

Foreign Market Entry Programme

Fact Finding Mission from Africa and Australia
to Germany

15 November 2021 – 19 November 2021

Facilitators:



Day One

Virtual Delegation Kick-Off with Southern
Africa and Australia

15 November 2021

Facilitators:

Opening Remarks

Annika Glatz

German Federal Ministry for Economic Affairs and Energy



Digital fact-finding mission to Germany for African and Australian companies in the mining sector

15 November 2021

Annika Glatz from the International Raw Materials Policy Division,
German Federal Ministry for Economic Affairs and Energy



German Mining Network

Supported by:



on the basis of a decision
by the German Bundestag



GERMAN MINING NETWORK

Competence in Mining & Mineral Resources

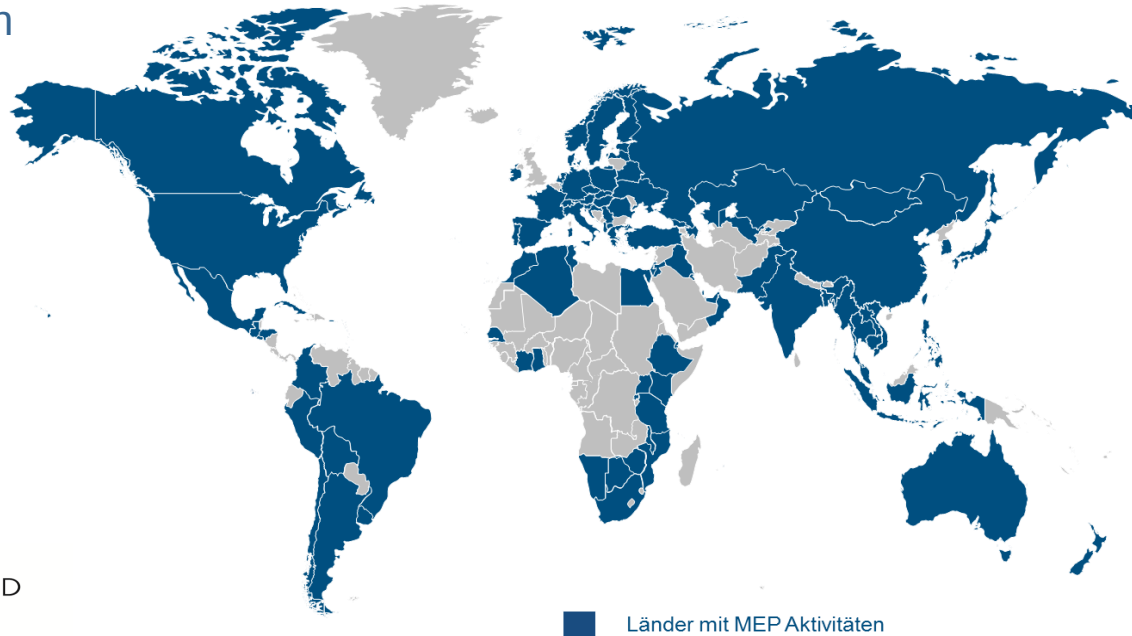


Partner



Market Entry Programme - in brief

- Focus on selected market-related and SME-related issues and regional and sectoral focussed
 - High quality and sustainability and demonstrably high impact
 - Fast responsive and practical realisation of trends and developments; strict inclusion of SME interests
 - Intensive mentoring through experienced organizers
- 





Federal Ministry
for Economic Affairs
and Energy



MITTELSTAND
GLOBAL
FOREIGN MARKET
ENTRY PROGRAMME

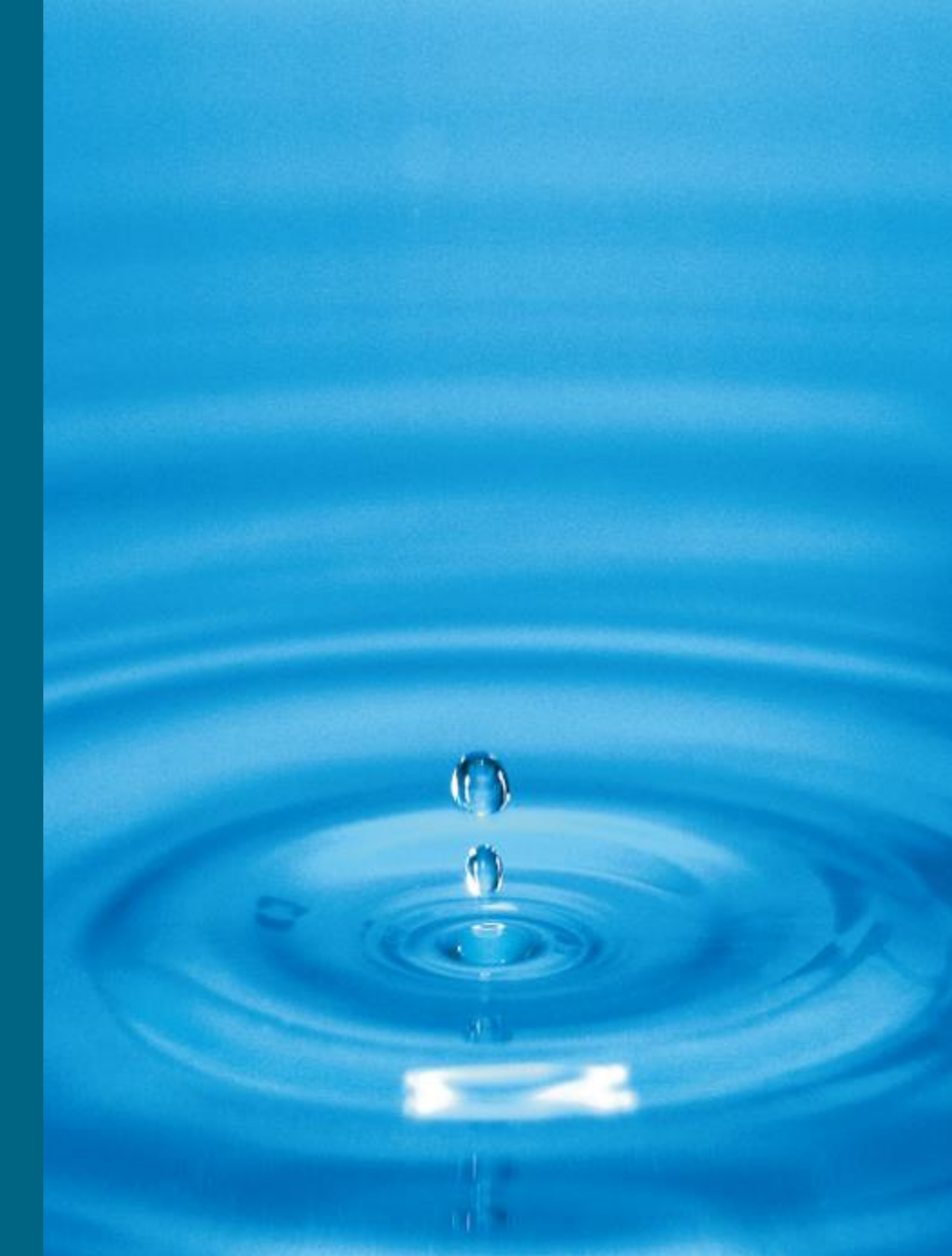
Thank you for your attention!

Welcome Remarks

Ann-Marei Zwickirsch

Klaus Stöckmann

VDMA Mining

The left side of the slide features a vertical image of a water drop falling into a pool of water, creating concentric ripples. The background is a solid blue color.

VDMA – partner of Fact-Finding Mission Australia and Southern Africa in the field of mining and raw materials

Klaus Stoeckmann,
Deputy Managing Director VDMA Mining
Ann-Marei Zwickirsch,
Manager Exhibition VDMA Mining

VDMA - Mechanical Engineering Industry



The leading federation of European engineering

- » representing about 3.300 companies
- » more than 1 Million employees
- » turnover ~ 229 bn € (2019)
- » export quota ~ 80 %
- » small and medium-sized companies ~ 86 %
- » 45.000 visitors per year
- » 1.500 events per year
- » over 600 dedicated employees



Well positioned everywhere



36 trade associations

- » Experts for product-specific topics

12 specialized departments

- » Consultation in all specific topics

6 regional subsidiaries in Germany

Offices in Brussels and Berlin

- » Exchange with political decision makers and key stakeholders

Foreign subsidiaries in Austria, Brazil, China, India, Iran, Japan, Poland and Russia

- » On site consultation and support

Working groups and forums

- » Cross-sectoral cooperation

Service companies

- » Services in various fields

Our Trade Associations



- » Agricultural Machinery
- » Air-handling Technology
- » Building Control and Management
- » Cleaning Systems
- » Compressors, Compressed Air and Vacuum Technology
- » Construction Equipment and Plant Engineering
- » Electric Automation
- » Electronics, Micro and Nano Technologies
- » Engines and Systems
- » Fire Fighting Equipment
- » Fluid Power
- » Food Processing and Packaging Machinery
- » Large Industrial Plant Manufacturing
- » Lifts and Escalators
- » Machine Tools and Manufacturing Systems
- » Materials Handling and Intralogistics
- » Measuring and Testing Technology
- » Metallurgy
- » **Mining**
- » Municipal Equipment
- » Plastics and Rubber Machinery
- » Power Systems
- » Power Transmission Engineering
- » Precision Tools
- » Printing and Paper Technology
- » Process Plant and Equipment
- » Pumps + Systems
- » Robotics + Automation
- » Security Systems
- » Software and Digitalization
- » Textile Care, Fabric and Leather Technologies
- » Textile Machinery
- » Valves
- » Waste Treatment and Recycling Technology
- » Welding and Pressure Gas Equipment
- » Woodworking Machines

VDMA Mining

As part of VDMA ...

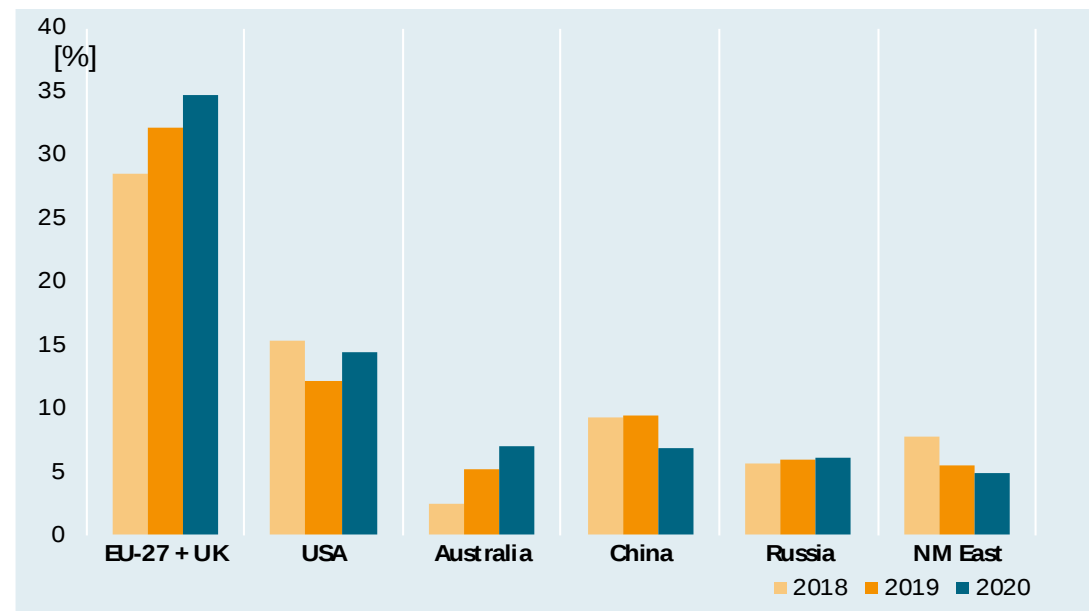
... we represent manufacturers of mining equipment for the extraction and processing of raw material

- » **Open Pit Mining i.e. and among others**
 - Extraction (Continuous / Truck & shovel)
 - Blasting equipment
- » **Underground Mining**
 - Extraction (longwall / room & pillar)
 - Roof support
 - Conveying & haulage underground
- » **Coal & Mineral processing/beneficiation**
 - Crushers / Mills
 - Sizing & Sorting equipment
 - Granulation equipment
- » **Consulting/Engineering**



Key Figures 2020

- » Members: 145
- » 2020 sales: 3,38 Mrd. €
- » Number of employees: roughly 12.000
- » Export quota: ~ 98%
- » Main Export Markets (share of total export in per cent):



VDMA Mining



Some Activities



Coordinating activities and decisions in our committees

- » Steering committee Africa
- » Steering committee Asia-Pacific
- » and other committees

Trade Fairs Mining

- » MINExpo, Las Vegas, USA
- » **AIMEX, Sydney/Australia**
- » **IMARC, Melbourne/Australia**
- » China Coal & Mining, Beijing/China
- » **Electra Mining, Johannesburg/South Africa**
- » **bauma CONEXPO Africa, Johannesburg/South Africa**
- » **Mining Indaba, Cape Town/ South Africa**
- » **DRC Mining Week, Lubumbashi, DRC**

Interoperability:

- » **OPC UA – Companion Specification Mining**

www.vdma.org/mining

» Starting Point „Roadmap 2035“

What do our mining customers expect in terms of energy consumption, automation, autonomous operation or efficiency, for example?

