Challenges related to monitoring the circular economy

Material accounting and related policy outputs

MinFuture workshop

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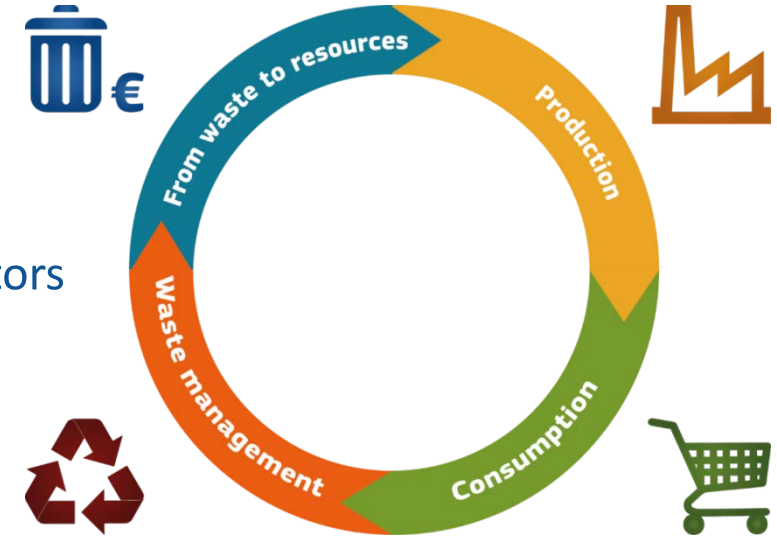
Overview

1. The compilation of indicator sets: challenges for policy makers
2. The RMIS as a platform for structuring EU raw materials data/information
3. Conclusion

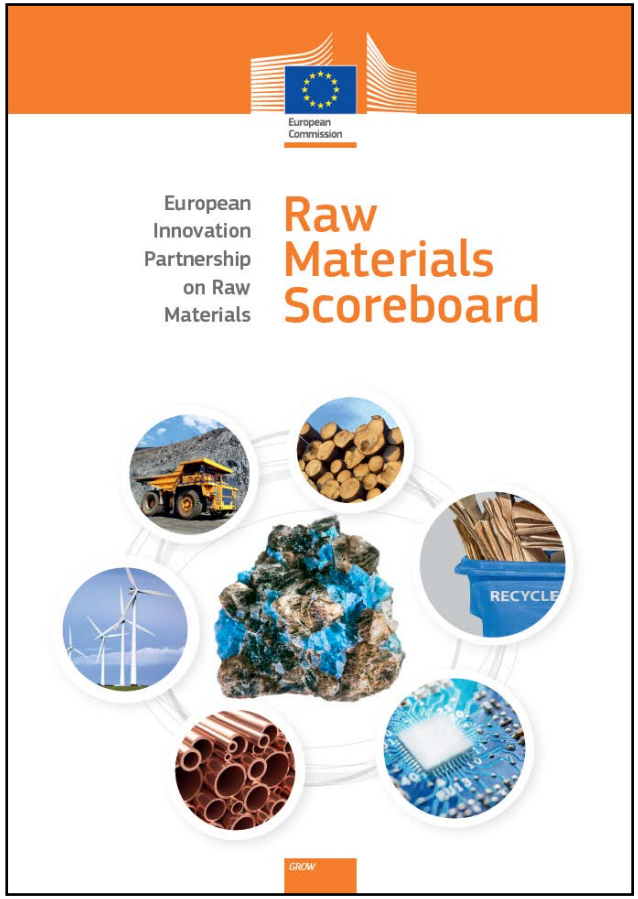
A monitoring framework for the circular economy

- Action proposed in the Circular Economy Action Plan, to be published in December 2017
- Concise list of meaningful indicators, including indicators from the Resource Efficiency and Raw Materials Scoreboards
- Challenges:
  - Capturing systemic change
  - Data availability
  - Lack of harmonisation for certain indicators



The Raw Materials Scoreboard: an initiative of the European Innovation Partnership (EIP) on Raw Materials

- **Purpose**
  - Follow up on the **objectives** of the European Innovation Partnership on Raw Materials
  - Keep an overview on the **competitiveness** of the EU's raw materials sector
  - Provide **relevant and reliable information** for policymaking processes
- **Modalities**
  - 24 **generally accepted indicators**
  - Logical **narrative**
  - Accessible to **non-experts**
- **Developed with the support of the JRC**



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The Raw Materials Scoreboard gives an overview on the challenges related to raw materials

