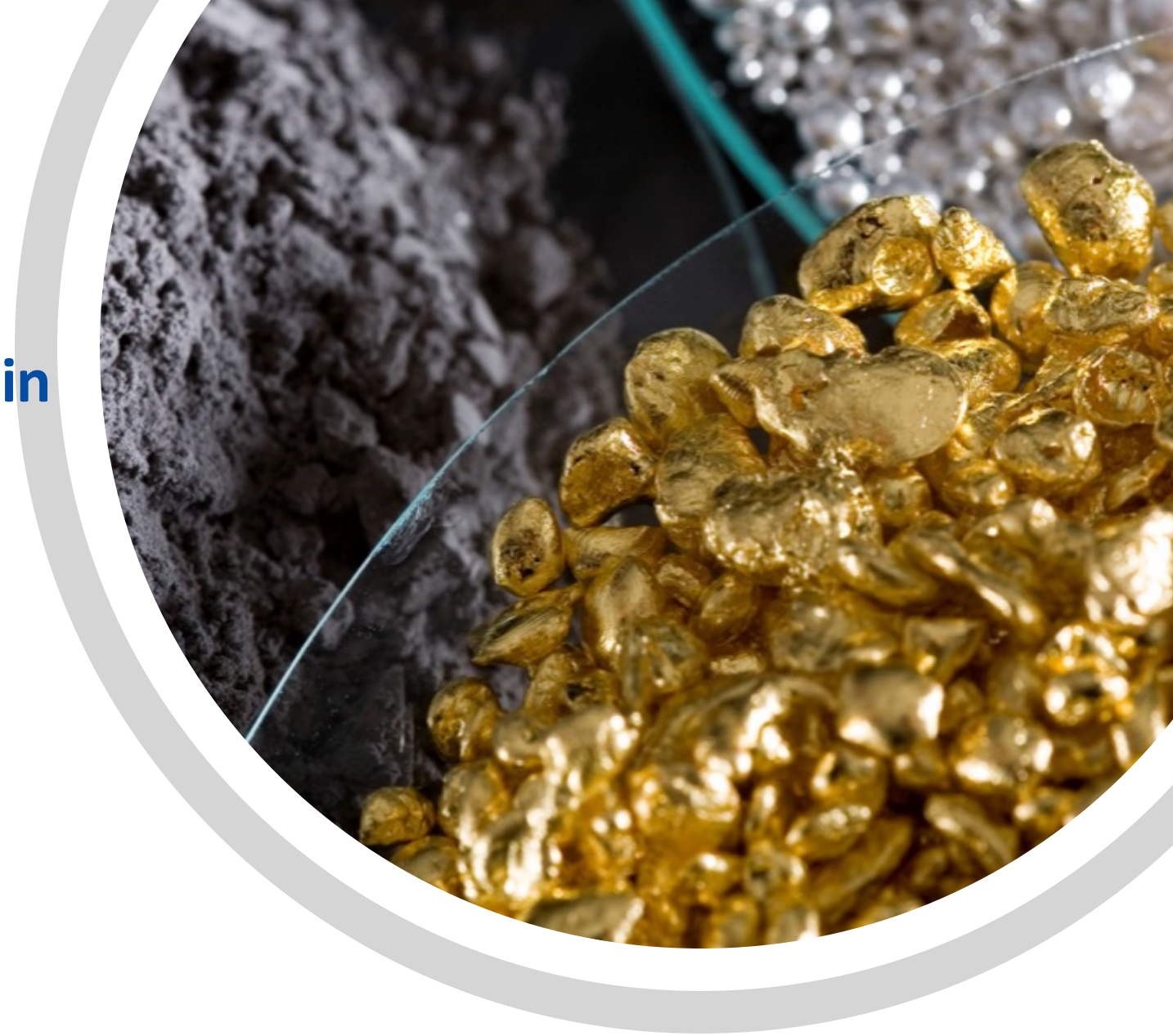


EIT RawMaterials: the world's largest network for innovation in metals and minerals

Pier Luigi Franceschini,
General Manager CLC South

Antonis Politis,
Business Developer CLC East



Windturbine
 Iron
 Copper
 Aluminum
 Zinc
 Graphite
 Rare Earth

Structures
 Bricks (clay)
 Concrete (sand, gravel, cement)
 Iron
 Painting (limestone, titanium)
 Electricity (copper, iron)

Airplanes
 Aluminum
 Iron
 Magnesium
 Zinc
 Titanium
 Copper
 Rare Earth

Wires
 Copper
 Iron

Mast
 Iron
 Zinc
 Aluminum
 Copper
 Feldspar
 Quartz

Truck
 Iron
 Aluminum
 Lead
 Copper
 Zinc
 Magnesium
 Quartz

Concrete
 Cement (limestone)
 Sand & gravel
 Iron



Glass
 Feldspar
 Quartz

Electronics
 Copper
 Tantalum
 Rare Earth
 Niobium
 Indium
 Gold
 Aluminum
 Silicium
 Iron

