

EU Policy and Strategy on secure supply of mineral resources



Workshop on Waste Valorisation and CRM
24 April, EGRC Week, Geneva

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Unit C2 - «Resource Efficiency and Raw Materials»

Raw materials policy framework

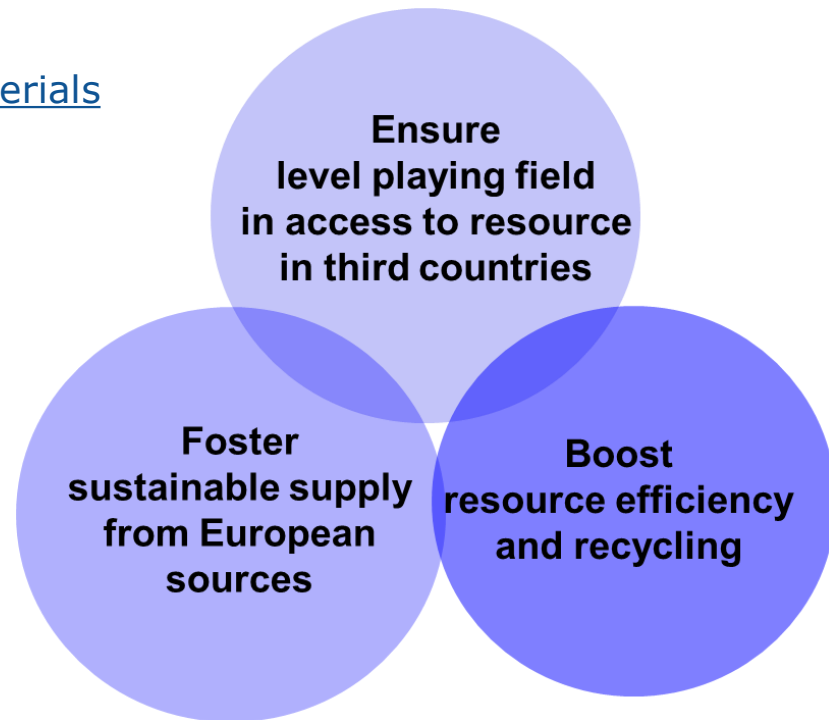
Non-energy raw materials

EU Raw Materials Strategy and Juncker priorities



Raw Materials Initiative = EU raw materials policy

- Aim: securing sustainable supplies of raw materials
- Non-energy, non-agricultural raw materials
- Integrated strategy (3 pillars)
- Introduced a list of Critical Raw Materials in 2011 and updated lists in 2014 and 2017

