Portuguese priorities for the raw materials sector and the national engagement within the European Innovation Partnership

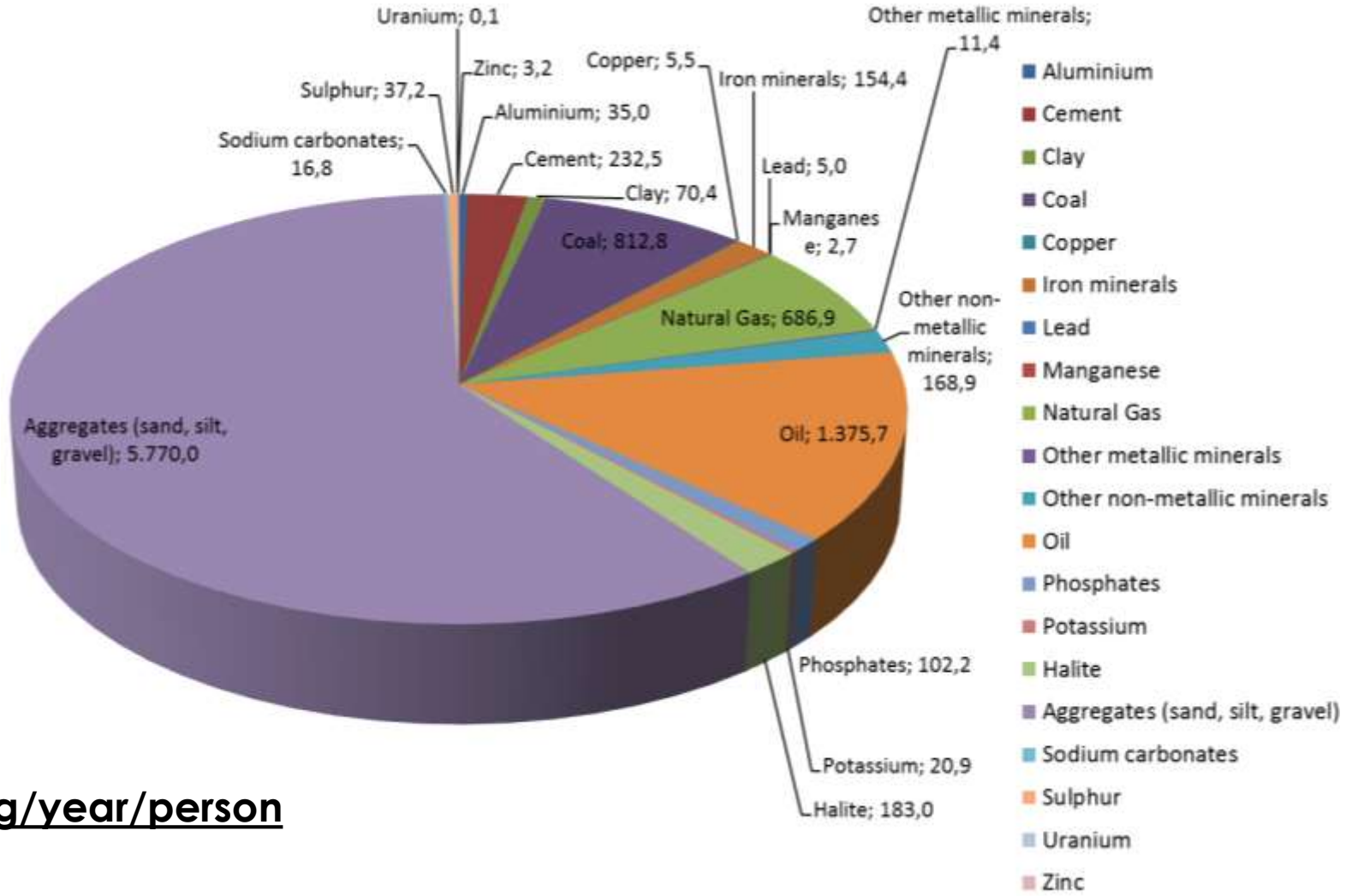
Paula Dinis

Direcção Geral de Energia e Geologia

HORIZONTE 2020 INFODAY MATÉRIAS-PRIMAS

24th November 2015, Lisboa, Ordem dos Engenheiros

Mineral resources consumption on EU27, 2011 data (Kg/year/person)

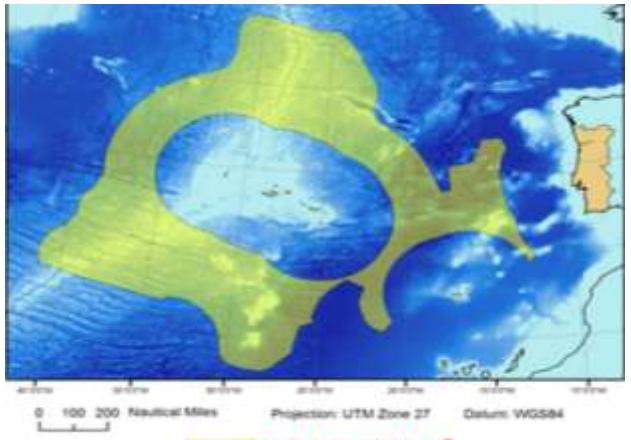


About <u>9.700 Kg/year/person</u>

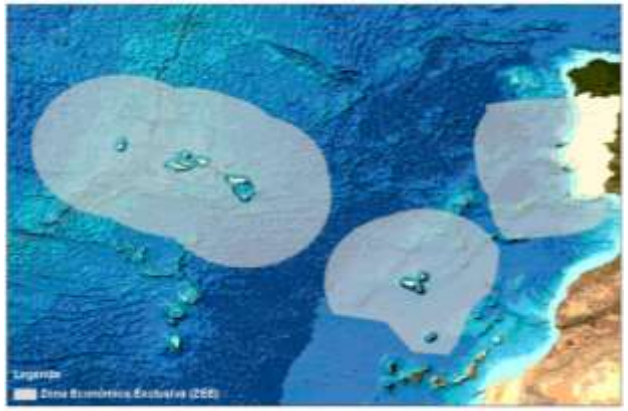
http://ec.europa.eu/eurostat/web/environmental-data-centre-on-natural-resources/natural-resources/raw-materials/mineral-resources-non-metallic
http://ec.europa.eu/eurostat/web/environmental-data-centre-on-natural-resources/natural-resources/raw-materials/metal-ores
https://www.bgs.ac.uk/mineralsuk/mineralsYou/howuse.html
http://www.min-pan.krakow.pl/Wydawnictwa/GSM2443/koziol-kawalec-kabzinski.pdf
http://www.eia.gov/beta/international/

