The Building Blocks for Europe's Future

Securing essential raw materials for the Green Deal

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Welcome coffee

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Welcome

Jörg Ertle
President, EUROGYPSUM

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Overview of the EU raw material policy

Vincent Basuyau
European Commission
DG Internal Market, Industry, Entrepreneurship & SMEs

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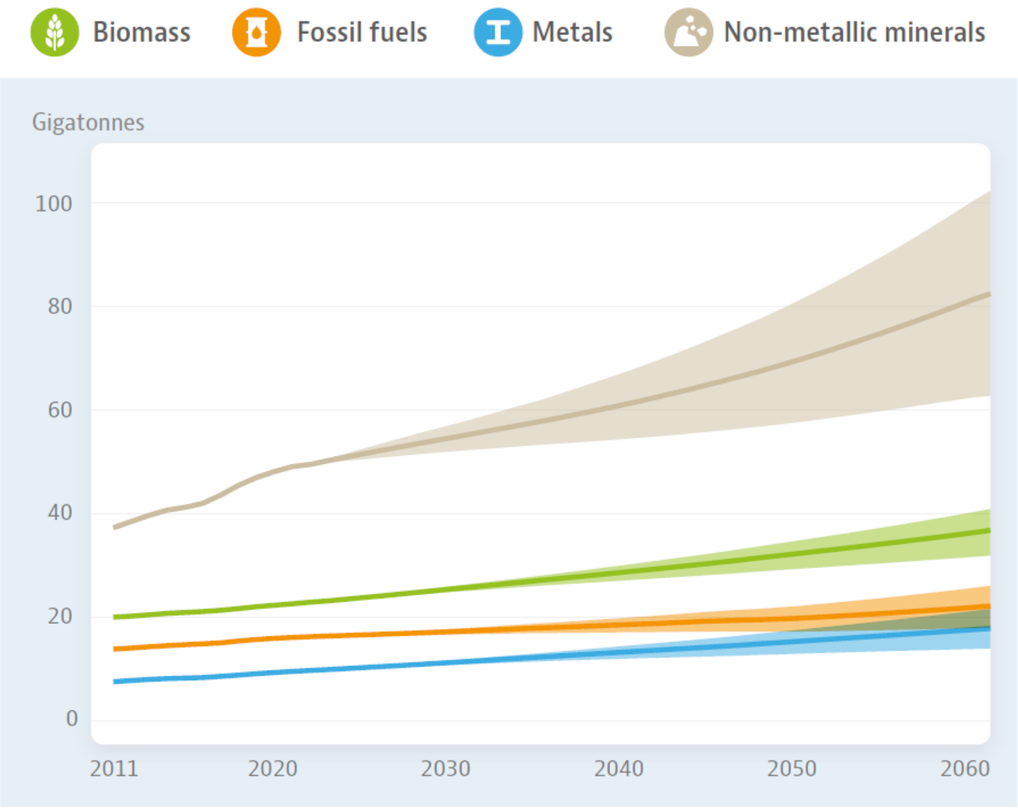
Raw materials: a strategic issue for the EU

Figure 6. **Growth in materials use depends on population and economic growth assumptions**



Source: OECD, Global Material Resources Outlook to 2060, 2019

- Ubiquity of RM: construction, food, electronics, energy…
- Today's industrial performance / tomorrow's technological leadership
- Tradition of extraction, processing and manufacturing of raw materials: jobs, value chains, mining and industrial basins in MS
- Global demand: doubling (2060) with demography, industrialization, needs for climate transition

Global demand set to exceed global supply

The European Raw Materials Initiative (2008)

1st Pillar: Diversify Global Supply and Promote Global Sustainable Extraction
EU trade strategy for raw materials: FTA
Mining diplomacy: win-win cooperation, cooperation, international partnerships
‘Sustainable Extraction Principles’ / sustainable supplies / due diligence ‘conflict minerals’

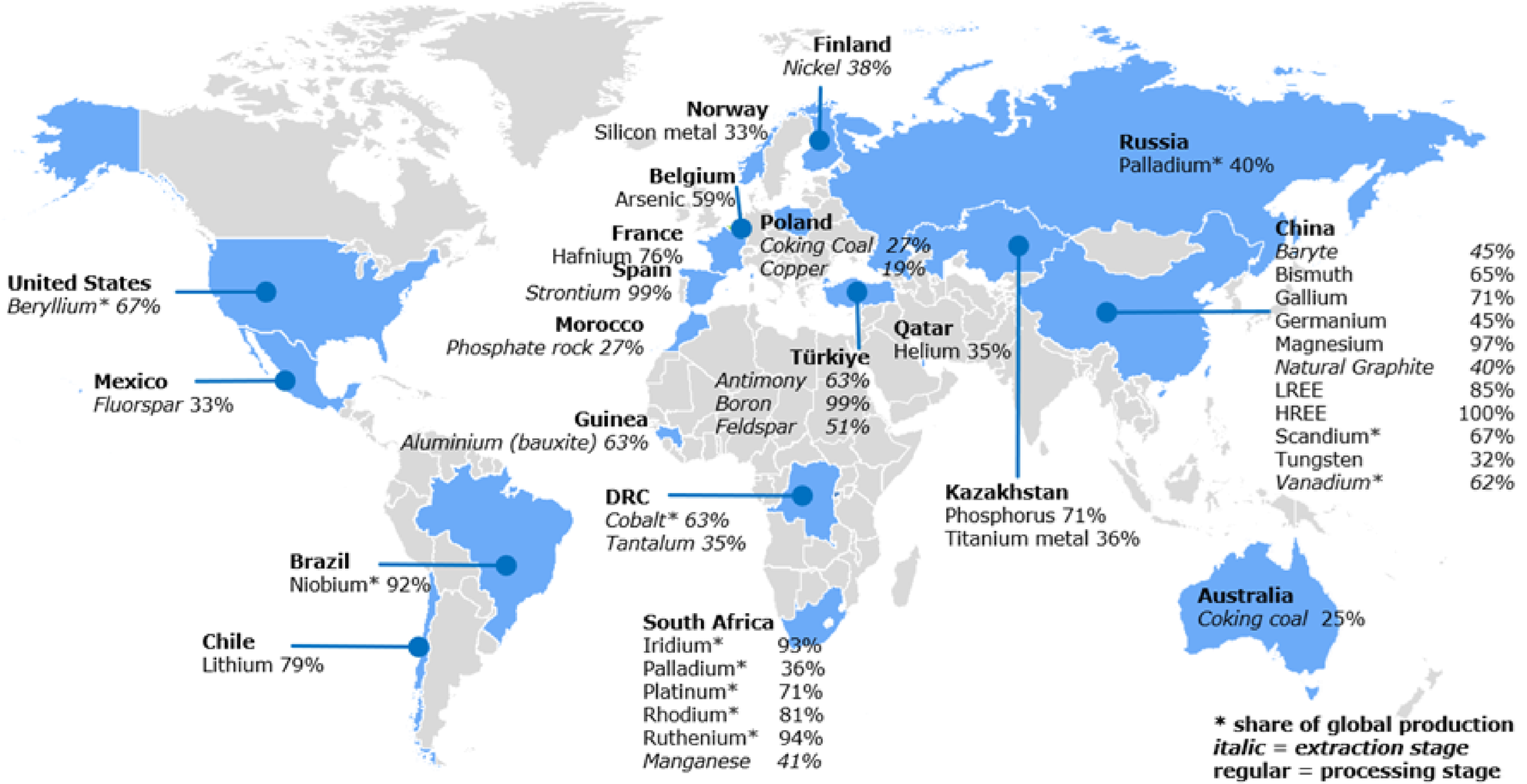
2nd Pillar: Use of EU domestic resources by improving investment conditions and procedures
Exchange of good practice between EU Member States
Strengthening the knowledge base on mineral resources in Europe
Promoting research and skills

