



# EU Raw Materials Policy

10th ESEE Dialogue Conference  
27 March 2019, Leoben, Austria

**Milan GROHOL**

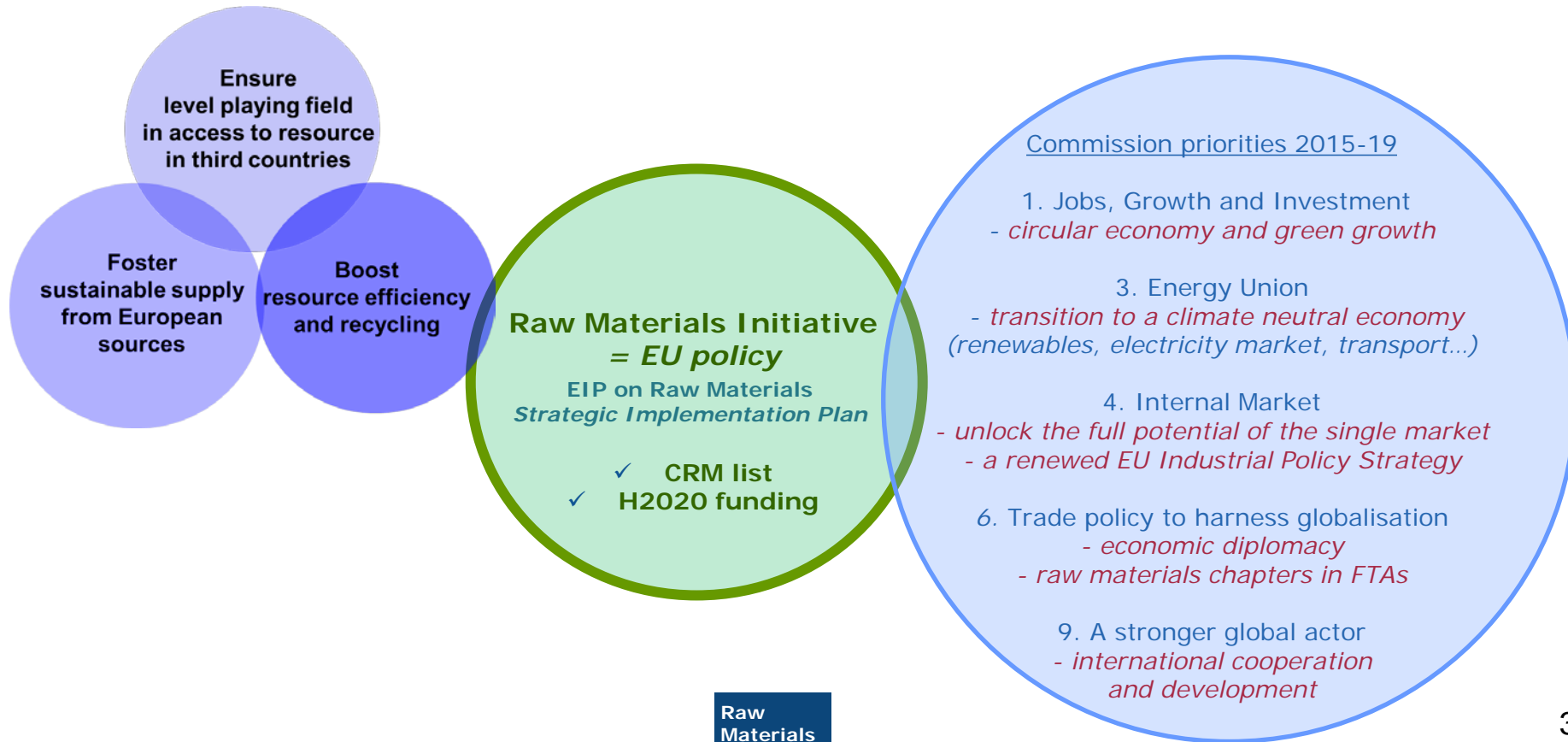
*Unit C2 - «Resource Efficiency and Raw Materials»  
European Commission, Directorate-General for Internal  
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Raw  
Materials

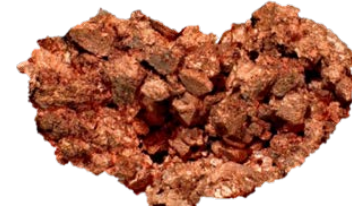
# Raw materials policy framework

Non-fuel non-agricultural raw materials





**Why:** ...to ensure fair, long term, secure, sustainable and affordable access to both primary and secondary raw materials for a more resilient EU economy...