Washing mashine
 Iron
 Aluminum
 Zinc
 Copper

Plumbing
 Copper
 Lead
 Iron
 Limestone

Solar Panels
 Indium
 Gallium
 Aluminum
 Silicium

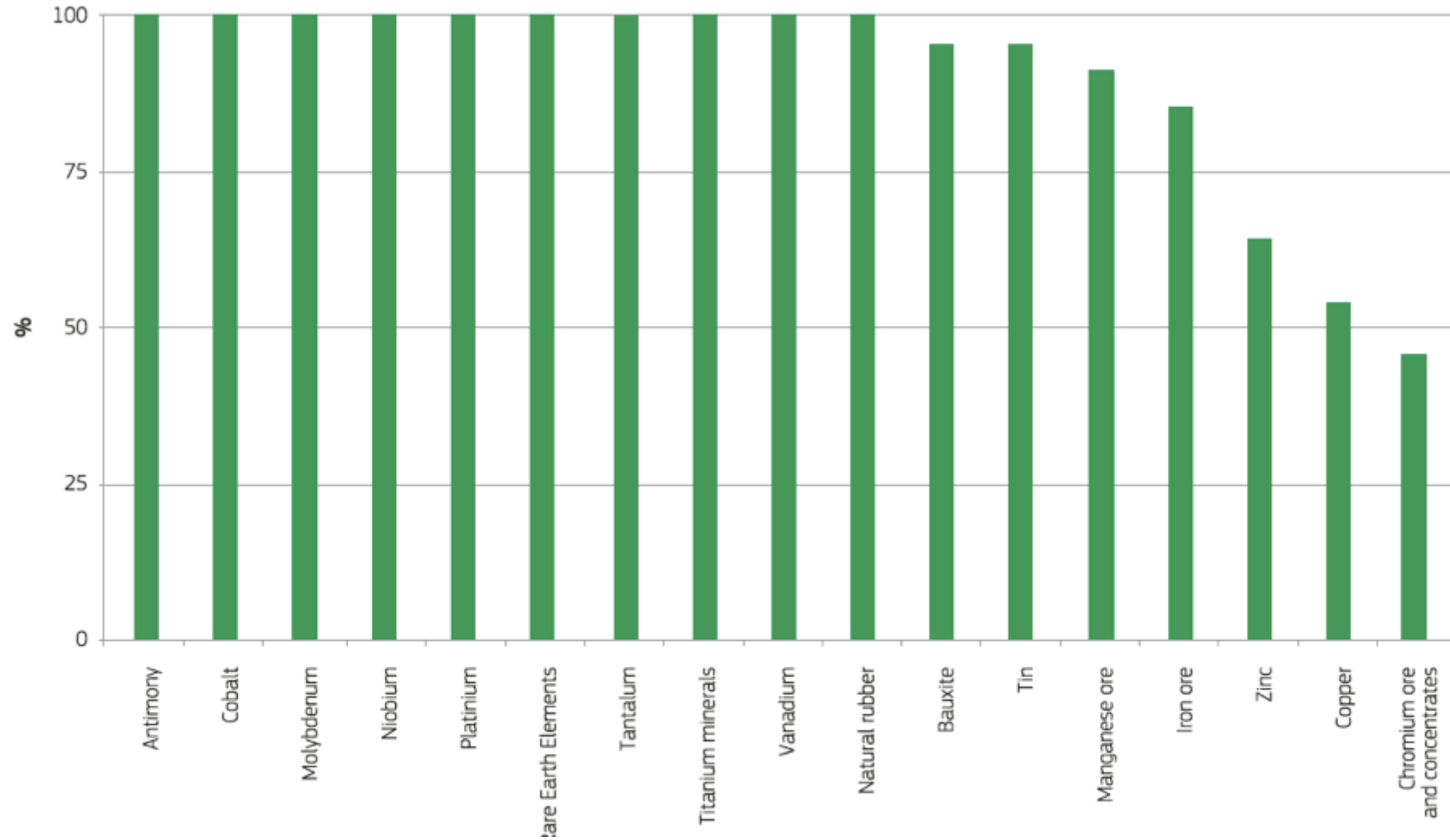
Tracks
 Iron
 Sand & gravel
 Limestone

Fill
 Sand & gravel
 Stone

Rubber
 Dolomite
 Limestone
 Talc
 Graphite

Vehicles
 Iron
 Magnesium
 Aluminum
 Chrome
 Nickel
 Rare Earth
 Lead
 Zinc
 Limestone
 Graphite
 Titanite
 Quartz

Import dependence for selected raw materials



Market drivers



Tesla Model S:
63 kg lithium carbonate
54 kg graphite
22.5 kg Co

Source: [Benchmark Mineral Intelligence](#)

THE TESLA OUTLOOK

If the Tesla Motors lithium-ion battery gigafactory reaches its target capacity of 35 GWh by 2020, its demand for the following materials will grow significantly.