» How do we make progress towards the goal of carbon neutrality?

- with alternative drive technologies (for example electric, H2 drives, hybrid drive technology)
- through digitalisation
- implemented in everyday practice through standards in communication => OPC UA
- working groups

» OPC UA as a vehicle/ a mean for automation, autonomy, safer and greener mining

- Establishing OPC UC Companion Specification

Your Contact



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Our new colleague for Africa



Deutsche Industrie- und Handels-
kammer für das südliche Afrika
Southern African-German Chamber
of Commerce and Industry



Deutsch-Australische
Industrie- und Handelskammer
German-Australian Chamber
of Industry and Commerce

Introduction: German Chambers Aboard

Jürgen Wallstabe

Simon Doleschal

AHK Australien & AHK Südliches Afrika



Federal Ministry
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Facilitators:

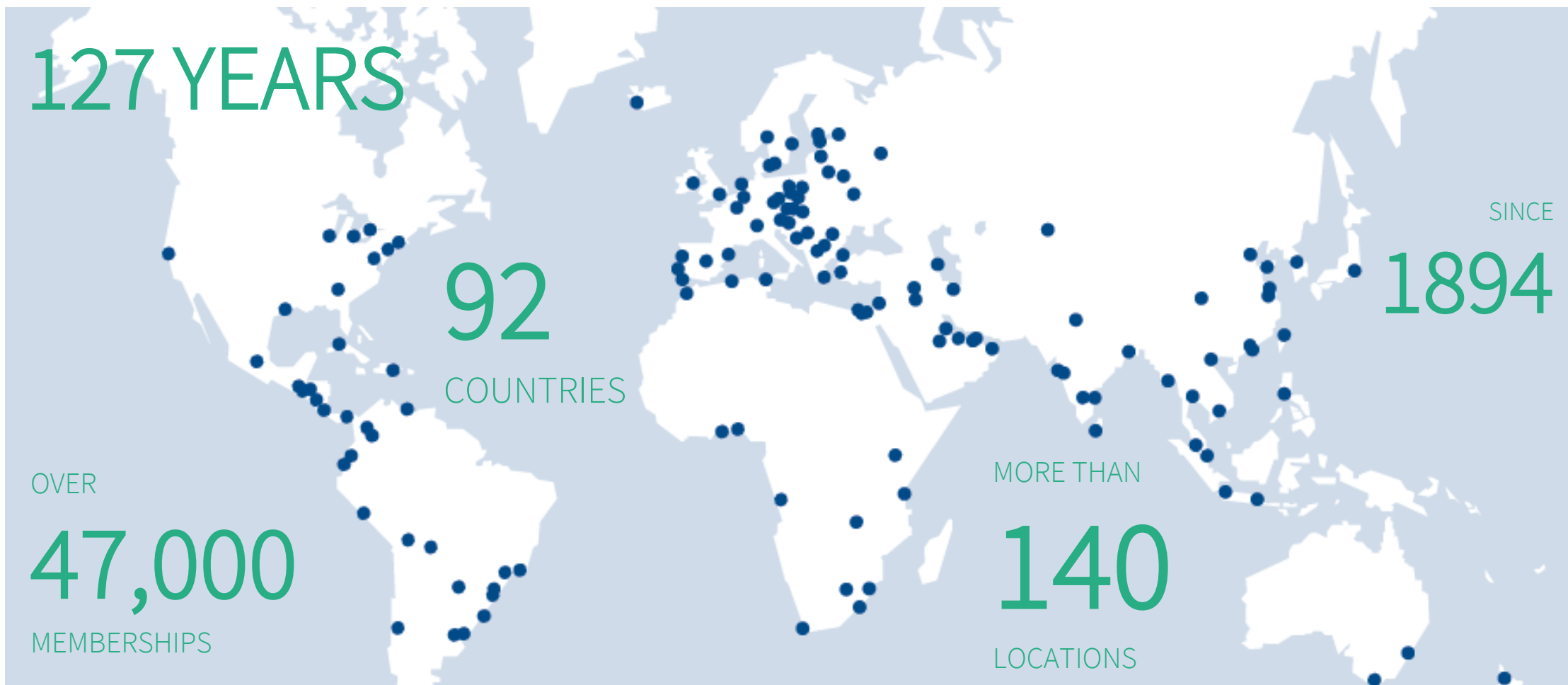


Deutsche Industrie- und Handels-
kammer für das südliche Afrika
Southern African-German Chamber
of Commerce and Industry



Deutsch-Australische
Industrie- und Handelskammer
German-Australian Chamber
of Industry and Commerce

German Chambers Abroad





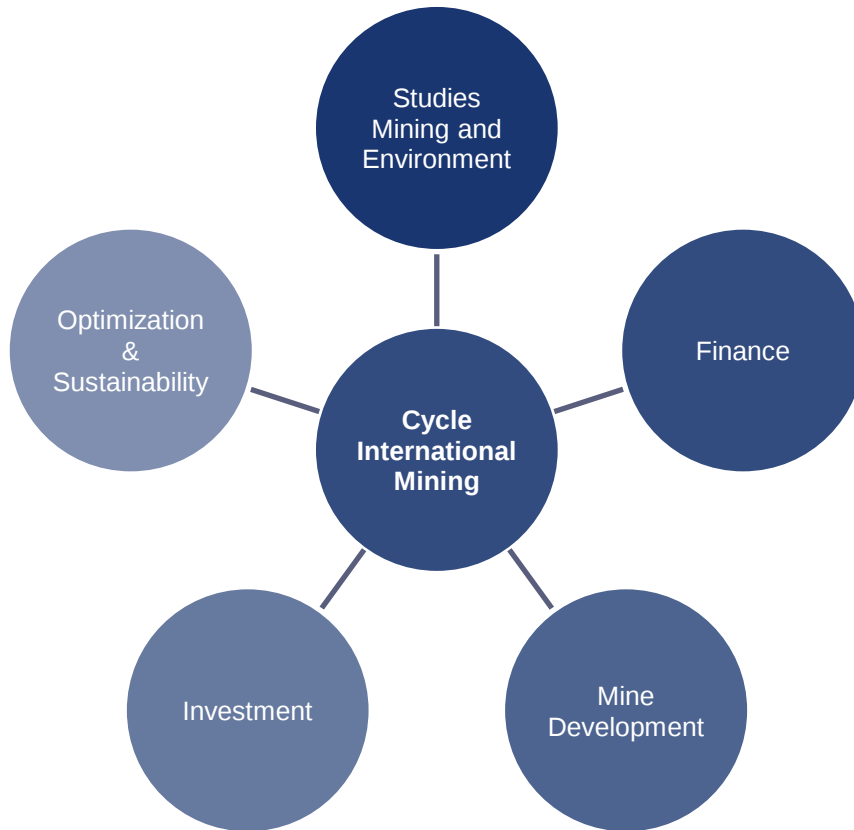
Introduction: Financing of Mineral Projects

Dr. Martin Wedig

German Federation of International Mining and Mineral Resources (FAB)

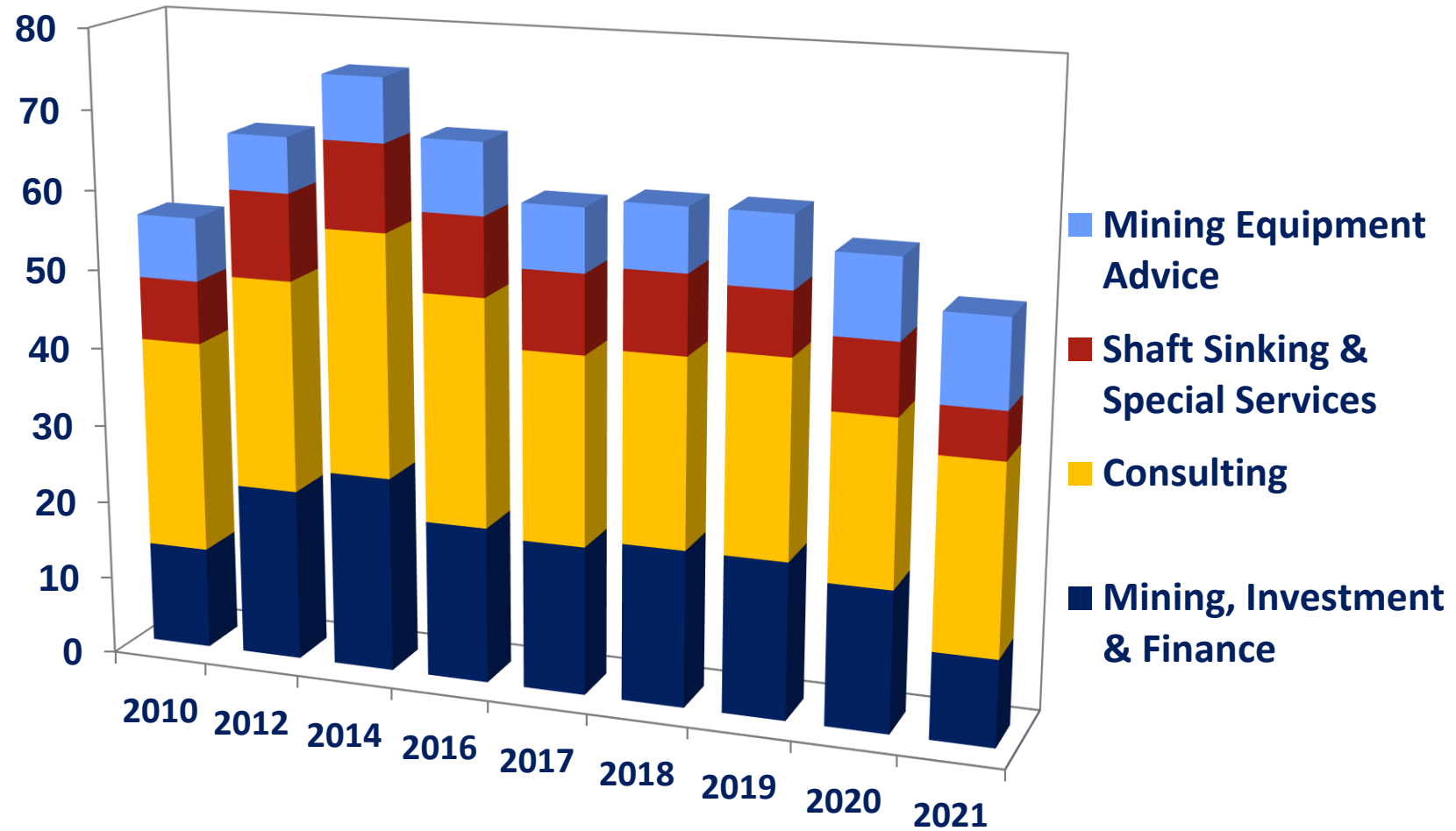


FAB and the Financing of Mineral Projects
at Africa & Australia Mining Summit
Dr Martin Wedig, 15th November 2021



