

# RAW MATERIALS, THE MINING SECTOR AND THE CIRCULAR ECONOMY – CHANGES AND CHALLENGES

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*Brussels, 11-12 December 2018*

## GREECE — MINERAL/ORE PRODUCTION (2017)

MINERAL / ORE	POSITION IN EU	POSITION IN GLOBAL
Perlite	1	2
Bentonite	1	5
Bauxite	1	11
Ni	1	17
Magnesite	3	8
Lignite	4	10
Al	5	28

*data taken from WORLD MINING DATA [C. REICHL, M. SCHATZ, G. ZSAK]  
VOL. 33 MINERALS PRODUCTION / VIENNA 2018*

# GREECE – NATIONAL CIRCULAR ECONOMY ACTION PLAN



- ❑ Endorsed by the Governmental Economic Policy Council in November 2018 after consultation process and social dialogue with stakeholders
- ❑ An interministerial (9 ministries) Working Group was established to promote the use of International standards and coordinate the required act
- ❑ The Ministry of Environment and Energy acts as coordinator for the implementation and evaluation of the national strategy and its action plan
- ❑ Consistent with the 2015 European Action Plan for the Circular Economy and the 2030 Agenda for Sustainable Development

# GREECE-NATIONAL ACTION PLAN ON CIRCULAR ECONOMY 2018-2019 PRIORITIES RELATED TO RAW MATERIALS



- New legal definitions for wastes, by-products and re-use materials, declassification of waste and quality standards for secondary raw materials
- Increasing the potential of re-utilisation of construction and demolition waste by setting and applying concrete standards to enable construction components' recoverability, adequate reuse (e.g. in road construction)
- Integrating circular economy considerations and criteria in the environmental permitting process
- Improving governance structure by setting up mechanisms such as an Executive Secretariat for the Circular Economy and a national Observatory to track progress, results and gaps on the economic, environmental and social dimension

