

EIT-KIC Raw Materials FCT|NOVA Core members



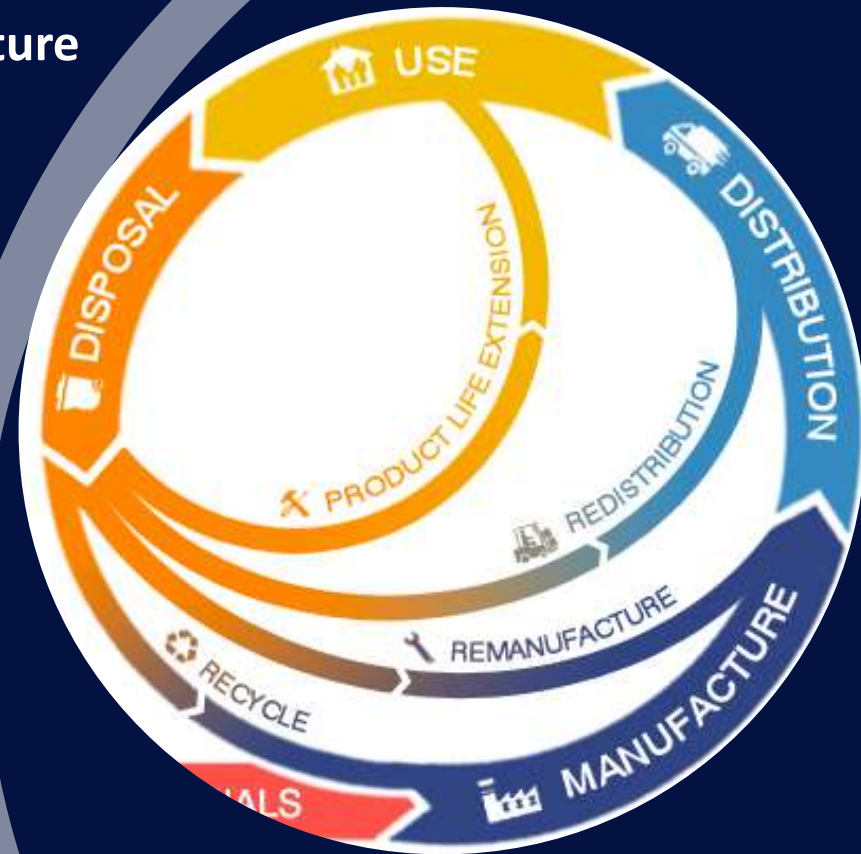
R. Martins, J. Kullberg, A. Reis,
A. Ribeiro, J. Veiga, S. Barreiros,
J. Almeida