3rd Pillar: Increase circularity, efficiency of resources through R&D and circular business models
Implement smarter waste legislation for efficiency and recycling
Strengthening enforcement of EU waste shipment regulations

10 actions to ensure Europe's access to raw materials

1. European Industrial Alliances
2. Develop sustainable financing criteria for mining
3. Research and innovation on waste processing, advanced materials and substitution
4. Map the potential supply of secondary CRM from EU stocks and wastes
5. Identify priority mining and processing projects for critical raw materials in the EU
6. Develop expertise and skills
7. Deploy Earth observation programmes for exploration, operation and post-closure environmental management
8. Develop research and innovation projects on exploitation and processing of CRMs
9. Develop strategic international partnerships to secure CRMs supply
10. Promote responsible mining practices for CRMs

Dependencies in the EU supply of Critical Raw Materials



Source: "European Commission, Study on the Critical Raw Materials for the EU 2023– Final Report"

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Critical Raw Materials Act actions

Ensuring a secure and sustainable supply of critical raw materials for the Union

Investment

- Strategic project labelling as signalling for access to finance
- Public/Private financing (w/ blending)

Markets

- Secondary Raw Materials markets
- Focus on Permanent Magnets
- Certification schemes

Skills

- Skills for quality jobs (geologists, metallurgists, mine workers, etc)
- Credentials for skills transparency, transferability & cross-border mobility

Sustainability

- Environmental CO2 footprint info on CRM
- CRMs circular economy –waste collection, recycling and use of secondary RMs
- Focus on extractive waste and use for CRMs
- Development of standards for CRM value chain operations

Risk management

- Stress-tests for CRM supply chains
- Mitigation of risks (stocks and joint purchasing)
- Monitoring and coordination

International Partnerships

- International strategic partnerships

Critical Raw Materials

Note: A subset of the CRMs are classified as „**strategic raw materials**“ due to their use in strategic technologies and strong projected demand growth. Certain measures under the CRMA apply only to them.

34 RAW MATERIALS DEFINED AS CRITICAL BY THEIR HIGH

- Economic importance
- Supply risk

… based on a regular assessment of available data in an established methodology

- Antimony
- Arsenic
- Bauxite
- Baryte
- Beryllium
- **Bismuth**
- **Boron**
- **Cobalt**
- Coking Coal
- **Copper**
- Feldspar
- Fluorspar
- **Gallium**
- **Germanium**
- Hafnium
- Helium
- **Heavy Rare Earth Elements**
- **Light Rare Earth Elements**
- **Lithium**
- **Magnesium**
- **Manganese**
- **Natural Graphite**
- **Nickel – battery grade**
- Niobium
- Phosphate rock
- Phosphorus
- **Platinum Group Metals**
- Scandium
- **Silicon metal**
- Strontium
- Tantalum
- **Titanium metal**
- **Tungsten**
- Vanadium

Risk monitoring and preparedness

Commission

Monitors:

- trade flows;
- demand and supply;
- concentration of supply;
- Union and global production (Extraction, Processing, Recycling)

Publish information / dashboard

- results of monitoring and supply risk
- Results of stress test and Mitigation measures

- Exploration programmes (18(4))
- Monitoring (20(1) and (2)),
- Strategic stocks (21(1), 22(5))
- National measures on circularity (25(6)).

Stress tests for SRM supply chains (19(3), 23(2))

to Member States, the Board and the Union governance bodies of crisis vigilance

Member States

subgroups, for monitoring national supply and information agencies covering critical raw materials or equivalent relevant national authority

information gathering and sharing

- evolution of the monitoring parameters
- Including any new or existing raw material project on their territory (UNFC)

key market operators (23)

- Survey
- notify Commission of "major events that may hinder the regular operations"

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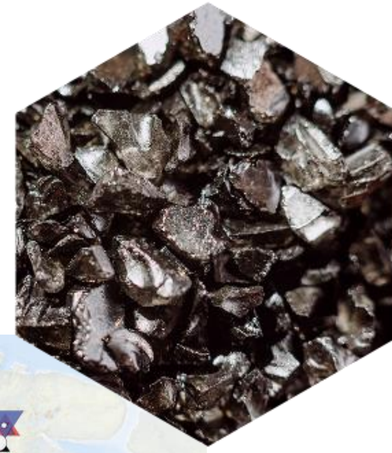
programmes



Objective: Support the EU's CRM value chain by:

- Increasing the geological knowledge of the EU's CRM potential
- Helping de-risk targeted and private exploration campaigns

Member States are to draw up National exploration programmes on CRMs (to be reviewed every 5 years), including, as appropriate:

- mineral mapping at a suitable scale;
- geochemical campaigns (soils, sediments, rocks);
- geoscientific surveys;
- processing of the data (e.g., predictive maps);
- reprocessing of existing geoscientific survey data.

with a high level of environmental protection

CIRCULARITY

- National measures on CRMs circularity
  - Increase reuse, collection and recycling
  - Increase use of secondary RM
  - Recycling technologies
- Maximising potential from (closed) extractive waste facilities
- Recyclability and recycled content of permanent magnets

SUSTAINABLE CHOICES

- Recognition of certification schemes on the sustainability of CRMs
- Empowerment to set, at a later stage, information requirements on the environmental footprint of CRMs placed in the EU market

CE REGULATORY MEASURES

- Review of EoL Vehicles Directive
- Codes in European list of Waste
- Harmonisation of Waste Management Rules
- Review WEEE Directive

STRATEGIC PROJECTS

Across the whole SRM value chain: extraction – processing – recycling in the EU and third countries

Selection by the Commission on advice from the Board based on (Article 5, criteria Annex III)

- Contribution to security of supply, Sustainability, Technical feasibility, Cross-border benefits in EU/ Economic and social benefits in third countries

Process (Art. 6)

- Application by the project promoter
- Opinion by the Board, Veto possibility for the MS or third country concerned
- Decision by the Commission

Permitting

- One stop shop (OSS) (Art. 8)
- Time limits for the permit granting process (Art. 10)
- Priority status for administrative and judicial processes (Art. 9)
- Considered of public interest in light of potential overriding interest exemption (7(2))
- Bundling and streamlining of environmental assessments (Art. 11)
- Planning (Art. 12)

Coordination of Financing

- Private and public investment
- State aid

Facilitating off-take agreements

- Commission brings together project promoters and off-takers via a system, in compliance with competition rules

Overview of permitting benefits

- For all CRM projects:
  - Authorities to take into account the potential for CRM projects in **planning** (Art. 12)
  - Single point of contact for whole process, i.e. **one-stop-shop (OSS)** (Art. 8)
- In addition for Strategic Projects:
  - Considered of **public interest** in light of potential overriding interest exemption (7(2))
  - **Time limits** for the permit granting process (Art. 10)
  - **Priority status** for administrative and judicial processes (Art. 9)
  - Bundling and streamlining of **environmental assessments** (Art. 11)