- Around 55 German FAB members with interests in foreign mining.
- FAB contributes to the dissemination and marketing of German mining know-how
- FAB disseminates German mining law, occupational safety and health experience and environmental protection knowledge abroad
- Workshops for members on very different world regions and raw material countries

Development of FAB Membership



Role of FAB



Source: FAB Initiator of German Stand at Mining Indaba 2020

- Contact point for inquiries and project proposals
- Hub for information
- Forum for discussion with trade visitors and institutions
- Catalyst for cooperation
- Mediator of expertise
- Shaper of raw materials policy
- Representation of interests for members
- Coordinator for statements

Different types of projects in international mining at FAB



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**Technical retrofit with
German execution or
participation interest**



**Green/Brown Fields,
funding to secure raw
material supplies.**

**Process engineering
innovations for the purpose
of ↑ raw material yield +
↓ cost reduction**



**Capacity expansions of
mining operations**

Industrial Megatrends drive Demand for Raw Materials and Mining



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Examples of industrial megatrends:

- Electromobility
- Wind turbines
- Robotics, Industry 4.0
- Energy generation & storage
- Next generation batteries



Source: istockphoto.com

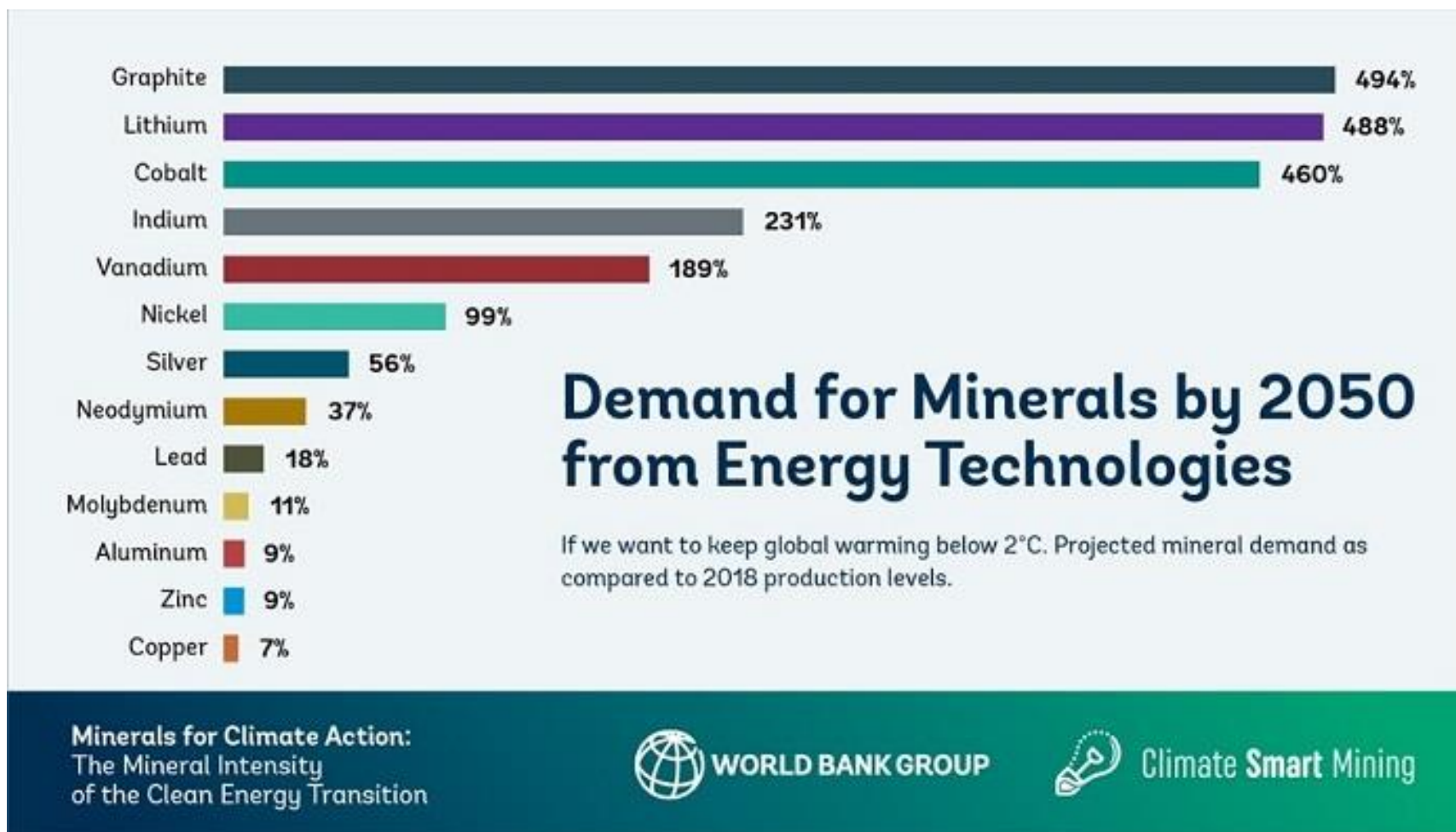
The demand is on high value critical and strategic metals and minerals such as lithium, cobalt, nickel, SEE or even PGMs.

Analysts expect unprecedented demand growth and supply shortages. This development needs new deposits and raw material mining.

Changes in Minerals Demand Outlook



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Source: Worldbank Group

New EU List of critical raw materials



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- DERA regular market monitoring.
- EU Commission review of critical raw materials every three years.
- Assessment for 2020 contains examination of 83 raw materials.
- Criticality determination of value chain from extraction to processing.

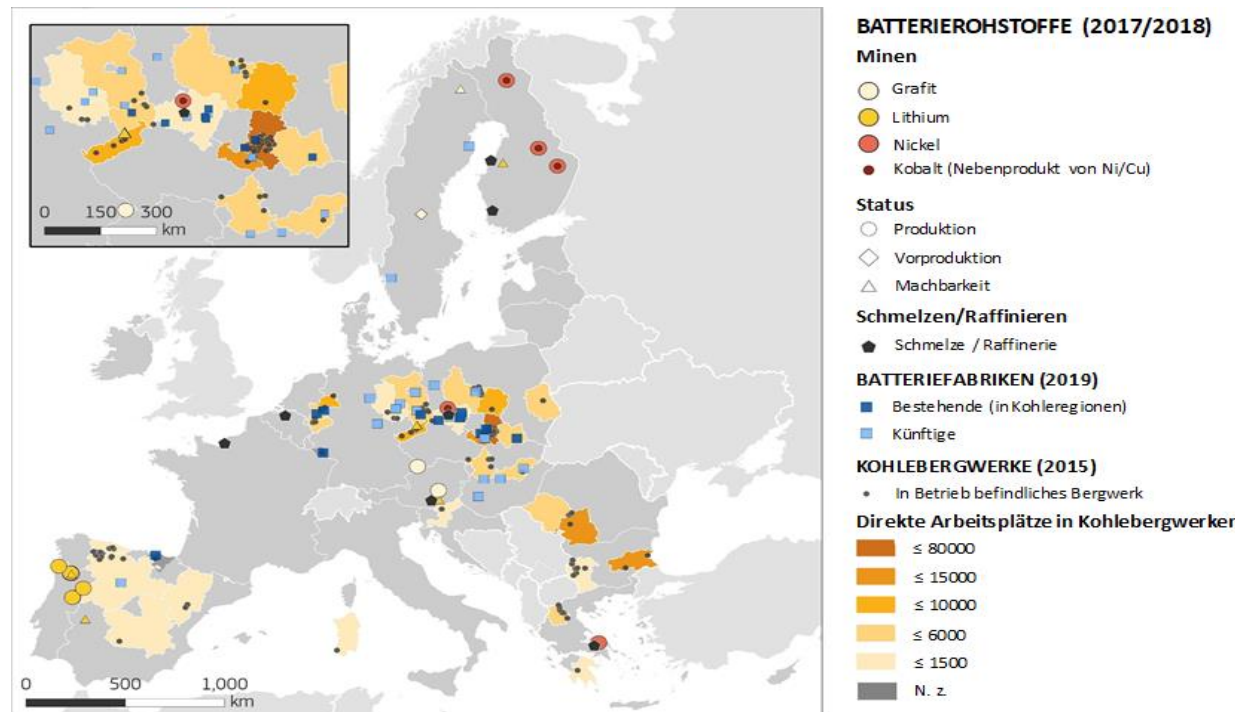
EU Critical raw materials 2020 (new compared to 2017 in yellow)

Antimony	Hafnium	Phosphorus
Barite	Heavy Rare Earths	Scandium
Beryllium	Light Rare Earths	Silicon metal
Bismuth	Indium	Tantalum
Borate	Magnesium	Tungsten
Cobalt	Natural graphite	Vanadium
Coking coal	Natural rubber	Bauxite
Fluorspar	Niobium	Lithium
Gallium	PGMs	Titanium
Germanium	Phosphorite	Strontium

Source: European Commission 2020

A Raw Material Supercycle is imminent

and requires visionary course setting for target-oriented raw material extraction.



Source: European Commission 2020

There are untapped EU resources: the geographical distribution of deposits in Europe shows the development potential of battery raw materials such as lithium, nickel, cobalt and graphite.

Other Origin of raw materials

- Key raw materials found in resource-rich emerging and developing countries (**EMDC**), e.g. Africa.
- Mining sector varies - mine sizes and the degree of mechanization.
- Small-Scale Mining (ASM) and Large-Scale Mining (LSM).
- Majority of raw materials mined industrially, 20% from ASM with simple, non-industrial methods.

- **Tasks for future improvements:**
larger transparency, mining in environmentally and climate-friendly manner.



ASM Cobalt Mining DR Kongo, Source: Miserior

- **Strong Requirement:**
Creation of a legal framework under mining law and the associated institutionalization of strong mining supervision.

Start-up investments in Raw Material Extraction



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Source: Pixabay.com

- Germany requires a number of raw materials to secure its national supply.
- Development of raw material deposits inside and outside Europe (EMDC) becoming increasingly important.
- The development of new deposits not possible without suitable financing.
- Private sector restrained and state not determined to provide finance.

Solution:

Establishment of start-up companies according to raw material clusters and their financing via IPOs (Frankfurt Junior Miners) secures long term mineral sourcing of EU companies.



Source: istockphoto.com

DEM - Deutsche E Metalle AG implements measures to ensure a sustainable supply of indispensable raw materials:

- **Environment:**
rehabilitation plans in each project.
- **Investments:**
into project development and sustainable working conditions.
- **Social commitment:**
involve local communities into value creation.
- **Governance:**
environmental, social, regulatory and ethical principles in line with international best practice.
- **Project selection:**
by suitability of the raw material project.
- **Project development:**
step-by-step with investments, co-investments and partnering activities.



Source: Mining Technology Magazine



Source: Goldplat

Caracal Gold established to acquire and develop un-developed gold mining projects in East Africa:

- mid-term goal of producing approx. 50,000 ounces of gold per annum
- resource in excess of 2 million ounces

Main Project Kilimapesa Mine:

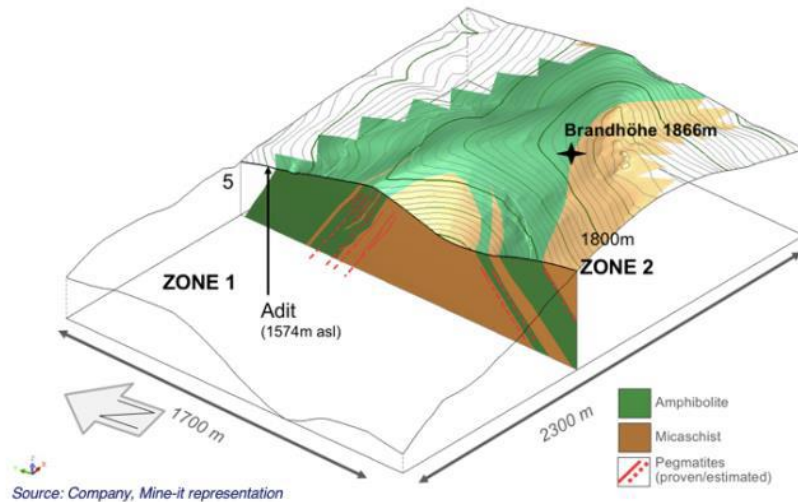
- Kilimapesa gold mine located in the mining-friendly jurisdiction of Kenya.
- Mining license with a JORC resource and an extensive prospecting permit.
- Established producing underground mine and processing plant.
- Upside potential through expansion of the operating plant and upgrading of reserves and resources.