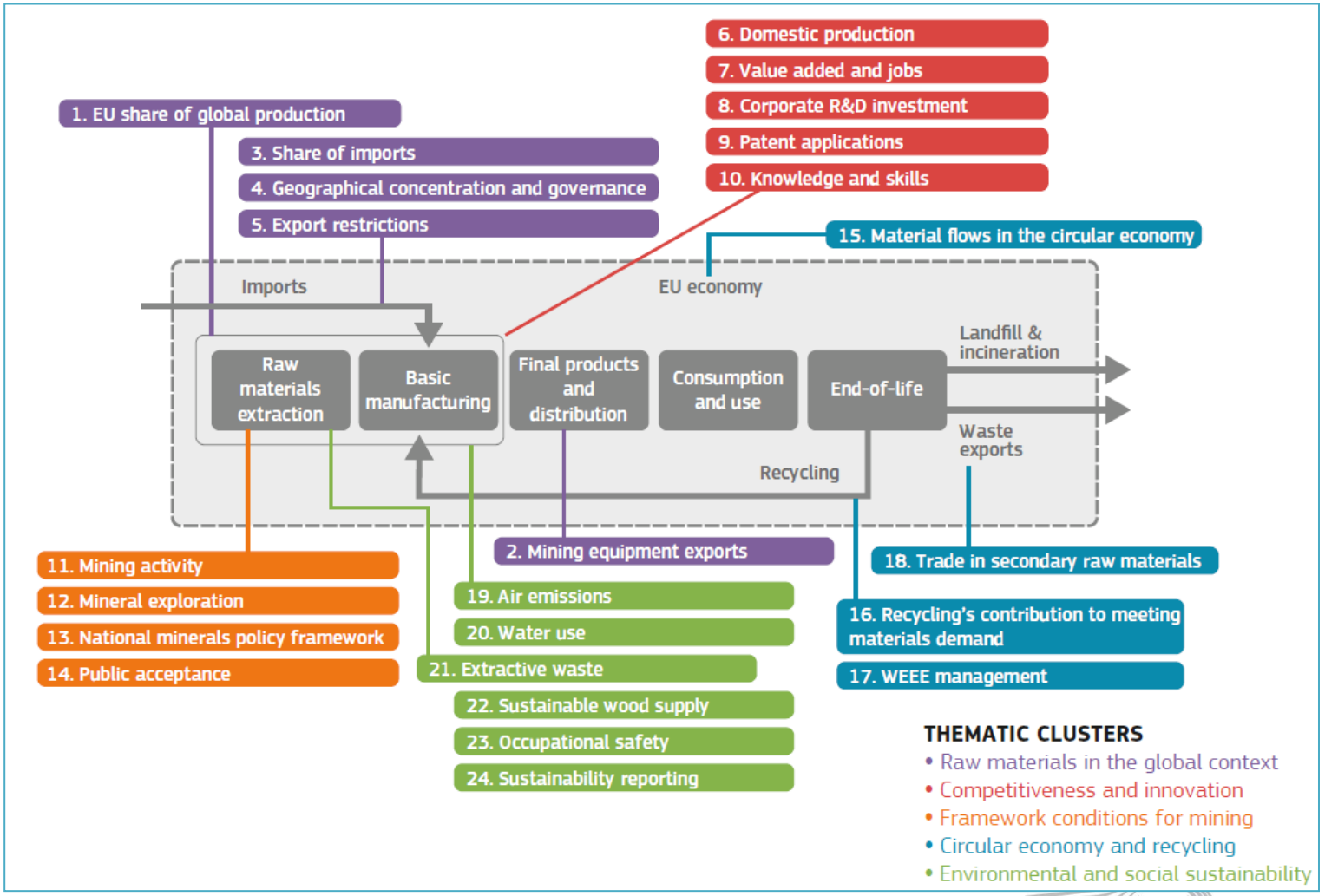

Figure 1: The Raw Materials Scoreboard at a glance

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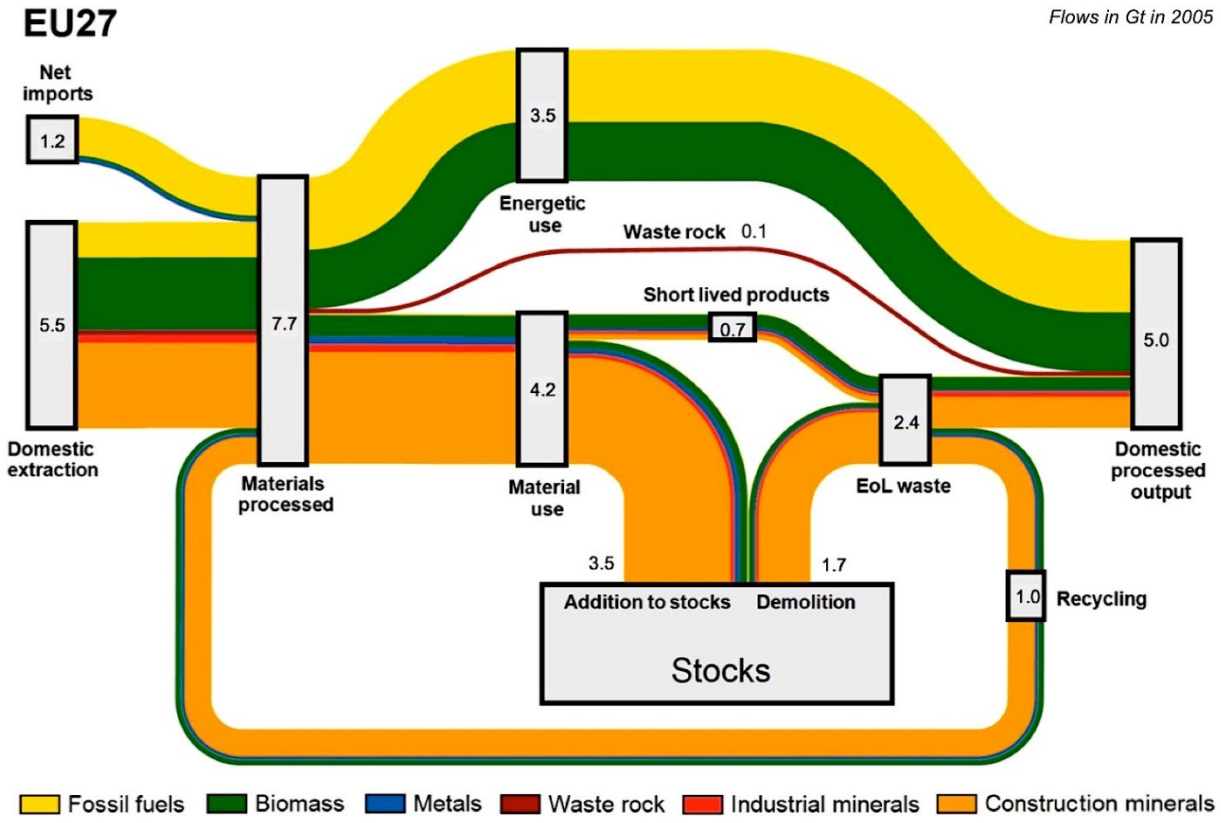
Circular economy and recycling

>> **Indicators:**

15. Material flows in the circular economy
16. Recycling's contribution to meeting materials demand
17. WEEE management
18. Trade in secondary raw materials

15. Material flows in the circular economy