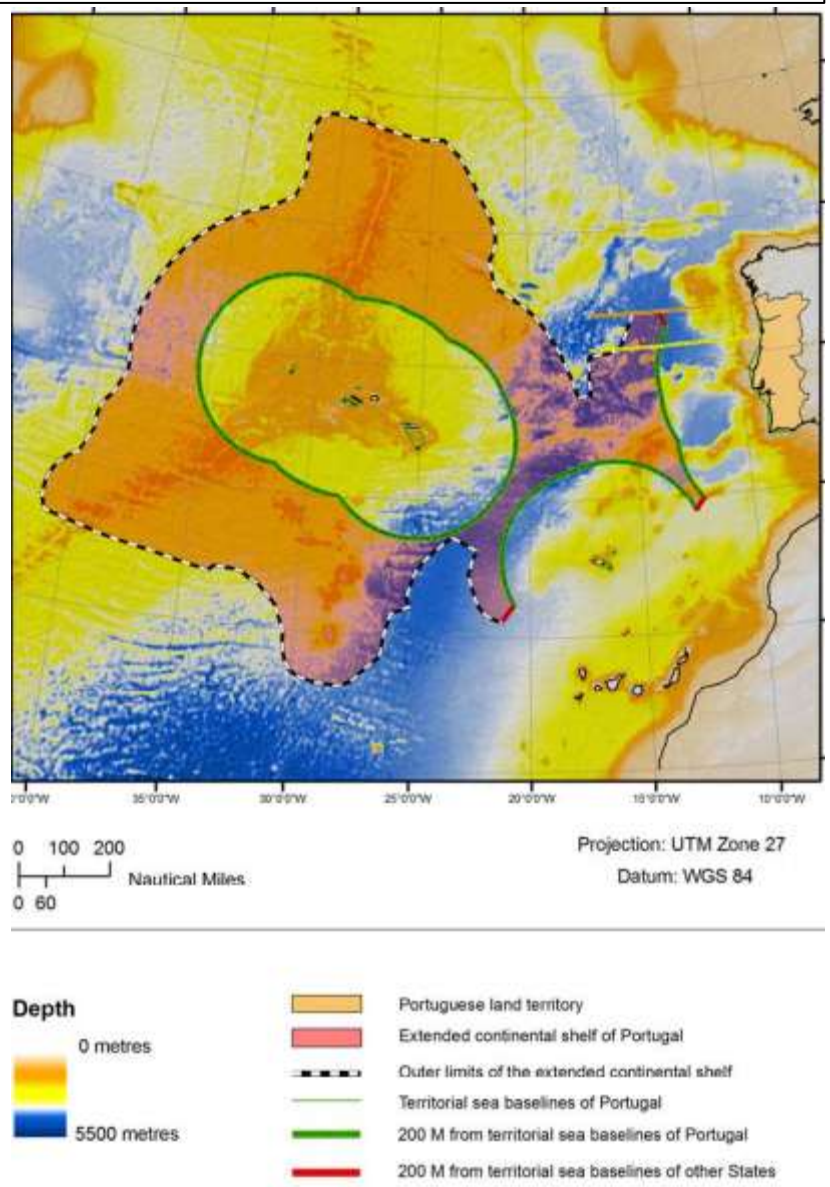
Maritime Area: 3.870.000 km2

Terrestrial Area: 92.000 km2



+

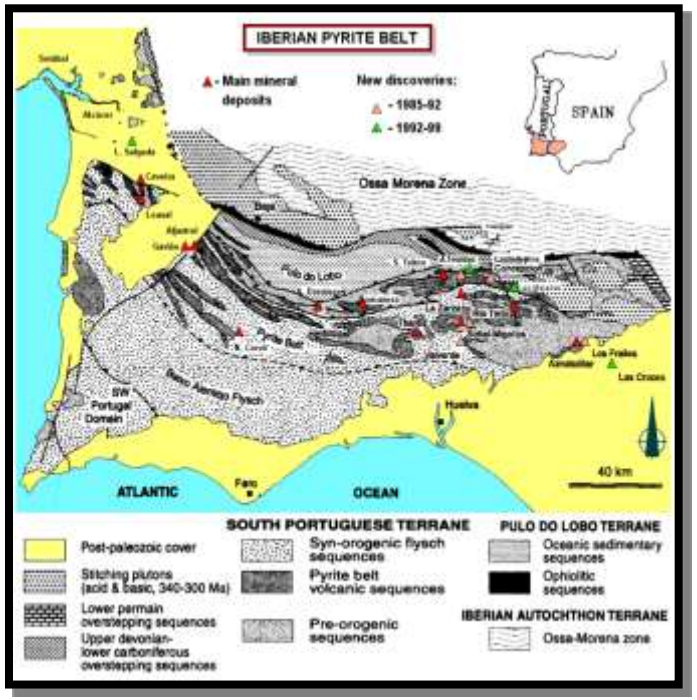




Extracted from the original (https://www.cia.gov/library/publications/the-world-factbook/maps/po_largelocator_template.html)