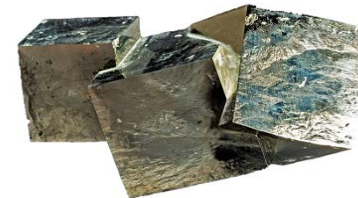


**Who:** Industry, public sector, academia and NGOs in  
HLSG + Sherpa, Operational Groups  
**123 Raw Materials Commitments: 980 partners**

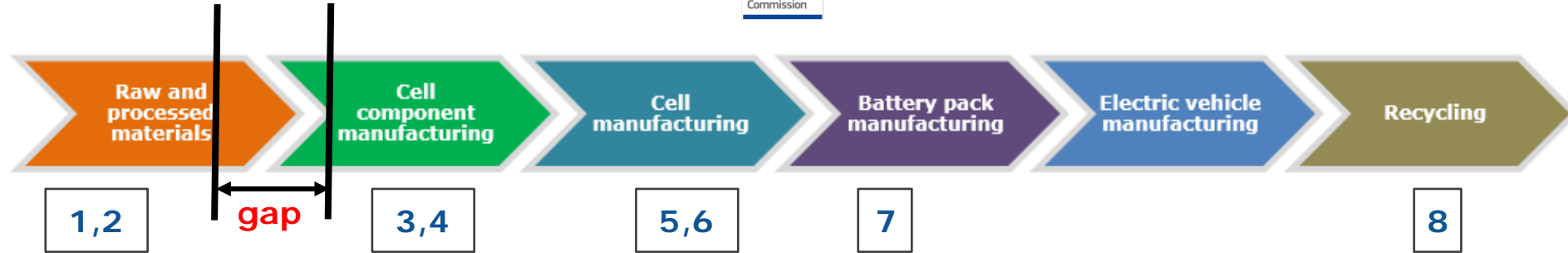


**What:** Strategic Implementation Plan adopted in 2013  
EIP position paper on future orientations in 2017

**Ongoing:** Horizon 2020 ~ €600 million ~ already 50+ running projects  
Better framework for raw materials, Actions in Circular Economy Package, EIT RawMaterials, Raw Materials Information System, International dialogues



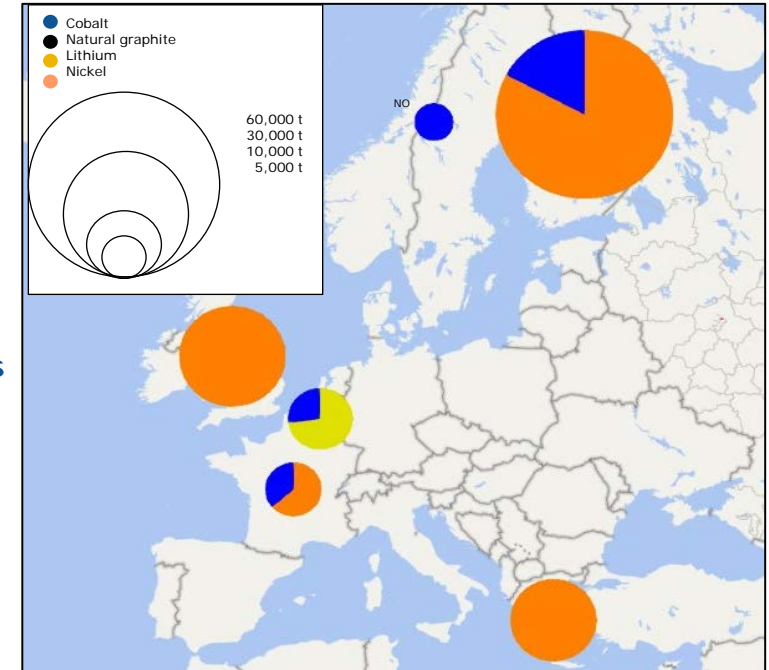
# Value chain approach



1. Keliber – Li production - Finland
2. Savannah – Li production - Portugal
3. Umicore – Cathode materials - Nysa, Poland
4. BASF + Nornickel – Cathodes materials - Harjavalta, Finland
5. Northvolt - Cells manufacturing - Skellefteå, Sweden
6. Saft + Solvay + Umicore + Siemens + Manz – Advanced Li-ion, Li-ion solid state
7. Northvolt + South Bay Solutions – Battery modules - Gdansk, Poland
8. BMW + Northvolt + Umicore – Sustainable life cycle loop for batteries

