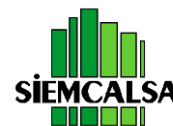




European Union
European Regional
Development Fund

Overview of the mining activity in Castilla y León



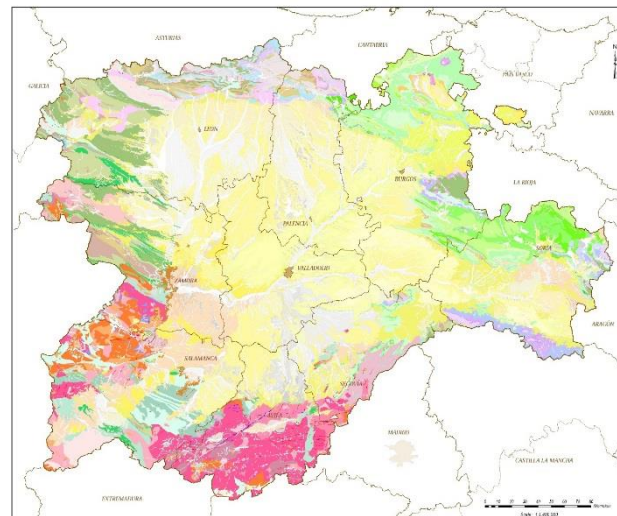
Ramón Cabrera
SIEMCALSA

- 5th Workshop and Peer Review
- Valladolid, Castilla y León (Spain), March 20th 2018

OVERVIEW

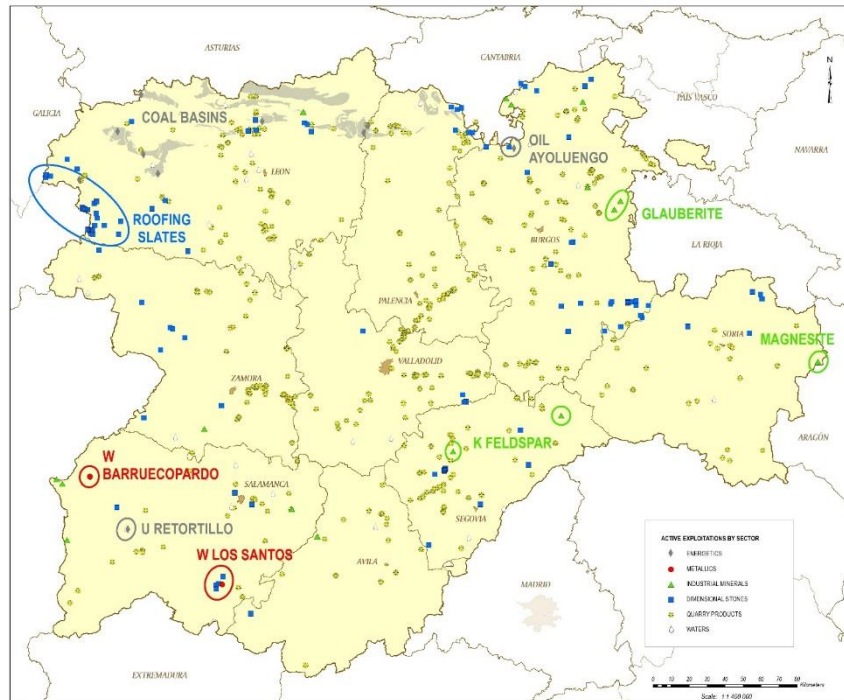


- Big numbers: substances, exploitations, size
- Quarry products: building crisis
- Dimens. stones: building crisis, roofing slates
- Ind. minerals: magnesite, glauberite, K feldspar
- Metallics: tungsten, other metals
- Energetics: coal decline, hydrocarbons, uranium
- Other aspects: waters, mining heritage



BIG NUMBERS

- Wide range of raw materials, related with varied geology
- Predominance of Quarry products (aggregates+building related industrial minerals): 73% of exploitations
- Predominance of micro: 85%



