

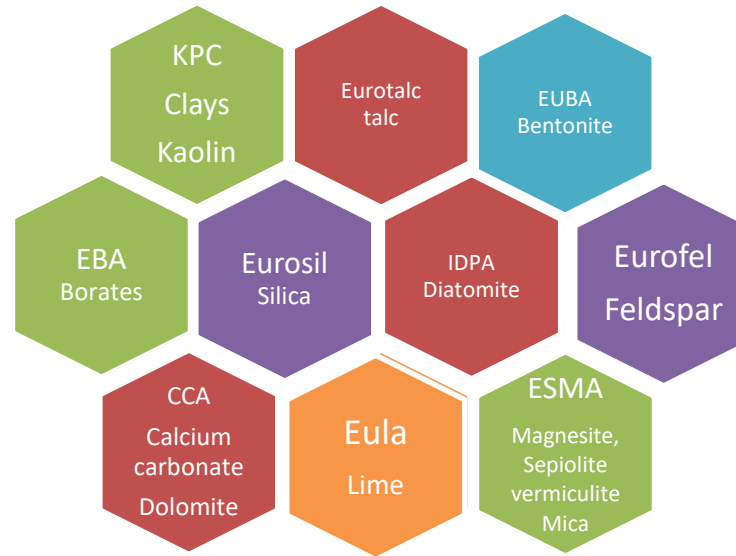
Industrial Minerals sector's contribution to the ASEAN Mineral Cooperation Action Plan

APMREC 2016
Forum on Capital raising, funding and investment

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Industrial Minerals Association (IMA-Europe)



IMA - Europe



- **24 EU Member States + Norway, Switzerland, Turkey and Ukraine**
- **500 companies: i.e. 685 mines & quarries, 750 plants**
- **42,500 employees**
- **180 million tpa**
- **EUR 10 billion turnover**
- **Non-energy / non-metallic**

more: <http://www.ima-europe.eu>

Industrial minerals – our world is made of them!



**Industrial minerals are vital to society,
supplying everyday products.**

Industrial minerals at the basis of manufacturing industry



GLASS: up to 100% minerals

PAINT: 50% of minerals



**CERAMICS:
up to 100% minerals**

PAPER up to 50% minerals



And many more ...

Plastics, Gas and water treatments, adhesives, Fiberglass, Soil, chemistry, steel, foundry, filtration, food, detergents, energy, automotive, aerospace, machinery, etc.

Even 4.0 economy ...