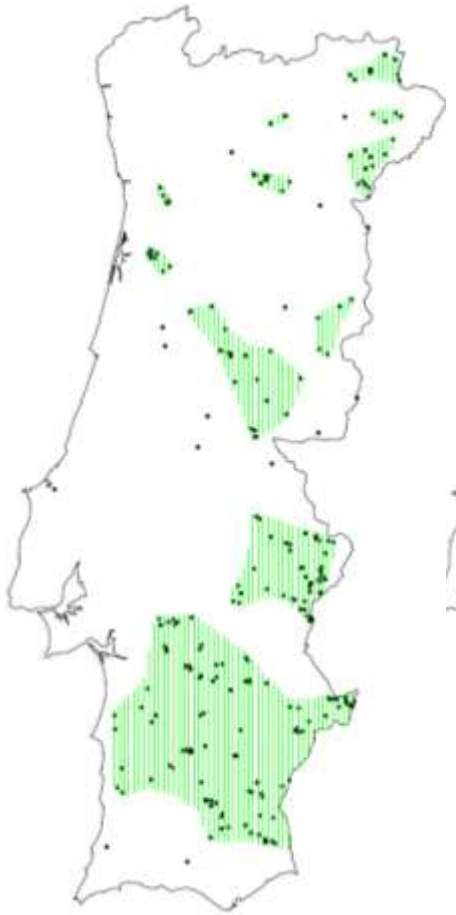
Metallic Minerals deposits

- World class: Cu, Zn, U, Fe, W, Sn
- Critical Minerals: W, Sb, In, Nb, Ta, Be, Ge, Li
- Other relevant deposits: Au, Ag, Mn, …