FCT | NOVA Strategy for the KIC Raw Materials

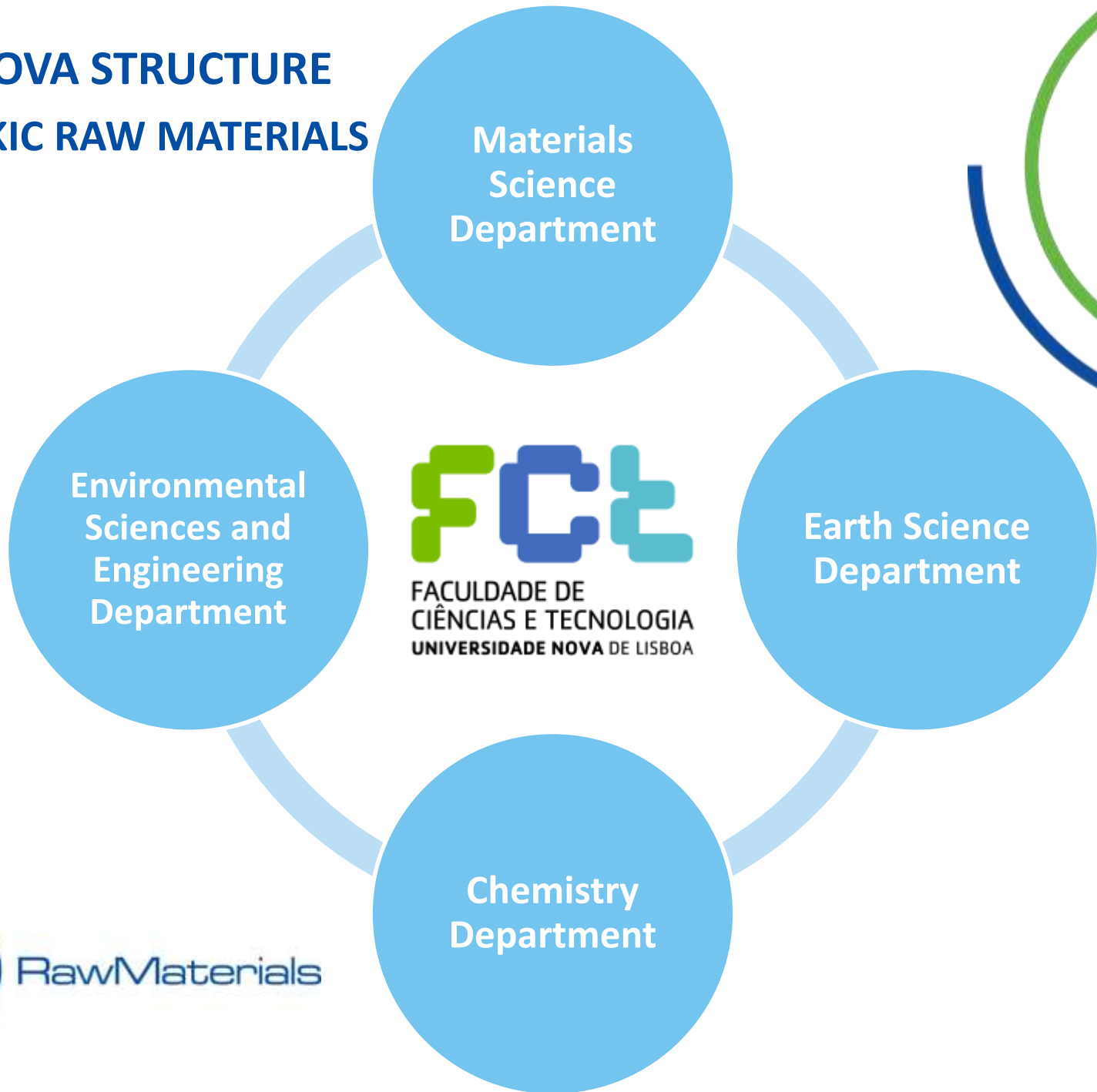
To establish a Value Chain within the structure

GOING FROM MINING TO RECYCLING

CLOSING THE LOOP WITH CIRCULAR ECONOMY



FCT | NOVA STRUCTURE AT EIT-KIC RAW MATERIALS



FCT | NOVA Value Chain

RECYCLING / CIRCULAR ECONOMY

CENSE

Centro de Investigação em
Ambiente e Sustentabilidade

PROCESS EFFICIENCY/SUBSTITUTION

CENIMAT/I3N

Centro de Investigação em
Materiais do I3N - Instituto de
Nanoestruturas, Nanomodelação e
Nanofabricação

PROCESS EFFICIENCY/SUBSTITUTION
CIRCULAR ECONOMY

LAQV

Laboratório Associado para a
Química Verde - Tecnologias
Limpas e Processos

UCIBIO

Unidade de Ciências
Biomoleculares Aplicadas

EXPLORATION/MINING

GeoBioTec

Geobiociências, Geoengenharias e
Geotecnologias



Earth Sciences Department

Head: Prof. J. Kullberg

Research Center:



GeoBioTec - Geobiociências, Geoengenharias e Geotecnologias
Coordinator: Prof. José António Almeida

Area: Exploration/Mining



Materials Science Department

Head: Prof. R. Martins

Research Center:



i3N - Instituto de Nanoestruturas, Nanomodelação e Nanofabricação
Coordinator: Prof. Elvira Fortunato

Area: Process Efficiency / Substitution



Chemistry Department

Head: Prof. M. J. Romão

Research Center:



LAQV
@ REQUIMTE

LAQV - Laboratório Associado para a Química Verde - Tecnologias Limpas e Processos

Coordinator: Prof. Manuel Nunes da Ponte



UCIBIO
@ REQUIMTE

UCIBIO - Unidade de Ciências Biomoleculares Aplicadas

Coordinator: Prof. Maria João Romão

Area: Process Efficiency/SubstitutionCircular Economy



Environmental Sciences and Engineering Department

Head: Prof. J. Seixas

Research Center:



CENSE
center for environmental
and sustainability research

CENSE - Centro de Investigação em Ambiente e Sustentabilidade

Coordinator: Prof. Alexandra Ribeiro

Area: Recycling / Circular Economy

EIT – An European Initiative

- Knowledge and Innovation Community (KIC)
- About 130 members (1/3 universities, 1/3 RTOs, 1/3 industries)