Existing funds for supporting projects

Funds and programmes	Objectives	Envelope	Instruments	Examples
ERDF (European Regional Development Fund)	Promote regional cohesion (focus on SMEs)	€72 bn for PO "Greener Europe" under MFF	**Grants**	(ES) Reducing energy consumption of processing of raw materials
Recovery and Resilience Facility (RRF) – RePowerEU chapter	Energy security, diversification of EU's energy supply, increase of uptake of renewables and energy efficiency Explicit reference to CRM value chains	€750 bn + €20 bn under RePower	**Grants/financial instruments (loans, equity, guarantees)**	(FR): €5 mio for perm. magnet recycling to recover rare earths
Just Transition Fund	Reduce social and economic costs of the green transition	€19.2 bn under the MFF+NGEU	**Primarily grants**	(EE): €19 mio for rare earth magnet manufacturing
InvestEU	Support to EU policy priorities (market-based and demand-driven instrument)	€26.2 bn under MFF+NGEU (budgetary guarantee split btw EIB group and other IPs)	**Loans, equity. guarantees**	Projects under due diligence by EIB; CRM eligible for other IPs (EBRD, CDC, NIB, ICO, CDP)
Innovation Fund	Driving clean innovative technologies toward the market	€38 bn from ETS revenue (at €75/tCo2)	**Grants, up to 60% of the additional capital and operational costs**	Relieve (FR): €67 mio for recycling of batteries to recover raw materials
NDICI (EFSD+ guarantee)	EU's investment framework for external action	€40 bn (budgetary guarantee split btw EIB and other IPs)	**Grants, loans, guarantees, equity**	EBRD guarantee programme "Hi-Bar" which covers CRM value chain
Strategic Technologies for Europe Platform (STEP)	Clean technologies, incl. sustainable extraction of critical raw materials	€10 bn	**Guarantees, grants, loans, equity**	NA

Horizon Europe

Raw Materials for EU open strategic autonomy and successful transition to a climate-neutral and circular economy

5 topics in 2024, EUR 92 mln **Opening: 19 Sep 2023** **Deadline: 7 Feb 2024**

- HORIZON-CL4-2024-RESILIENCE-01-01: **Exploration of critical raw materials in deep land deposits** (RIA)
- HORIZON-CL4-2024-RESILIENCE-01-04: **Technologies for processing and refining of critical raw materials** (IA)
- HORIZON-CL4-2024-RESILIENCE-01-08: **Rare Earth and magnets innovation hubs** (IA)
- HORIZON-CL4-2024-RESILIENCE-01-10: **Addressing due diligence requirements in raw materials supply chains** (CSA)
- HORIZON-CL4-2024-RESILIENCE-01-11: **Technologies for extraction and processing of critical raw materials** (IA)

State Aid Schemes

- **General Block Exemption Rules (GBER)**
  - ➢Does not require notification
  - ➢Since March 2023 also explicitly includes risk finance aid for SMEs along CRM value chain
- **Climate, Energy and Environmental Aid Guidelines (CEEAG)**
  - ➢Possibilities for processing, recycling, deploying less polluting technologies, rehabilitating polluted mining sites, etc.
- **Regional Aid Guidelines**
  - ➢Can be along entire CRM value chain as long as conditions fulfilled: needs to be in assisted areas, needs to have incentive effect, etc.
- **Temporary Crisis and Transition Framework (TCTF**)
  - ➢Covers key sectors affected by the Inflation Reduction Act (IRA) that are critical for the transition to net-zero and at risk of being diverted (i.e. batteries, solar panels, wind turbines, heat-pumps, electrolysers, carbon capture usage and storage equipment)
  - ➢For these sectors, it covers key components and related critical raw materials
- **Important Projects of Common European Interest** (**IPCEI**) - value chain approach

Facilitating off-take agreements

- Volatile prices for SRM in combination with long lead-times create a lot of **uncertainty** for investors and harm the development of SRM projects
- Support both Strategic Projects and downstream manufacturers by bringing them together and increasing **stability for their SRM prices**; this supports projects to **secure financing**

(1) Commission shall set up system to facilitate conclusion of off-take agreements related to SPs, in compliance with competition rules

(2) Potential off-takers can make bids, indicating volume and quality, price range and duration

(3) Project promoter of SPs can make bids, indicating volume and quality, price range and duration

(4) Based on bids made, Commission brings together project promoters and off-takers

EU Strategic Partnerships on Raw Materials

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European Commission | Raw Materials Week
13 • 17 November 2023
Brussels

https://ec.europa.eu/raw-materials-week

Useful links

[CRM Act Press Release]

[CRM Act (Draft Regulation)]

[CRM Act (Communication)]

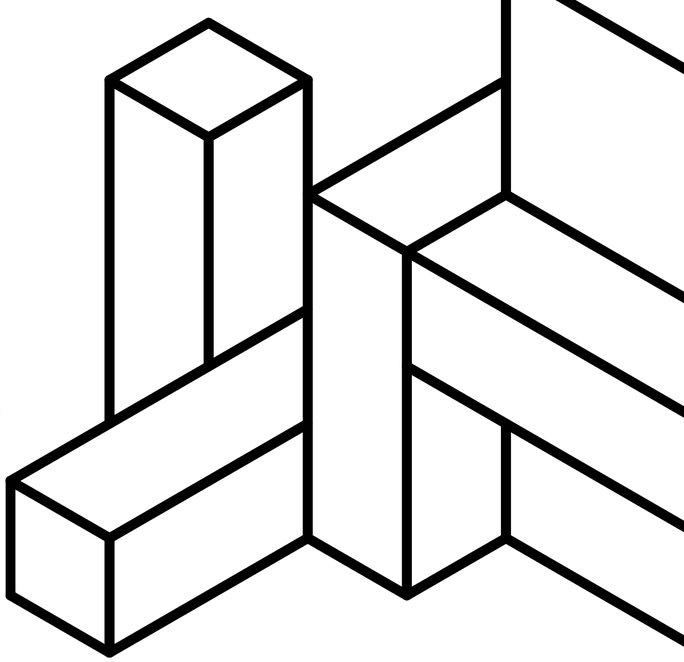
[2023 JRC Foresight Study]

[2023 Study on CRMs for the EU]

[CRM Factsheets]