European Lithium AG

Wolfsberg Lithium Project



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- Detailed exploration data and geological exploration activity (JORC compliance).
- Mining license awarded on a permanent basis.



2022/23 Start of production:

- First potential lithium producer in Europe
- JORC- Resource: Rd.11 Mio.t (measured + indicated) at 1% Li₂O in Zone 1, possible doubling of resource in zone 2
- Infrastructure development: site hydroxide plant Wolfsberg
- Creation of approx. 400 highly qualified jobs

- In the light of industrial megatrends mineral and raw material demand becomes apparent.
- Changes in demand manifold requires immediate actions depending on criticality of mineral.
- Mineral deposit development with focus in Europe and EMDC.
- Suitable finance for EU mining projects rare and without history of venture capital funding within Europe.
- Establishment of Junior Miners via IPOs at Frankfurt stock exchange to secure long term mineral sourcing of EU companies.
- Examples: Deutsche E-Metalle, Caracal Gold Plc and European Lithium AG.



Thank you for your attention !

Mining in Germany

*Moderator: Peter Hartlieb,
EnergieAgentur.NRW*



K + S AG

Lars Rickfelder



Federal Ministry
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Facilitators:



AHK

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kammer für das südliche Afrika
Southern African-German Chamber
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AHK

Deutsch-Australische
Industrie- und Handelskammer
German-Australian Chamber
of Industry and Commerce

15 November 2021 Lars Rickfelder

VDMA Mining Fact Finding Mission

Online

K+S at a Glance

Customer Segments

Agriculture



Revenues

- Potassium chloride (MOP)
- Fertilizer specialties

Industry+



Revenues

Industry

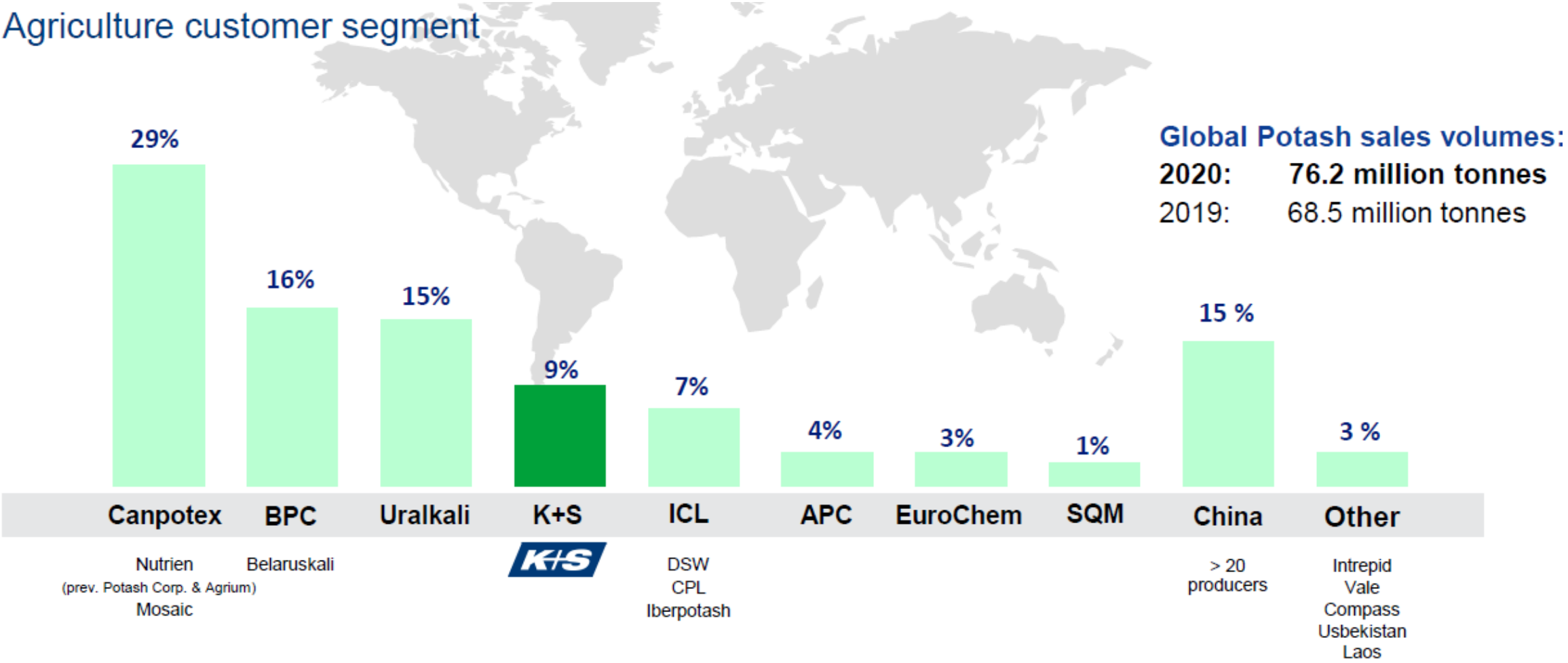
- Chemical
- Pharma
- Food
- Animal nutrition
- Oil and gas
- Water softening
- other industrial products

Consumer

Communities

Supplier structure on the global potash market

Agriculture customer segment



Basis: 2020
Source: IFA, K+S
Incl. potassium sulphate and potash grades with lower K₂O content

Main salt suppliers in Europe

Industry+ customer segment

Capacity in million tonnes (crystallized salt and salt in brine; excl. captive use)



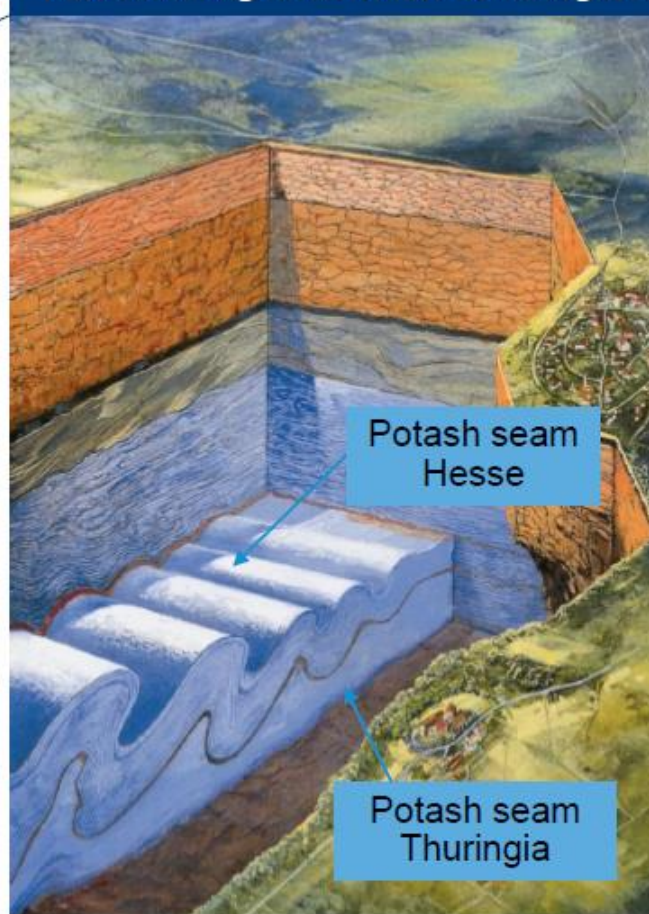
Potash Sites in Germany

Potash production



Kassel **K+S**

Potash mining in the Werra-Fulda region

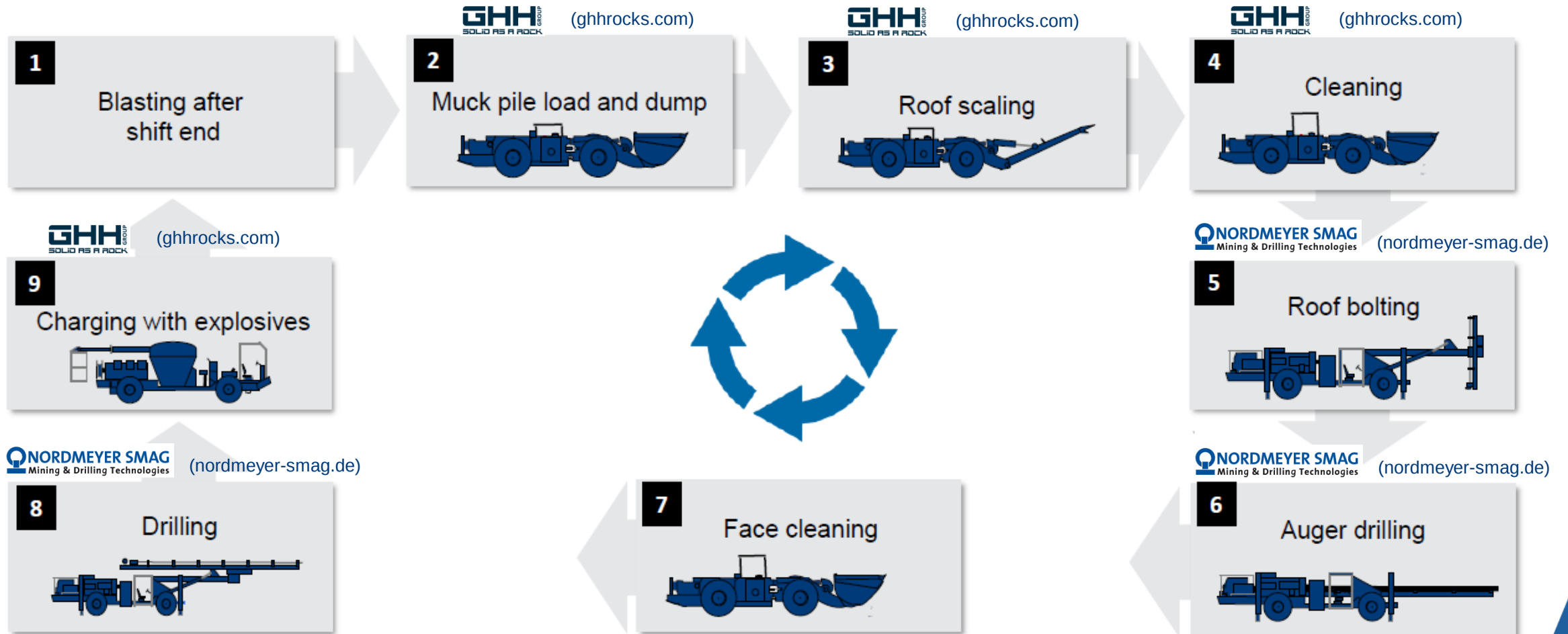


Share of annual production capacity (in %)