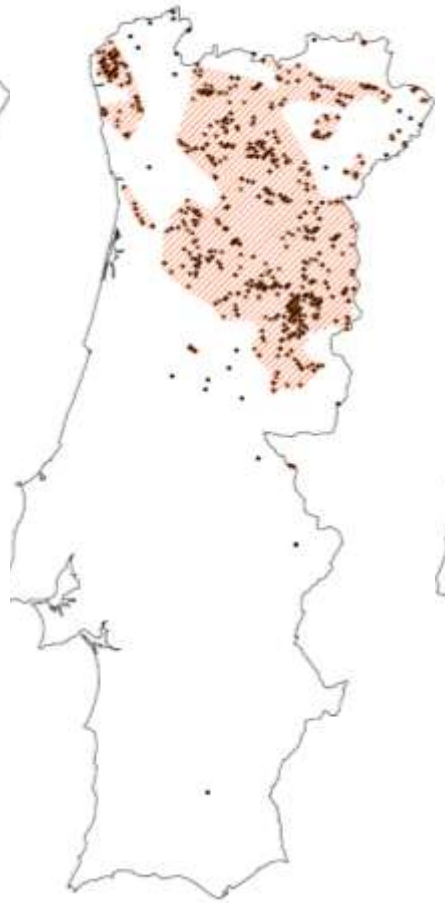


Iberian Pyrite Belt is one of the largest VMS provinces in the world

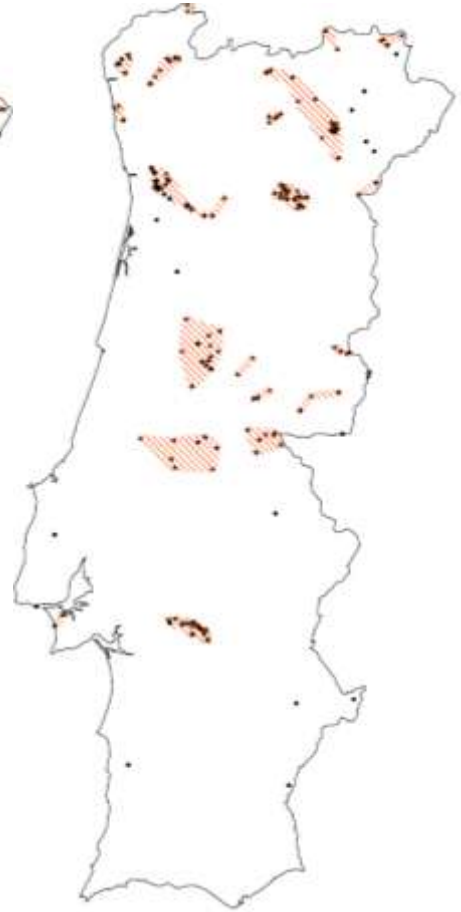
Pyrite & base metals



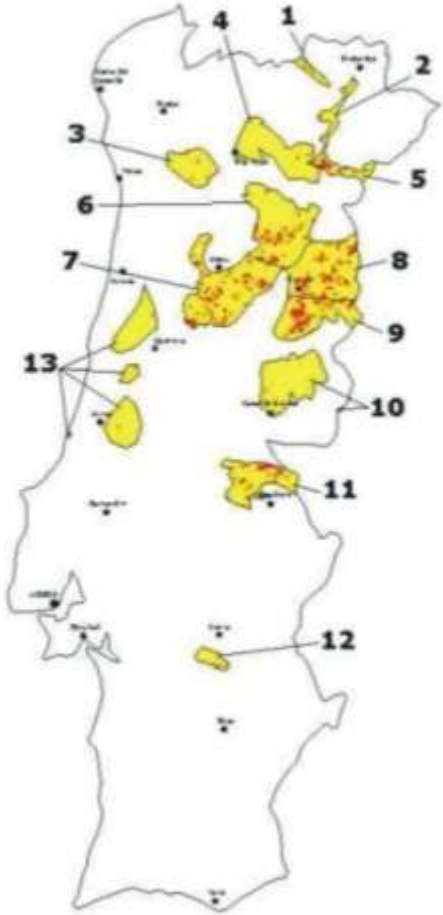
W, Sn



Au

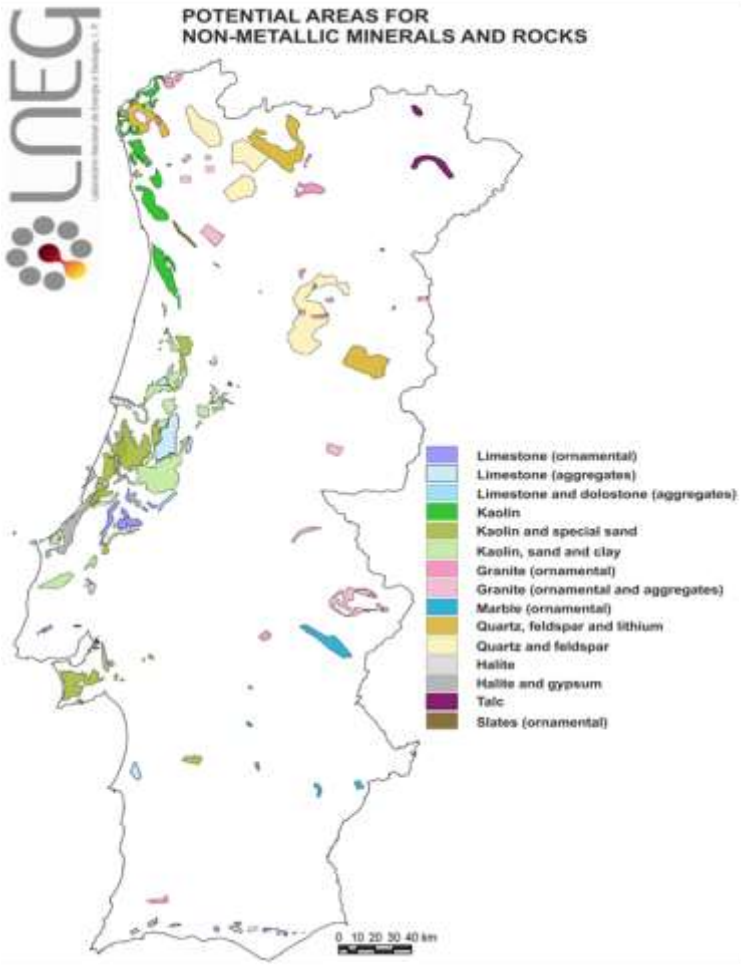


U



Non-Metallic Minerals deposits

- World class: marbles, limestones.
- Other relevant deposits: kaolin, quartz, feldspar, special clays, special sands, halite, gypsum, talc, granites, slates, aggregates,…

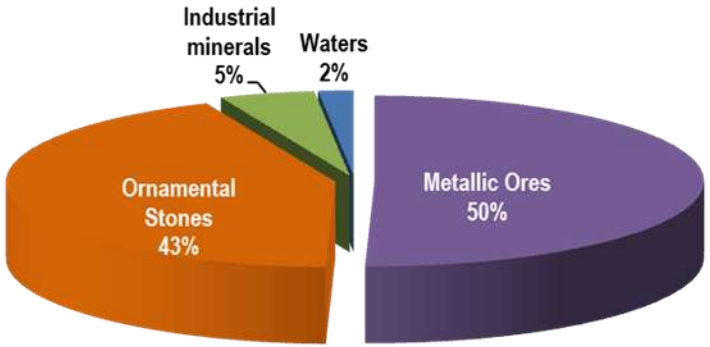


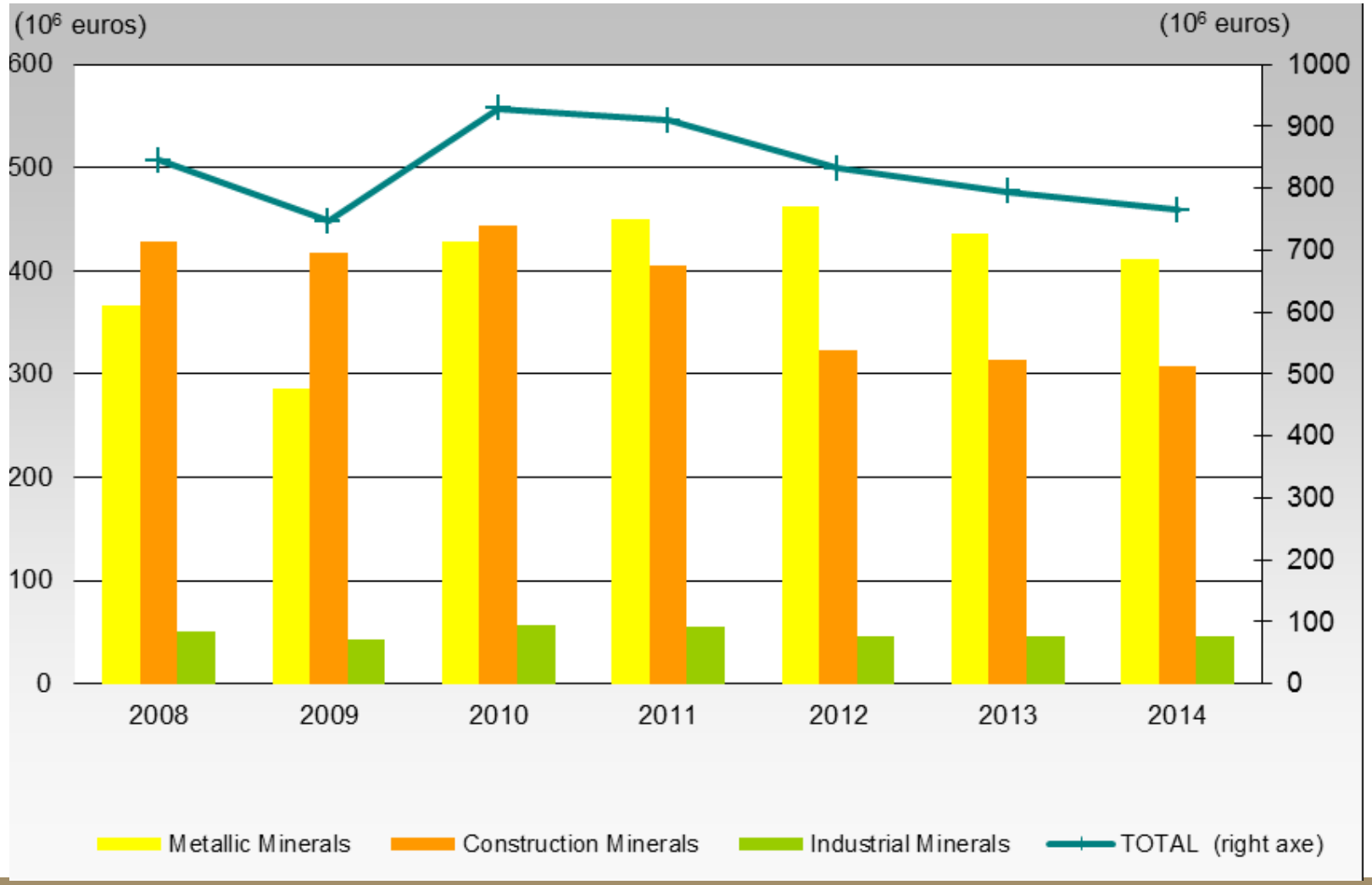
Main production centers of ornamental stones

