



REMIX

Interreg Europe



European Union
European Regional
Development Fund

National Technical University of Athens – NTUA



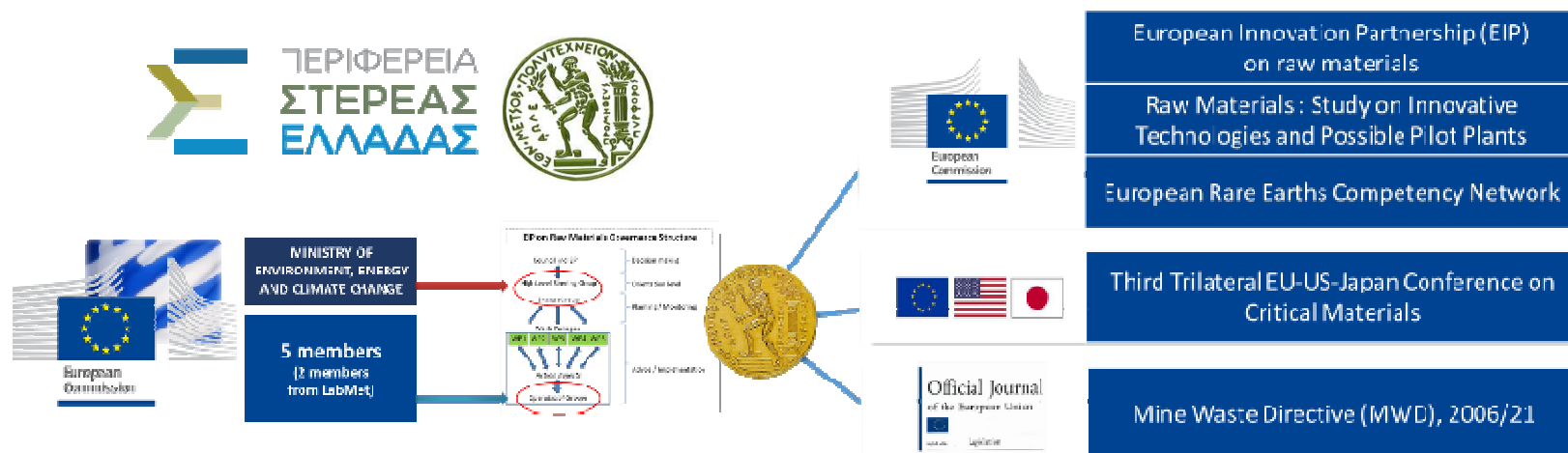
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Kick Off –meeting, Kemi, Finland 4-6.4.2017

National Technical University of Athens - NTUA



- ✓ NTUA is the only higher education and research body for Mining in Greece performs as a hub over the whole RM value chain connecting academia-research-industry of Greek mining sector.
- ✓ It has a continuous collaboration with the Ministry of Environment, Energy and Climate Change and of the Regions involved in the Raw Materials sector. The relevant one for this project is Region of Sterea Ellada.
- ✓ Active in various projects and networks towards the enhancement of the National and Regional development of the RM Sector.



Region of Sterea Ellada



- Area of 15.549 km²
- 2nd largest in Greece in total area
- Permanent population: 547.390 inhabitants, (5.07% of the country)



Strengths

- Great geographic position (proximity to Athens)
- Rich agricultural land and production expertise in agriculture and livestock production
- Strong industrial sector - first place in nickel and aluminium production
- Great concentration in fisheries and aquaculture
- Important cultural resources (Delfi, Thermopyles)
- Sound infrastructure of national transport networks and RES capacity (solar, wind, hydro)
- Potential in development of synergies with agriculture and livestock production
- Development of environmental technologies and energy saving technologies