The circular use of raw materials in the economy is relatively low, mostly due to technical limitations to recycling and because demand for raw materials to build infrastructure is higher than what can be met through recycling



Haas, W., F. Krausmann, D. Wiedenhofer, and M. Heinz. 2015. How Circular is the Global Economy? *Journal of Industrial Ecology* 19(5): 765–777.

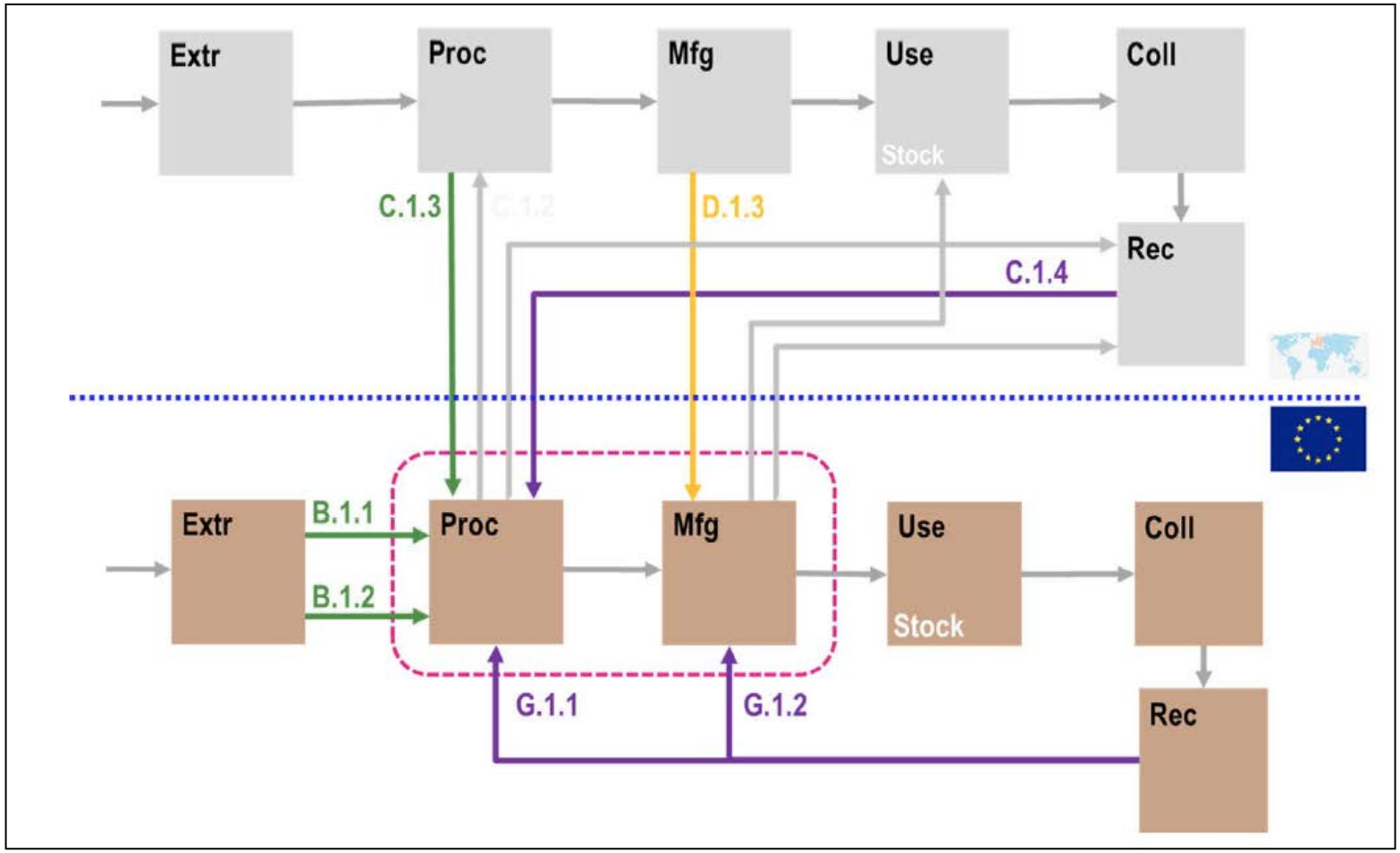
Figure 32: Material flows in the EU-27 economy (2005)