SUBSTANCE	NUMBER OF EXPLOITATIONS				EMPLOY.	EMP/EXP
	MICRO	SMALL	MED-LARGE	TOTAL		
Clay	29			29	58	2
Silica sand	14	2		16	116	7
Sands & Gravels	219	6		225	758	3
Sandstone	1			1	5	5
Limestone	39	13		52	331	6
Hornfel		3		3	76	25
Quartzite	3	1		4	37	9
Dolostone	1			1	5	5
Granite	5	1		6	27	5
Porphyry		1		1	15	15
Gypsum	1	2		3	24	8
QUARRY RM	312	29	0	341	1452	4
Sandstone	15	1		16	67	4
Limestone	30	3		33	140	4
Quartzite	6			6	15	3
Diorite	1			1	2	2
Granite	7	1		8	34	4
Marble	2			2	3	2
Slate	14	14	5	33	801	24
DIMENSIONAL	75	19	5	99	1062	11
Special clays	1	1		2	20	10
China clay		1		1	30	30
Quartz	1	1	1	3	77	26
Feldspar		2		2	79	40
Glauberite			2	2	230	115
Magnesite		1		1	17	17
Wollastonite	1			1	7	7
Salt	3			3	9	3
Turf	2			2	4	2
INDUSTRIAL	8	6	3	17	473	28
Tungsten			1	1	119	119
METALLICS	0	0	1	1	119	119
Anthracite	2	3	2	7	257	37
Black coal		1	1	2	333	167
Hydrocarbons		1		1	19	19
ENERGETICS	2	5	3	10	609	61
TOTAL	397	59	12	468	3715	8

QUARRY P. / DIMENSION. ST.

- Strong crisis related with building sector since 2008
- Loss of exploitations, production and jobs

Quarry products

- Aggregates + industrial minerals related with building sector
- 341 exploitations, 1452 employees, predominance of microcompanies: 91%
- Association: ANEFA (national), AFARCYL (regional)

Dimensional Stones

- 99 exploitations, 801 employees, predominance of micro (76%)
- 52 different varieties of commercial stones
- Association: PINACAL (regional level)
- Highlight: roofing slates

Roofing Slates

- Exploitations concentrated in León
- Great production: almost 33% of the national production
- Spain world leader
- Employment: 75% of Dim. Stones sector
- Importance of exports (>90%), endurance in times of crisis
- Specific associations: APICAL, APROPICAL
- Experience in research and innovation



INDUSTRIAL MINERALS (1)

General

- 17 exploitations, 473 employees
- Larger size of companies, usually grouped in corporations
- Association: AINDEX (national level)
- Potential for exploration: talc, graphite, lithium, etc.
- Most outstanding: magnesite, glauberite, K feldspar



Magnesite

- Borobia mine – Magnesitas Sorianas
- Discovery: end of 90's. Set up: 2015
- Main product: Magnesia (MgO), critical raw material
- Use as fertilizers, refractories, etc.
- 25% of national production in Soria province



INDUSTRIAL MINERALS (2)

Glauberite

- Or Glauber salt: Sodic-Calcic Sulphate
- Cerezo del Río Tirón (Burgos), huge deposit (biggest in Spain)
- 2 Spanish corporations operating: CRIMIDESA and SAMCA
- Main product: NaSO_4 , used as excipient in detergents
- Biggest production in Spain (65% of national production)
- Production sold outside CYL



K Feldspar

- Segovia deposits, biggest in Spain
- 2 corporations operating: Saint Gobain and SAMCA
- Main product: K Feldspar, used in ceramic industry
- Secondary: quartz for the glass industry
- Biggest production in Spain
- K Feldspar production sold outside CYL (Mediterranean coast ceramic industry)



Tungsten

- Critical raw material
- Los Santos W mine: in operation since 2008
- Barruecopardo W project: in op. in 2019
- Companies: ALMONTY and SALORO
- In both cases, the final product is a concentrate of CaWO_4 (>65%)
- Exports to USA
- Important potential on the Iberian Massif District (western CYL provinces)
- ESMIMET: Interreg project focused on exploration guides and the set up of a network of research and innovation
- Some other projects try to improve W recovery (pilot plants)