Lithium

→ 44% INCREASE

Spherical Graphite*

→ 150% INCREASE

Flake Graphite*

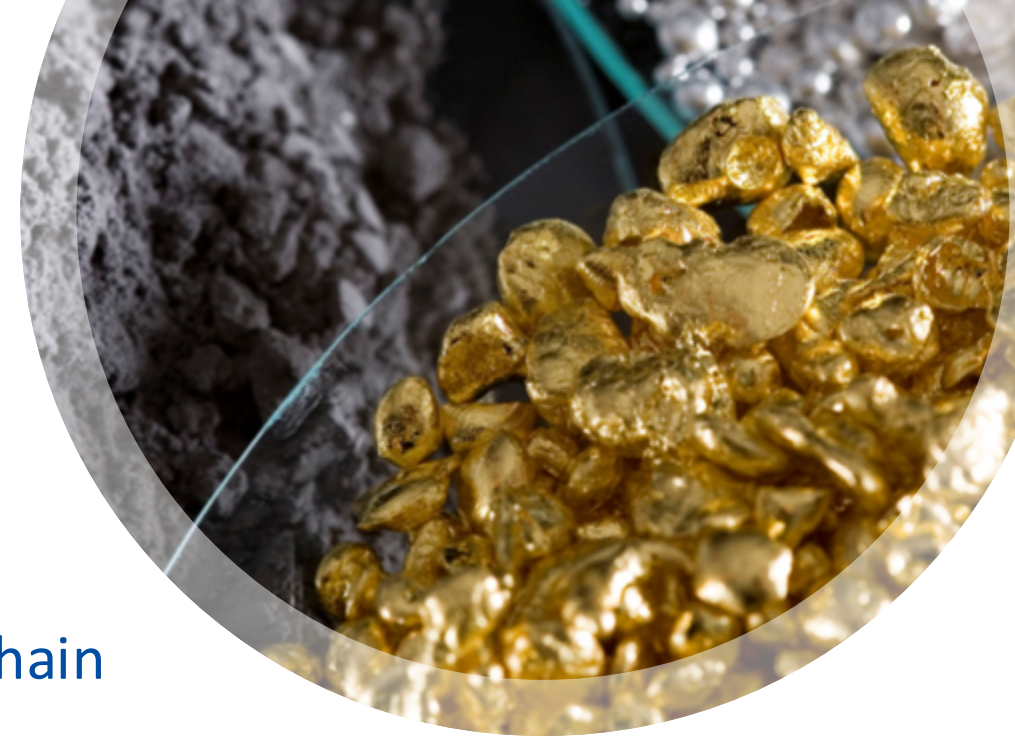
→ 150% INCREASE

Cobalt

→ 18% INCREASE

What is EIT RawMaterials?

- A company formed by > 120 European partners
- Financially supported by the European Union
- Aims to support innovation in the raw materials value chain through financial support and network activities
- Focus is the whole raw material value chain
- Focus on innovation (TRL 5-7) and entrepreneurial education



TRL 5:

Technology validated in relevant environment (industrially relevant environment in the case of key enabling technologies)

TRL 6:

Technology demonstrated in relevant environment (industrially relevant environment in the case of key enabling technologies)

TRL 7:

System prototype demonstration in operational environment



RawMaterials

Connecting matters

Our Vision

To develop raw materials into a major strength for Europe

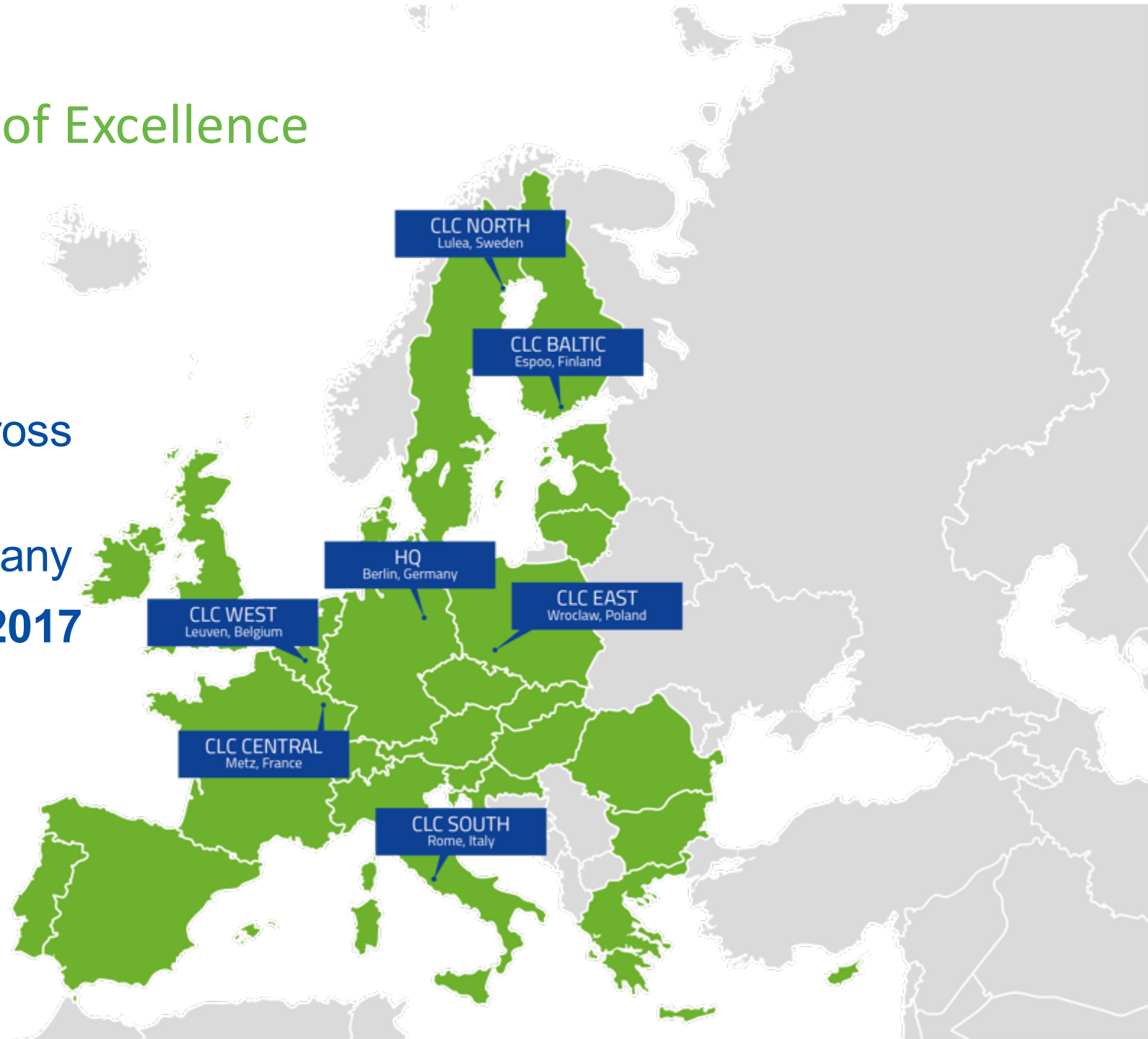
Our Mission

To boost the competitiveness, growth and attractiveness of the European raw materials sector via radical innovation, new educational approaches and guided entrepreneurship



A pan-European Network of Excellence

- > 120 partners
- 22 countries
- Coverage of full value chain
- Six Co-Location-Centers across Europe
- Headquarter in Berlin, Germany
- **> 200 projects running in 2017**