- 350 M€ funding for education / business creation / innovation projects

BECOMING A MEMBER

<http://eitrawmaterials.eu/about-us/partners/>

Core Partners

Can participate to an unlimited number of projects and activities **without funding limitations**

Core Partners membership fees are **100K€ in cash + 900k€ of in-kind contribution (KCA)**

Associate Partners

Can participate to collaborative projects **with funding limitations (300k€/year)**

Associate partners membership fees are **30k€ in cash + 300k€ of in-kind contribution (KCA)**

Task Partners

Contribute to actions/tasks. **No membership fees** and **funding capped to 60k€/year**

SCOPE OF ACTIVITIES (Scope)

- **EXPLORATION** (J. Kullberg, J. Almeida, S. Barbosa)
Mining exploration and raw materials resource assessment
- **MINING** (J. Kullberg, J. Almeida, S. Barbosa, A. Ribeiro)
Mining in challenging environments (city, deep sea, etc.)
- **PROCESS EFFICIENCY** (A. Reis, J. Veiga, A. Ribeiro, J. Almeida)
Increase resource and efficiency in mineral and metallurgical processes
- **SUBSTITUTION** (R. Martins, A. Reis, J. Veiga, S. Barreiros)
Substitution of critical/toxic materials in products and for optimized performances
- **RECYCLING** (A. Ribeiro, J. Veiga, J. Almeida)
Recycling and materials chain optimization of end-of-life products
- **CIRCULAR ECONOMY** (A. Reis, A. Ribeiro, J. Veiga, S. Barreiros)
Design of products and services for the circular economy

PRIORITY TARGETS (Markets)

- ENERGY
- MOBILITY
- MACHINERY & EQUIPMENT
- INFORMATION & COMMUNICATION TECHNOLOGY

INNOVATION PROJECTS (Activities)

- MATCHMAKING & NETWORKING EVENTS
- VALIDATION & ACCELERATION -> Up-scaling projects
 - > Networks of infrastructure (NoI)
 - > Internationalization projects
 - > Regional and Information Scheme projects (RIS)



SOME RUNNING PROJECTS

Note: Your CLC-Central is focused on the following thematics:
substitution - recycling - circular economy

- **ECO COM'BAT** (Arkema, Fraunhofer, TU Darmstadt)
Ecological composites for high-efficient Li-ion batteries
- **Go-4-0** (Eramet, ArcelorMittal, CRM)
From Fe- and Mn-oxides wastes to valuable metal alloys using novel carbon sources materials
- **RACE TP** (Arkema, IRT-M2P, Mondragon)
Lightweight recyclable automotive thermoplastic composite parts for large series production
- **SIRIUS** (Nanomakers, CEA, Varta)
Silicon nanoparticles based composites upscaling

SOME RUNNING EDUCATIONAL PROJECTS

IDS-INN= FunMat PhD program

FCT|UNL Integrates the program since November 2016 with **4 PhD students** involving the areas of Materials, Green Chemistry and Recycling.

Novelty

An **industry** mentor is mandatory (at least for about one year of all PhD work) and the student receives an annual grant for mobility of about 5500€.

KIC EIT Raw Materials labelled IDS-FunMat-INNO Doctoral Program

SPRING SCHOOL ON LIFE CYCLE OF MATERIALS AND PROJECT & RISK MANAGEMENT

23-29 APRIL 2017 IN CAPARICA

Organised by:



In collaboration with:



Sponsored by:

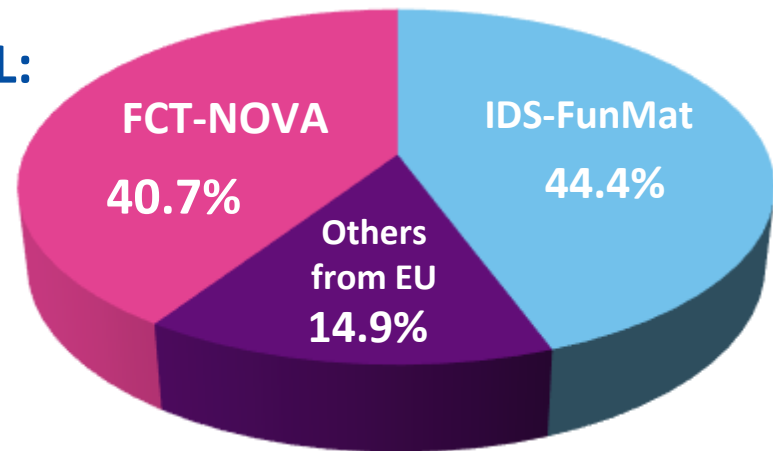


EXECUTIVE SUMMARY:

6 days of Spring School, including 1 ½ days of visits to Mining & Recycling sites, 1 ½ days of course on Project and Risk Management, 1 day of lectures on life cycle of materials, mining & exploration, substitution of critical & toxic raw materials, recycling & circular economy, criticality & sustainability assessment, ½ day of project work, ½ day of materials science lab visit (working on substitution), plus 1 day of arrival, welcome reception and excursion.

ATTENDED TO THE SPRING SCHOOL:

- 12 PhD Students of the *IDS-FunMat*;
- 4 PhD Students from Leoben University;
- 11 PhD Students from FCT|NOVA



MINE VISIT - Neves Corvo Mine explored by SOMINCOR

- (approx. 200 km from Lisbon): Ores of poly-metallic sulphides – mainly copper and zinc
Visit to the mineral separation and preparation plant.

Coordination: Prof. José Almeida(FCT|NOVA, PT)



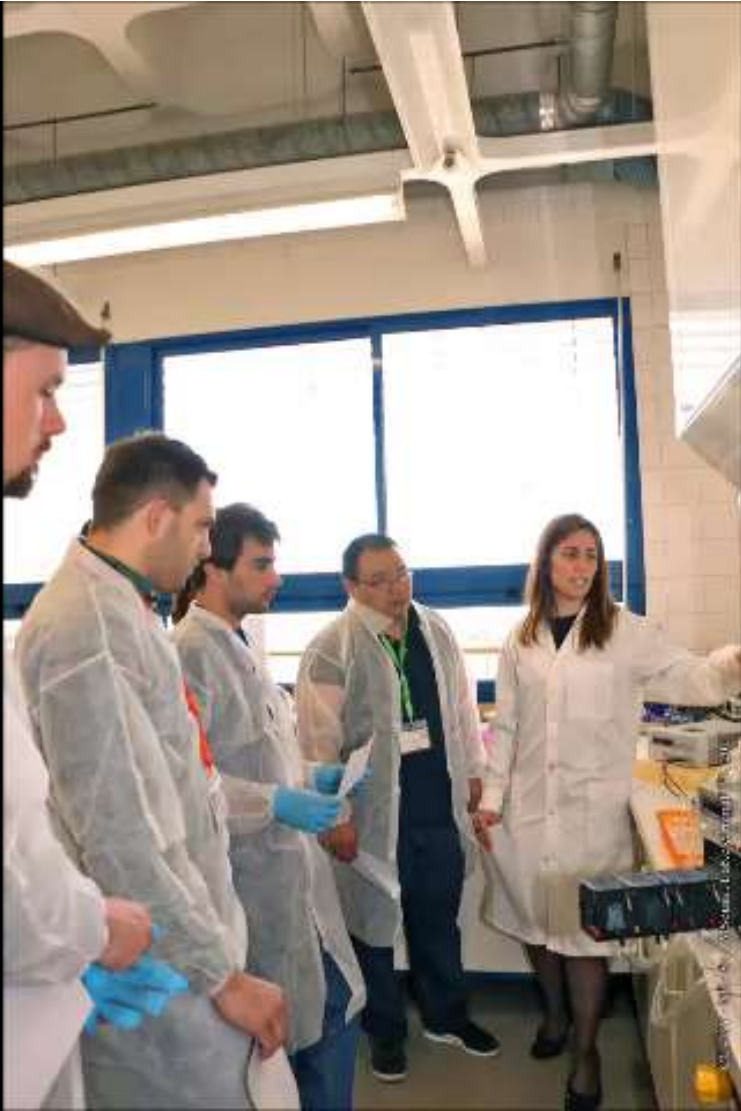
RECYCLING PLANT VISIT - AmbiGroup plant

- Recycling of main metals (Cu, Al, Zn) and metal alloys (Zn, stainless steel, magnetic steel, brass).