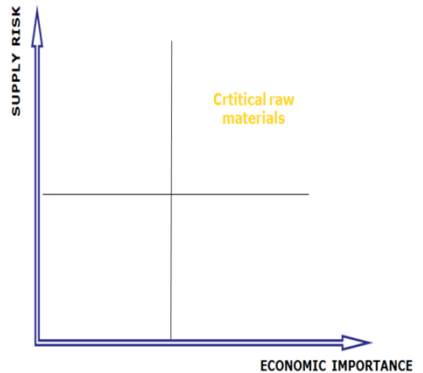
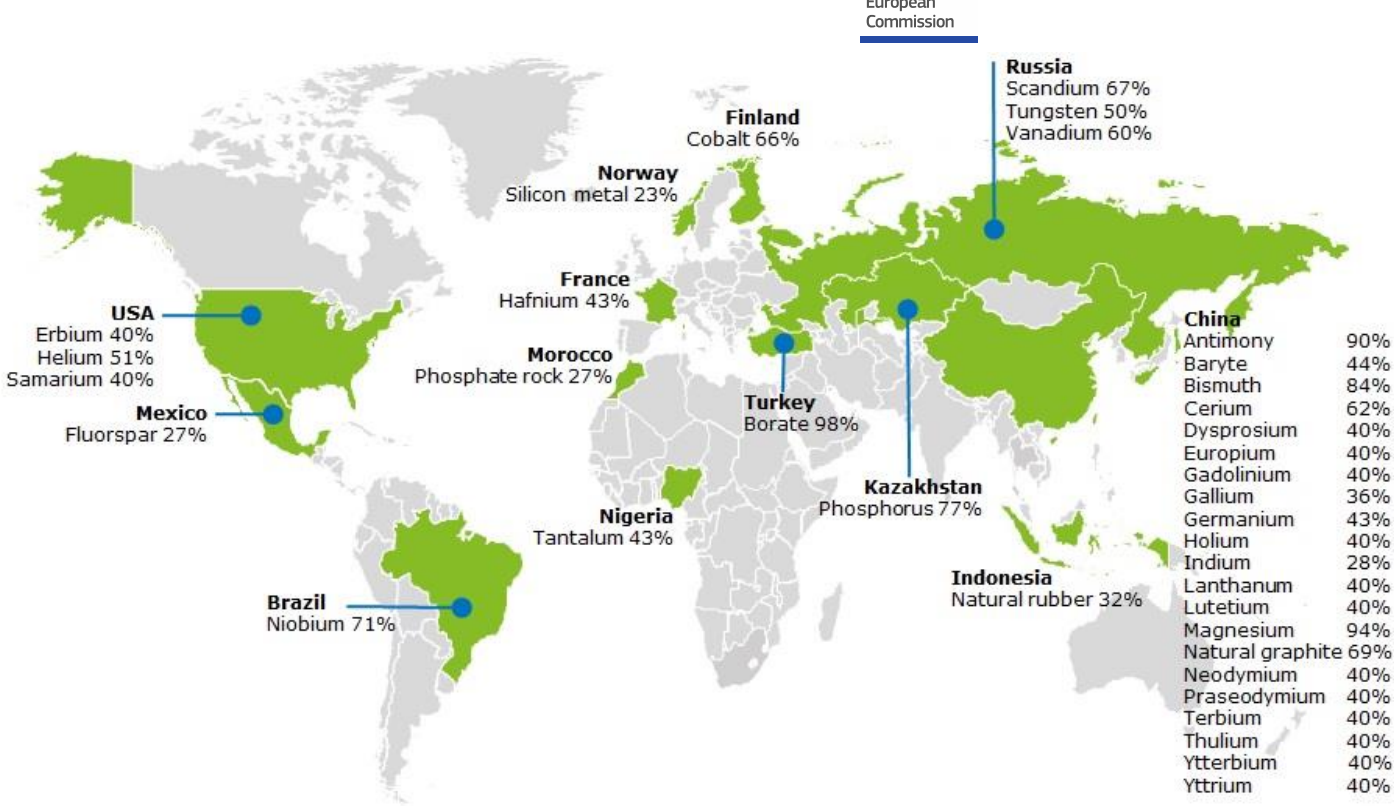


EU Critical Raw Materials

Biggest suppliers of CRM to the EU



Raw Materials Initiative EU Critical Raw Materials



Economic importance

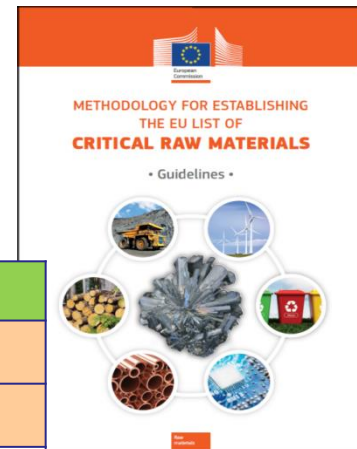
- Importance of a raw material per economic sector & importance of the sector in the EU economy (value added)
- Substitution (technical and cost performance)

Supply risk

- Global supply and EU sourcing
- Market concentration (HHI)
- Governance performance (WGI)
- Import reliance
- Trade agreements and restrictions
- Substitution (production, criticality, co/by-production)
- End-of-Life Recycling Input Rate

Study on the review of the list of critical raw materials 2017

- **78 raw materials** evaluated with **fact sheets available**, revised **methodology** published – CRM website
- Commission's Communication on **2017 list of Critical Raw Materials for the EU**, COM(2017)490, 13.9.2017



2017 CRMs (27)			
Antimony	Fluorspar	*LREEs	<i>Phosphorus</i>
<i>Baryte</i>	Gallium	Magnesium	<i>Scandium</i>
Beryllium	Germanium	Natural graphite	Silicon metal
<i>Bismuth</i>	Hafnium	Natural Rubber	<i>Tantalum</i>
Borate	<i>Helium</i>	Niobium	Tungsten
Cobalt	*HREEs	*PGMs	<i>Vanadium</i>
Coking coal	Indium	Phosphate rock	

EU RMIS

*HREEs=heavy rare earth elements, LREEs=light rare earth elements, PGMs=platinum group metals