### Action Area “Securing the sustainable supply of raw materials”

- **Map** the current and future **primary RM for batteries**.
  - **Assess** the **potential within the EU for sourcing battery RM materials** Cobalt, Lithium, Natural Graphite, and Nickel
  - **Dialogue with Member States** to determine the **fitness** of their **raw materials policies, mining codes** and **incentives for exploration** to address the strategic needs of materials for batteries.
- **Member States survey 2018-2019 via RMSG**
- **Report on the Strategic Action Plan on Batteries (coming)**



**Refining production in Europe (2016)**

(Source: Survey Member States- RMSG, 2018)

# Knowledge

Collaboration  
with key  
providers

- UNFC
- Eurostat/National data providers
- EuroGeoSurveys
- Inspire
- Copernicus



Studies  
and  
projects

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

## EU raw materials knowledge base



-> RMIS

## EU 2017 CRMs (27)

Antimony	Germanium	Niobium
Baryte	Hafnium	PGMs
Beryllium	Helium	Phosphate rock
Bismuth	HREEs	Phosphorus
Borate	Indium	Scandium
Cobalt	LREEs	Silicon metal
Coking coal	Magnesium	Tantalum
Fluorspar	Natural graphite	Tungsten
Gallium	Natural Rubber	Vanadium

## Next CRM assessment

- European Commission should lead and perform the next assessment (mostly in 2019)
- engaging major public EU data providers (Eurostat, EuroGeoSurveys, WMD...)
- **engaging external expert network ([screen.eu](https://screen.eu)), validation workshops in September – October 2019**
- We will use the same methodology as in 2017
- Similar scope – over 80 raw materials
- Main products expected in 2020: the EU list of CRMs and factsheets/profiles

# Map of CRM ore deposits in Europe



Raw Materials Initiative  
EU Critical Raw Materials



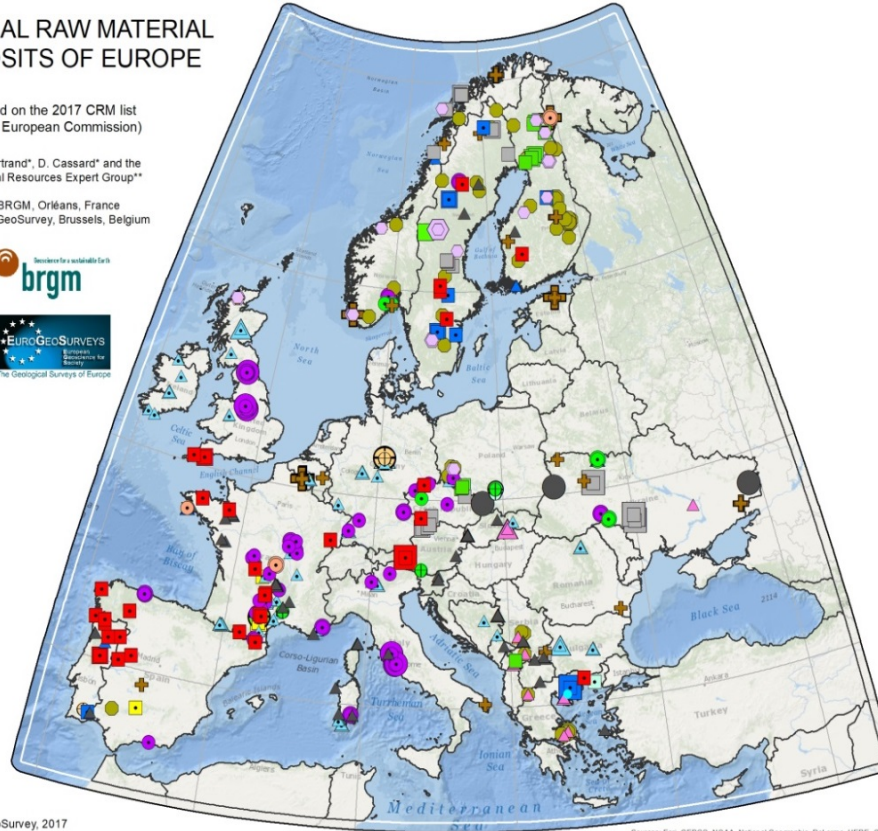
## CRITICAL RAW MATERIAL DEPOSITS OF EUROPE