European Commission

The needs for raw materials in buildings – German outlook for 2040



Dirk Fincke
Aggregates Europe-UEPG

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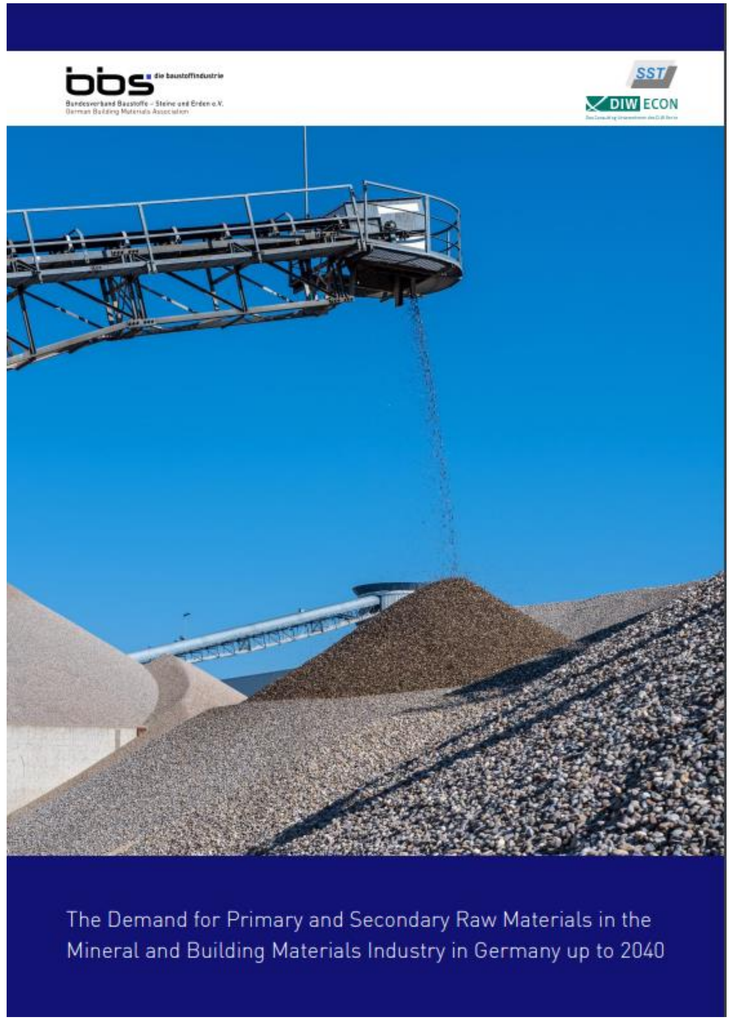
Key questions

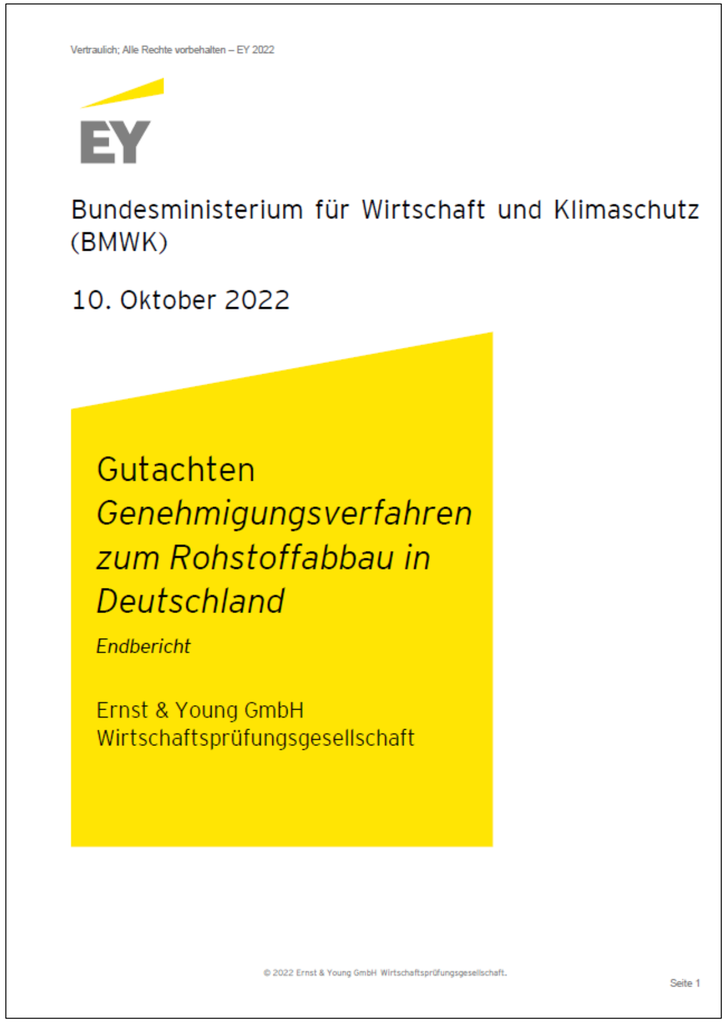
1. Future demand scenarios of construction raw materials in Germany 2040/2050

2. Conditions to supply construction raw materials

3. What needs to be done and who does it (EU, member state, region, local community)?

Sources / Credit to



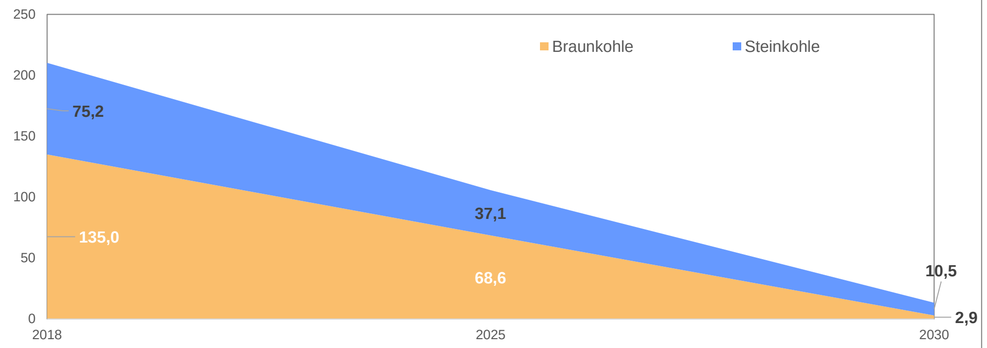


1. The Demand for Primary and Secondary Raw Materials in the Mineral and Building Materials Industry in Germany up to 2040, Published in 2022

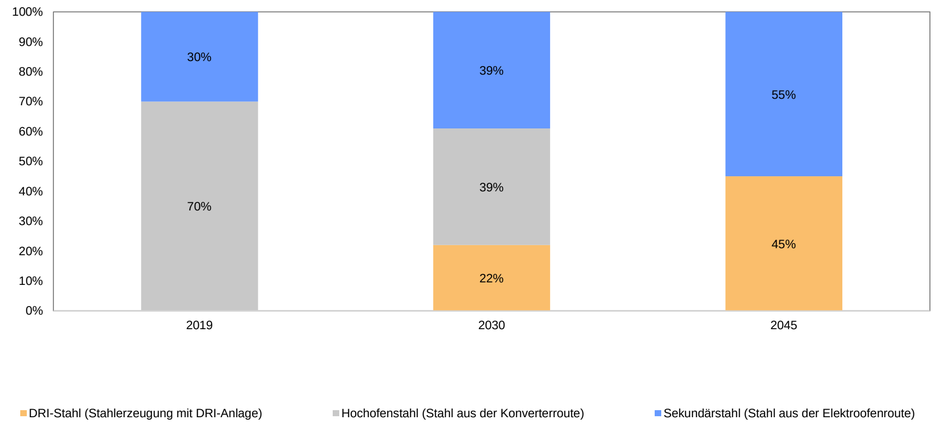
2. Federal Ministry for Economic Affairs and Climate Action, Report on the permitting process for raw material extraction in Germany, Published on 10 October 2022