EIP Raw Materials

When: launched in 2013, based on Raw Materials Initiative, Industrial Policy, Innovation Union

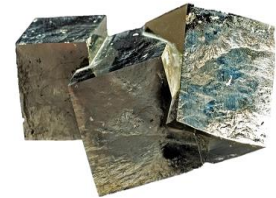
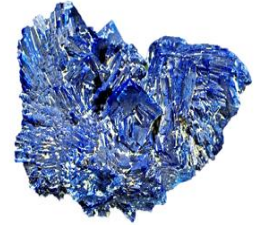
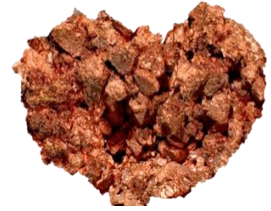
Who: Industry, public sector, academia and NGOs in
HLSG + Sherpa, Operational Groups
Groups renewed in 2017

**123 Raw Materials Commitments: 980 partners,
indicative budget ± EUR 2 billion**

Why: ...to ensure the sustainable supply of raw materials to the
European economy...

What: **Strategic Implementation Plan** adopted in 2013 **Achieving
targets**

Position paper on future orientations of the High-Level
Steering Group of the EIP. 20 December 2017



Overall objective:

Contribute to the 2020 objectives of the EU Industrial Policy (to increase the share of industry in GDP to 20%), the Innovation Union and the Resource Efficiency 'flagships'

EIP targets:

- Up to 10 innovative pilot actions
- Substitutes for at least 3 applications of CRMs
- Improve framework conditions for primary and secondary RM
- EU RM Knowledge base with RM flows and trends
- International cooperation strategy



EIP-RM Strategic Implementation Plan

I. Technology Pillar

- I.A Raw materials research and innovation coordination
- I.B Technologies for primary and secondary raw materials' production
- I.C Substitution of raw materials

II. Non-Technology Policy Pillar

- II.A Improving Europe's raw materials framework conditions
- **II.B Improving Europe's waste management framework conditions and excellence**
- **II.C Knowledge, skills and raw materials flows**

III. International Cooperation Pillar

- III.1 Technology
- III.2 Global Raw Materials Governance and Dialogues
- III.3 Health, Safety and Environment
- III.4 Skills, Education and Knowledge
- III.5 Investment activities

EIP-RM SIP - Implementation Document

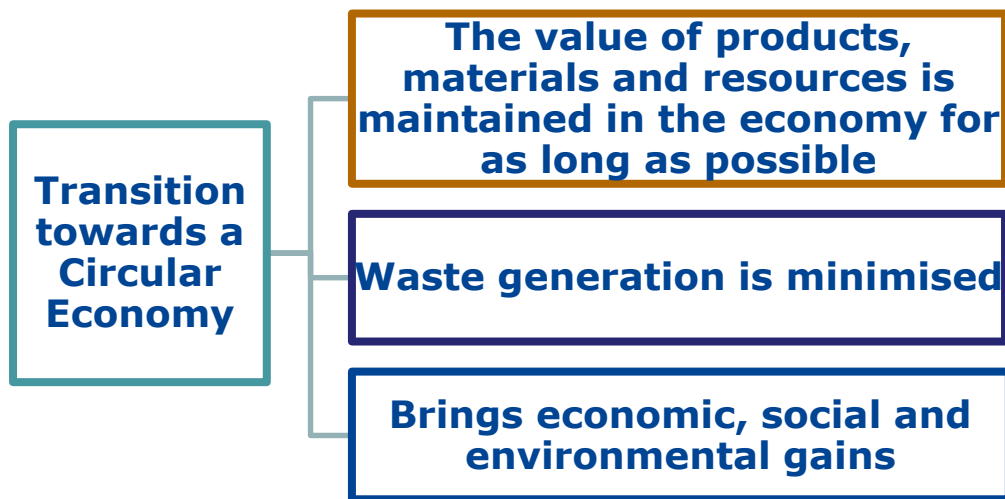
Monitors the level of implementation of the EIP-RM SIP