(based on the 2017 CRM list  
of the European Commission)

G. Bertrand\*, D. Cassard\* and the  
Mineral Resources Expert Group\*\*

\* BRGM, Orléans, France

\*\* EuroGeoSurvey, Brussels, Belgium



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Sources: ESR, GEBCO, NOAA, National Geographic, DeLorme, HERE, Geonames.org, and other contributors

## Legend

### Commodity

- Beryllium (BeO)
- Bismuth (metal)
- Borates (B<sub>2</sub>O<sub>3</sub>)
- Baryte (BaSO<sub>4</sub>)
- Cobalt (metal)
- Coking coal
- Fluorite (CaF<sub>2</sub>)
- Gallium (metal)
- Germanium (metal)
- Graphite
- Hafnium (metal)
- Indium (metal)
- Magnesite, magnesium (MgCO<sub>3</sub>)
- Niobium - columbium (Nb<sub>2</sub>O<sub>5</sub>)
- Phosphate (P<sub>2</sub>O<sub>5</sub>)
- Rare earths elements (RE<sub>2</sub>O<sub>3</sub>)
- Platinum, platinumoids group metals
- Antimony (metal)
- Scandium (metal)
- Tantalum (Ta<sub>2</sub>O<sub>5</sub>)
- Vanadium (metal)
- Wolfram (WO<sub>3</sub>)