Primary and secondary raw materials – demand and supply until 2040

Net electricity generation from lignite and hard coal in TWh (model progression)



Conversion of steel production by 2045

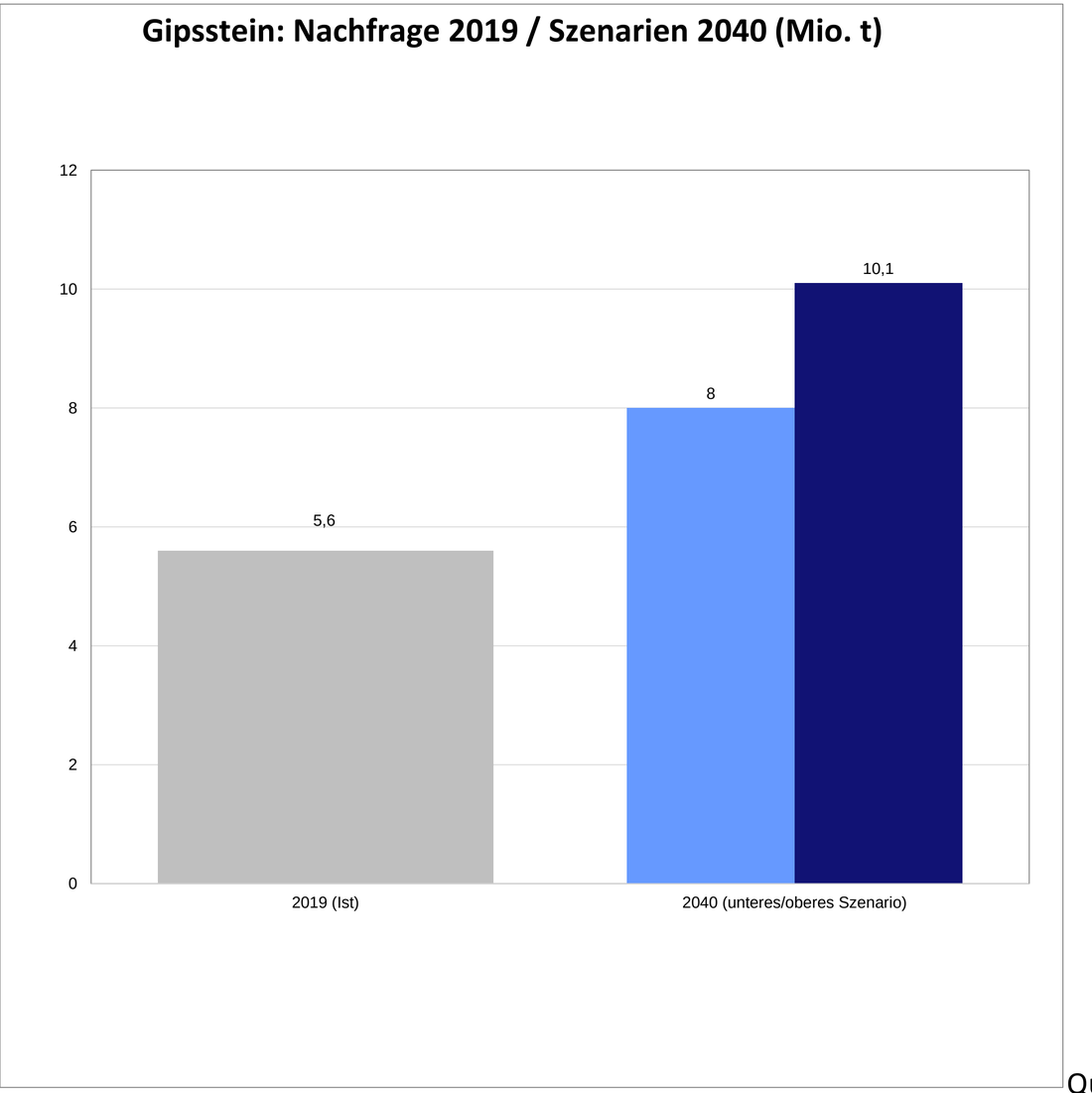


Sources: Study „Klimaneutrales Deutschland 2045“, BCG-Study „Klimapfade 2.0“

Changes:

- Modification of the assumptions regarding the production of secondary materials (e.g. early phase-out of coal, decarbonization)
  - Elimination of REA gypsum and hard coal fly ash by the beginning of the 1930s
  - Strong reduction in blast furnace slag by 2040
- Consideration of direct effects of the coal phase-out and decarbonization on primary raw material demand

Examples: demand for gypsum stone until 2040



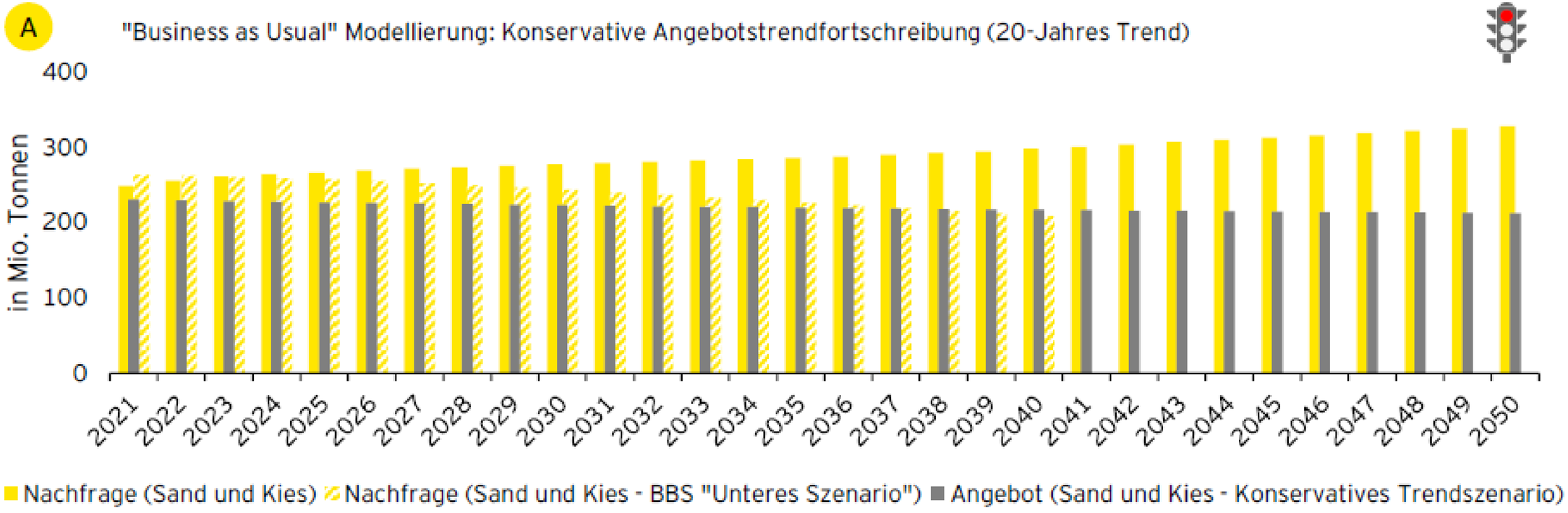
- Demand for natural gypsum increases sharply with the discontinuation of REA gypsum production - significant increase even with weak economic development (lower scenario)

Quelle: bbs-Rohstoffstudie

Conditions to supply: 8 key findings

1. Number of permit applications remained constant or decreased from 2000 to 2020;
2. Increasing complexity in the approval process, e.g., through additional testing steps, extensive application documents, and expansion of public participation;
3. Regionally different approaches between and within the federal states and districts are further significant challenges in the permitting process;
4. While companies are increasing their staff for the approval process, the number of employees in the permitting authorities is largely decreasing;
5. Desired adjustments to the permitting process are aimed at making planning law more flexible and adhering to deadlines;
6. The digitalization of processes is not a key driver for speeding up procedures;
7. In the context of security of supply, conflicts regarding regional plans and land use claims are often discussed;
8. Bottlenecks are already emerging in the context of security of supply, for example sand having to be imported from other federal states or even from abroad.