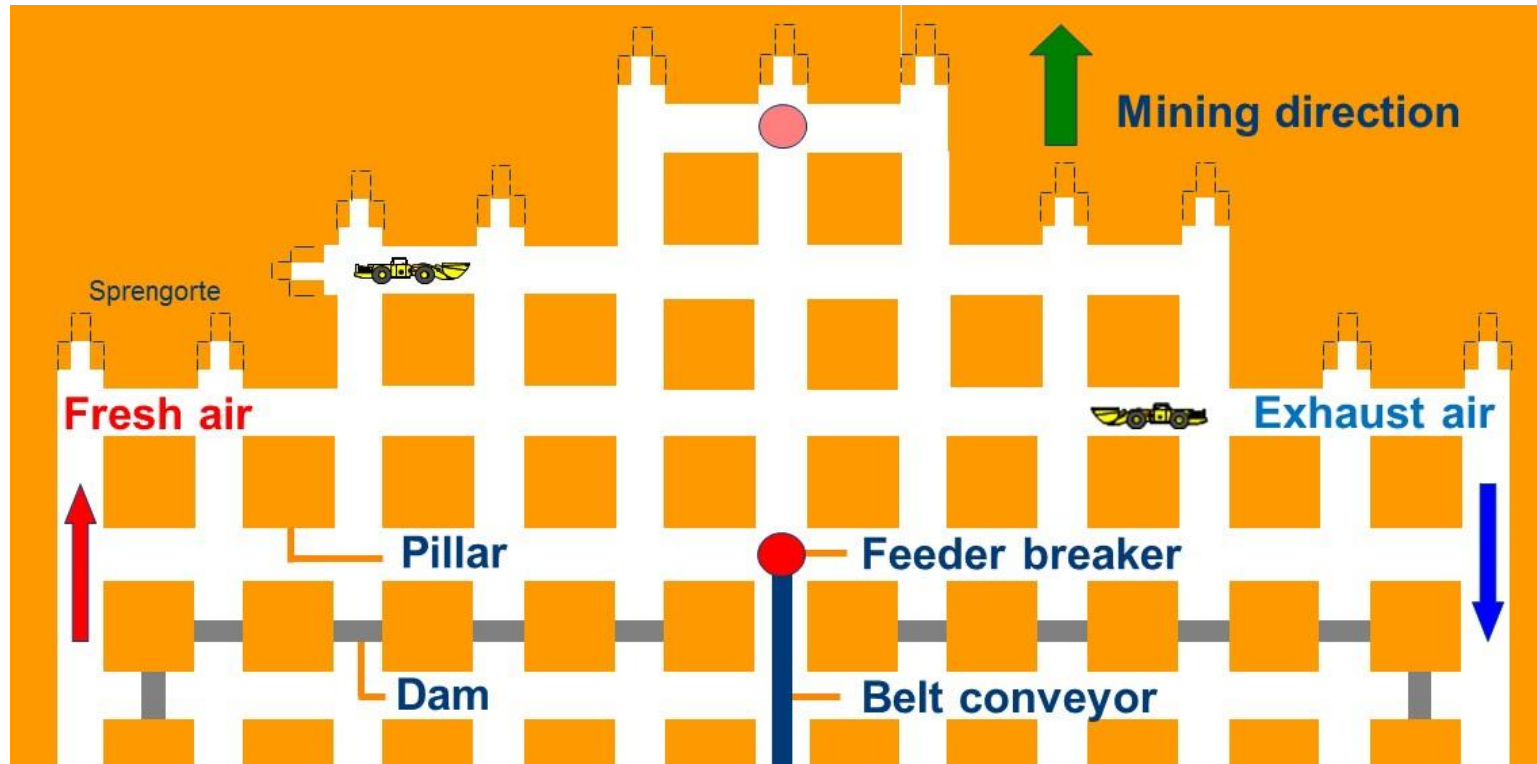
1.	Wintershall		
2.	Untereibzbach	} Integrated Werra plant	~ 50
3.	Hattorf		
4.	Zielitz		
5.	Neuhof-Ellers		~ 20
6.	Bergmannsseggen-Hugo		~ 5
	(production site only, no mining)		

Underground mining production cycle

Potash production



Room and pillar mining



Soft rock mining

Bulk density:	1,5 t/cbm
LHD buckets:	max. 14 cbm / 21 t
compressive strength:	< 25 MPa

Ambient conditions

Temperature:	20 – 52 ° C
Gradients:	max. 28 %

Galleries:

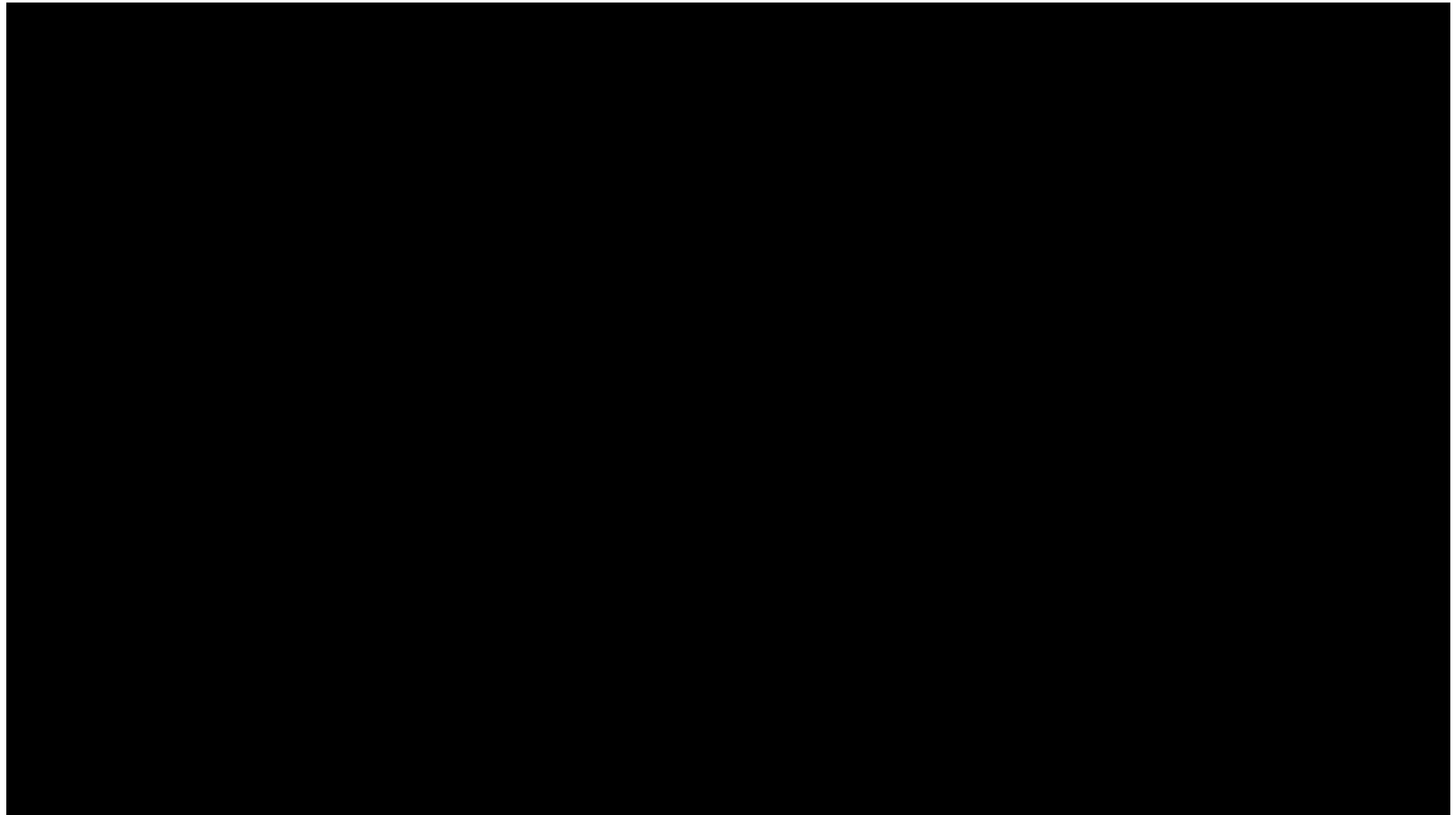
Width:	10 – 16 m
Height:	2 – 9 m

Large holes:

Diameter:	280 or 350 mm
Length:	7 m

Blast holes:

Diameter:	38 – 50 mm
Length:	7 m





Knauf Gips KG

Daniel Schroeder



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Mining @ Knauf



Knauf Group – Leading not only in plasterboards and plaster...

more than **250 Plants** worldwide

In more than **90 countries**
on all continents

more than
35.000 employees

10 billion € annual turnover

More than
80 open pits

10 underground mines
+3 in planning phase

Annual Production
22 Mio. t

Usage of Natural Gypsum and Anhydrite

Gypsum = Calciumsulfat Dihydrat ($\text{CaSO}_4 \cdot 2 \text{H}_2\text{O}$)

Anhydrite = Calciumsulfat (CaSO_4)

Gypsum-based Construction Materials



Retarding agent for Cement



Without **4-5% Gypsum and Anhydrite** cement/concrete would set immediately and would not be workable

Fertilizer - Ca and S carrier



Natural gypsum certified as **fertilizer** for **organic farming**



Raw Material Sources – German Gypsum Industry 2020

Raw Material

Natural Gypsum
55%

Open-pit Mining, Quarries

Underground Mining



Synthetic Gypsum
43%

FGD Gypsum & others



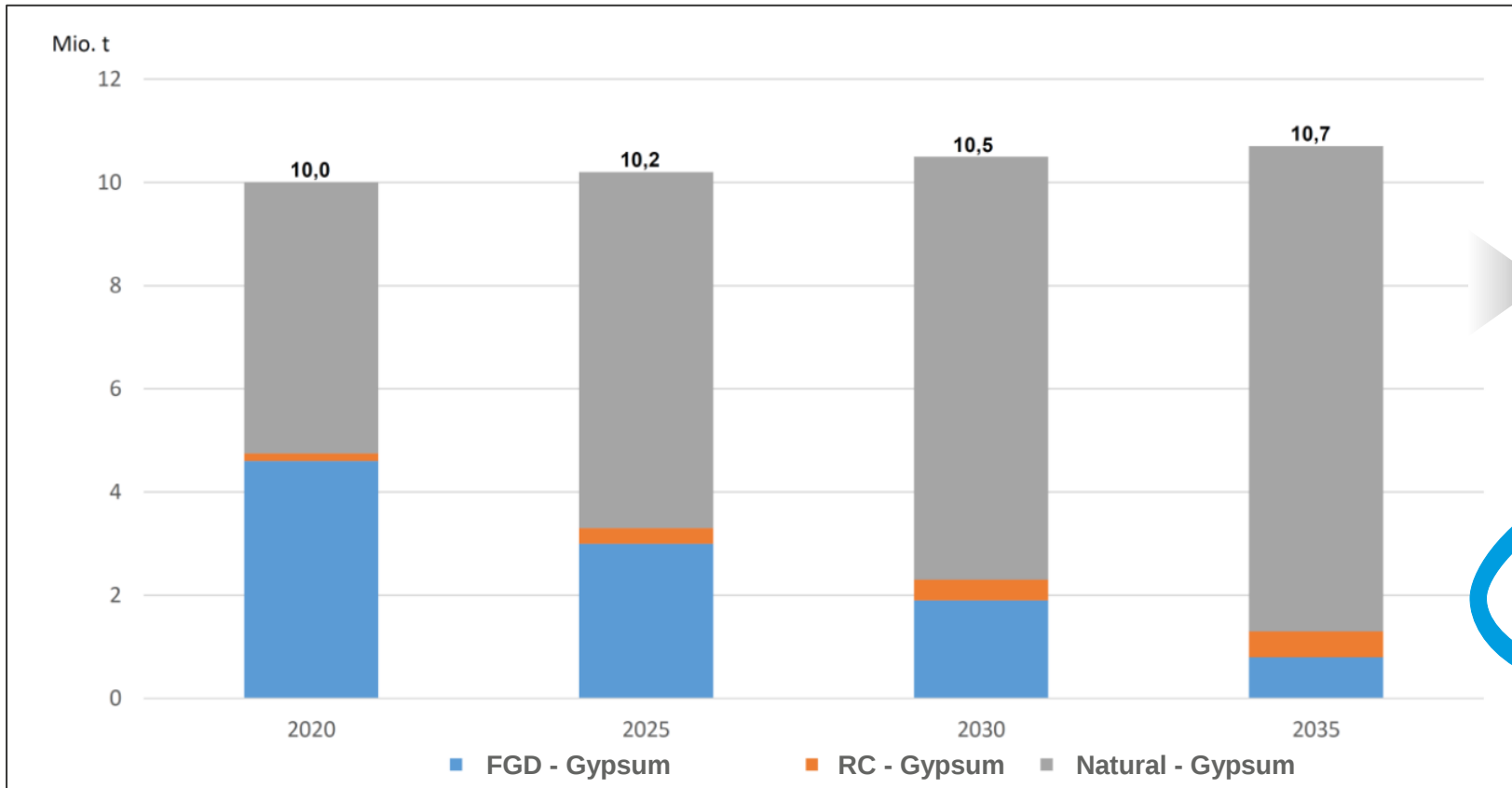
Recycling
2%

Production residue



Gypsum Mix – German Gypsum Industry

Coal Phase Out: 2050 → 2038 → 2030 → ...?