A huge multiplying effect through Value chains

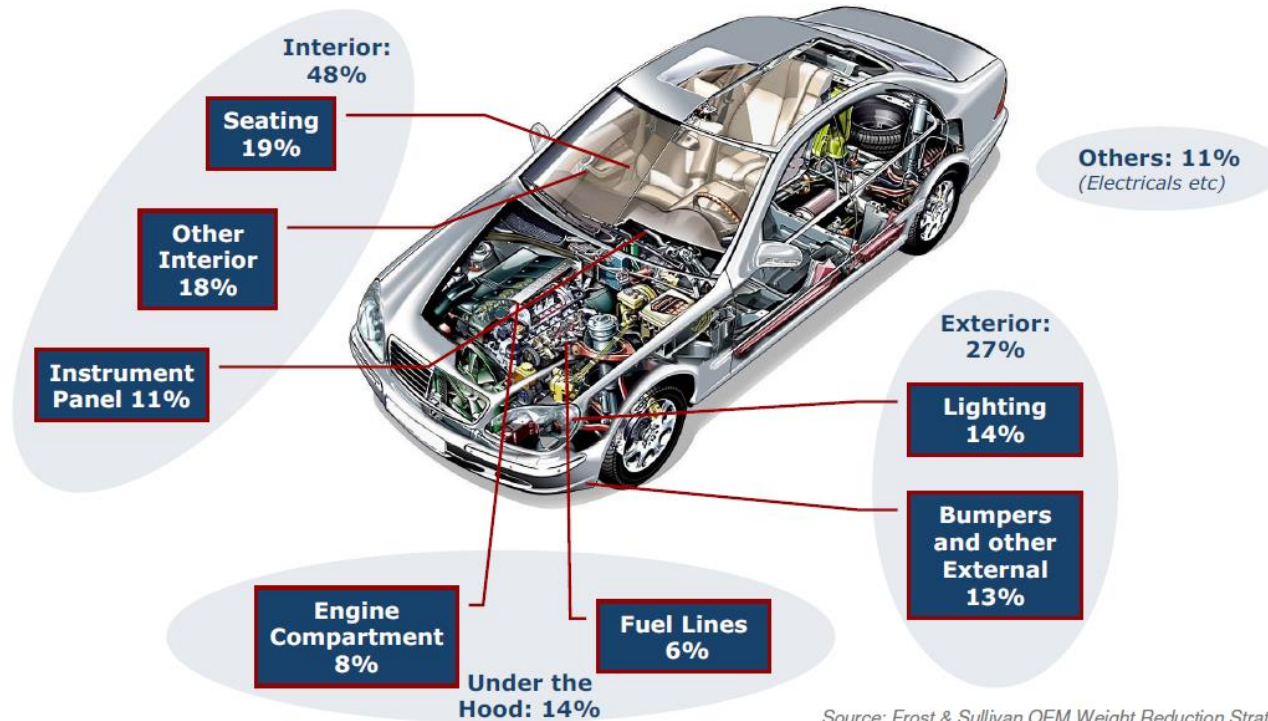


Sector	% IM	EU Turnover	Employ
IM		10 (billion)	40 (000)
Paper	50	75	185
Glass	100	20	105
Paint	50	17	120
Ceramics	100	30	200
...			
Plastics, Gas and water treatments, adhesives, Fiberglass, Soil, chemistry, steel, foundry, filtration, food, detergents, energy, automotive, aerospace, machinery, etc.			

Manufacturing industry depends on industrial minerals, and minerals depends on manufacturing industry ...

Automotive plastics, one amongst many chains

Plastic Composition in a Typical Passenger Car



Source: Frost & Sullivan OEM Weight Reduction Strategies

- Talc improves stiffness, impact resistance and dimensional stability of thermoplastic automotive parts
- Diatomite, Kaolin, Mica and GCC are already sold in automotive applications such as sound dampener, polishes, etc.

Average talc usage medium EU vehicle:

- 13 kg in 2014 from 4.9 kg in 2006

(Courtesy Imerys)

High tech applications rely on industrial minerals

Steel reinforcement manufactured in blast furnaces insulated by **refractory minerals**, then rolled after re-heating in furnaces lined with **monolithic refractories**

High-tech glass screens with high-tactile sensitivity and ultra-strength polished with **ultra-high precision abrasives**

Cover made of resistant, lightweight, fire-proofed and recyclable thanks to **carbonates, mica, talc, carbon black**

Miniature batteries for high-speed charging and enhanced longevity thanks to **graphite and carbon black**

Micro-chip and printed circuit boards made of silicium, manufactured in furnaces insulated by **refractories** then casted for refining in **high purity quartz crucibles**

Insulating foils to avoid overheating of the micro-chip: **graphite foils**



Industrial Minerals three pillars values

High quality minerals reserves

- ◆ Prospecting and managing minerals deposits
- ◆ Running mining operations
- ◆ Sustainable development is a key part of this equation
- ◆ Only 5 to 20% of the value chains, although essential to its entirety



Processing and technical skills

- ◆ Value-added treatment of minerals through different technologies
- ◆ Key part of the value-added chain
- ◆ Output is a large product range



Direct access to customer

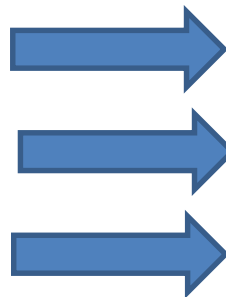
- ◆ Close technical dialogue with final customer
- ◆ Intimate understanding of end-markets and applications
- ◆ Product innovation



Sustainable supply of raw materials



- A global challenge: growing demand for raw materials, e.g. construction materials
- Manufacturing industry directly dependent on raw materials
- Tight Quality / specifications
- Interdependency: no country is self-sufficient for all the raw material it needs
- Sophisticated valuation techniques and ownership
- Create win-win situations