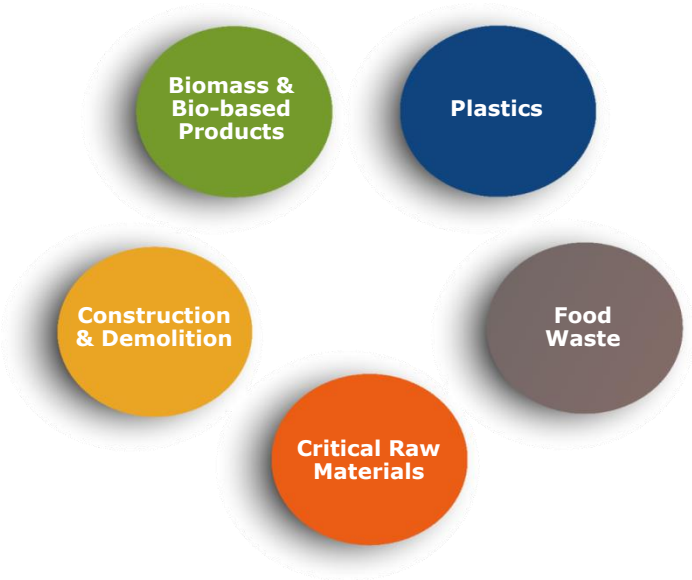
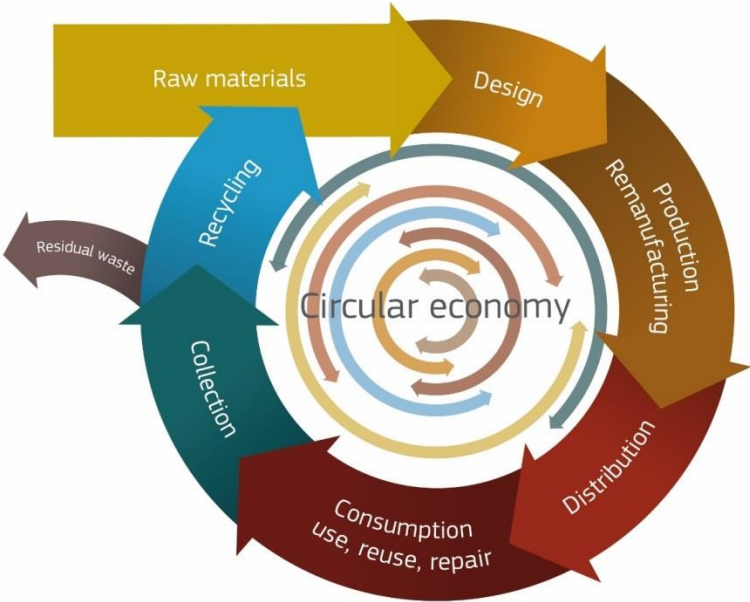
Target	Outlook (2016)
1 - Up to 10 innovative pilot actions	😊😊😊
2 - Substitutes for at least 3 applications of critical and scarce raw materials	😊😊😊
3 - Framework conditions for primary raw materials	😊😊
4 - Framework conditions for material efficiency and waste management	😊😊😊
5 - European raw materials knowledge base	😊😊😊
6 - Launch of a Knowledge and Innovation Community	😊😊😊😊
7 - Pro-active international co-operation strategy	😊😊😊

Circular economy – Action Plan

"Closing the loop. An EU action plan for the Circular Economy"

Commission's Communication COM(2015) 614 final





**Innovation, Investment &
Monitoring**

Production

- Material-efficiency aspects of Ecodesign of energy-related products

Markets for secondary raw materials

- Development of quality standards
- Facilitate waste shipment across the EU
- Further develop the EU raw materials information system

Critical raw materials

- Information exchange between manufacturers and recyclers of electronics (<https://i4r-platform.eu/>)
- European standards for material-efficient recycling of electronic waste and batteries
- Voluntary certification of treatment facilities for certain key types of waste, e.g. electronic waste
- Best practices for the recovery of critical raw materials from mining waste and landfills

Report on CRM and the Circular Economy

Issued in January 2018, taking into account the new list of 27 critical raw materials (Sep 2017)

Objectives:

- To help Member States implement the new provisions on critical raw materials in the Waste Framework Directive – i.e. in relation to waste prevention and waste management
- To ensure a coherent and effective EU approach to critical raw materials in the transition to a circular and low-carbon economy.
- Provide information to stakeholders.
- Provide key data sources and identify best practices and possible further actions

How much is viable to recover?