Marbles production region - Alentejo

Evolution of mineral resources production in Portugal(2008/2014)

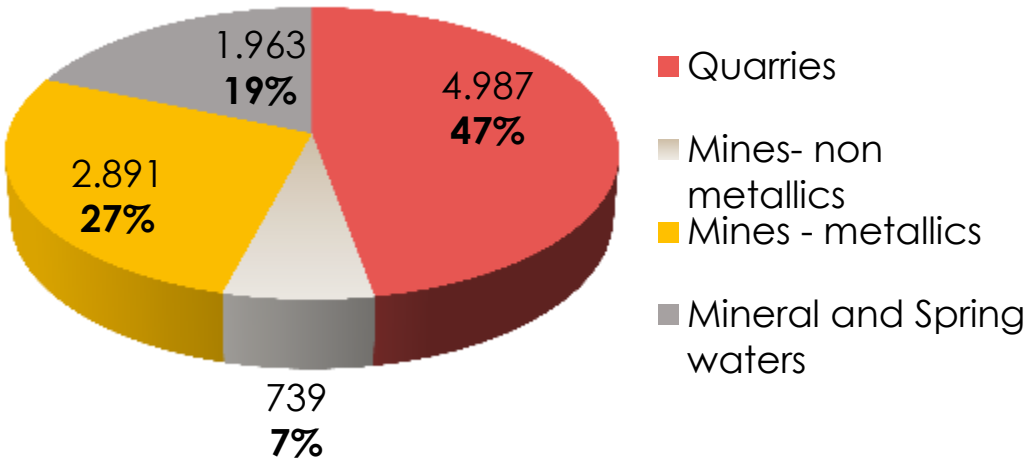
About 800 Million €/year



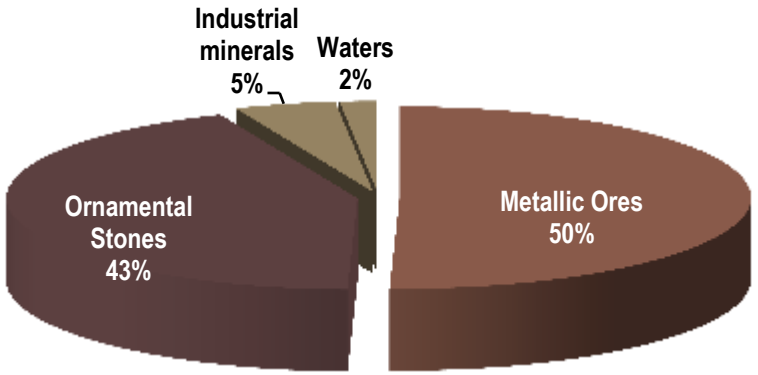


Some figures…

Direct employment = 10.580 workers



Exports = About 868 M€/year



Geological resources represents 0,57% GDP

Key steps since 2008…

EU:

- 2008 – **Raw Materials Initiative.**
- 2012 – **European Inovation Partnership on Raw Materials (EIP RM)**.
- 2013 – **Strategic Implementation Plan of the EIP RM (SIP).**
- 2014 – **Publication of the 25 best practice cases on minerals policy and legal framework, information framework, land use planning and permitting (***Report of the Ad Hoc Working Group on Exchange of best practices on minerals policy and legal framework, information framework, land-use planning and permitting* **)**

http://ec.europa.eu/growth/tools-databases/newsroom/cf/itemdetail.cfm?item_id=7608

3 best practice cases from Portugal

1.National Strategy for Geological Resources- Mineral Resources
2. Increased sustainability from the use of royalties
3. Increase the Capacity and Effectiveness of Land Use Planning

PT:

- 2011 – Designation of the portuguese representative on the **Raw Materials Supply Group**.
- 2012 – Launch of the **National Strategy on Geological Resources – Mineral Resources**.
  - Designation of the portuguese representative on the **Sherpa Group** (Carlos Caxaria as deputy director of DGEG).
  - Designation of representatives for the **Operacional Groups of EIP (WP1…WP5**).
- 2015 – Designation of the new portuguese representative on the **Sherpa Group** (Cristina Lourenço as deputy director of DGEG).

Recent update on legislation concerning geological resources:

RCM 78/2012 – National Strategy for Geological Resources

Law 54/2015 (22th june) Legal Framework of Geological Resources

2007 **2012** **2014** **2015**

Law 58/2007 – National Program for Land Use Planning Policy (PNPOT)

Law 31/2014 – General principles for land use management

DL 80/2015 (14th may) – Legal Framework of Land Use Management Tools

DR 15/2015 (19th august) – Establishes the criteria for the soil classification

Enforces the importance of geological resources and states the compatibility with agriculture and forest land uses.

Priorities…

To promote a mining sector that is:

a) **Dynamic**, ensuring the uptake and holding of investment and proper exploitation of the resources;

b) **Sustainable** at economic, social, environmental and territorial levels;

c) **Capable to promote the growth** of the national economy, by ensuring supply of essential raw materials and reinforces its contribution to the national Gross Domestic Product and exports growth;

d) **Capable to promote regional development**, ensuring the economic revenues and employment for local people and development of the local communities.

Stakeholders – Portuguese network

WHO?