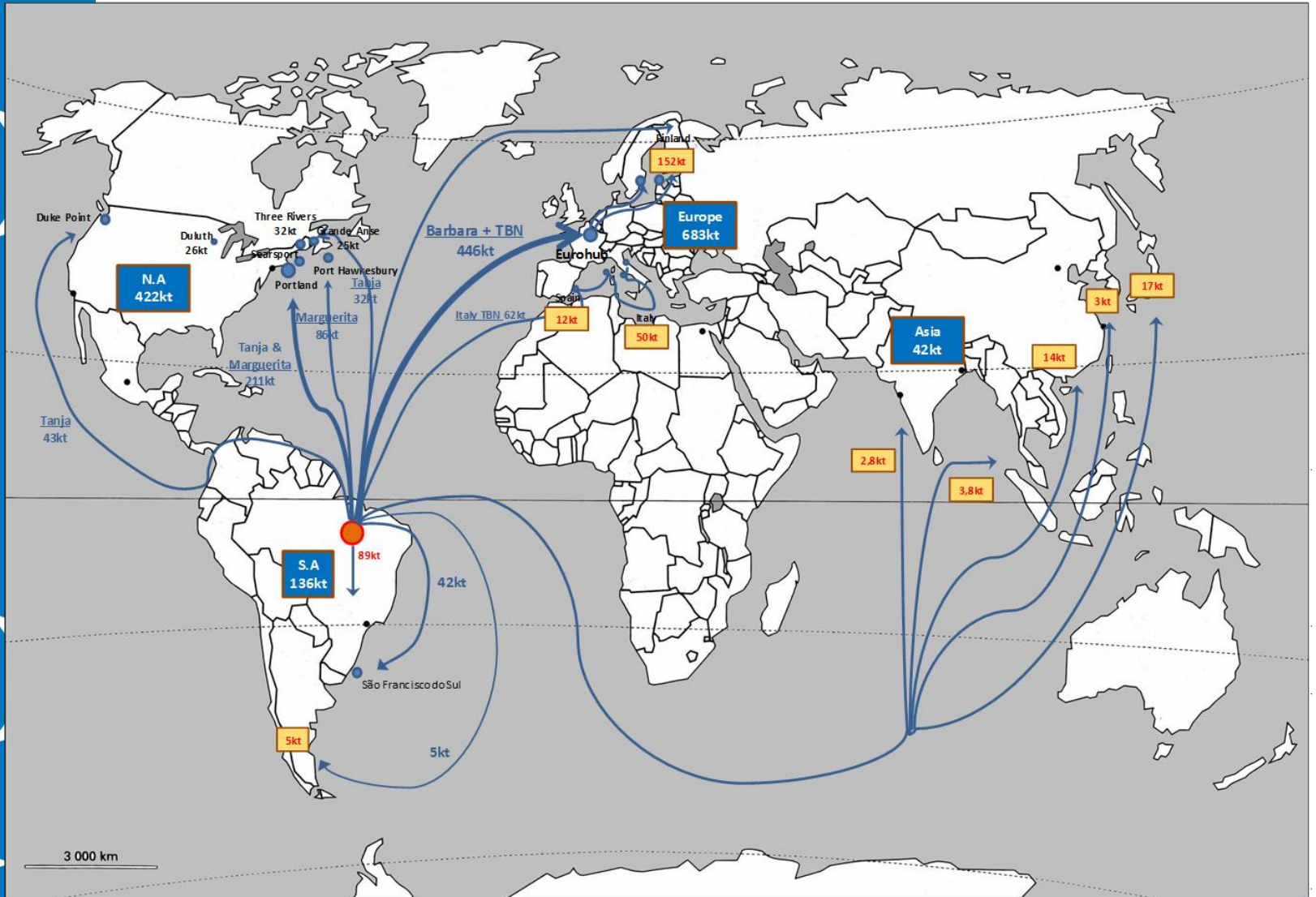


Trade measures influencing export/imports (quotas, taxes, etc.)

Legislation re. access to resources + end-uses legislation have large impact on industrial project feasibility

Balance domestic supply and international trade

Industrial Minerals travel intensively



... in a **global regulatory context**: doing business across countries or regions implies knowing and complying with very different sets of obligations

Convergence trend of regulatory regimes

- ✓ International standards (e.g. GHS)
- ✓ REACH-like regulations
- ✓ Emissions Trading Systems
- ✓ ...



Which does not exclude divergences when transposed into national law!

Compliance with an intense regulatory environment



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Permitting

- Mining codes
- Environmental legislation: impact assessment, biodiversity / nature preservation, water, air, ...
- Land use / competing land use

Producing

- Occupational Safety and Health
- Waste
- Emissions (pollution, air, ...)
- Industrial sites (Seveso, etc.)
- Explosives

Placing on the market

- Chemicals legislation (GHS, Classification and Labelling, MSDS, etc.)
- Downstream legislation specific to end-uses (feed, biocides, cosmetics, ...)

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- ✓ In
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- ✓ RE
- ✓ Emissions Trading Systems
- ✓ ...



Which does not exclude
divergences when transposed
into national law!



Multiplied by the number of
countries that a company
operates in...

- Cycles demand / supply / price dynamic
- Presence /development of downstream industry
- Global capacity balances
- Capital intensive projects requiring sufficient perspective
- Tangible raw material mineral policy
- Regulatory uncertainty/variations is a major obstacle to investment



A Light and Flexible Global Network and Interface



Scope:

IMAGINE is a network for IM producers active at a global scale. IMAGINE aims to mutualise efforts and resources to help companies address issues specific to IMs in countries and regions with a dynamic path to industrial minerals valuation.

Activities and Objectives:

1. **A Node: Monitor and share** information
2. **An Interface: Facilitate dialogue** with stakeholders
3. **A Tool: Promote** the IM sector

The ASEAN Mineral Cooperation Action plan 2016-2025



- Vision: A vibrant mineral sector ... as a basis for sustainable growth
- A large potential for Industrial Minerals sector
- Predictability is of paramount importance for industry
- Public-private dialog and partnership are key to progresses
- Two strategic area of particular interest
 - Facilitating and enhancing trade and investment in minerals
 - Promoting environmentally and socially sustainable mineral development



- Structured dialog and transparent interface involving regulators and industry representatives
- Partnering to move to a sustained dialog
- An Industrial Minerals seminar?



Thank you for your attention

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