Partners della EIT RawMaterials

Industries



Partners della EIT RawMaterials

Research Centres

ASTER



Partners della EIT RawMaterials

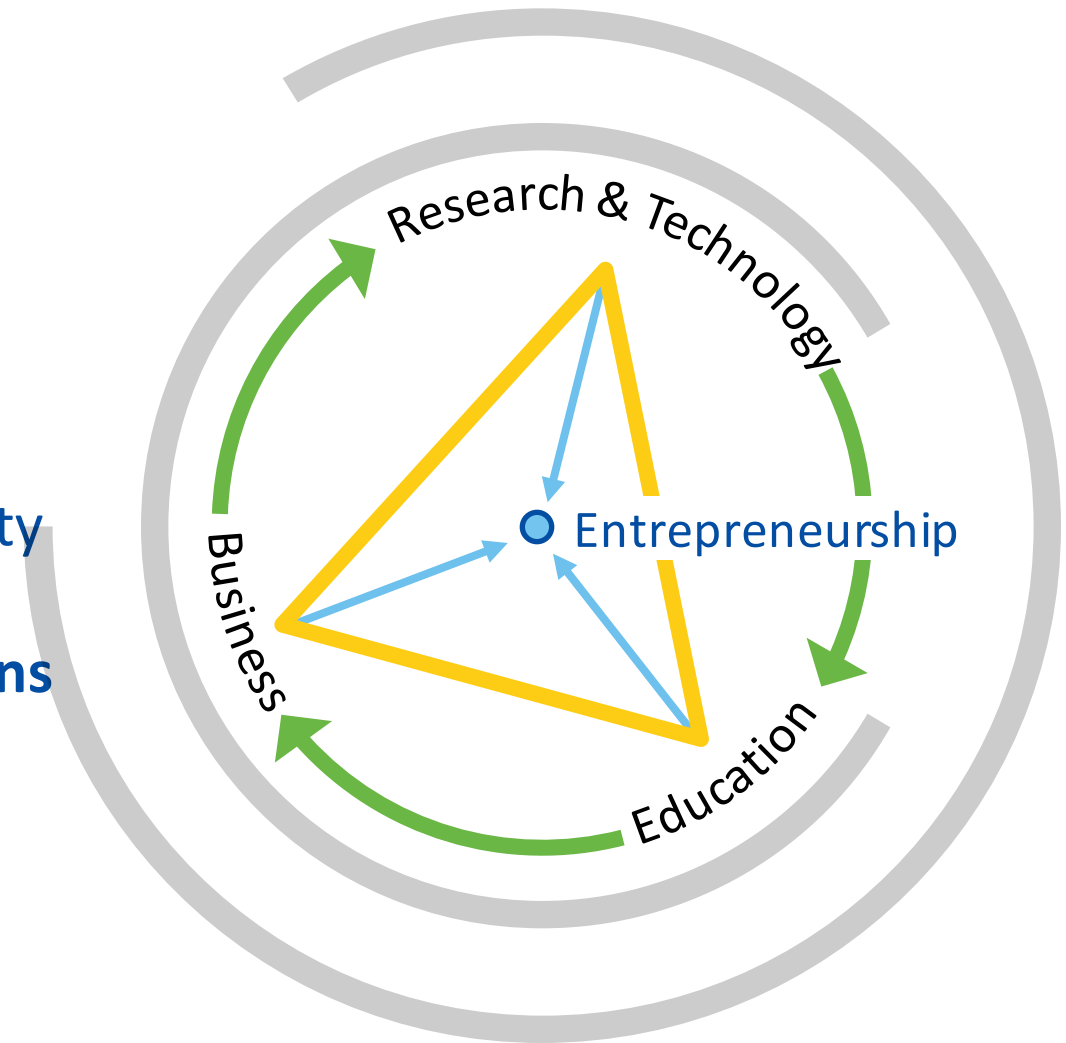
Universities



EIT (European Institute of Innovation and Technology)

Knowledge Innovation Community is:

- A **thematic innovation community** that develops innovative products and services, foster new business, nurture young entrepreneurial talent
- Characterised by **integration**, a long-term perspective, and the **entrepreneurial culture**
- Unique partnerships that increase Europe's capacity for innovation by **bringing together leading companies, universities and research organisations**
- Driven by a pursuit of **excellence**



EIT RM: partnership in Spain

Business

Higher education

Research



EIT RM
In Spain



EIT RM achievements (2017)

ECOSYSTEM

- **>120 partners** (educational, research, industry)
- **> 400 organisations** involved in the ecosystem

INNOVATION & ENTREPRENEURSHIP

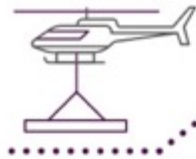
- **> 65 startups** supported
- **43 Upscaling project** launched
- **10 improved products/services to be launched** on the market

EDUCATION

- **7 EIT-labelled** education programs
- **44 new education** projects started
- **750 students** from 30 schools in 8 countries involved in outreach