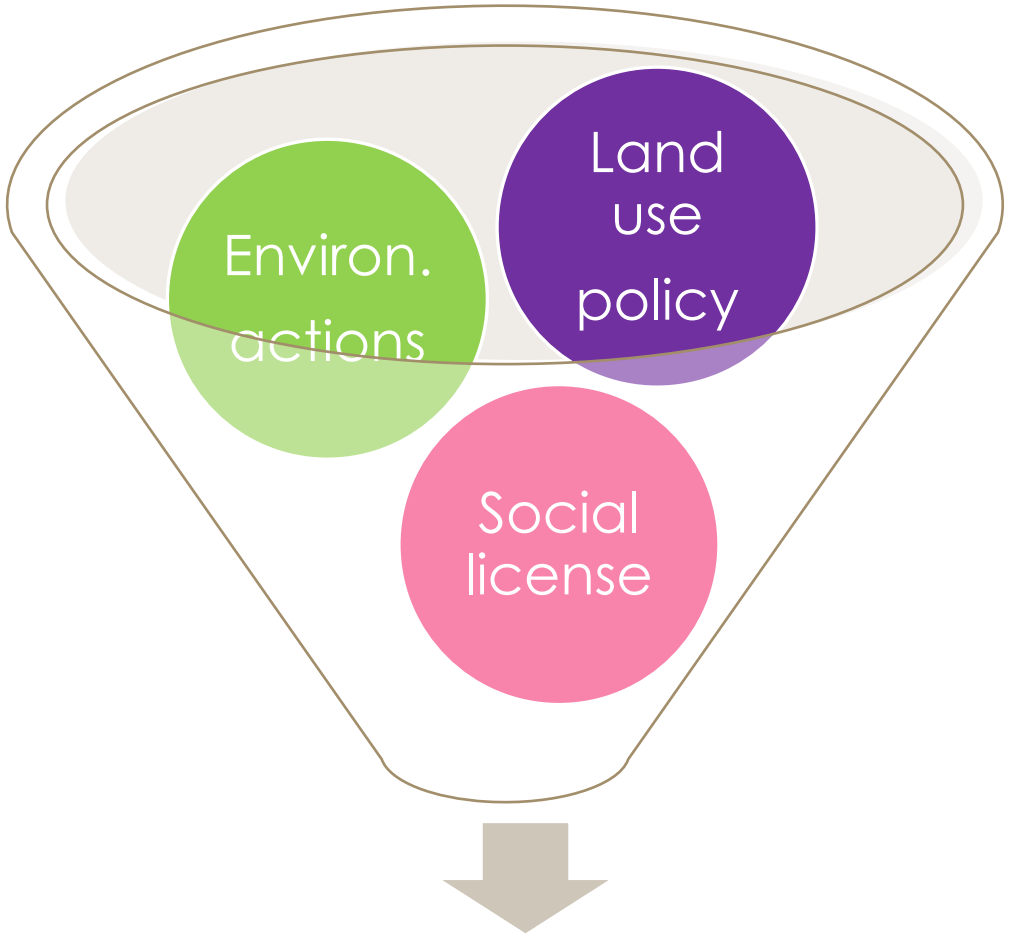
- **Portuguese Partnership on Geological resources**
- **PT Group**

Objectives?

- **To organize, plan, analyse, discuss…**
- **To prepare strategic portuguese position regarding the geological resources policy**

http://www.thinkstockphotos.com.pt/image/stock-illustration-speech-bubbles-and-social-network-icons/155335995

DGEG Key actions towards sustainability



Responsible mining operations

DGEG Key actions on social responsability

Social license

Objective:

- Increase corporate social responsibility by encouraging actions to support local communities

What is being done:

- Since 2012 DGEG allows the allocation of part of the money coming from mining companies (royalties) in regions where mining occurs to improve life quality and local programs.

- DGEG and mining companies are increasing public awareness, acceptance and trust on the mining sector.

- DGEG is encouraging companies to consider participation in the transparency initiatives and local support on communities.

Examples: **Somincor mining case** (Cu, Zn)
Medgold exploration case (Au)
Pedras Salgadas minearl water case (On crisis time, hydrogeological companies provide for free natural mineral water to the population (municipality), in order to ensure their basic needs. On a north municipality a company offers to their citizens monthly an amount of natural carbonated water (Pedras Salgadas).
Development of Hidromonitor application hardware and software, to monitor online/real time some water quality parameters of several holes of natural mineral water concessions (for bottling and SPA).

DGEG Key actions on land use policy

Land use policy

Objective:

- Safeguard of the existing geological resources.

What is being done:

- Participate on 3 levels of land use planning: national, regional and local (PDM's). At local level ensure that the areas where the known geological resources exist are **included in all cathegory of rural soil**.
- Foster a land use planning policy which clearly include mineral resources in harmonization with other uses of rural soil (recognize their parity with other natural resources), avoiding conflicts in the use of soil, and preventing uses that might compromise the current and future access to deposits and known mineral occurrences.
- Promote meetings, workshops and debates with stakeholders to **stress the importance and peculiarity of mineral resources**.

DGEG Key actions on environment

Environ. actions

Objective:

- Ensure that mining and quarrying companies include high standards sustainable rehabilitation in their projects

What is being done:

- DGEG is assessing environmental and rehabilitation mining projects, according to the law.
- The Government, through DGEG, allocates part of the money from taxes to the rehabilitation of ancient abandoned mines, which is being done by EDM (State owned company).
- DGEG is encouraging companies to consider participation in environmental projects at local scale in order to improve the overall environmental conditions of communities.

EIP RM - scope

- Launched on 2012 by the European Commission in order to promote innovation and face the main challenges on geological resources.