The extraction of natural gypsum must be **doubled within 10 years**

Coal phase out will lead to an **increase** of mining activities in the gypsum industry, both underground and on the surface



Underground Mining – Production cycle

1

Drilling



2

Charging & Blasting



3

Loading



4

Transport



5

Crushing



6

Product – 0/50 mm



The future comes closer – Smart & Green Mining



<https://www.volvonautomoussolutions.com>

Glückauf

Thank you for your attention

Daniel Schroeder

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RWE Power AG

Arie-Johann Heiertz



Federal Ministry
for Economic Affairs
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RWE



Best Practice: RWE continuous mining in Germany and consulting projects overseas.
Arie-Johann Heiertz – Head of Mining and Materials Handling

Who we are

Engineering. Consulting. Utilityroots.

- Heritage in Mining & Power Generation
- Owner/Operator of 3 large-scale open-cast coal mines (~100Mtpa)
- 55+ years international projects experience
- 1,250+ projects executed successfully
- 300+ in-house experts
- Key Competences:
Project planning, operation & maintenance, training
- Talent Pool:
Innovation & New Technologies
(green mining incl. emission reduction, renewable/hybrid energy solutions)



Mining



Thermal Power



O & M



Renewables

Who we are



Where we come from

RWE operates in the Rhenish lignite deposit for >100 years

Openpit Garzweiler



production 40 Mio. t/a
2 power plants with 5.500 MW

Openpit Hambach

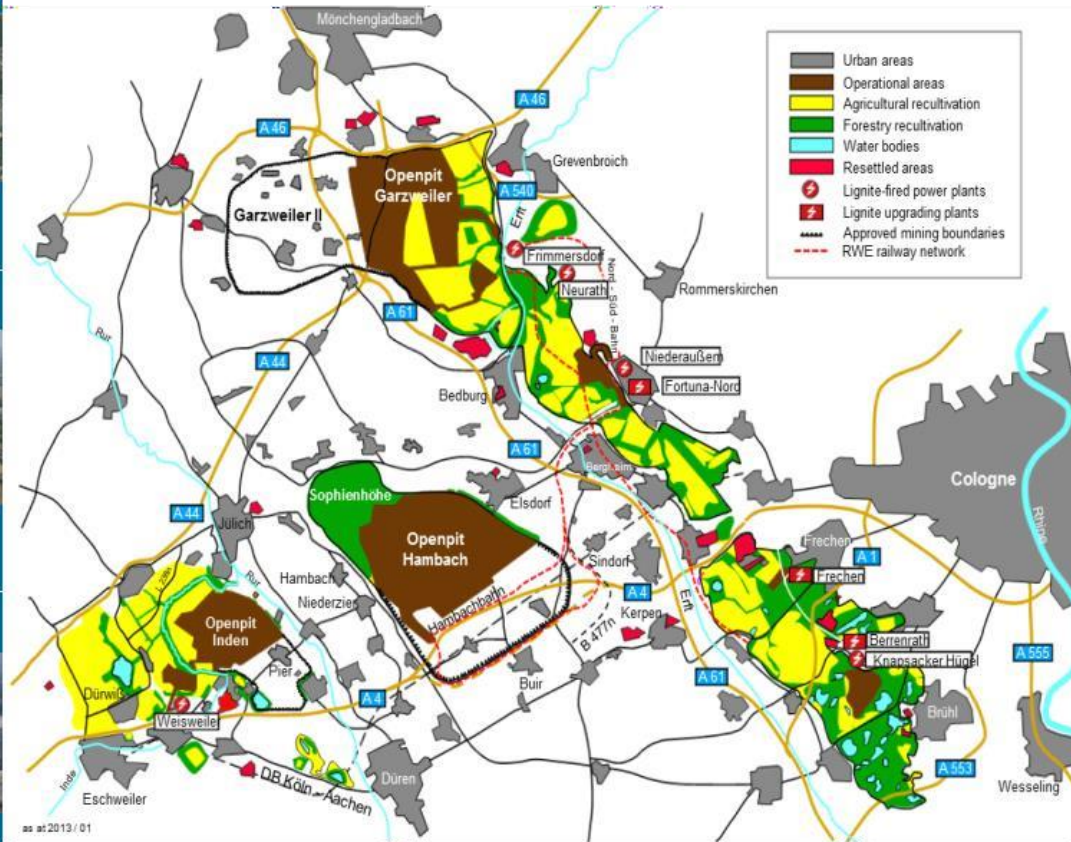


production 42 Mio. t/a
2 power plants with 5.500 MW

Openpit Inden



production 22 Mio. t/a
1 power plant with 2.000 MW



Overburden: 1.000 Mio.t/a

Maintenance Center



maintenance of big machinery
technical support / development

Logistics



330 km of own railwaysystem
47 locomotives

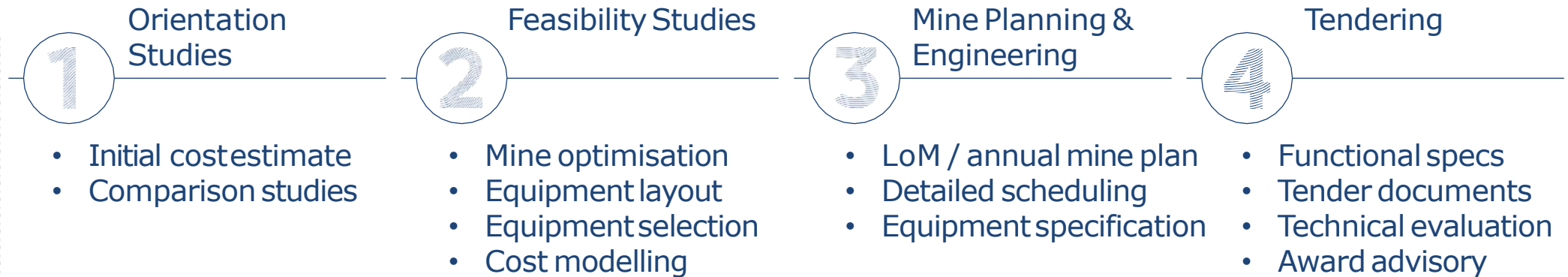
Dewatering



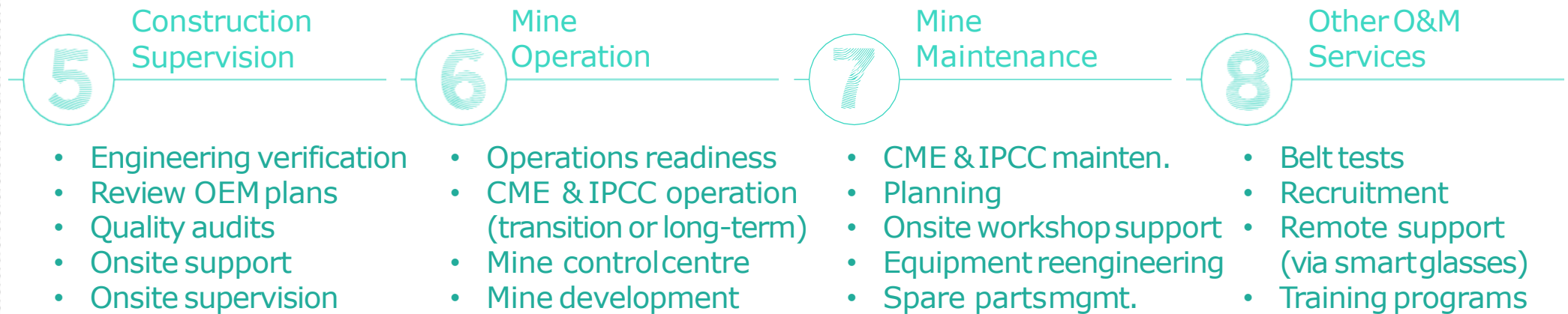
1.500 wells
750 km of pipework
4 waterworks

RWE engineering and consulting services for sustainable in-pit crushing and conveying (IPCC) solutions

OFF-SITE



ON-SITE



Partly Remote Possible

RWE mines

Mining operation since more than 100 years.