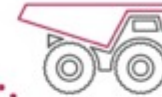


EIT RawMaterials Knowledge and Innovation Themes



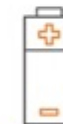
EXPLORATION AND RAW MATERIALS RESOURCE ASSESSMENT

MINING IN CHALLENGING ENVIRONMENTS



INCREASED RESOURCE EFFICIENCY IN MINERAL AND METALLURGICAL PROCESSES

RECYCLING AND MATERIALS CHAIN OPTIMISATION OF END-OF-LIFE PRODUCTS



SUBSTITUTION OF CRITICAL AND TOXIC MATERIALS IN PRODUCTS AND SUBSTITUTIONS FOR OPTIMISED PERFORMANCE

DESIGN OF PRODUCTS AND SERVICES FOR THE CIRCULAR ECONOMY

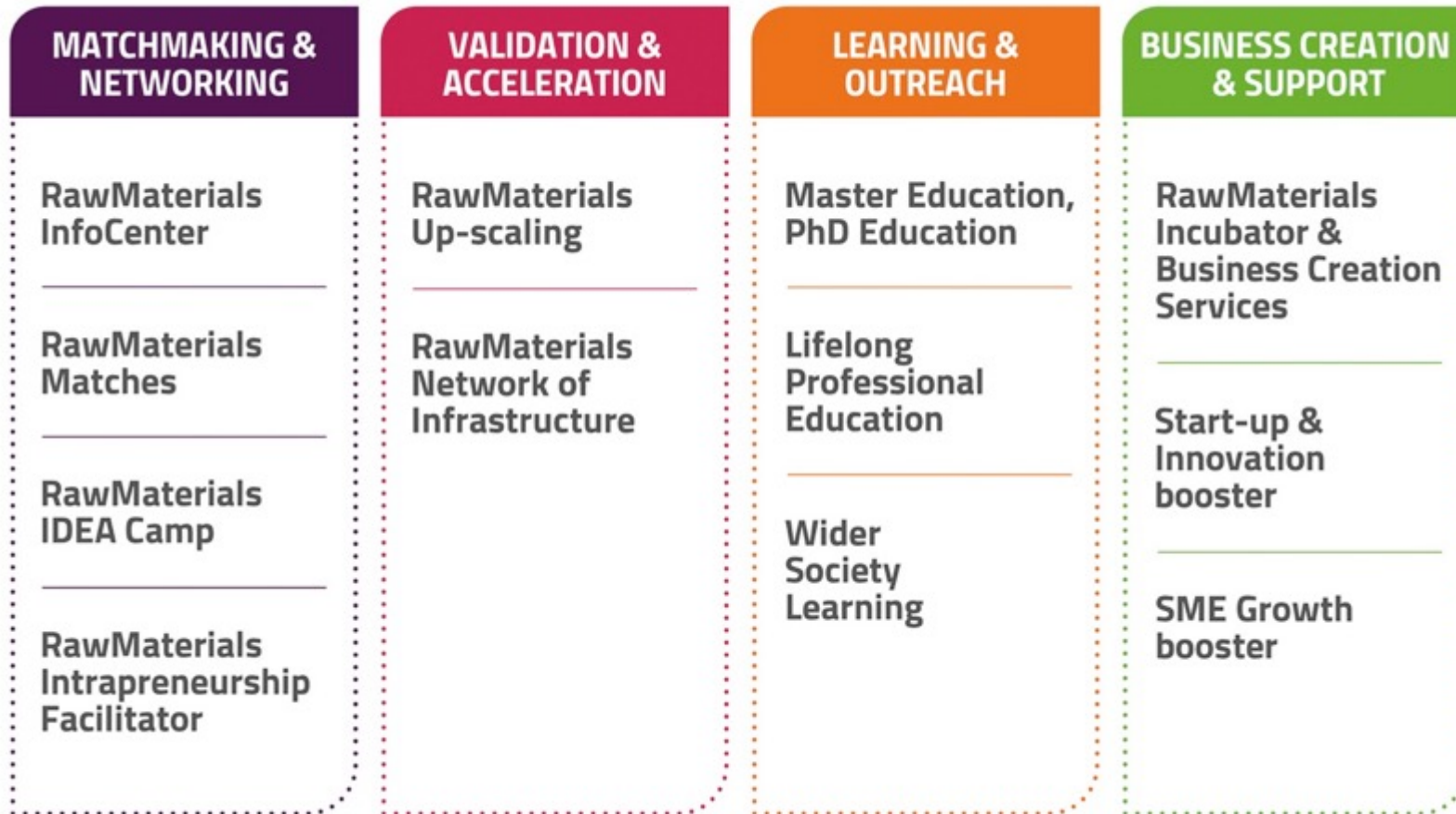


RAW MATERIALS VALUE CHAIN

SUBSTITUTION OF CRITICAL TOXIC, AND LOW PERFORMANCE MATERIALS



EIT RawMaterials - Innovation, Education and Entrepreneurship Activities



UPSCALING INNOVATION PROJECTS

Bringing “X” to the market



Examples

- Integration/application of existing technology in new area
- Introducing new technologies/ processes/optimisation, etc.
- De-siloing value chain

Requirements

- Based on previous project
- Co-funding
- Including educational component!
- Starting at TRL 5
- Ending at > TRL7
- Product/service/improved process on market max. 3 years after project end

VALIDATION &
ACCELERATION

amco
amcosystems.com

UPSCALING INNOVATION PROJECTS

Example: AMCO – Automated Microscopic Characterization of Ores



INTERNATIONAL
CAMPUS OF
EXCELLENCE



Thin Section Lab

- Low investment and maintenance
- Complementary & alternative to expensive traditional SEM analysis.
- Ultra high performance for specific types of ores such as iron oxides.
- Portable, robust, on site operating capability.
- Can operate 24/7.
- Save time and costs in ore processing.
- user-friendly, no highly specialized personnel.