Figure 9 - Amounts of some critical raw materials in EU-28 as “Extraction waste disposed in situ/tailings” and “Stock in tailings”
(JRC elaboration based on MSA study (2015))

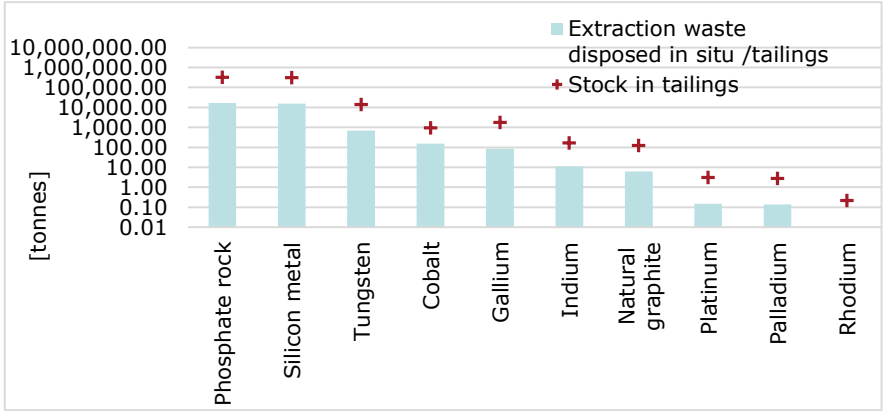
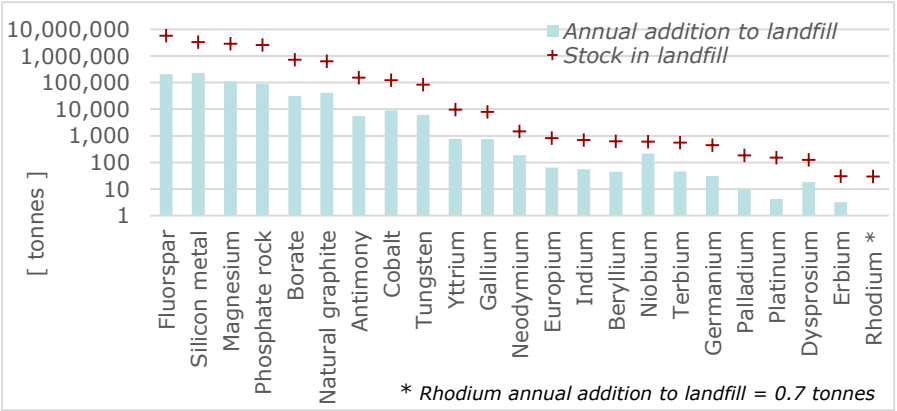


Figure 11 - Amounts of CRMs as “Annual addition to stock in landfills in EU” and “Stock in landfill in EU”
(JRC elaboration based on MSA study (2015))



Tools

Horizon 2020, studies



European
Commission

Horizon 2020 Context and overview

Topics relevant to raw materials

NMPB - Materials
SPIRE PPP
EEB PPP

SME Instrument
FTI-pilot

Excellent
science
(€ 24 billion)

Industrial
leadership
(€ 17 billion)

Societal
challenges
(€ 31 billion)

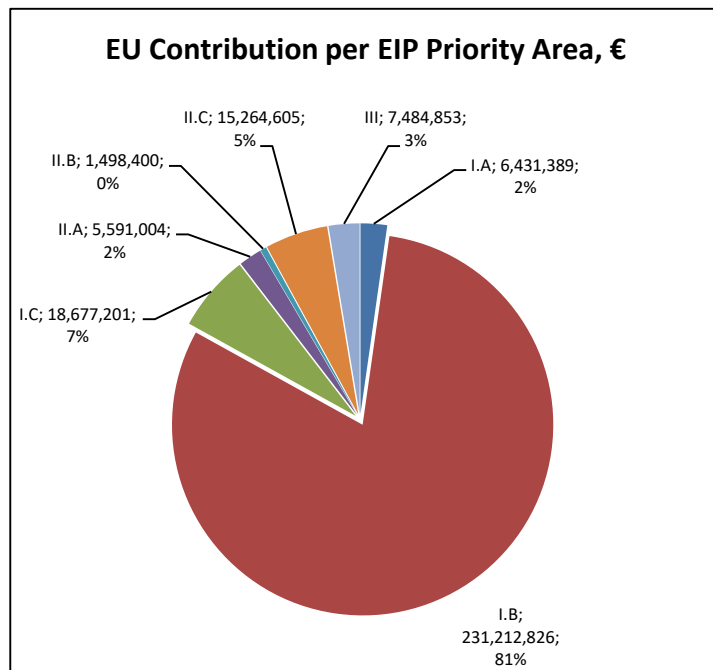
SC5. Climate action,
environment, resource
efficiency and **raw
materials**