Business as Usual no longer possible



Conclusions

1. A threat to the supply situation can occur in all raw material groups considered in the report over the next 25 years or longer.

2. There is no scope for a decrease in the quantities of primary raw materials to be extracted in terms of security of supply, even if the efficiency potential is exploited to the best of its ability.

3. The persistently high demand for primary raw materials is met by a declining number of operators. In the past ten years alone (2011-2021), the number of companies in the gravel, sand and natural stone industry has declined by almost 500 to 2,700 companies nationwide.

4. The decrease of the local supply of mineral raw materials leads to less security of supply and longer, environmentally harmful transport.

Why essential raw materials? An example:

“Manufacturing wind turbines and components requires stable, secure supply and cost-competitive supply of raw materials such as concrete, iron, and steel that make up more than 90% of the mass of a turbine, including the foundation.” Wind Europe, Nov 2022

Our colleagues from the German Aggregates Federation (MIRO) stated in the German Parliament during a hearing in September 2023:

1. One 3-megawatt wind turbine requires 1,300 t aggregates for the base plus 700 t for the tower;
2. The German Government plans to build 30 wind turbines per week to achieve the “Energiewende”, i.e. 1,560 wind turbines per year;
3. That means more than 3,000,000 t of aggregates per year for the wind turbines only (not counting for infrastructure), or the total annual average production of an additional 20-30 aggregates sites, not yet permitted.
4. And we need access now!

“Supply issues of sand?
We have it everywhere!”

“If not critical nor strategic,
why bothering?”

“Essential raw materials could be covered at national level.”

“If not accessible in one country, it could be imported from another!?”

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Coffee Break

We will resume at 10:45

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Practical case: Gypsum. Current situation, challenges and perspectives

Jean-Luc Marchand
EUROGYPSUM

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The European Green Deal

"The strategy to transform the EU into a fair and prosperous society, with a modern, resource-efficient and competitive economy where there are no net emissions of greenhouse gases in 2050 and where economic growth is decoupled from resource use."

The Gypsum business is committed and active in contributing to the Green Deal

Gypsum resource in Europe

The European gypsum industry

1.7 billion m²
boards

8.2 million tonnes
of plaster & other gypsum products

€7.7 billion
Annual turnover

160
Quarries

101
Factories

16,000
People directly employed

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Gypsum resource in Europe

Gypsum Volumes Processed in Europe

by the Plaster and Plasterboard Industry

2022

Processed raw materials

Virgin gypsum rock

16,903,176 tonnes

DSG/FGD gypsum*

6,530,255 tonnes

Recovered gypsum (total volumes)

1,349,518 tonnes

Recycled gypsum from construction & demolition waste**

749,695 tonnes

Internally recovered material***

599,823 tonnes

*DSG/FGD gypsum: desulphogypsum / gypsum from flue gas desulphurisation of coal power plants
**Gypsum recycled from the construction, renovation or demolition phase, which is used by the gypsum industry
*** Gypsum material which has been recovered internally during the production phase

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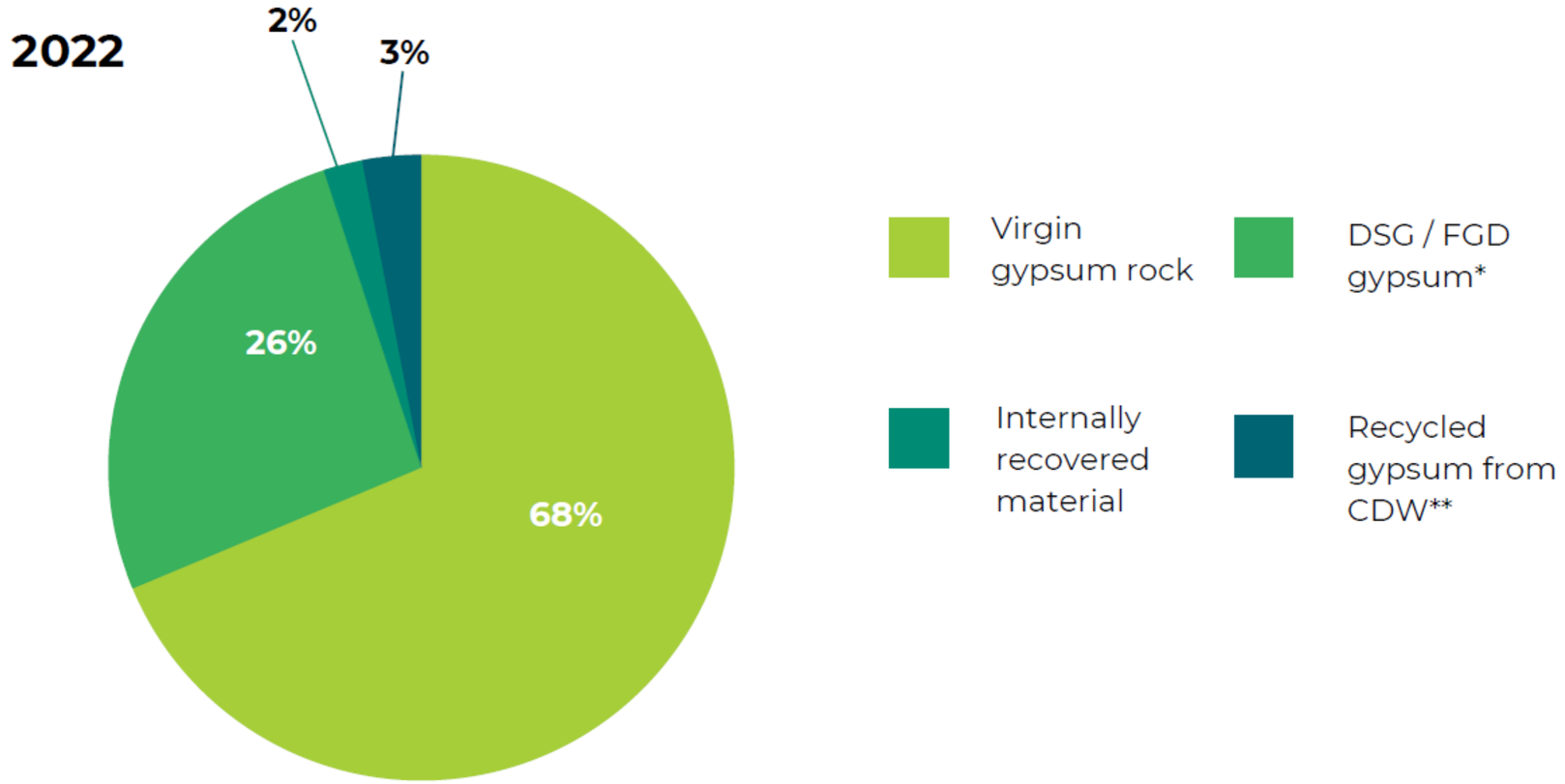
Gypsum resource in Europe