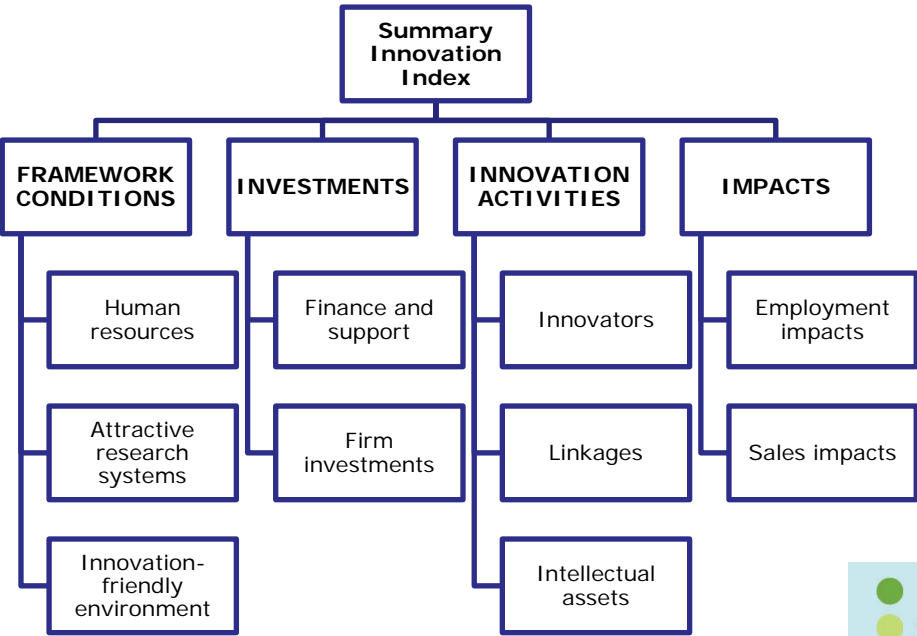
### Deposit size

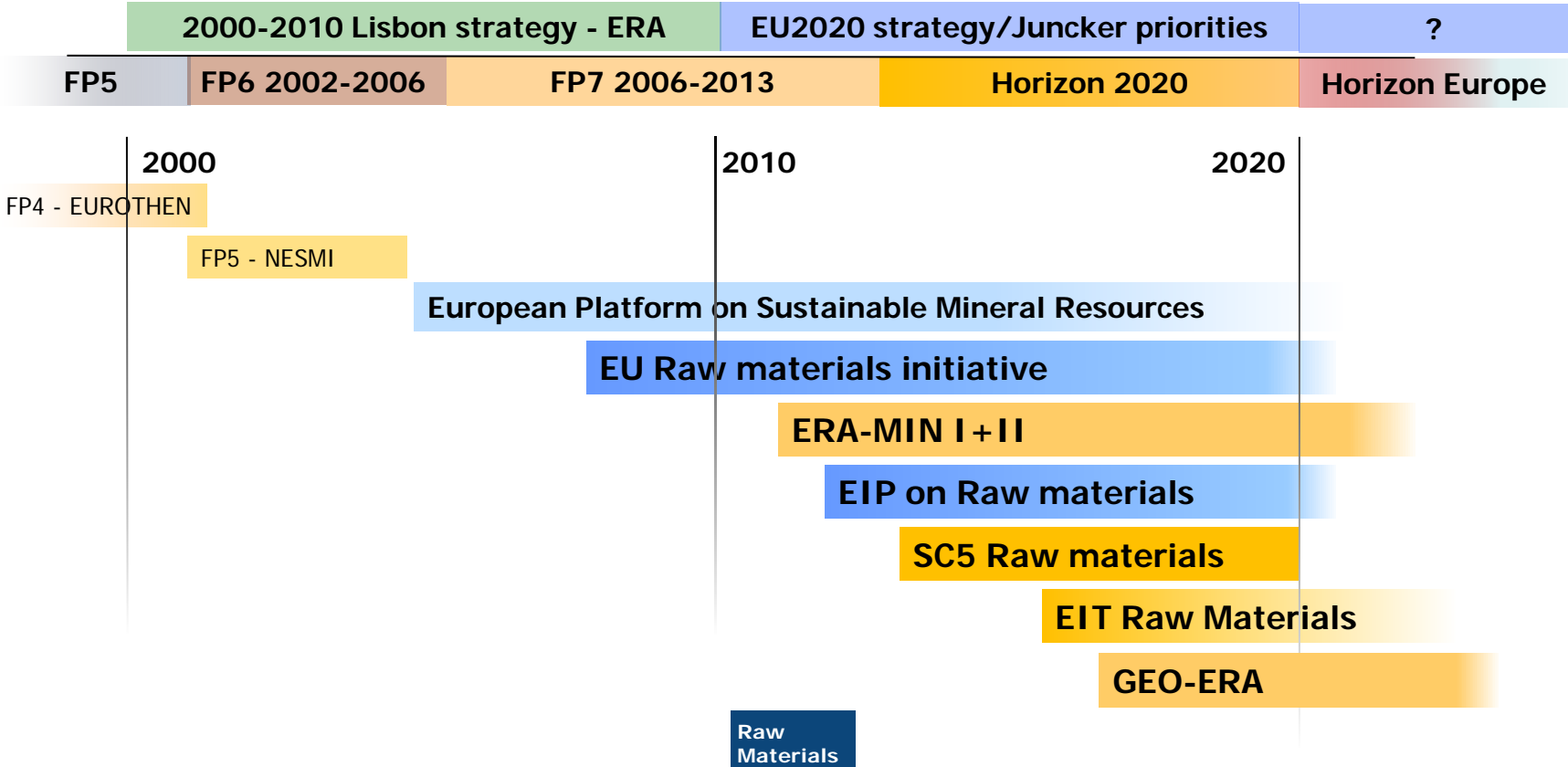
- Class A (super-large)
- Class B (large)
- Class C (medium)