Other metals

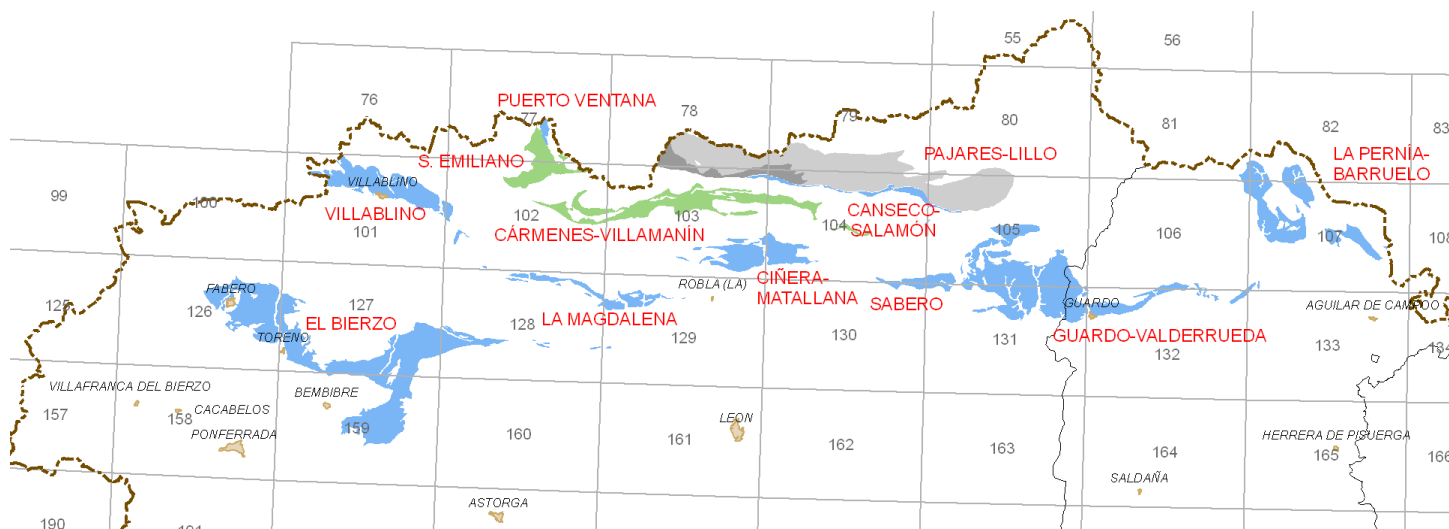
- Advanced projects of tin-tungsten, iron and lead-zinc. Potential for Au, Cu, Co, Ni, etc.



ENERGETICS (1)

Coal

- First mines in last decades of 19th century
- Important production of hard coal and anthracite in the 20th century (León and Palencia provinces)
- Strong economic dependence on the mining activity
- 4 thermal power stations
- Production in decline since 90's
- Nowadays only a few mines in operation, small production
- Deep crisis, high unemployment
- Regional Administration has specific plan: Plan for the Economic Dynamization of the CYL Mining Municipalities



ENERGETICS (2)



Hydrocarbons

- Ayoluengo: onshore oilfield in operation 1967-2017
- Fuel for industrial use
- Mining potential for shale gas, according Spanish Geological Survey (IGME)
- Several companies tried to explore this potential
- Strong social opposition, many municipalities against fracking
- Companies withdrawing from CYL are giving up projects

Uranium

- Uranium mine in operation 1974-2000
- Exploration works led to define 3 deposits
- Berkeley Minera España S.L. in process of obtaining permits to enter in operation



OTHER RELATED ASPECTS

Waters

- Spring waters (with public utility declaration) and thermal waters, mineral resources according to the Spanish Law of Mines
- 18 bottling plants, 100 M€/year
- 12 thermal baths, 20 M€/year

Heritage

- 16 mining sites have been turned into touristic places
- Mining museums, guided visits in old quarries and underground mines
- Mines of gold, coal, iron, manganese, copper, tungsten, salt, dimensional stones
- 92,000 visitors in 2017
- Educational and touristic approach





Overview of the mining activity in Castilla y León



THANKS FOR YOUR ATTENTION !!

Ramón Cabrera

rcabrera@siemcalsa.com

SIEMCALSA

siemcalsa@siemcalsa.com