Primary & secondary raw material gypsum

used by the European plaster and plasterboard industry



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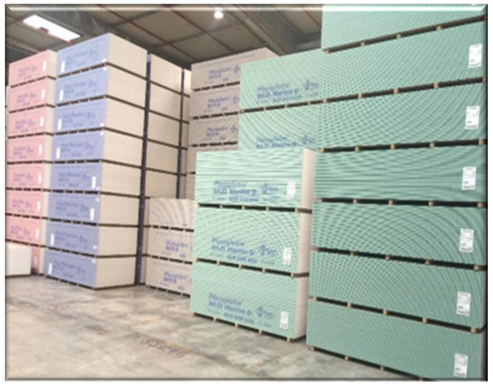
Gypsum resource in Europe

Building & Renovating in an energy and resource efficient way : light construction / building insulation

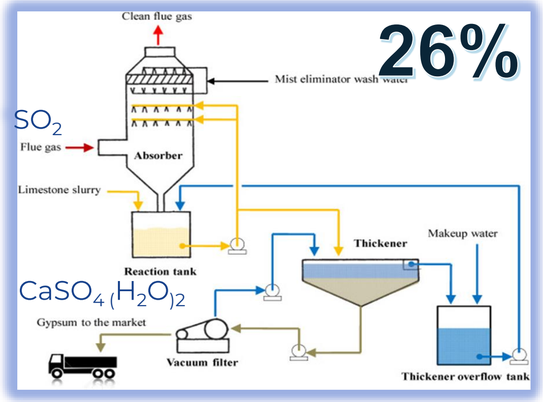


Short circuit

Local resource & manufacturing

24.5 Mtons in 2022

Natural Gypsum



FGD Gypsum

Recycling

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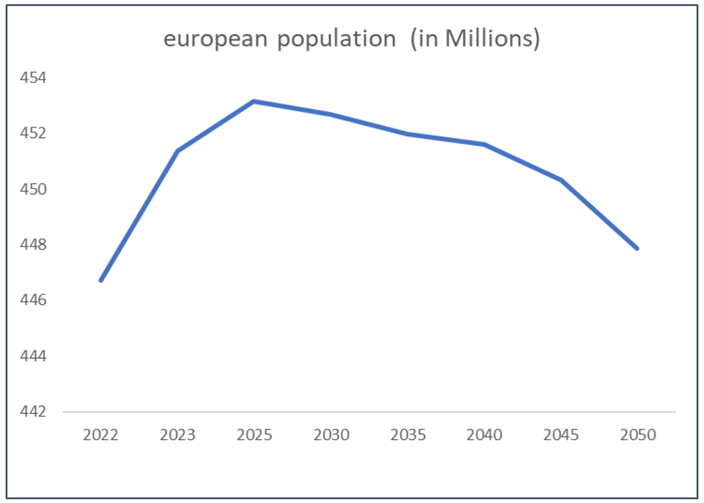
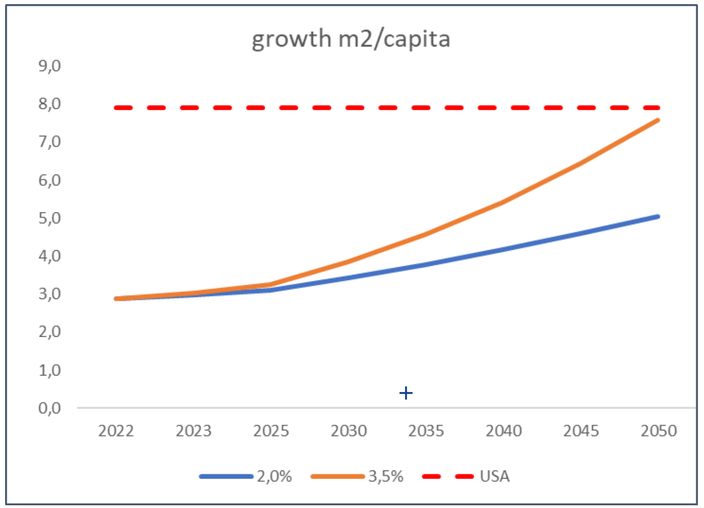
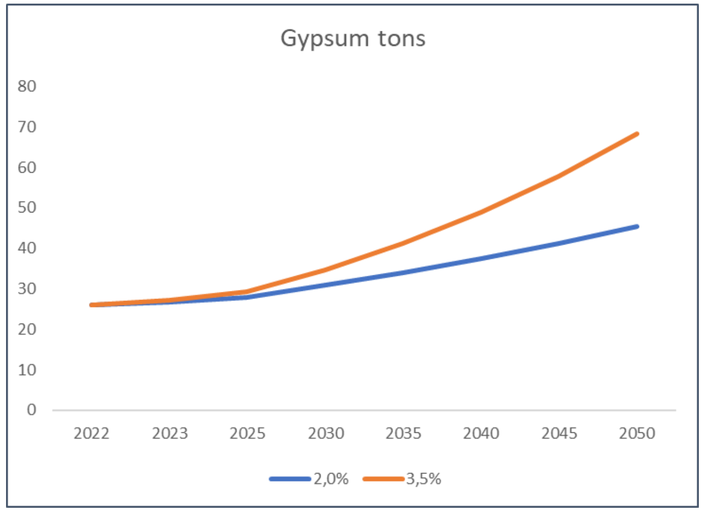
Gypsum demand for plasterboards



Needs based on demography



Plasterboard is still a growing market



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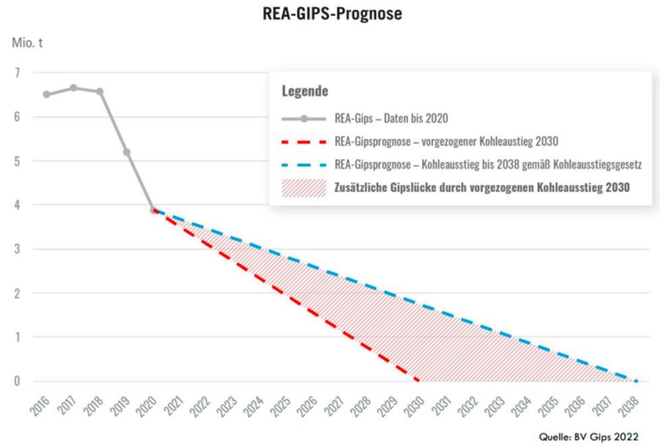

FGD phase out: - 7 Mtons

Additional 25 to 50 Mt of gypsum will be required in Europe in 2050 !