# GREECE-NEW NATIONAL GROWTH STRATEGY JULY 2018



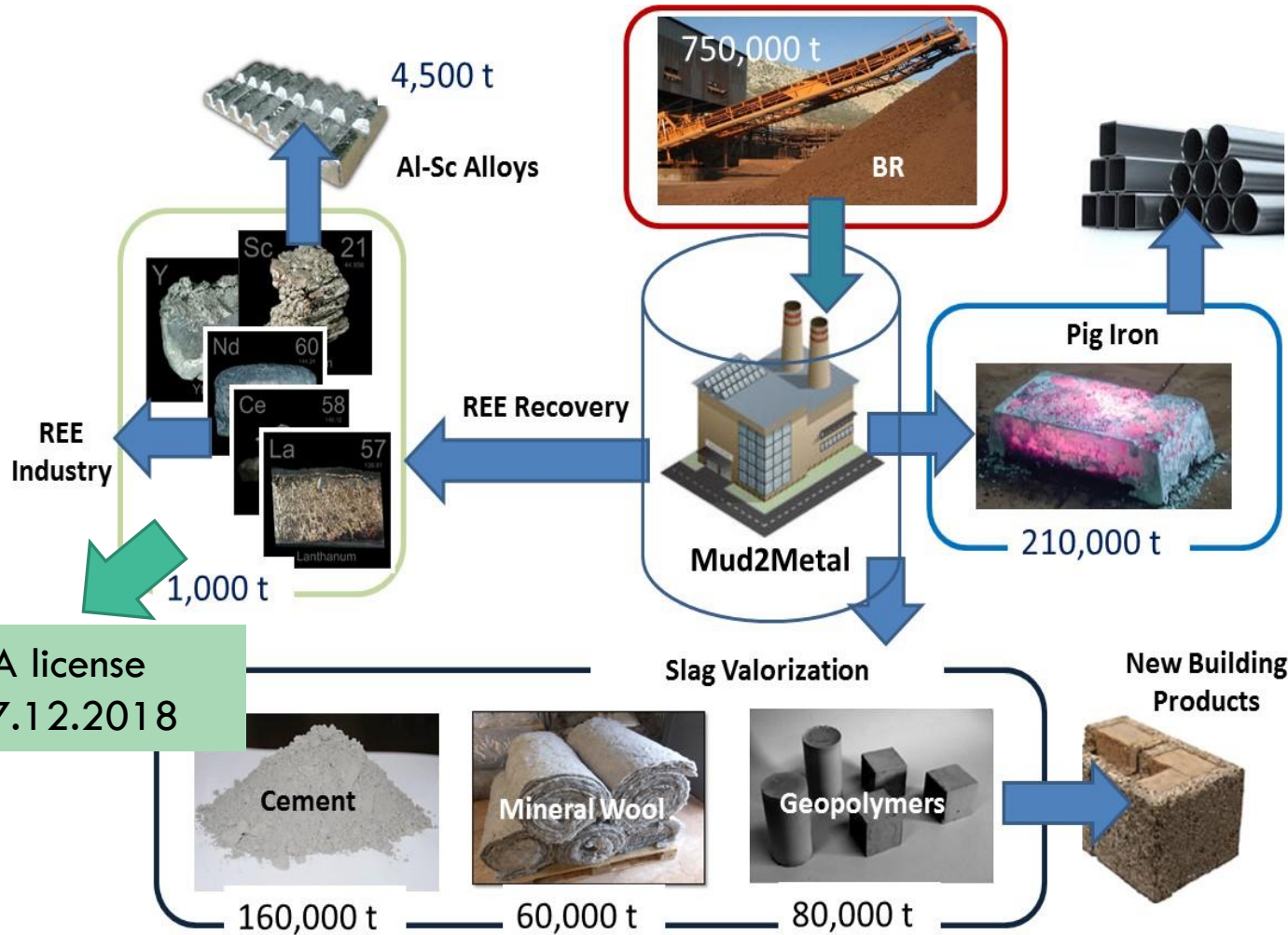
**as a national priority among others “ ...The ecological re-design of the economy by promoting a circular economy model”**

# CIRCULAR PRACTICES- LIGNITE COMBUSTION FOR POWER GENERATION



- ❑ The long-lasting use of Fly Ash (=Coal Combustion ~6300 kt in 2016), as a substitute for clinker or as a material for strengthening the overburdened slopes during the exploitation of lignite mines
- ❑ Substitution for construction materials
  - ❑ Energy and landfill areas saving
  - ❑ Emission reduction
- ❑ Fulfils the waste hierarchy targets, where waste prevention is above re-use, recycling, recovery and disposal [Article 4 -Waste Framework Directive (2008/98/EC)]

# CIRCULAR PRACTICES- ALUMINIUM AND ALUMINA PRODUCTION BAUXITE RESIDUE VALORISATION



- ✓ 100% utilization of the BR stream
- ✓ Economically Viable
- ✓ Near Zero-Waste
- ✓ Industrial Symbiosis

# FERROUS NICKEL PRODUCTION SLAG VALORISATION



## □ Two kinds:

the Electric Furnace Slag (EFS) ( $1,6 \times 10^6$  t/yr)

the Converters' Slag (80kt/yr)

## □ Studies according the use of slags as:

sand-blasting material

aggregate substitute (in high strength concrete, in the light concrete for the construction of the base of roads, as an anti-slippery blacktop material and anti-slippery pavement tiles etc)

additive (in tiles and bricks, Fettling material, in high strength alumina cement)





[www.ggk.gov.gr/wp-content/uploads/2018/06/VNR-Greece-2018.pdf](http://www.ggk.gov.gr/wp-content/uploads/2018/06/VNR-Greece-2018.pdf)

*Σας ευχαριστώ*

A guidance on  
Best Practices  
in the Extractive  
Waste  
Management Plans  
related to  
Circular Economy

**in progress**