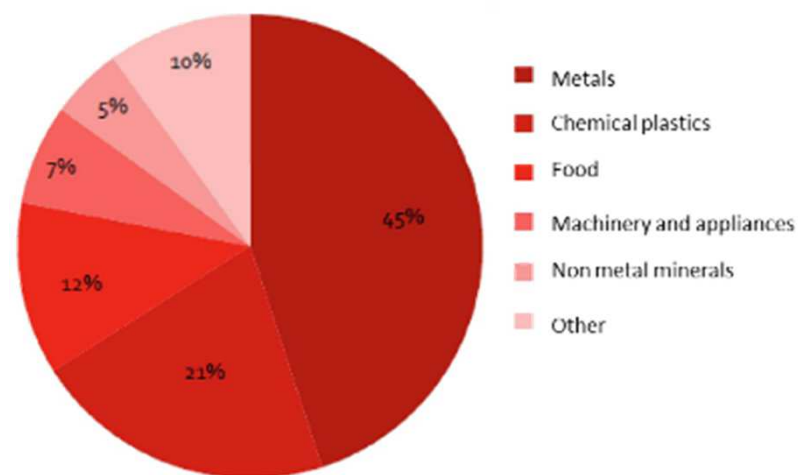


Region of Sterea Ellada

Gross Value Added by Industry 2013

Industry/ Sector	Gross Value Added (amount in million euro)	% in total GVA of the Region
Agriculture, Forestry and Fishing	561	7.6
Mining, energy, water supply and waste management	584	7.9
Manufacturing	1856	25.2
Construction	213	2.9
Trade, transportation and storage, accommodation and food service activities	1449	19.6
Information and Communication	75	1.0
Financial and Insurance activities	158	2.2
Real Estate activities	986	13.4
Scientific, administrative and support service activities	128	1.7
Public administration, education, health and social work activities	1130	15.3
Arts, recreation and other service activities	234	3.2
Total	7375	100

Key exporting goods



Region of Sterea Ellada

Bauxite – Alumina - Aluminum

World's top 10 bauxite deposits (By country)



Source: USGS

Greece is included in the **world's top 10 countries** with the biggest bauxite reserves, **estimated to 600 Mt**



THE LARGEST VERTICALLY INTEGRATED ALUMINIUM & ALUMINA PRODUCER IN E.U.



Bauxite Mines

- Second largest bauxite producer in Europe with ~700 ktpa of production capacity.
- Long life of mine underpinned by 11mt of resources.
- Long-term off-take agreement with third parties in Greece and abroad.



Aluminium Smelter

- ~182 ktpa of production capacity
- Established customer base
- Long-term off-take agreements provide security of sales



Alumina Refinery

- Amongst largest standalone smelters globally
- Producer of 17% of total European Alumina output ~820 ktpa
- Sufficient capacity to cover internal needs for the smelter and to export ~500 ktpa
- Long-term off-take agreement with global and regional players



334 MW CHP

- On-site power and steam production offering purchasing flexibility – Secured Electricity Supply
- Internal Steam production using Natural Gas



Port Facilities

- On-site port facilities for incoming raw materials and outgoing finished products, minimising logistical costs.