250 km of belt
conveyors



Largest belt width
2.80 m



37 Large Mining
Machines

Capacity of up to
38,500 t/h



Fully continuous

Reduced dust and
diesel emissions

Safety and Environmental Improvement Continuous Mining Solutions

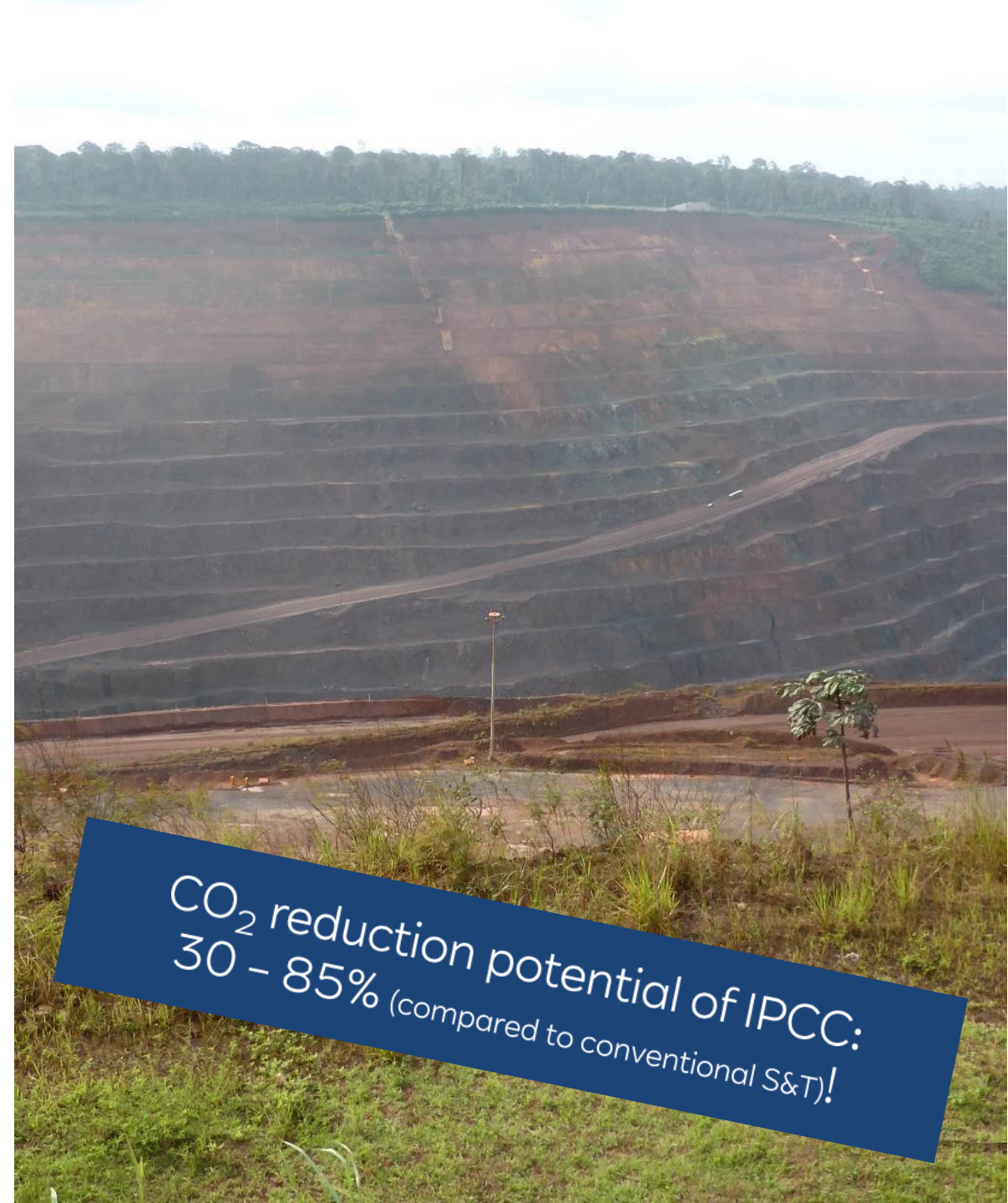


Environmental Impact

CO₂ Emissions & Employment

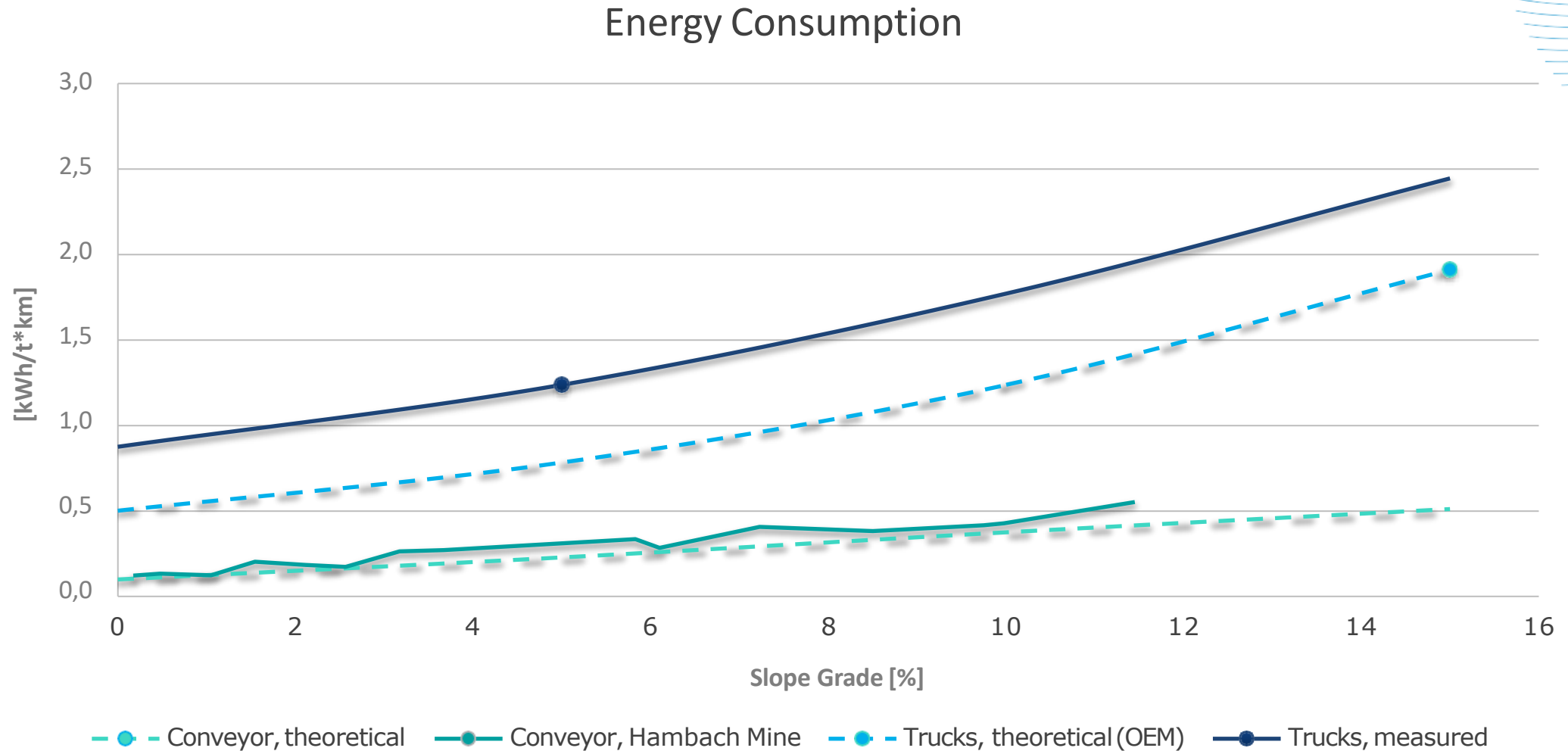
In-pit Crushing and Conveying positively impacts the environment when:

- The technology/equipment that replaces truck haulage uses renewable electricity or an energy mix – up to **85% of Greenhouse gas (GHG) emission reduction** can be achieved if the IPCC equipment is powered by e.g. hydro energy!
- The generation of dust by truck haulage is an issue – conveyor transport generates less dust and can be easier suppressed (covered conveyors, belt cleaning devices,)
- The consumption of water for dust suppression is an issue – with the application of continuous mining and material handling equipment water usage for dust suppression can be limited to material transfers and conveyors only



CO₂ reduction potential of IPCC:
30 – 85% (compared to conventional S&T)!

Energy Consumption of Material Transport Modes



Environmental Impact

Dust emissions & Mitigation

RWE assists operators in developing operational improvements to prevent and mitigate atmospheric emissions arising during materials handling and processing.

Particulate matter is often emitted by:

- wind erosion
- material handling
- haul roads
- loading processes
- combustions in furnaces.

We support you from the early-stage planning process to development strategies in order to eliminate the dust source.



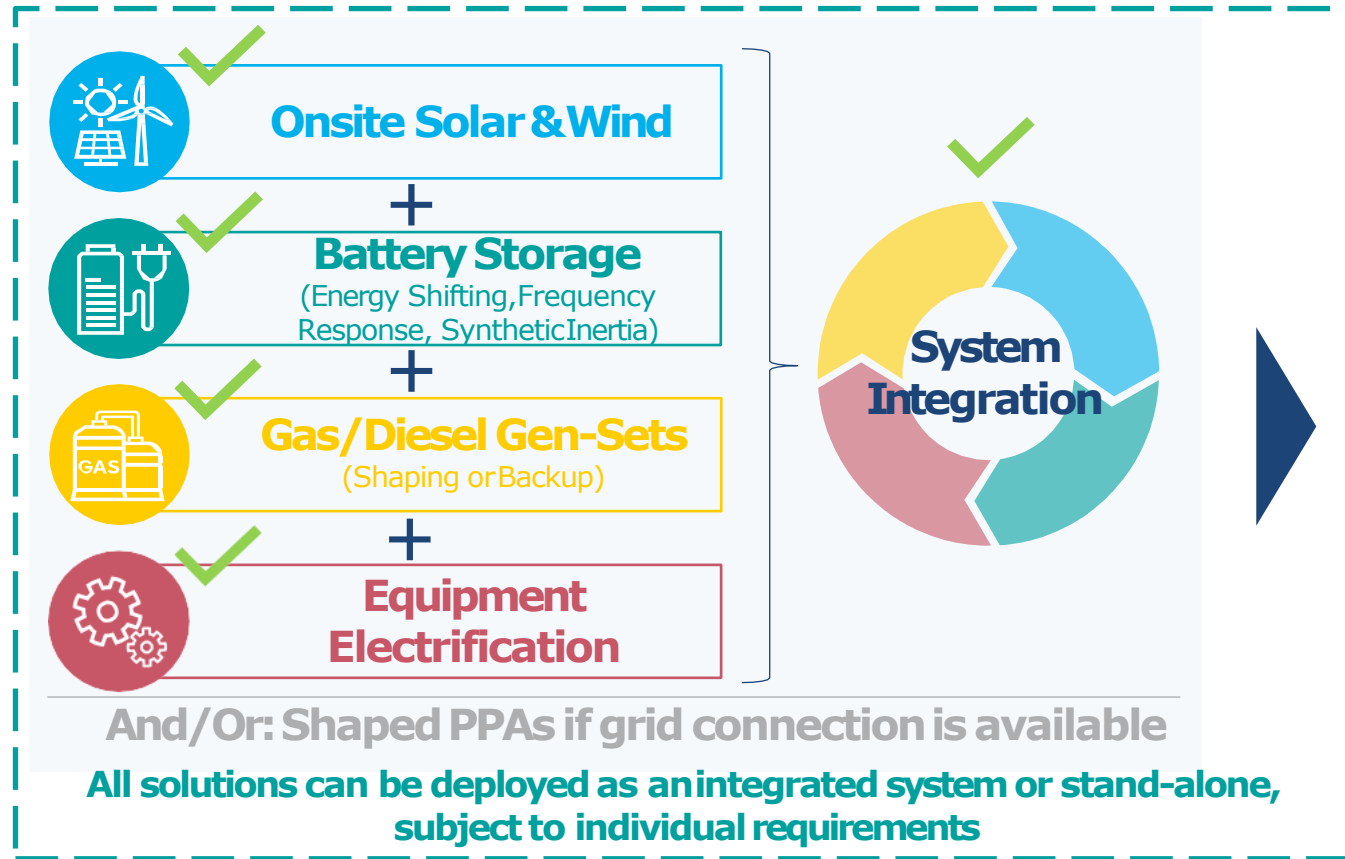
Green Mining Solutions

RWE Renewables



RWE has the expertise to provide solutions catering to Australia's ambitious GHG targets

RWE



Australia's GHG Ambitions:

- Australia will increase its ambition to reduce carbon emissions from 26% to 28% by 2030, with the firm prospect of becoming a carbon neutral country by 2050.

Optimal solution to reduce GHG emissions in the mining sector

On-site Solutions



- I Complete off-grid solution:** In-situ Solar/Wind assets, Batteries and Diesel Gen-sets with Energy Management System to harmonize mix
 - ❖ Fuel mix composition optimized to desired degree of RES penetration and/or to minimize cost of energy for a specific mine
- II On-site Renewables component (if grid connected):** In-situ Solar/Wind asset to reduce mine's dependency on grid electricity or feed (excess) electricity into the grid
 - ❖ Addition of battery storage can also be explored based on need
- III Electrification of material handling equipment:** Adaptation of In-Pit Crushing and Conveying methodology combined with electrification of loading and hauling processes

Power Purchase Agreement (PPA)



- IV Bilateral PPA or Bundled PPA (if grid connected):** Electricity supplied by offsite Renewable asset(s) (e.g. on reclaimed land) via grid
 - ❖ Supply can be customized to meet portfolio needs or a specific mine's load profile through bundled PPA, combining multiple sources of generation

The choice of solution also depends on...