AUTOMATED MICROSCOPIC
CHARACTERIZATION OF ORES

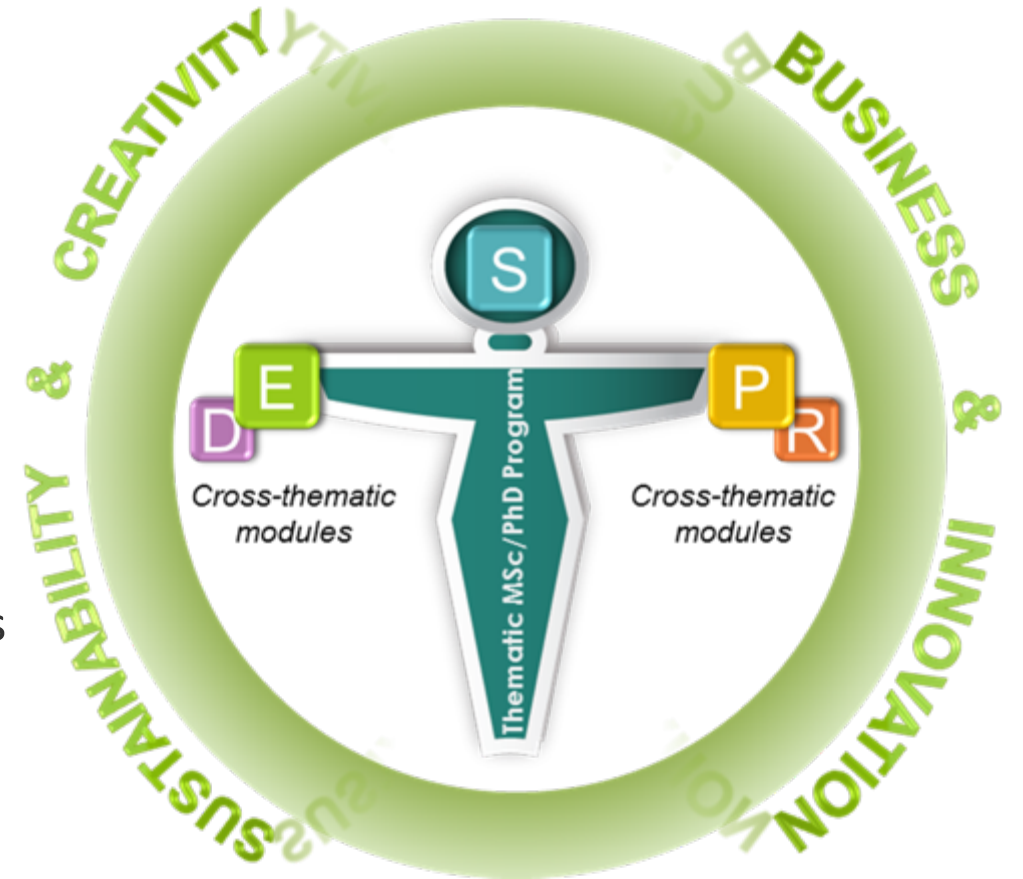
Higher Education, Lifelong Learning, Wider Society Learning

- Objectives

- Integration of entrepreneurship concept in higher education
- Turn ideas into business opportunities

- Strategies in education

- Train **T-shaped** students through
- Ensure industrial participation
- Create attractive career paths
- Change the **perception in the society** on Raw Materials



Wide Society Learning



**"I hear and I forget.
I see and I remember.
I do and I understand."
(Confucius)**

EIT CROSS-KIC

BUSINESS IDEA COMPETITION

FOOD · HEALTH ·
RAW MATERIALS

APPLY UNTIL

31 MARCH 2018

PRIZE UP TO

€10.000

VISIT: WWW.LYYTI.FI/P/EITBIC2018_0505

 This activity has received funding from the European Institute of Innovation and Technology (EIT), a body of the European Union, under the Horizon 2020, the EU Framework Programme for Research and Innovation

WHO

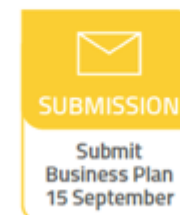
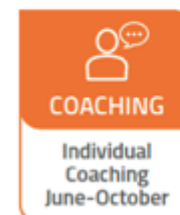
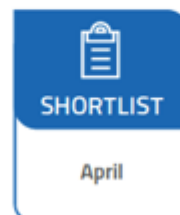
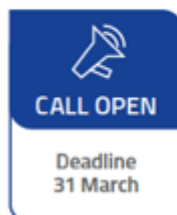
Researchers / idea holders / early stage start-ups not yet fully validated (TRL<4)

WHAT

Ideas for innovative products (services) technologies in the raw materials sector.

WHY

Participate in **training bootcamps** (fully reimbursed).
Learn how to **develop your idea into a business plan** and pitch your idea to investors.
Pitch your idea at the final event and **win up to €10.000**.
Engage with the world's largest innovation community in the raw materials sector.





Invent Support

Bootcamp training on business essentials
3 months, up to €15k



Build Support

Customer validation, Testing, advanced training, coaching
6-9 months, up to €30k grant