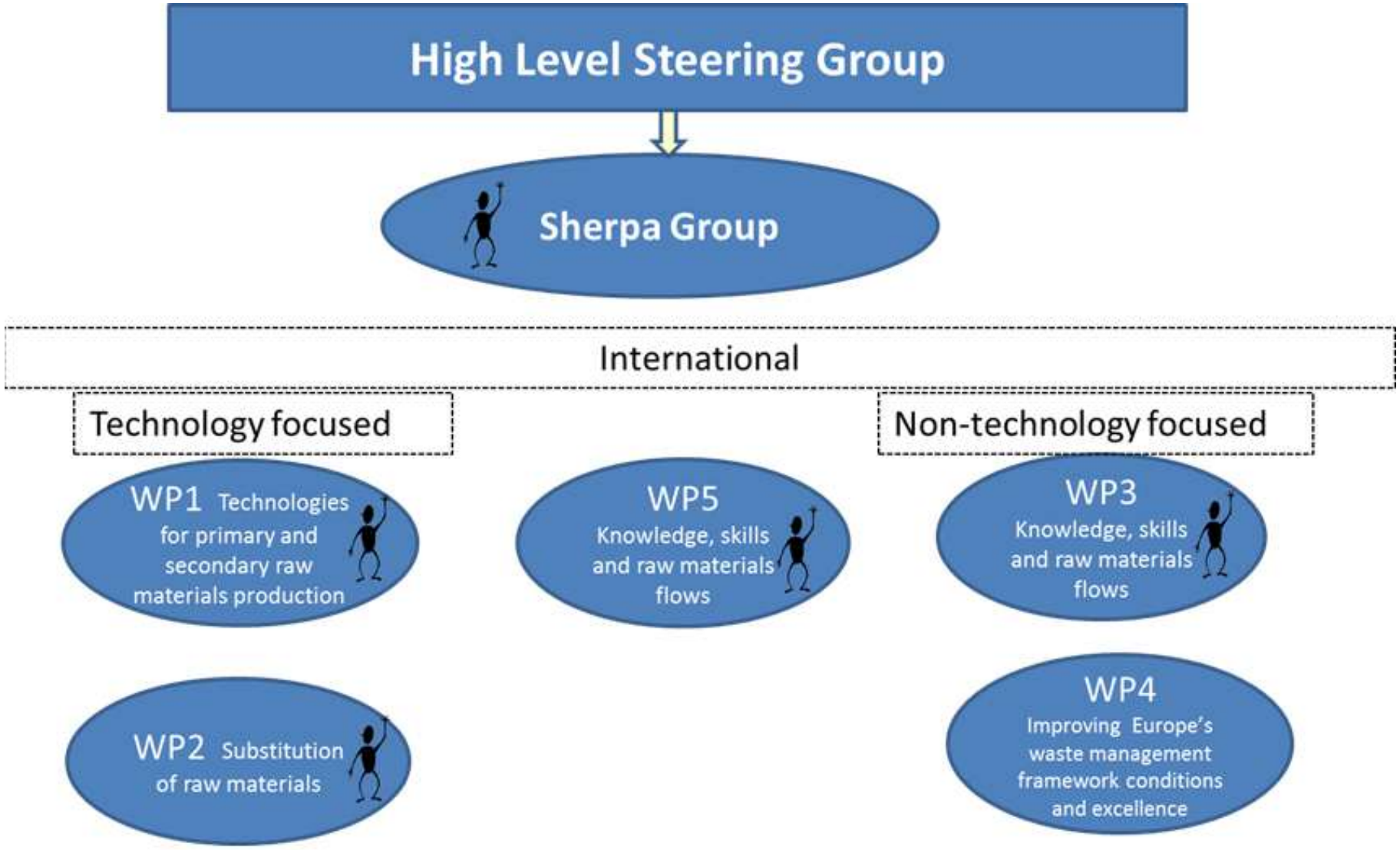
- DGEG and LNEG were actively involved in the preparation phase of the COM which launched the EIP RM, contributing to the concept and structure. These two entities also participated in the consultation process that preceded the launch of the COM (2012) 82.

- **The Strategic Implementation Plan (SIP)** is the EIP's action plan. It was endorsed by the EIP's High Level Steering Group on 25 September 2013.
  The Strategic Implementation Plan sets out the objectives, targets and actions to be reached or implemented by 2020.
  SIP consists of two parts:

  Part I - EIP objectives, targets & methodology; overall strategy;

  Part II - Priority Areas, Action Areas & Actions targeting sector-specific stakeholders & practitioners (24 action areas and 97 sector- specific targeting actions).

EIP – Main structure



Portuguese representatives - EU

- Sherpa Group – Drª Cristina Lourenço (deputy director DGEG)

- 4 Operational Groups:
  - WP1 – Profª Teresa Carvalho (IST)
  - WP2 – Prof. João Labrincha (Univ. Aveiro)
  - WP3 – Engª Licínia Gamito (DGEG)
  - WP5 - Dr. Luis Martins (Assimagra)

- Raw Materials Supply Group – Engª Paula Dinis (DGEG)

- Ah-hoc Working Group on Critical Raw Materials – Prof. António Mateus (FCUL)

EIP – Axis

TECHNOLOGY FOCUSSED

WP1 - Technologies for primary and secondary raw materials production

- Improving R&D&I coordination in the EU
- Exploration
- Innovative extraction of raw materials
- Processing and refining of raw materials
- Recycling of raw materials from products, buildings and infrastructure

WP2 - Substitution of raw materials

- Improving R&D&I coordination in the EU
- Materials for green energy technologies
- Materials for electronic devices
- Materials under extreme conditions
- Applications using materials in large quantities

NON TECHNOLOGY FOCUSSED

WP 3 - Knowledge, skills and raw materials flows

- EU Raw Materials Knowledge Base
- Possible EIT Knowledge and Innovation Community
- Optimised raw materials flows along value chains
- Minerals Policy Framework
- Access to Mineral Potential in the EU
- Public Awareness, Acceptance and Trust

WP 4 - Improving Europe's waste management framework conditions and excellence

- Product design for optimised use of (critical) raw materials and increased quality of recycling
- Optimised waste flows for increased recycling
- Prevention of illegal shipments of waste
- Optimised material recovery

INTERNATIONAL COOPERATION

WP 5 - International Cooperation Panel

- Technology
- Global Raw Materials Governance and Dialogues
- Health, Safety and Environment
- Skills, Education and Knowledge
- Investment activities

EIP – Why get involved?

- Be aware of European and international current agenda with impact on mineral resources;
- Follow matters under discussion and trend analysis;
- Opportunity to bring into discussion topics/issues relevant to Portugal;
- Participate and influence positions which are favorable to Portugal;
- Present the mining potential and conditions to operate in Portugal, which may lead to the capture of investment for the prospection and exploration and exploitation;
- Present Portugal as an important and relevant partner to the policy of mineral resources in the EU;
- Know the agenda and topics of the framework programs, funding and guidelines;
- Opportunity to develop new and innovative actions/projects under the H2020.