16. Recycling's contribution to meeting materials demand

For most materials, recycling's contribution to meeting materials demand is relatively low, because demand is higher than what can be met by recycling or because high-quality recycling is not technically or economically feasible

Figure 34: End-of-life recycling input rates (EOL-RIR) for a selection of raw materials

EU Material System Analysis as Input to the EOL-RIR Calculations



Blengini, G.A., P. Nuss, J. Dewulf, V. Nita, L.T. Peirò, B. Vidal-Legaz, C. Latunussa, et al. 2017. EU methodology for critical raw materials assessment: Policy needs and proposed solutions for incremental improvements. *Resources Policy* 53: 12–19.

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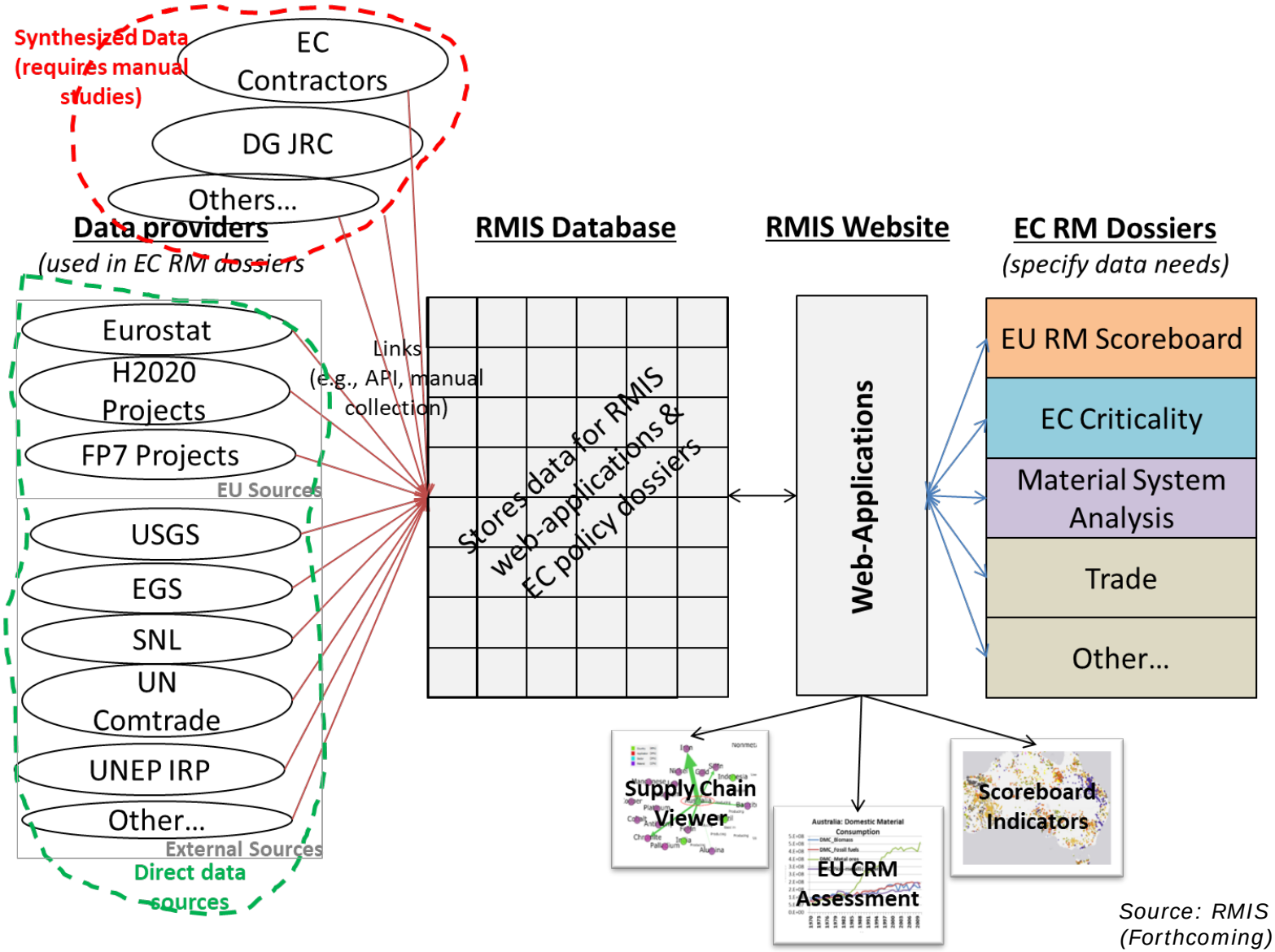
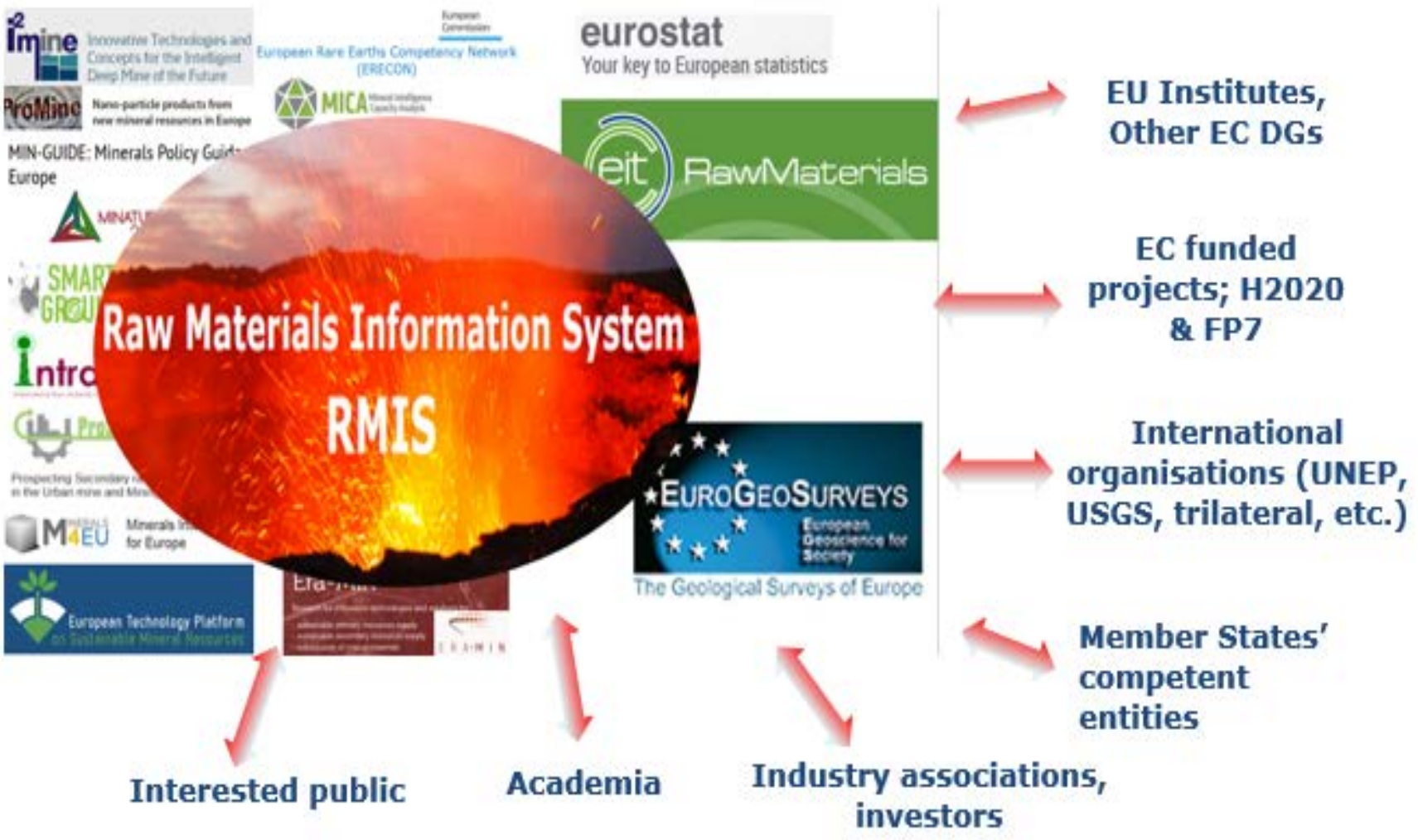
EU Raw Materials Information System (RMIS) as an overarching platform for EU knowledge on raw materials