Growth Support

Business development, tailored services...
9 months, up to €45k grant

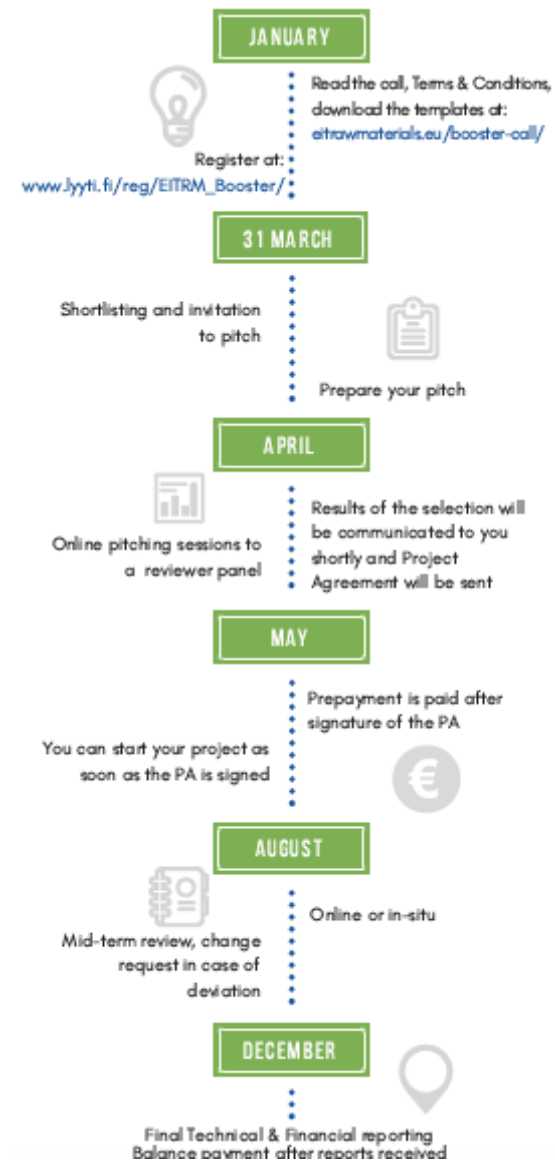


START-UP AND SME BOOSTER CALL

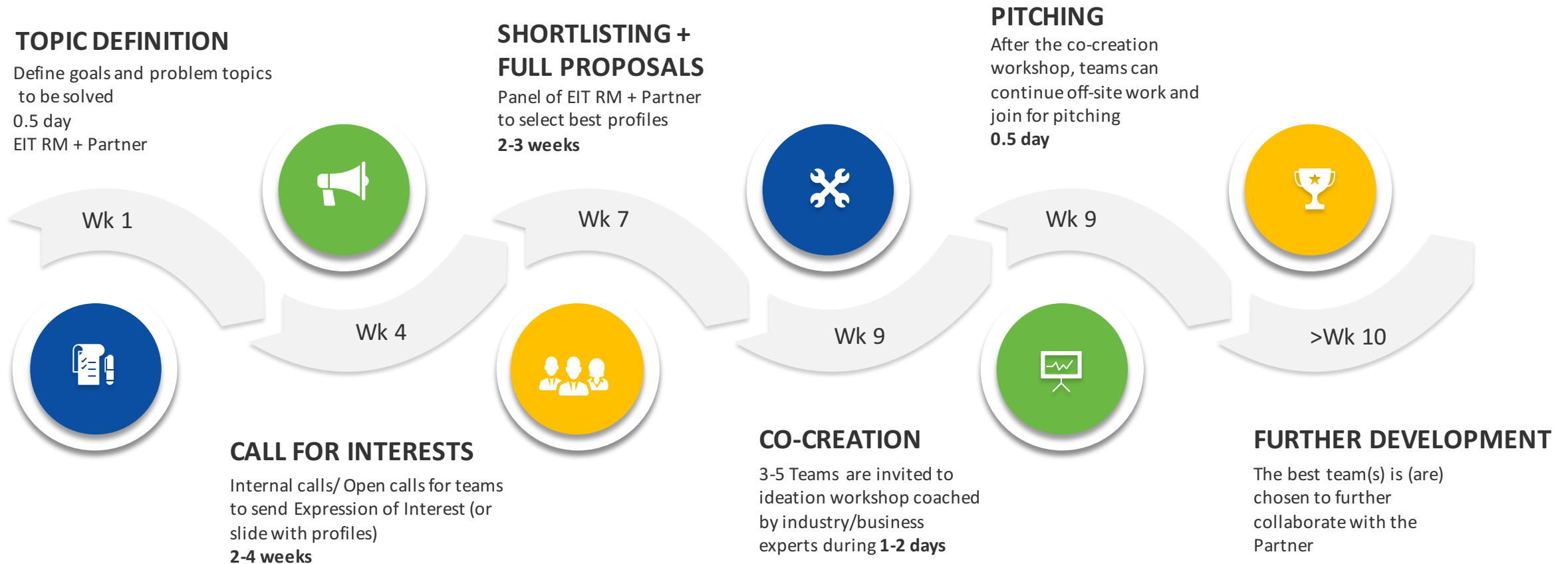
Submit your application by 31 March 2018
eitrawmaterials.eu/booster-call/

 This activity has received funding from the European Institute of Innovation and Technology (EIT), a body of the European Union, under the Horizon 2020, the EU Framework Programme for Research and Innovation

UP TO
€60.000



Open co-creation – Industry Hackathon Process



EIT Raw Materials · How to get involved?

- Participate in our thematic centric or regional [Matchmaking & Networking events](#)
- Consider becoming a [Partner](#) of EIT RawMaterials:
 - Core partner
 - Associate partner
 - **new upcoming** from 2018 – facilitated access for SMEs and other organizations, **work in progress**
- Apply for [our competitions](#)
- Follow us on [www](#), [Twitter](#), [LinkedIn](#)

EIT RawMaterials

Bridging business, research and education.



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Contact: pierluigi.franceschini@eitrawmaterials.eu,
antonis.politis@eitrawmaterials.eu