Portuguese participation on projects under H2020…

Acrónimo	Título	Web	Tipo de projecto	Parceiro PT
FAME	Flexible and Mobile Economic Processing Technologies	http://fame-project.eu/	RIA	▪ Eurocolt Recources ▪ LNEG - Laboratório Nacional de Energia e Geologia ▪ Universidade do Porto
REAL-TIME MINING	Real-time optimization of extraction and the logistic process in highly complex geological and selective mining settings	-	RIA	▪ Instituto Superior Técnico
INTRAW	International cooperation on Raw materials	-	CSA	▪ ASSIMAGRA - Associação Portuguesa dos Industriais de Mármores e Ramos Afins ▪ RECIFEMETAL - Reciclagem de Ferros e Metais, S.A. ▪ Fundação para a Ciência e a Tecnologia
MINATURA 2020	Developing a concept for a European minerals deposit framework	http://minatura2020.eu	CSA	▪ Fundação da Faculdade de Ciências da Universidade de Lisboa
VAMOS	¡Viable and Alternative Mine Operating System!	http://vamos-project.eu/	RIA	▪ INESC PORTO - Instituto de Engenharia de Sistemas e Computadores do Porto ▪ MINERALIA - Minas, Geotecnia e Construções, Lda. ▪ EDM - Empresa de Desenvolvimento Mineiro
MIN-GUIDE*	Minerals Policy Guidance for Europe	-	CSA	▪ Universidade de Aveiro
UNEXMIN*	Autonomous Underwater Explorer for Flooded Mines	-	RIA	▪ INESC PORTO - Instituto de Engenharia de Sistemas e Computadores do Porto ▪ GEOPLANO Consultores, S.A. ▪ EDM - Empresa de Desenvolvimento Mineiro
INTMED*	Integrated innovative metallurgical system to benefit efficiently polymetallic, complex and low grade ores and concentrates	-	RIA	▪ SOMINCOR - Sociedade Mineira de Neves-Corvo, S.A.

New call 2016/2017 → New oportunities!

Referência tópico	Título	Ano	Tipo de projeto	M€ por projeto	Orçamento disponível	Tipo de concurso	*Deadline*
	Call Greening the Economy						
SC5-13-2016/2017: New solutions for sustainable production of raw materials							
SC5-13a-2016	Sustainable selective low-impact mining	2016	RIA	3-7	*26 M€*	*Single-stage*	8 Mar 2016
SC5-13b-2016	New technologies for the enhanced recovery of by-products	2016	RIA	3-7		*Single-stage*	8 Mar 2016
SC5-13c-2017	New sensitive exploration technologies	2017	RIA	3-7	*10 M€*	*Single-stage*	7 Mar 2017
SC5-14-2016/2017: Raw materials Innovation actions							
SC5-14a-2016	Intelligent mining on land	2016	IA	8-13	*28 M€*	*Two-stage*	1ª fase: 8 Mar 2016 2ª fase: 6 Set 2016
SC5-14b-2017	Processing of lower grade and/or complex primary and/or secondary raw materials in the most sustainable ways	2017	IA	8-13	*56 M€*	*Two-stage*	1ª fase: 7 Mar 2017 2ª fase: 5 Set 2017
SC5-14c-2017	Sustainable metallurgical processes	2017	IA	8-13		*Two-stage*	1ª fase: 7 Mar 2017 2ª fase: 5 Set 2017
SC5-15-2016/2017: Raw materials policy support actions							
SC5-15a-2016	Expert network on Critical Raw Materials	2016	CSA	3	*5 M€ (incluindo 16a e 16b)*	*Single-stage*	8 Mar 2016
SC5-15b-2017	Good practice in waste collection systems	2017	CSA	1,5	*9.5 M€ (incluindo 16c)*	*Single-stage*	7 Mar 2017
SC5-15c-2017	Optimising collection of raw materials data in Member States	2017	CSA	1,5		*Single-stage*	7 Mar 2017
SC5-15d-2017	Linking land use planning policies to national mineral policies	2017	CSA	1,5		*Single-stage*	7 Mar 2017
SC5-15e-2017	EU network of mining and metallurgy regions	2017	CSA	3		*Single-stage*	7 Mar 2017
SC5-15f-2017	EU network of regions on sustainable wood mobilisation (wood supply)	2017	CSA	1,5		*Single-stage*	7 Mar 2017
SC5-16-2016/2017: Raw materials international co-operation							
SC5-16a-2016	Demand-supply forecast and raw materials flows at global level	2016	CSA	1	-	*Single-stage*	8 Mar 2016
SC5-16b-2016	Advancing the idea of a World Forum on Raw Materials	2016	CSA	1		*Single-stage*	8 Mar 2016
SC5-16c-2017	International network of raw materials training centres	2017	CSA	1	-	*Single-stage*	7 Mar 2017
SC5-17-2016: ERA-NET Cofund on Raw materials							
SC5-17-2016	ERA-NET Cofund on Raw materials	2016	ERA-NET-Cofund *	5	*5 M€*	*Single-stage*	8 Mar 2016

Next steps…

Prepare and publish the regulations for the geological resources framework (Law n°54/2015).

Improve National Strategy for geological resources (RCM n° 78/2012).

Create the one stop shop to support the mining investor.

Develop the sectorial plan for the geological resources.

Links

UE raw materials webpage:
http://ec.europa.eu/enterprise/non_energy_extractive_industries/raw_materials.htm

EIP - European Innovation Partnership on Raw Materials
SIP - Strategic Implementation Plan

https://ec.europa.eu/eip/raw-materials/en
https://ec.europa.eu/eip/raw-materials/en/content/about-sip

Horizonte 2020:

http://ec.europa.eu/research/horizon2020

www.gppq.fct.pt

Thank you

www.dgeg.pt

paula.dinis@dgeg.pt