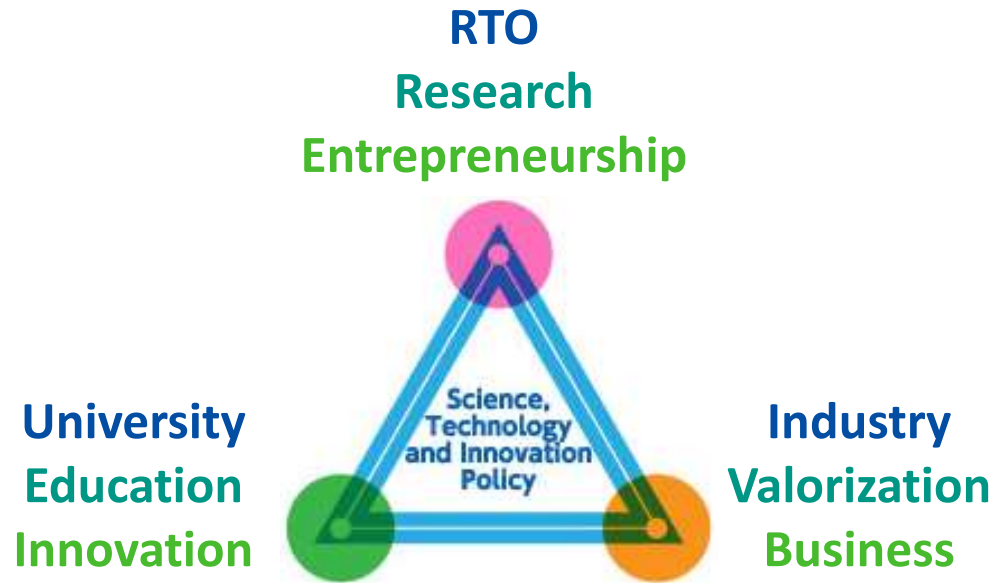
Coordination: Prof. José Almeida (FCT|NOVA, PT)



LABS TOUR @NOVA



THE TRIANGLE RULE



The KIC finances collaborative projects on 3 conditions:

To fit in one of the proposed **activities**, to be in the **scope** of the value chain of raw materials, and to target one of the priority **markets** identified

EIT RAW MATERIALS TIMELINE (1)

Work with the timeline...



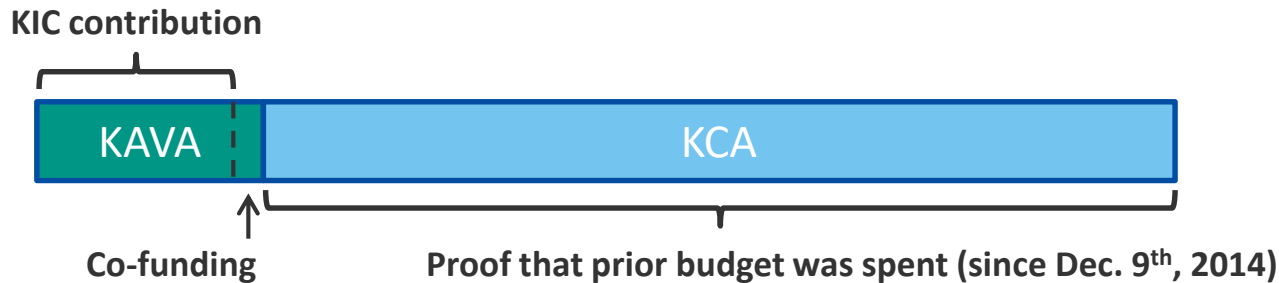
EIT RAW MATERIALS TIMELINE (2)

- **Opening date of the call:** 15th of November 2016
- **Closing date:** 31st of March 2017
- **Evaluation:** April – June 2017
- **Results:** end of June 2017
- **Earliest starting date** for approved projects: 1st of January 2018
- **Latest starting date** for approved projects: 1st of July 2018
- **Submission deadline for feasibility study:** 30th of September 2018
- **Pre-financing payment:** 55% of the project funding Q2 2018
- **Payment of balance:** 45% Q1 2019
- **SeedBook** for submitting the proposal <https://seedbook.eitrawmaterials.eu>
- **BlueBook** for reporting and budget adjustments <https://bluebook.eitrawmaterials.eu>