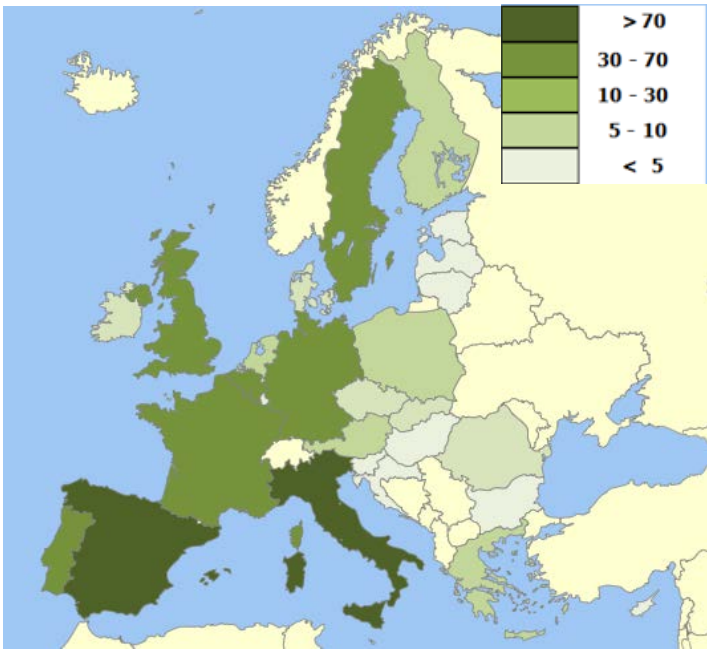
Raw  
Materials

# R&D

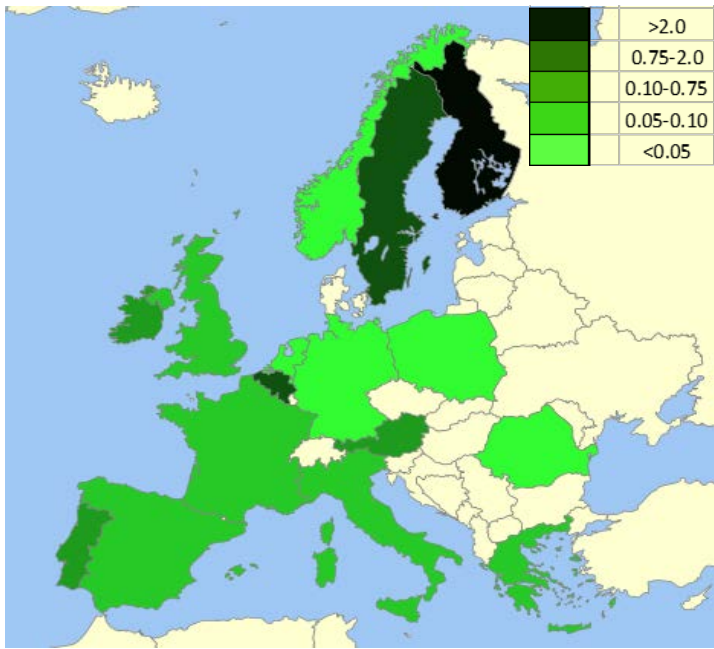
# EU Innovation Scoreboard 2018







Number of partners



Sources of public/regional funding  
(€/capita)

source: EIP Raw Materials - Annual Monitoring Report 2017 by JRC



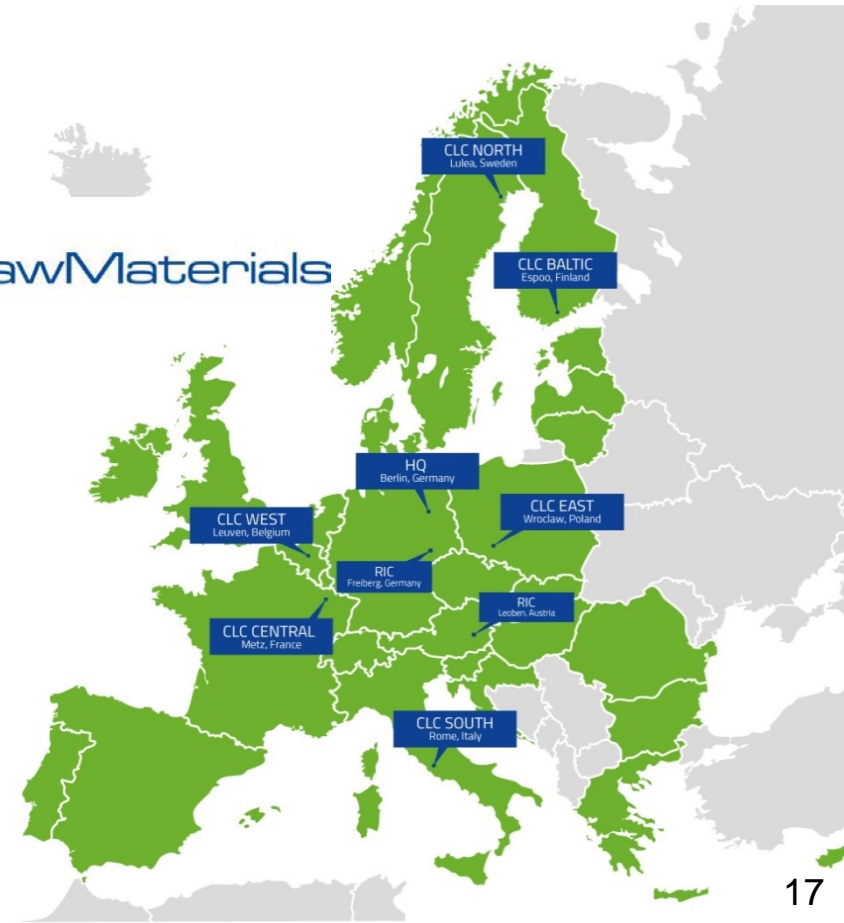
>120 partners, 23 countries  
€400 million (2015-2021)