Source: RMIS Roadmap (Forthcoming)

RMIS: Relationships between RMIS & EURMKB



Source: RMIS Roadmap (Forthcoming)

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Various data sources are used in policy-related outputs (i.e., MSA, Criticality, Scoreboard)

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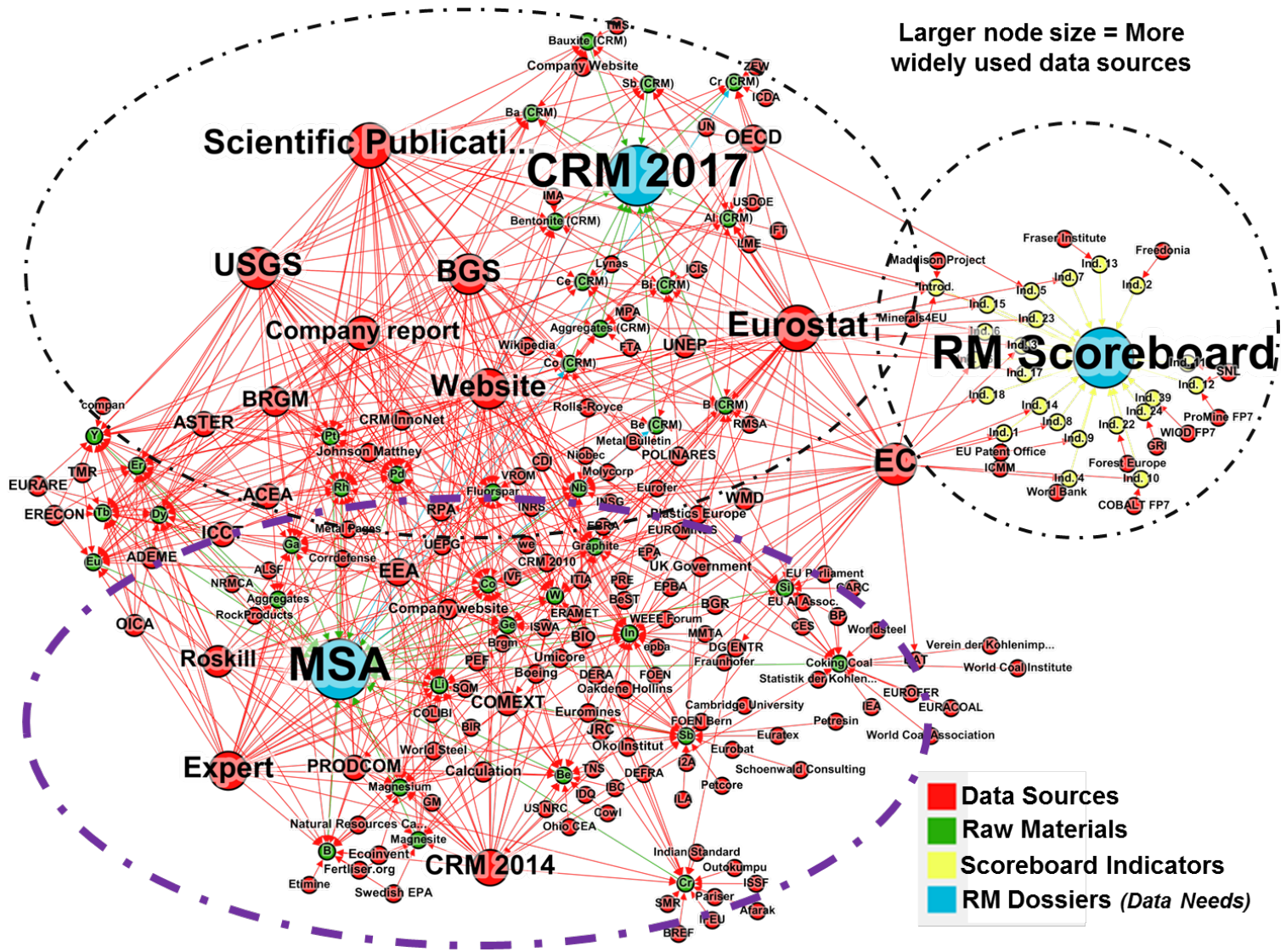
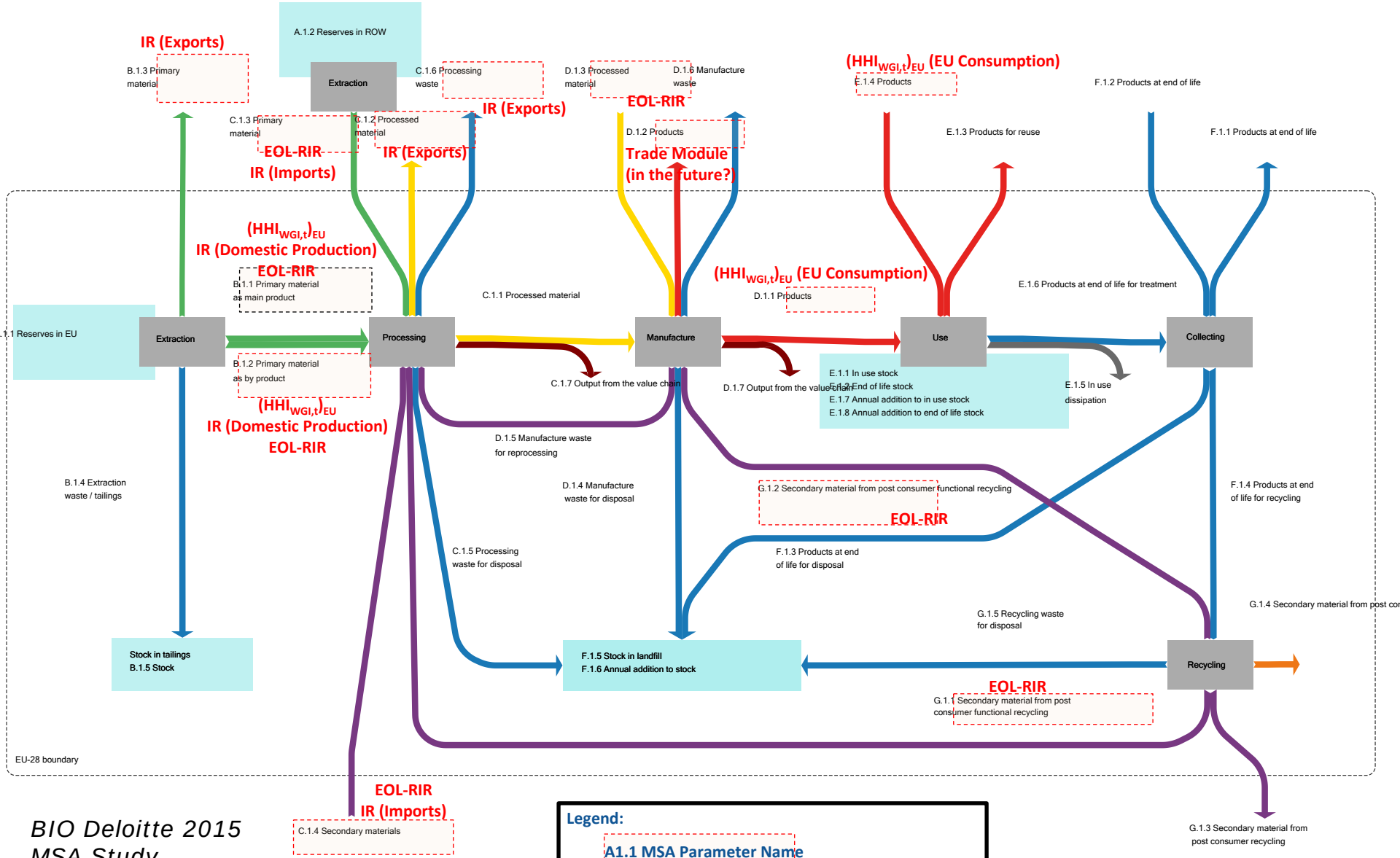
Data overlaps exist between policy-related outputs



