International activities for clustering REMIX-MIREU

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• Castilla y León owns minerals resources richness that need promotion, and the implementation of new advancing processing and extracting technologies.

• Castilla y León owns a strong industry in key sectors like: capital goods & manufacturing, energy production, automotive and aeronautics.

• There is a need to valorize the raw materials activity by boosting innovation across the full value chain, from resources to product in a circular economy approach.

• In line with its RIS3, ICE and DG Industry identify a gap in the RIS3. There is a need of a Technological Center to improve the performance, technology and valorize the endogenous resources of the region, and there is an associated need on a specialized Innovation Tech. Center in advanced materials for the industry.
International industrial network

Key international positioning

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ICAMCyL co-leads an S3 (under industrial modernization) alliance in materials for energy

For Horizon 2020, a PPP on advanced energy materials is being proposed to EU

- In order to implement the SET plan (Strategic Energy Technology) materials roadmap, 30 organizations (15 leading materials companies) from 10 different EU countries came together to found EMIRI association

- EMIRI (Energy Materials Industrial Research Initiative) will provide guidance, focus, direction and commitment to achieve commercially successful development of value added energy materials for energy applications

- EMIRI will enable actors from public & private sectors to work more effectively at EU scale with resources beyond critical mass to reach excellence in research & innovation on energy materials

EMIRI – Energy Materials Industrial Research Initiative
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EMIRI in a nutshell – Meeting October 21st LETIAT
TOWARDS A EU (TRANS-REGIONAL) INTERNATIONAL COMPETENCE CENTER FOR THE INDUSTRY WORKING UNDER EXTREME CONDITIONS

Energy production
Aviation; Aerospace
Manufacturing
Automotive
Energy production
**KEY LINES, SITES & INFRASTRUCTURE**

**ICAMCYL**
Centro internacional de materiales avanzados y materias primas

**Raw Materials processing pilots**

**MINING ZONE**

**Advanced Materials synthesis laboratory (nano-alloys/ODS, ceramics, composites)**

**LEON – city**

**Additive manufacturing, 3D metal printing. Standardization Materials service**

**MINING ZONE**

Implanting hydrometallurgy small scale pilot plant for raw materials recovery and processing from mining activity

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Regional Clusters for Innovation

Regional Clusters consist of co-located and linked:
- Regional Authorities
- Academia and RTD Institutes
- Industries
- Financial Organizations
- Institutions for Collaboration
- Competence Centers

Regional Clusters are sources of innovation and wealth since they:
- facilitate the development of common visions and thus contribute to achievement of common goals
- enhance the competitiveness of participating firms through the rapid diffusion of knowledge and expertise
- facilitate innovations and bring them to market maturity
- represent an efficient instrument for the concentration of resources
- act as a bridge-head in promoting interregional collaboration and research-industry networking

COMPETENCE CENTER IN SYNERGY WITH REGIONAL CLUSTERS
Innovation, Technology Transfer and Knowledge-based Business

- regional hub for the valorization of research results
- promotion of innovation and technology transfer
- high level training and education on managerial and entrepreneurial issues
- facilitated access to regional, national and international funds for RTD and innovation development
- in-house technical, financial, business and marketing consultancy
- management of national and international joint R&D programs
- promotion of investments in technology-oriented business
- promotion of technology clusters and of national and international partenariats and business networks
- common image promotion and communication
- offering key innovation and technical services to local industry

Unique model as COMPETENCE CENTER in synchrony with Castilla y Leon regional competitiveness environment
ELEMENTS TO PROGRESS AND FOSTER INNOVATION IN MINING SECTOR AS A REGIONAL APPROACH

- Regional Innovation ecosystems as pillars of Industrial development
- Reinforce Human Capital, Skills and Cluster policy for Industrial development
- Focus on Industrial uptake of Enabling Technologies, invest in pilot plants & demonstrators
- Use the “challenge approach” to combine industrial development and sustainability
Actions and vehicles to promote mining & processing under a regional strategy

- Plan structural investment founds accordingly. Develop an ad-hoc strategy well associated to a reliable policy.
- Invest in R+D+I infrastructures for excellence and singular capacities. Promote competence centers.
- Promotion of Companies’ that invest seriously on R&i. Create and promote industrial clusters in the thematic.
- Development of links and synergies between companies, technological centers and Universities, especially relating to the investment on new products and services development.
- Open innovation through smart specialization and support to mining and processing pilot lines
- Valorization: from mining raw materials towards advanced manufacturing and components.
- Impulse and promotion of R&I activities by enterprises and support the creation and consolidation of innovative enterprises: Grants for companies to develop R&D projects for the improvement or creation of new processes or products.
- Catalysis of ad-hoc + smart technologies (applied to the needs of the mining sites within the territory)
- Certification strategy, linked to environmental plan -> sustainability -> Social License to Operate.
- Work for social acceptance:
  - Development of infrastructure projects and restoration projects of degraded zones.
  - Training for unemployed people formerly mining workers to prepare them for new jobs.
  - Entrepreneurial Dynamization. Looking for entrepreneurial alternatives for formerly mining lands.
• To **review RIS3 Smart Specialization Strategies of the MIREU regions concerning their assets in economic aid programmes**, measures that foster market uptake and replication of innovative solutions, and strategies focusing on economic transition.

• To identify challenges in demographic change and geographic location

• To define a roadmap of actions targeting the creation of new business opportunities and economic growth and linking this with the EU’s Strategy on Raw Materials

• To identify compatible partner Regions by matching regional and national economic development programmes

• **Carry out a “regional mirroring” strategy across MIREU regions with the aim of informing public authority decision makers and regional strategic plans.**

• To encourage regions without RIS3 and/or similar strategies to use best practices from MIREU in future policy making.
Review of MIREU-(REMIX) Regions’ RIS3 strategies related to their assets in economic aid programmes and measures that foster market uptake and encourage replication of innovative solutions.

INTERREGIONAL ACTIONS:

Identify complementarities between the different RIS3 strategies, in order to group them and with the final goal of creating a SWOT model tailored to each region. This model will highlight both strengths and gaps, not only for RIS3 strategies but also with respect to circular economy and resource efficiency policies.

Conduct a SWOT analysis on Smart Specialization Strategies and benchmarking of the regions involved.

Specific guidance documents for the involved regions will be suggested in order to improve their RIS3 in accordance with MIREU’s findings.

Identification of societal challenges such as demographic change and geographic location.
(1) COMPEDIA & DATABASE OF REGIONS AND THEIR S3 PLANS FOR THE SPECIFIC TARGETS OF MIREU

(2) LIST OF REGIONS WITH SIMILARITIES AND OPPORTUNITIES

(3) MODEL TEMPLATE OF IDEAL RIS3 including lessons learnt and existing frameworks, roadmaps and activities, that can potentially be transferred between regions, while simultaneously promoting the use of other vehicles to further opportunities and economic growth in the context of raw materials.

Basis for a MIRRORING ACTION

Inputs from regions - stakeholders

Identification of stakeholders and key actors
SUGGESTED MIRRORING ACTION

**Vehicles:**
- Constitution of High-level group
- Group of stakeholders/actors
- S3 platform sustainable mining
- ERRIN, EURADA

A pilot plan of actions, implemented in a mirror-core group of regions

This will constitute the proof-of-concept for a possible future large-scale demonstrator and the creation of a common EU roadmap for EU mining and metallurgy regions.
THANKS FOR YOUR ATTENTION

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