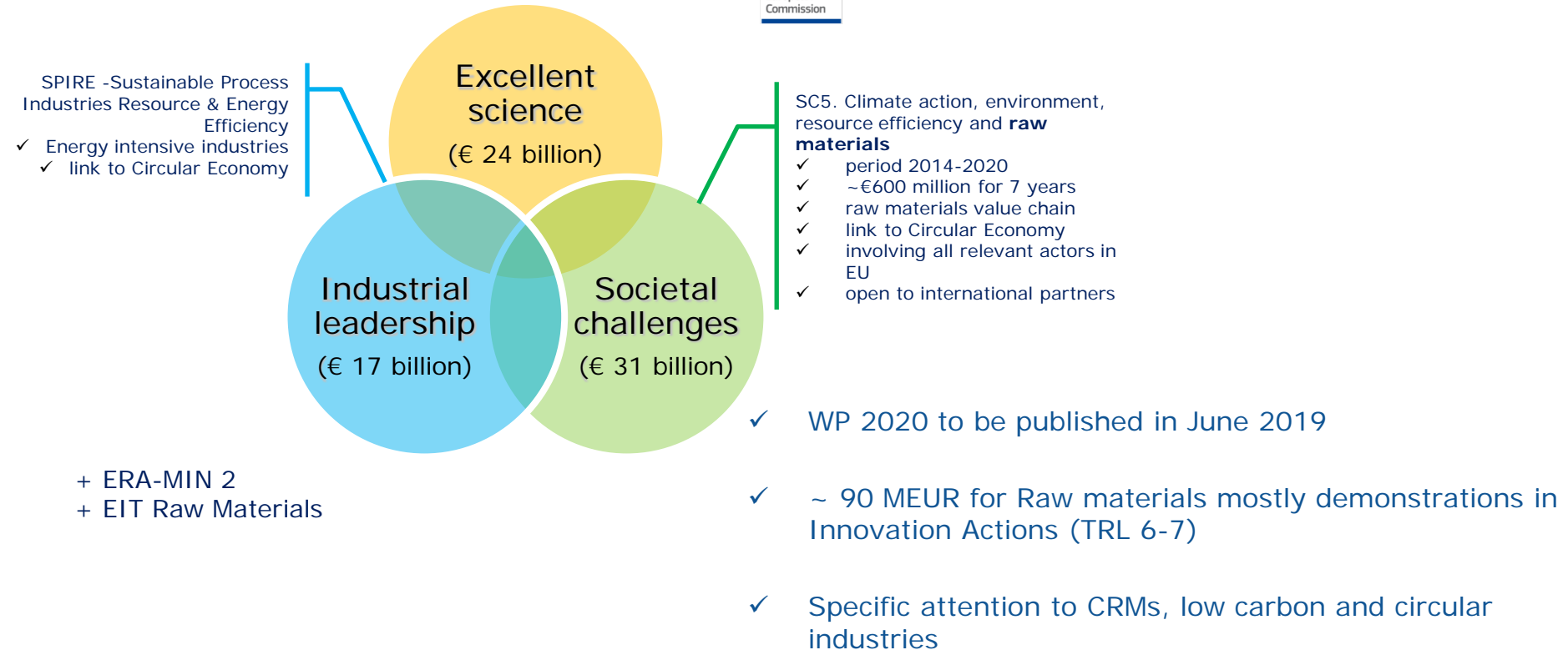
- HQ: Berlin, Germany
- Northern CLC: Luleå, Sweden:
- Eastern CLC: Wroclaw, Poland
- Southern CLC: Rome, Italy
- Western CLC: Metz, France
- Central CLC: Leuven, Belgium
- Baltic Sea CLC: Espoo, Finland