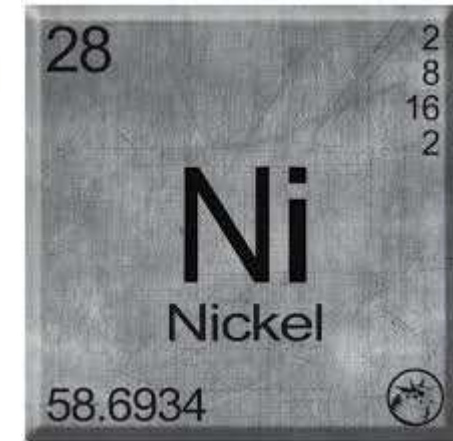
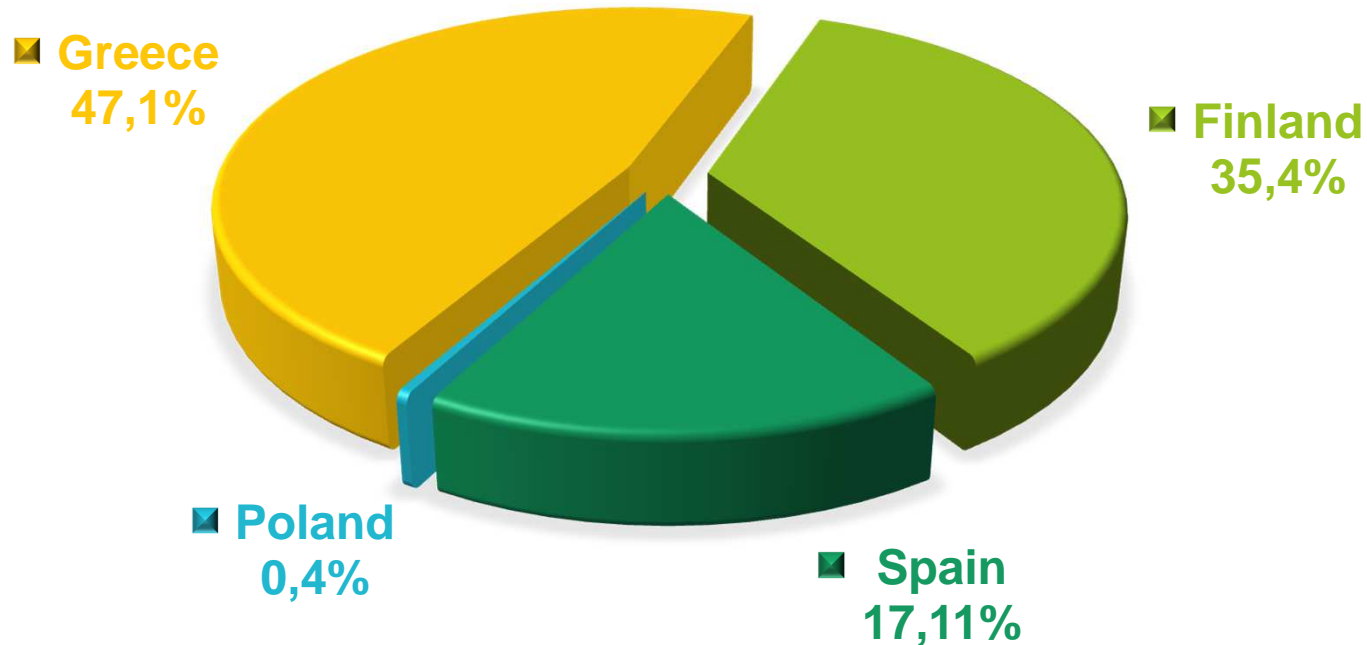
Primary Aluminium
Annual Capacity



Refined Alumina
Annual Capacity



Region of Sterea Ellada



EU27 produced 2.22% of world mine nickel (2010)

Greece is ranked (2010)

1st in EU27 with 47.1%

12th in the world with 1%

Reserves in Nickel content: 490 ktons

Region of Sterea Ellada



- G.M.M.S.A. LARCO is today the only Ferronickel producer in European Union from local deposits, **covering 5 % of European market annual demand in nickel**
- The **annual production** in the three nickel mines (Euboea, Agios Ioannis, Kastoria) **exceeds two million tones**
- Larymna smelter: an **annual production of 19.000 tones of Ferro Nickel Alloy**
- Among the company's customers are the greatest stainless steel producers of western Europe
- GMMASA LARCO is a 100% exporting company and is considered among the most reliable producers in the global nickel market

NTUA in REMIX



The policy instrument we want to improve is the Regional Operational Programme of Sterea Ellada (ROP) 2014-2020 mainly on Thematic Objectives (TO) 01: Fostering of Research, Development and Innovation and TO 04: Support the transition to a low-carbon economy

Through REMIX work we want to

- Improve governance process towards stronger and more sustainable mining sector.
- Evaluate the already available practices and propose new solutions based on gained expertise from other Regions
- Enhance regional R&D&I capacity and innovation support for mining
- Engage regional mining cluster for the improvement of practices towards more sustainable regional industry and processes.
- Create an active communication with the regional stakeholder group, regional planning and decision making actors.

NTUA communication objective

- ✓ Engage stakeholder group as a critical mass to apply REMIX objectives in Region of Sterea Ellada
- ✓ Create an open to inclusion forum with key national and regional stakeholders from the triangle of R&D&I institutions-industry-public authorities and perform open discussions to develop Regional Strategy for mining sector
- ✓ Stakeholders' active involvement in REMIX events and activities
- ✓ Stakeholder members will be involved in the peer review process
- ✓ Disseminate REMIX in NTUA various communication channels (H2020 projects, EIT RawMaterials, KIC projects etc.)



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Thank you!

Questions welcome



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