- Policy-related outputs are currently treated independently (→ need for increased integration/ harmonization)

EU Material Flow and Stock Data



BIO Deloitte 2015
MSA Study

https://ec.europa.eu/jrc/en/scientific-tool/msa

Legend:

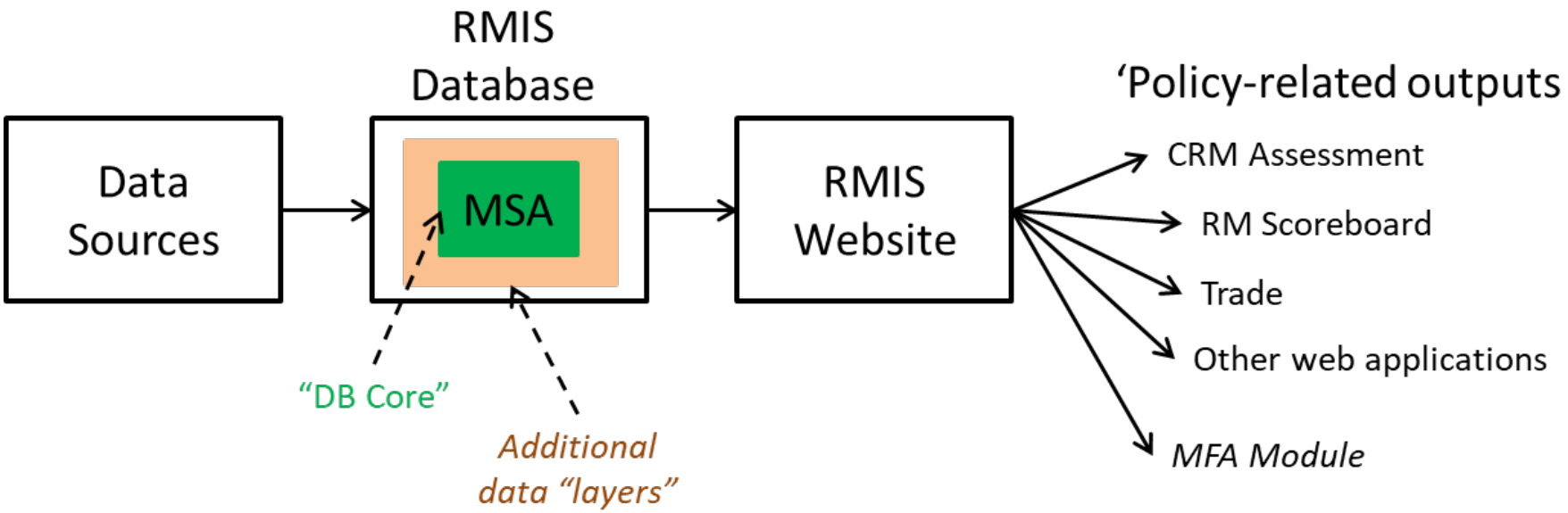
A1.1 MSA Parameter Name

Name of parameter from other policy-related output

MSA Study (2015) by Bio Deloitte

	MSA - Where we are
Country coverage	EU-28 in year 2012/2013
Scope	full supply chain 52 parameters (plus 11 optional non-physical ones)
Approach	Combination of bottom-up and top-down
Data preferences	• published reports, quality checked, regularly updated • Trade associations or other organisations, regularly updated • Private information which is purposely provided to MSA or can be purchased at a reasonable price, regularly updated, • single statistical information by credible institutions which can be extrapolated with the help of available indirect parameters, • single information by credible institutions which allows a measurement for the moment but cannot easily be extrapolated, • literature data of different quality grades.
Quality assessment	Results are classified (1 – 4)
Materials	28 (+3 currently being added)

MSA/MFA as RMIS Database Core?



1. Does the MSA framework provide a proper data structure (inter-operable, system context based on available data, common "language" between data providers, etc.)?

2. Quality assessment at level of RMIS?

3. Flexibility for future developments?

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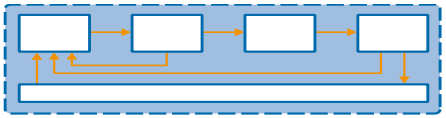
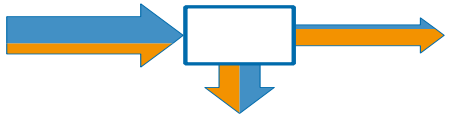
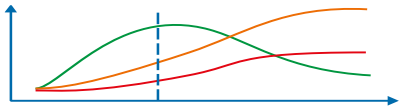
Different MFA dimensions in MinFuture







		MSA - upgrade	Vision
1. **Stages**	Integrate primary and secondary resources	✓	✓
2. **Trade**	Integrate production and consumption in global supply chains	Foreign trade of EU ✓ NO Intra-EU trade and between third countries	Increased integration of RMIS trade module with international trade statistics
3. **Linkages***	Capture linkages of metals at all stages	Not applied yet	Could be interesting in context of criticality and resilience?
4. **Time**	Historical development and future scenarios	Updates → Trends possible (!?)	?

***linkages of materials, energy, value**

Questions

1. How compatible do you think the MSA framework is with current developments by MinFuture, USGS, Yale, etc. ?

2. How could EC / RMIS support data harmonization (identify most relevant harmonization needs from systems perspective)?

3. The focus of the EU Raw Materials Initiative is on non-fuel and non-agricultural materials. How can we ensure that a common MFA methodology is suitable to such a wide range of materials (e.g., currently ~79 candidate materials in the 2017 CRM assessment)

Thank you for your attention!

Find the Scoreboard at:

https://bookshop.europa.eu/en/raw-materials-scoreboard-pbET0416759/

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Raw Materials Week

6-10 November 2017