→ **Waste recycling**
→ **Natural gypsum**

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Source of Waste






Internal waste:
(out of scope)

Renovation & new sites construction:
Offcuts

Prefab

Deconstruction
Mature market

Demolition
Limited recovery

mixed


gypsum & paper


gypsum & paper(+) & screws & paints & plastics……


Many things .. & gypsum……

Estimated maximum: 20 to 25% of the gypsum need

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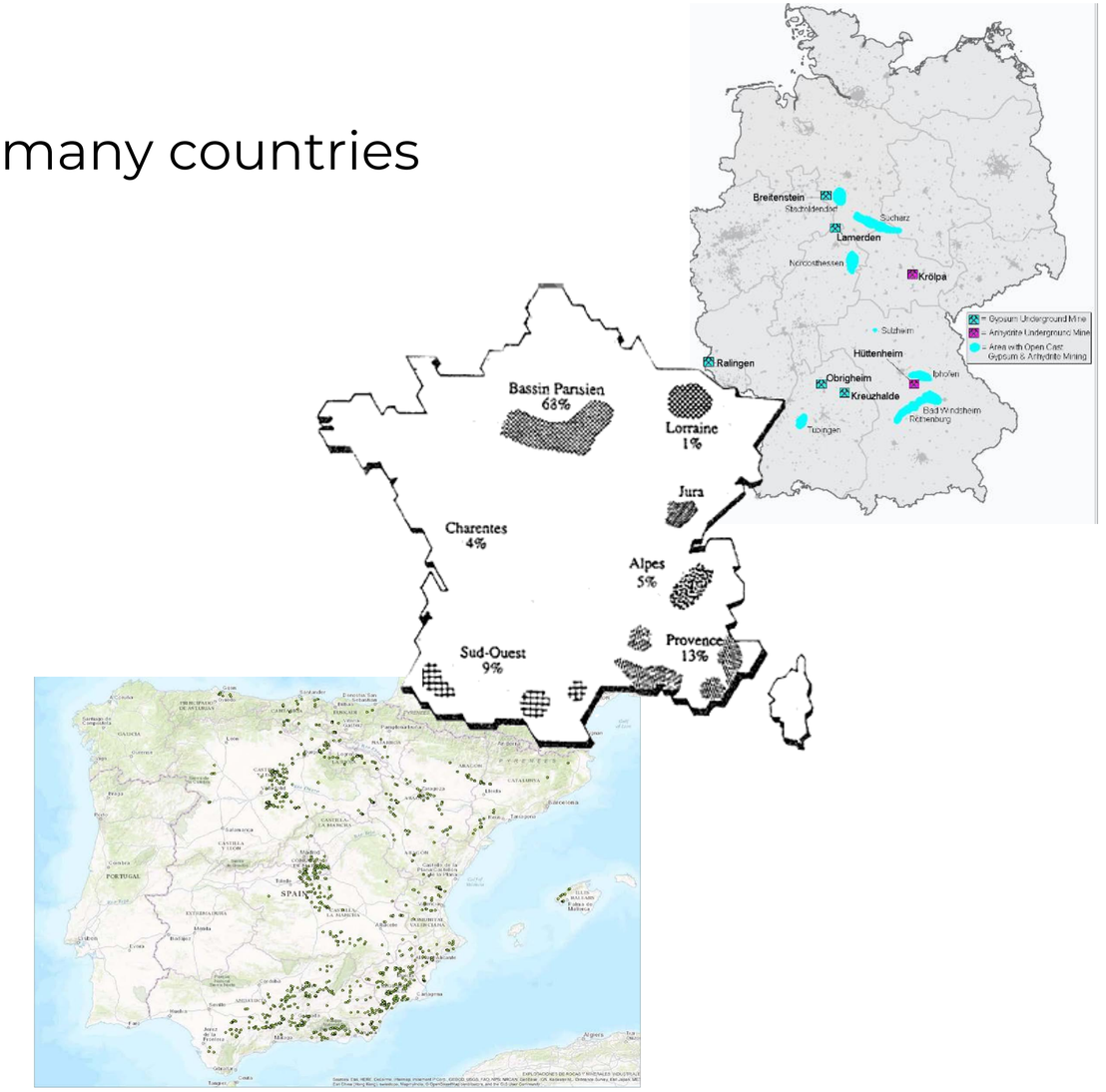
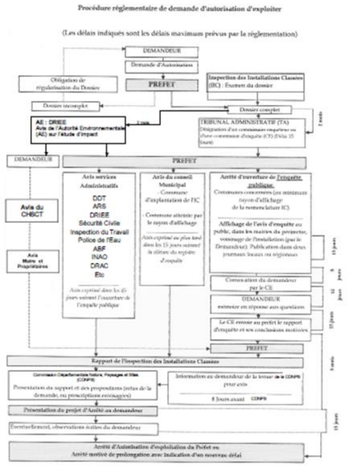
Main option: natural gypsum

- Gypsum is widely available in Europe, in many countries
- No official consolidation of the resource
- Several obstacles



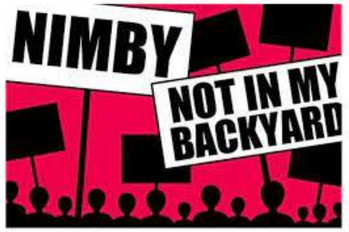
Natural gypsum mining authorisation: a complex, long, controversial process



Example: simplified legal procedure in France for getting a new permit to mine

➡

Essential Raw Materials… ? :
Simplification without losing the excellence + quicker process



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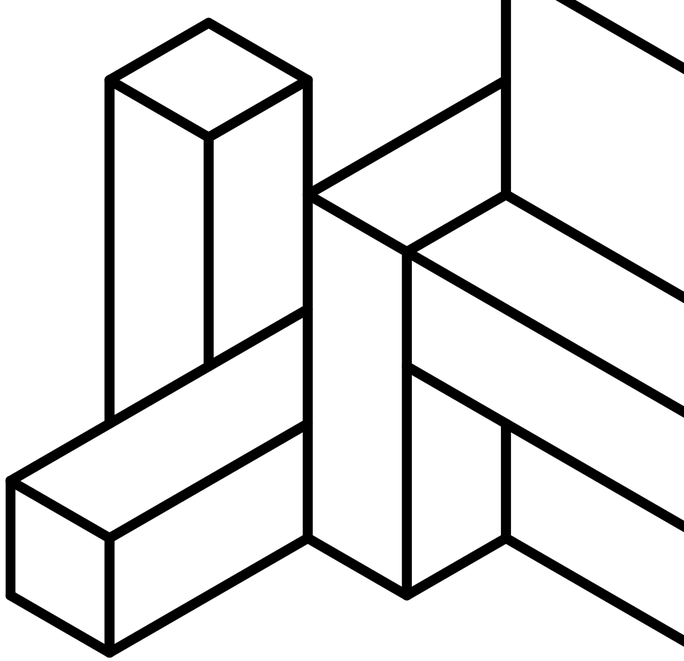
+

Facilitating natural gypsum extraction in Europe will help in contributing to the Green Deal

Discussion:
How to secure a sustainable supply of essential raw materials in Europe?



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Panel Discussion

Vincent Basuyau
European Commission,
DG GROW

Christoph Dorn
Knauf / EUROGYPSUM

Dirk Fincke
Aggregates Europe-UEPG

Emily Iona Stewart
Open Society Foundations

Moderation:
Tristan Suffys
EUROGYPSUM

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Closing words

Jörg Ertle
President, EUROGYPSUM

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Lunch

Lunch is served in the buffet outside the meeting room

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Thank you!

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