**SC5 - Raw materials
(~€600 million for 7
years)**

Circular Economy
SC2 - Bioeconomy
SC3 - Energy

+ ERA-MIN 2
+ EIT Raw Materials

Horizon 2020 projects - Raw materials (2014-2017)



I. - Technology Pillar

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II. - Non-Technology Policy Pillar

- II.A - Improving Europe's raw materials framework conditions
- II.B - Improving Europe's waste management framework conditions and excellence
- II.C - Knowledge, skills and raw materials flows

III. - International Cooperation Pillar



Studies and projects

- **ORAMA** (H2020, 2017-2019)
- **SCRREEN expert network** (H2020, 2016-2019)
- **CRM study** (DG GROW, 2017)
- **Materials Systems Analysis** (DG GROW study, 2014-2015) + **JRC**
- **Minfuture** (H2020, 2016-2018)
- **MICA** (H2020, 2015-2018)
- **Minerals4EU** (FP7, 2013-2015) + **GEO-ERA** (H2020, 2017-2022)
- **ProSUM** (H2020, 2015-2017)
- **SmartGround** (H2020, 2015-2018)
- **Minventory** (DG GROW study, 2013-2015)
- **MINEA** (COST action, ongoing)

Collaboration with key data providers

- **Eurostat**
- **EuroGeoSurveys**
- **National data providers**



Societal Challenge 5 call - "Greening the economy in line with the Sustainable Development Goals (SDGs)"

Major Issue Areas for Mining and the SDGs



- ✓ €240 million available under SC5 (plus FTI, SME Instrument)
- ✓ 2/3 of the budget for Innovation Actions (TRL 6-7)
- ✓ Specific attention to CRMs, Circular economy, Production...
- ✓ Feed into EU Raw Materials Information System – RMIS
- ✓ "Bridge" to Post-2020 "FP9".



European Commission > EU Science Hub > RMIS

- ✓ Scoreboard
- ✓ Raw Materials Profiles and flows
- ✓ CRM
- ✓ Country profiles
- ✓ Trade flows

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



OVERVIEW



POLICY & LEGISLATION



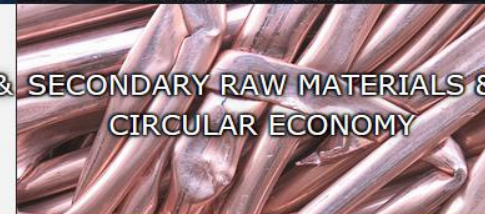
TERMINOLOGY & LIBRARY



CRITICAL RAW MATERIALS



RAW MATERIALS MONITORING & INDICATORS



SECONDARY RAW MATERIALS & CIRCULAR ECONOMY



ENVIRONMENTAL & SOCIAL SUSTAINABILITY



ECONOMICS & TRADE



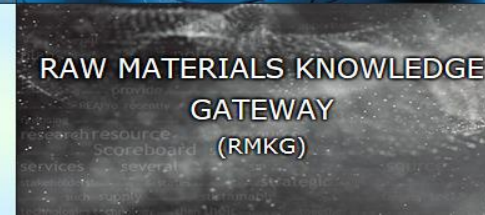
INDUSTRY & INNOVATION



RAW MATERIALS' FLOWS



COUNTRY PROFILES



RAW MATERIALS KNOWLEDGE GATEWAY (RMKG)

3rd Raw Materials Week

(Brussels, 12 - 16 November 2018)



Raw Materials Week

12-16 November 2018



Presentations of RM Week 2017 available on:
http://ec.europa.eu/growth/content/raw-materials-week-2017_en

Thank you!!

EU raw materials:

http://ec.europa.eu/growth/sectors/raw-materials/index_en.htm

EIP on Raw materials:

<https://ec.europa.eu/growth/tools-databases/eip-raw-materials/en>

Horizon 2020 - Raw materials webpage:

<http://ec.europa.eu/programmes/horizon2020/en/area/raw-materials>

H2020 Participant portal

<http://ec.europa.eu/research/participants/portal/desktop/en/home.html>

Horizon 2020 – EXPERTS:

<http://ec.europa.eu/research/participants/portal/desktop/en/experts/index.html>

EIT Raw materials: www.eitrawmaterials.eu