Regular calls every year



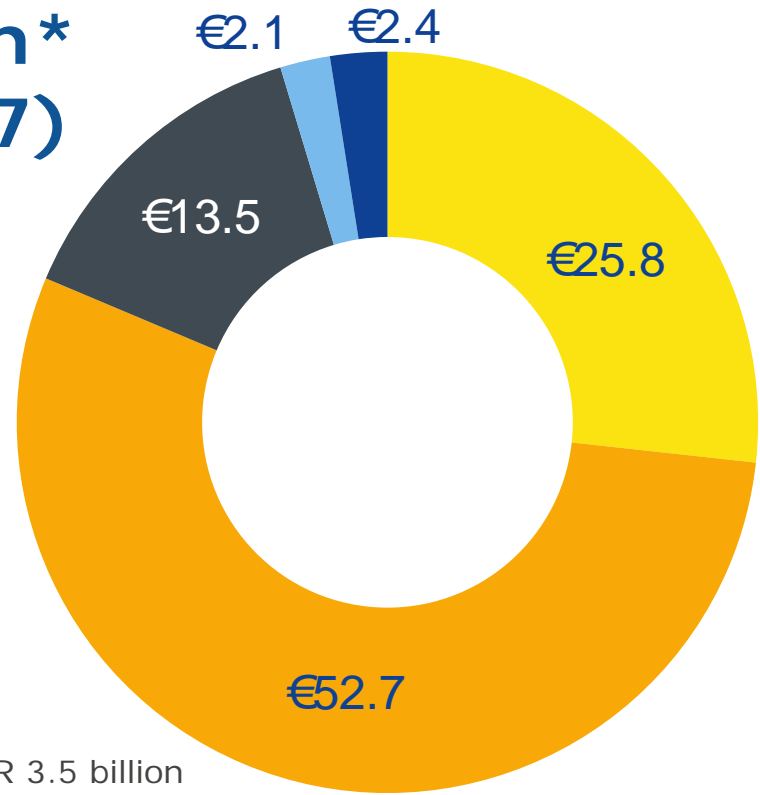
RawMaterials







€100 billion\*  
(2021-2027)



€billion  
In current prices

- 1
- 2
- 3
- 4
- 5

\* This envelope includes EUR 3.5 billion allocated under the InvestEU Fund.



## Pillar 1 Open Science

European Research Council

Marie Skłodowska-Curie Actions

Research Infrastructures



## Pillar 2 Global Challenges and Industrial competitiveness

Clusters

- Health
- Inclusive and Secure Society
- **Digital and Industry**
- Climate, Energy and Mobility
- Food and natural resources

Joint Research Centre



## Pillar 3 Open Innovation

European Innovation Council

European innovation ecosystems

European Institute of Innovation  
and Technology

## Strengthening the European Research Area

Sharing excellence

Reforming and Enhancing the European R&I system



- ~ €15 billion
- Circular Industries (incl. "Raw Materials")
- Low-Carbon and Clean Industries (energy-intensive industries)
- Advanced materials
- Manufacturing,
- a wide range of ICT technologies, and
- Space



**18-22 November 2019 in Brussels, Belgium**  
**[eurawmaterialsweek.eu](http://eurawmaterialsweek.eu)**

- ❖ **7<sup>th</sup> annual High Level Conference of EIP on raw materials "**
- ❖ Horizon 2020 Infoday & and brokerage event
- ❖ Critical Raw Materials
- ❖ The EU Raw Materials Knowledge Base event
- ❖ UN Framework Classification for Resources Management in Europe
- ❖ Responsible supply of raw materials
- ❖ EIT RawMaterials event
- ❖ Forests for the future



## Raw Materials Week

European Innovation  
Partnership on Raw Materials



# Thank you!



## **Critical raw materials for the EU:**

[http://ec.europa.eu/growth/sectors/raw-materials/specific-interest/critical\\_en](http://ec.europa.eu/growth/sectors/raw-materials/specific-interest/critical_en)

## **Methodology for establishing the EU list of critical raw materials:**

<https://publications.europa.eu/en/publication-detail/-/publication/2d43b7e2-66ac-11e7-b2f2-01aa75ed71a1/language-en/format-PDF/source-32064602>

## **Report on critical raw materials and the circular economy :**

<https://publications.europa.eu/en/publication-detail/-/publication/d1be1b43-e18f-11e8-b690-01aa75ed71a1>

## **Raw Materials Information System:**

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

## **EU Raw materials, metals, minerals and forest-based industries:**

[https://ec.europa.eu/growth/sectors/raw-materials\\_en](https://ec.europa.eu/growth/sectors/raw-materials_en)

## **EIP on Raw Materials:**

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

## **Horizon 2020 - raw materials and calls:**

<https://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/index.html>