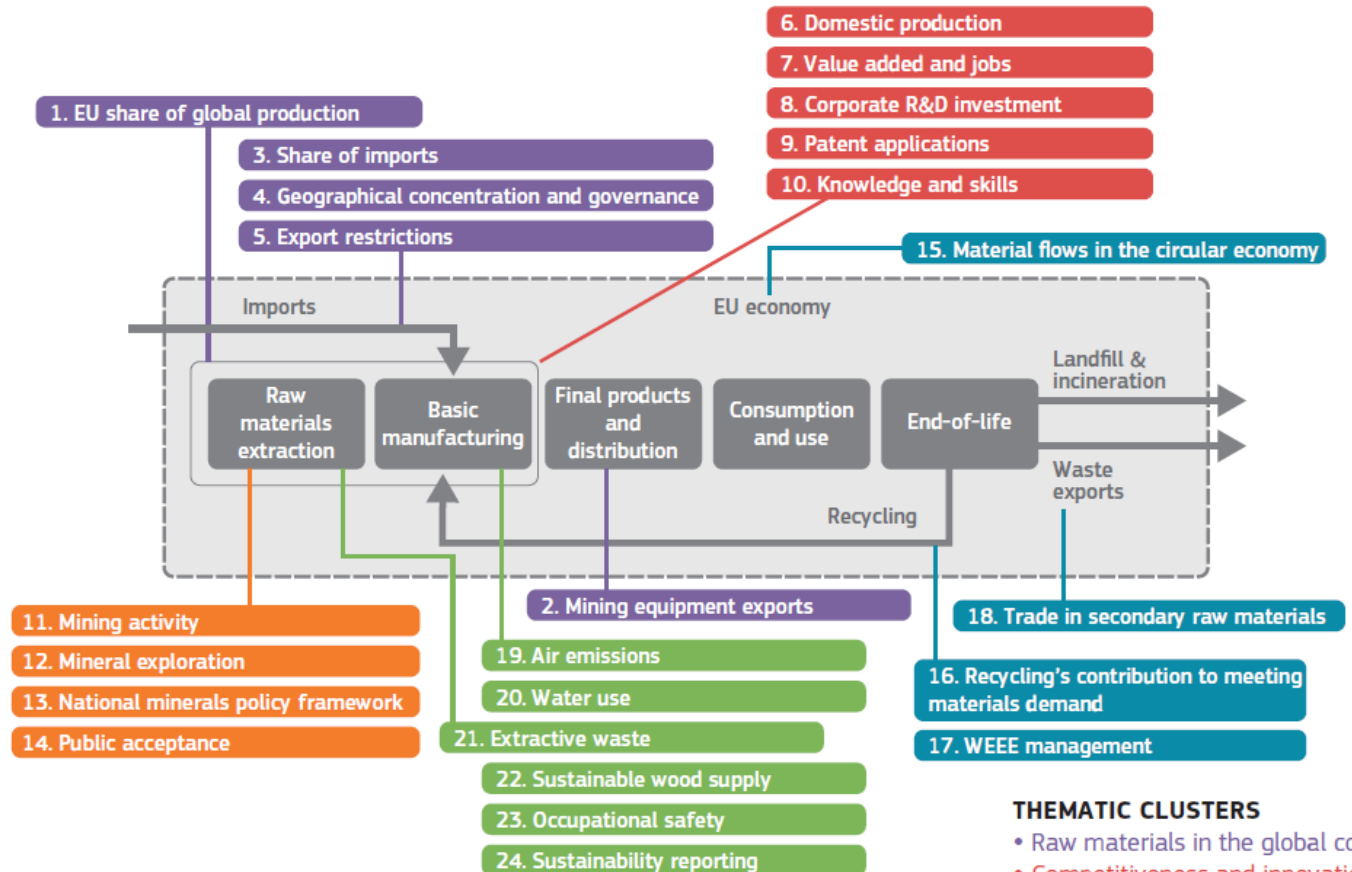
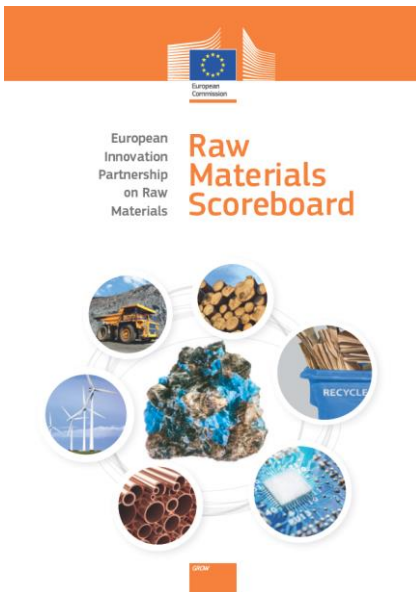
# RMIS 2.0: Concept & Architecture

## *Material-specific part: visualisation options*



# RMIS 2.0: Knowledge Needs

- The Raw Materials Scoreboard: included in the RMIS 2.0 -



## THEMATIC CLUSTERS

- Raw materials in the global context
- Competitiveness and innovation
- Framework conditions for mining
- Circular economy and recycling
- Environmental and social sustainability

# Giving (secondary) raw materials knowledge a product-centric approach...

## *Why?*

- End-of-life products are homogeneous waste streams containing similar mixes of materials
- Product approach can be deployed at **production** (e.g. Ecodesign, REACh), **consumption** (e.g. Labelling) and **waste management** stages

## *How?*

- By deploying the REAPro (Resource Efficiency Assessment of Products) method, developed by JRC
- **Criteria:** recyclability; recycled content; presence of precious / critical materials, hazardous substances; durability/reparability/re-usability



## Proposal of material efficiency requirements under Ecodesign: Examples for Displays

- 'Design for disassembly' measures (detailed documentation) for key components containing hazardous and valuable resources (boards, batteries, panel)
- Declaration of indium (Voluntary)
- Proposal to use labels on mercury 'logos'
- Proposal on flame retardant (FR) content (to allow recycling of FR-free polymers)



Recycled materials	Gold (in PCBs)	Silver (in PCBs)	Palladium (in PCBs)	Platinum (in PCBs)
Additional recycled mass in the EU per annum [in kg]	2000	5890	429	24

[Ardente et Mathieux, JoCP, 2014]

## Key development: CEN/CENELEC standardisation efforts on material efficiency of products

- Aim: define appropriate parameters and methods to assess material efficiency (for it to be verifiable, comparable)
- First meeting of Joint Working Group 10 on 28/09/2016



# Thank you for your attention!

**European Commission**  
– DG Joint Research Centre –

## **Further links and contact:**

### **JRC ScienceHub**

<https://ec.europa.eu/jrc/en/research-topic/green-and-resource-efficient-europe>

### **European Platform for Life Cycle Assessments**

<http://eplca.jrc.ec.europa.eu>

### **RMIS**

<http://rmis.jrc.ec.europa.eu/>

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