Next call launched: late 2017
Submission deadline: winter/spring 2018

THE KCA / KAVA / CO-FUNDING STORY



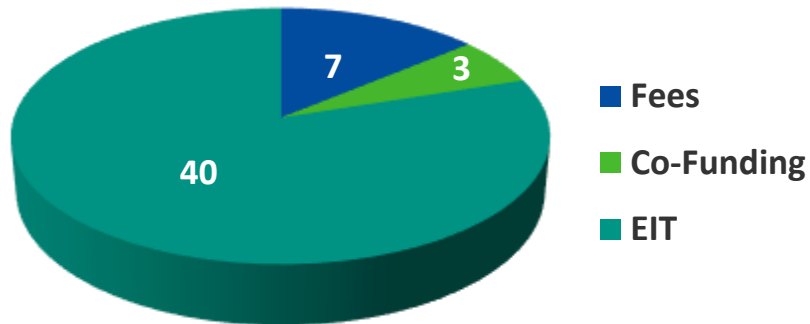
- **KAVA** (KIC Added Value Activity)
= requested budget for the project
 - **KAVA co-funding:**
= 10-15% mandatory for up-scaling projects
= Optional but encouraged for Education, RIS, and Internationalisation projects
 - **KCA** (KIC Complementary Activity)
= R&D already done to bring the technology at least up to TRL5
- upscaling: 25% KAVA / 75% KCA
education: 50% KAVA / 50% KCA

UPSCALING PROJECTS

- **Duration:** between 1 and 4 years
- **High TRL:** from 5 to 7/8
- **Consortium:** at least 3 Core / Associate partners
from 2 different CLC or 2 different countries
with a mix of industrials and/or RTO and/or academics
- **Budget:** 25% KAVA / 75% KCA
KAVA = 100% of direct cost + 25% indirect costs
additional overhead claimed as co-funding or KCA (or not claimed)
- **Co-funding:** 10-15% of KAVA required
- **Feasibility study** (GO vs NO-GO) & **Backflow** to the KIC proposed
- Educational component encouraged

FROM 2017 BUDGET...

- **Global budget:** 50M€ (*budget requested at Business Plan 2017*)



- **50-70% for upscaling projects:** **35-45% Exploration / Mining**
15-25% Processing
35-45% Substitution / Recycling / Circular economy

2-3 Large size projects (2-5 M€)
3-4 Medium size projects (1-2 M€)
5-10 Small size projects (< 1 M€)

EDUCATIONAL PROJECTS

- **Duration:** between 1 and 4 years
Master – PhD – Lifelong Education
Wider Society Learning
- **Consortium:** at least 3 Core / Associate partners
from 2 different CLC or 2 different countries
with a mix of industrials and/or RTO and/or academics
- **Budget:** 50% KAVA / 50% KCA
KAVA = 100% of direct cost
co-funding encouraged
- **Split of the budget:**
 - 20% Raw Materials Academy**
 - 40-60% Higher Education**
 - 20-40% Wider Society and Lifelong Learning**

INTERNATIONALISATION & RIS ELIGIBILITY

- **Internationalisation**

projects that are building on the results and experiences of earlier projects

- **Regional & Information Scheme**

case-by-case basis projects; may include for example mobility programmes for students and professors, study visits, scientific and technical valorisation of the results, technology transfer, support of local start-ups, joint communication and networking events

	Internationalisation	RIS
Targeted regions	EUNC: Neighbouring Countries of the EU	The East & South-East Europe (ESEE) region
	RDVP: Resource-rich developing economies (DR Congo, Bolivia, Peru, Liberia...)	
	RREM: Resource-rich emerging economies with strong activities in the RM sector (Brazil, Chile, South Africa, India, China...)	The Baltic countries
	TECH: Developed economies leading in the RM sector (Australia, Canada, USA, South Korea, Japan...)	

PROJECTS SUBMITTED BY FCT | NOVA

◆ 5 in Education

- **OpenYourMine** – A Master 2 education project dedicated to mining activities in Europe
Master Education - Budget: 1'209'449€ (322'539 € FCT-UNL)
- **IDS-FunMat-Inno-2**. International Doctoral School in Functional Materials & Innovation
PhD Education - Budget: 555'000€ (42'000 € FCT-UNL)
- **RM@Schools3.0**. Raw Materials Ambassadors at Schools 3.0
Wider Society Learning - Budget: 1'482'535€ (71'713 € FCT-UNL),
- **TravelEx1**. Underground resources travelling exhibition
Wider Society Learning – Budget:935121€ (76527€)
- **QUTE**. Dissemination of knowledge on abandoned QUarries: Teaming for Education
Wider Society Learning - Budget: 394'450€ (33000€ To FCT-UNL)

PROJECTS SUBMITTED BY FCT | NOVA

◆ 4 in Up-Scaling

- **SiMPLEX.** Standard Methods for Portable X-ray fluorescence in mineral
Up-scaling projects - Budget: 1'236'109€ (259'443€ FCT-UNL)
- **SeisRockWatcher.** Passive seismic 3D monitoring technology of rock mass
deformation
Up-scaling projects - Budget: 2'221'919€ (205'128€ FCT-UNL)
- **SUPERSMART.** Scale-Up of Printed Electronics Recyclable SMART materials
Up-scaling projects- Budget: 4'992'801€ (280'052€ FCT-UNL)
- **PHOS-FORCE.** Market ready technologies for P-recovery from municipal wastewater
Up-scaling projects –Budget: 2 031 340€ (187 275€ FCT-UNL)

◆ 1 in RIS – Regional Innovation Schemes

- **raPHOSafe.** Classification and Sorting of Radium-rich Phosphogypsum Tailings
Regional Innovation Schemes - Budget: 247'425€ (17'500 € FCT-UNL)

KIC – RawMaterials EVENTS & MEETINGS :

2016

- ✓ *31Jan-2Feb Brussels, (PROMETIA), J. Kullberg, J. Almeida + A. Ribeiro*
- ✓ 29 March, Lisbon, (EIT Raw Materials Meeting with FCT Dean), A. Ribeiro, J.C. Kullberg, M.J. Romão, N. Ponte, R. Martins
- ✓ 26-27 April, Lyon, (KIC - Steering Committee of CLC Centre+ Workshop), FCT Dean, R. Martins, J. Kullberg
- ✓ 8-9 September, Lisbon, (FCT-UNL, Raw Materials Steering Committee) – all members
- ✓ 4- 5 October, Berlin, (KIC's Lifelong Learning Workshop), J.P. Veiga; J.C. Kullberg; S. Barreiros, A. Ribeiro
- ✓ *26-28 October, Burgos, (PROMETIA), J. Kullberg A. Ribeiro*
- ✓ 13-15 November, Berlin, (General Assembly KIC RM), J. Kullberg, S. Barreiros, A. Ribeiro, J. Almeida, J.P. Veiga
- ✓ 29 Nov-3 Dec, Brussels, (General Assembly EIT RM), J. Kullberg, A. Ribeiro
- ✓ *13-17 December, Berlin, (PROMETIA), J. Kullberg, A. Ribeiro*

2017

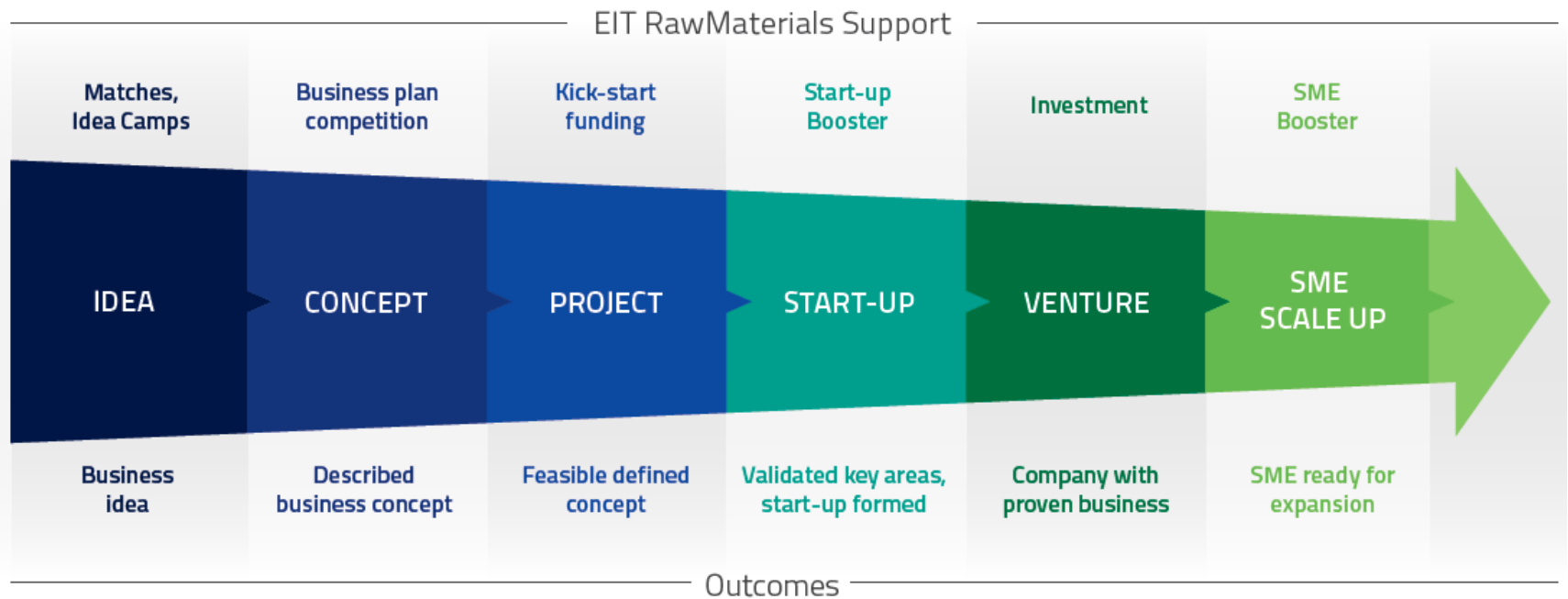
- ✓ 9 January , Caparica, (Preparation of the IDS-FunMat INNO Spring School at Lisbon -FCT/UNL) – all members
- ✓ 16-17 January, Metz, (KIC RawMaterials Steering Committee), R. Martins
- ✓ 6 February, Frankfurt, (EIT RawMaterials), R. Martins
- ✓ 14-15 February, Grenoble, (Workshop Supermat), J.P.Veiga
- ✓ 19-20 April, Frankfurt, (KIC - RawMaterials, Lighthouse Projects KIC RM) J.C. Kullberg (in representation of CLC Centre for Exploration)
- ✓ 23-29 April the IDS-FunMat INNO Spring School at FCT/UNL – all members involved
- ✓ 2 May, Porto, (KIC-AVM Portuguese Core Group Meeting), R. Martins
- ✓ 15-17 May, Berlin, KIC (Lighthouse Projects KIC RM), J.C. Kullberg (in representation of CLC Centre for Exploration)
- ✓ 22 May, Berlin, (General Assembly Meeting KIC Raw Materials), J.P.Veiga
- 25-26 June, Berlin, KIC (Lighthouse Projects KIC RM) J.C. Kullberg (in representation of CLC Centre for Exploration)
- 28 June, Nancy, (Steering Committee Meeting of Central CLC), J.P. Veiga
- 28-29 August, Berlin, KIC (Lighthouse Projects KIC RM) J.C. Kullberg (in representation of CLC Centre for Exploration)
- 3-5 October, Berlin, (Education Board), S. Barreiros, J.P. Veiga

INTERNATIONALISATION & RIS PROJECTS

- **Consortium:** at least 3 Core / Associate partners
from 2 different CLC or 2 different countries
with a mix of industrials and/or RTO and/or academics
- **Budget:** KAVA = 100% of direct cost
co-funding encouraged, budget smaller than 200k€
- **Size and number of projects to be granted:**
5 internationalisation projects
5-10 Research & Information Scheme Projects

BUSINESS CREATION

- Yearly Business Idea Competition
- Yearly Start-up Challenge
- Match-making events



BUSINESS IDEA COMPETITION (BIC)

- **General:** yearly activity in 2 rounds
- **Scope:** new solutions and approaches can be proposed on elemental, material, process, product, system and service level
- Winners receive a prize and are involved in various events organized by EIT RawMaterials, and have opportunity to network with the world largest community in the raw materials sector
- **Closing date:** 31st of May




BUSINESS IDEA COMPETITION

Deadline: 31 May 2017
Prizes: 112.500 Euro

Apply here: eitrawmaterials.eu/business-idea-competition/2017/



 EIT RawMaterials is supported by the EIT,
a body of the European Union

CONTACT PERSONS AT CLC LEVEL



Key Account Manager

didier.zimmermann@eitrawmaterials.eu

- ✓ Single contact to partners for all matters relating to partnership
- ✓ Works closely with HQ in the processing of partnership and membership
- ✓ Keeps a fluid communication with the partner
- ✓ Communicates and reminds partners of EIT RM events and other relevant news



Project Officers

julien.frey@eitrawmaterials.eu

serge.monturet@eitrawmaterials.eu

- ✓ Main contact for the project coordinator and consortium construction
- ✓ Reviews Bluebook data periodically to ensure consistency and correctness
- ✓ Guides project coordinator on correct reporting, budgetting in Bluebook
- ✓ Keeps fluid communication with the project coordinator
- ✓ Communicates, reminds, and helps project coordinator meet deadlines and processes



Business Developer Meeting,
Luleå – Sweden, August 26th 2015





THANK YOU