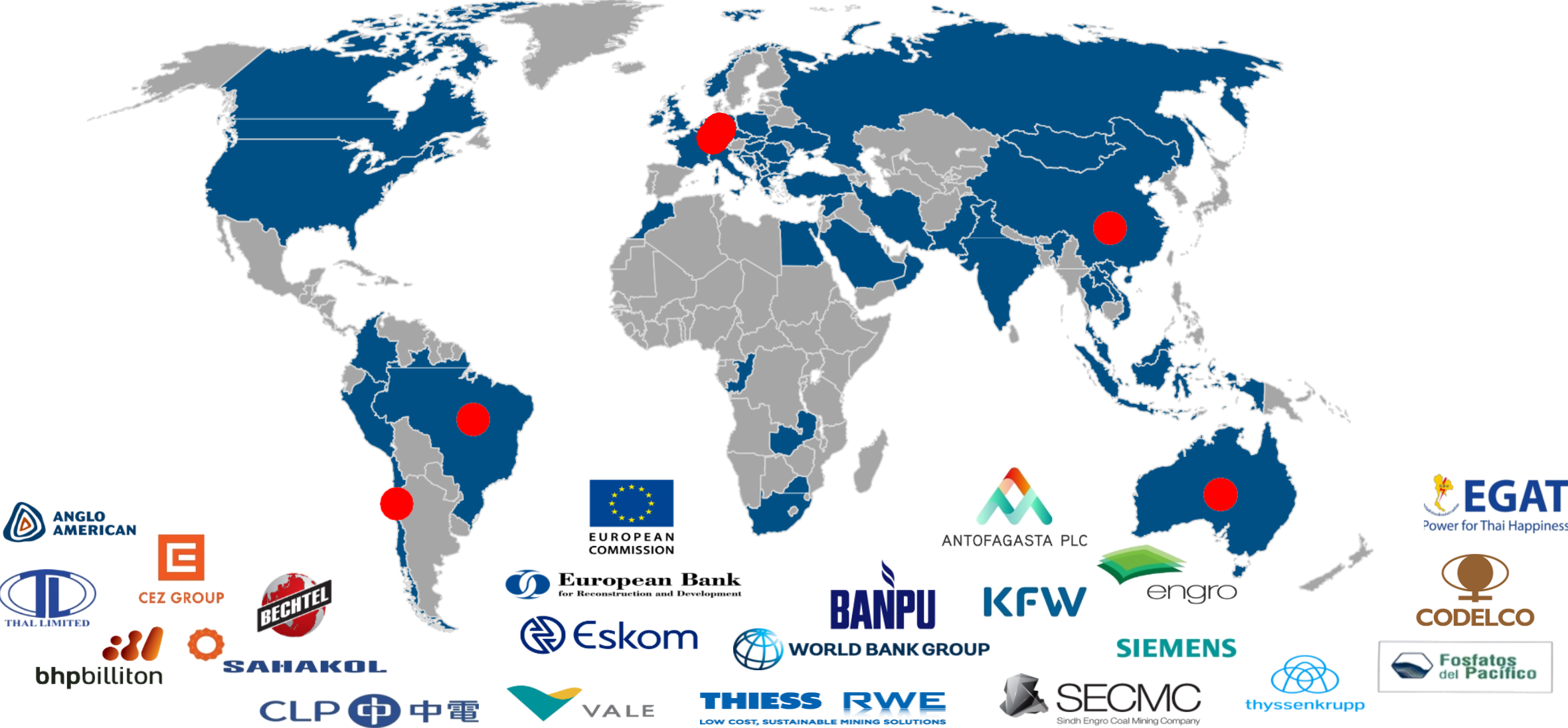
- > Sufficient renewable resource (solar irradiation / wind speeds)
- > Land availability
- > Ground conditions
- > Site accessibility and serviceability
- > Mine requirements (if connected):
 - Intra-day load profile
 - Power grid constraints (e.g. access to national grid, technical parameters)

Our Experience Worldwide

Large mining projects RWETI was and still is involved in (selection)



Our experience worldwide



Our experience in South America

Large mining projects RWETI was and still is involved in

RWE lignite mines:

- 3 mines
- 100 mio t/a coal
- 550 bcm/a overburden
- Up to 450 m deep



Various mining operations in Chile:

- Chuquicamata
- Los Pelambres
- Radomiro Tomic
- Minera Escondida
- Centinela
- Collahuasi
- Esperanza



Various iron ore operations in Brazil:

- S11D
- Mina de Aguas Claras
- Different iron ore ports





Review and optimization of a belt conveyor system

- running through a twelve Kilometres long tunnel
- overcome a 1,600 meters drop in elevation

Increase of the current daily output from 125,000 t to 175,000 t

Copper Ore – Plant Optimisation

1

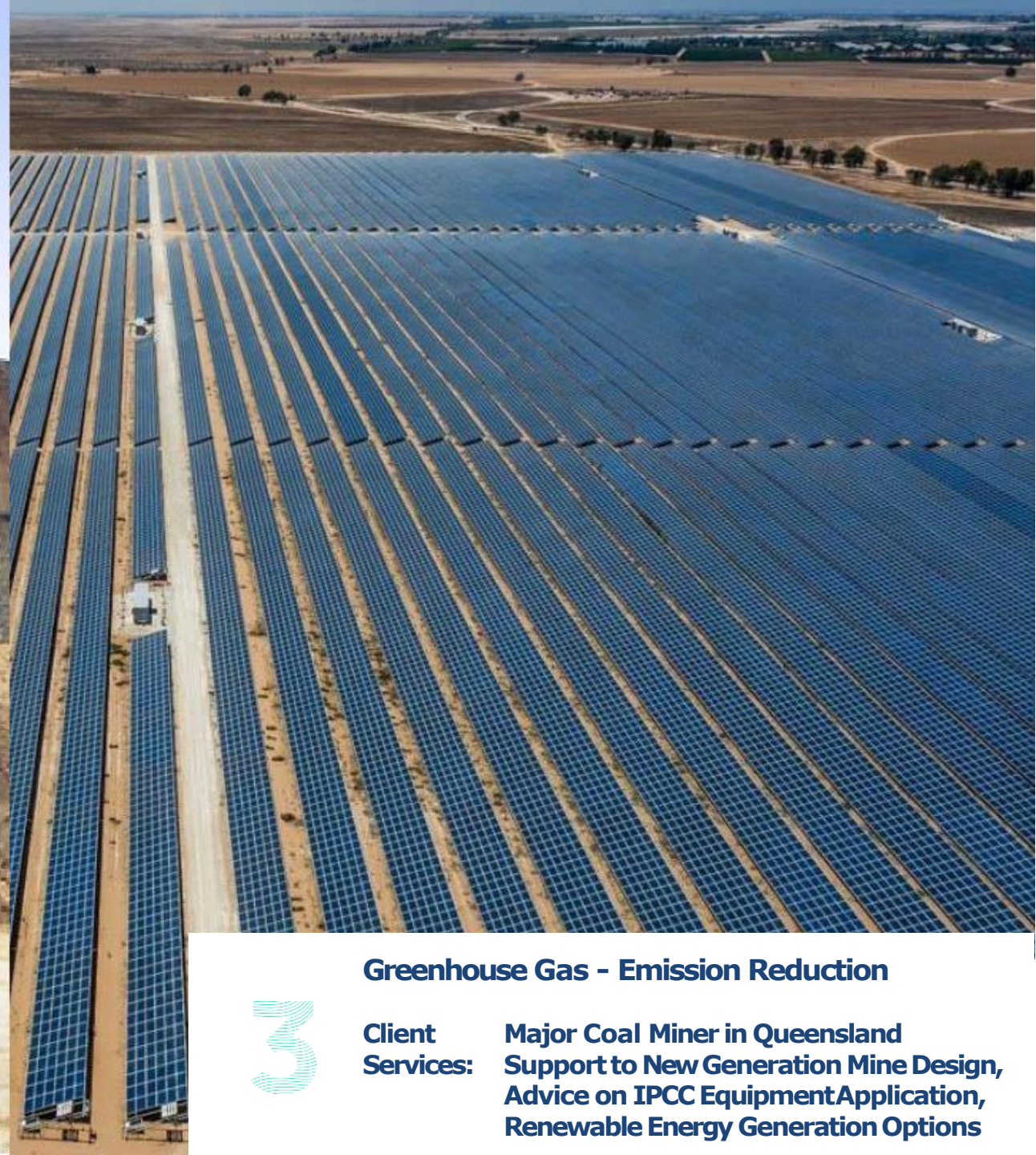
Client: Minera Los Pelambres, Chile
Services: Technical Audit,
Downhill Conveyor Design,
Capacity Increase



Iron-Ore – Mine Contract

2

Client: Vale, Brazil
Services: Technical Operations Support,
Emission Reduction Assessment,
Operational Excellence Training



Greenhouse Gas - Emission Reduction

3

Client Services: Major Coal Miner in Queensland
Support to New Generation Mine Design,
Advice on IPCC Equipment Application,
Renewable Energy Generation Options



BWE/IPCC Mine Expansion Study



Client: NLC – Neyveli Lignite Corp, India
Services: Feasibility Study for Mine Expansion,
Equipment Rehabilitation Schedule,
Power Plant Interlinkage Study



Thank you for your attention!

Advanced Mining Technologies

Prof. Dr. Elisabeth Clausen

RWTH Aachen



Advanced Mining Technologies

Fact-Finding Mission (Online)

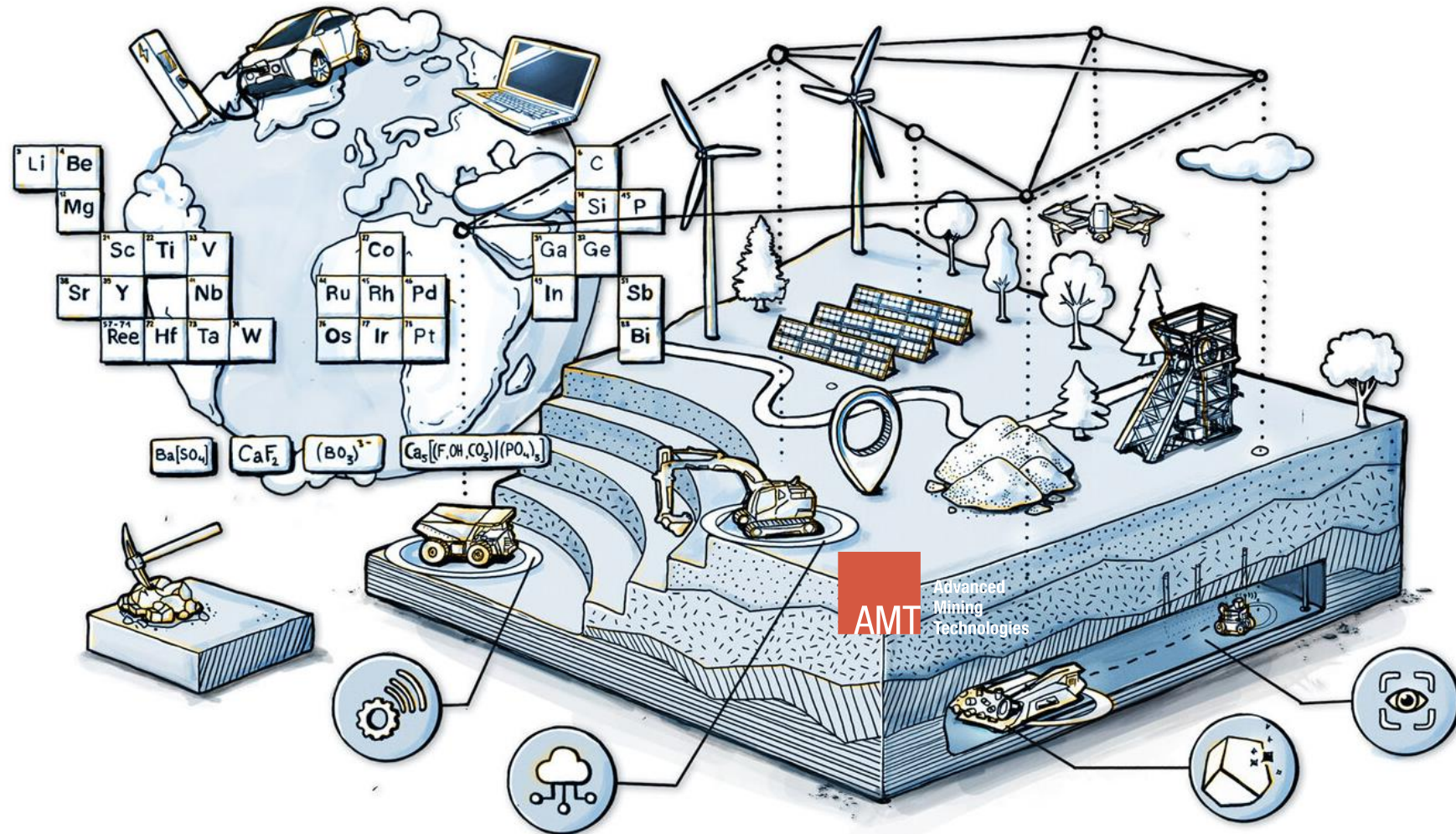
for buyers and multipliers from D.R. Congo,
South Africa, Zambia, Mozambique and
Botswana

in the field of mining and raw materials

Univ.-Prof. Dr.-Ing. Elisabeth Clausen

Online, 15.11.2021

A safe and secure supply of raw materials as one of the global challenges

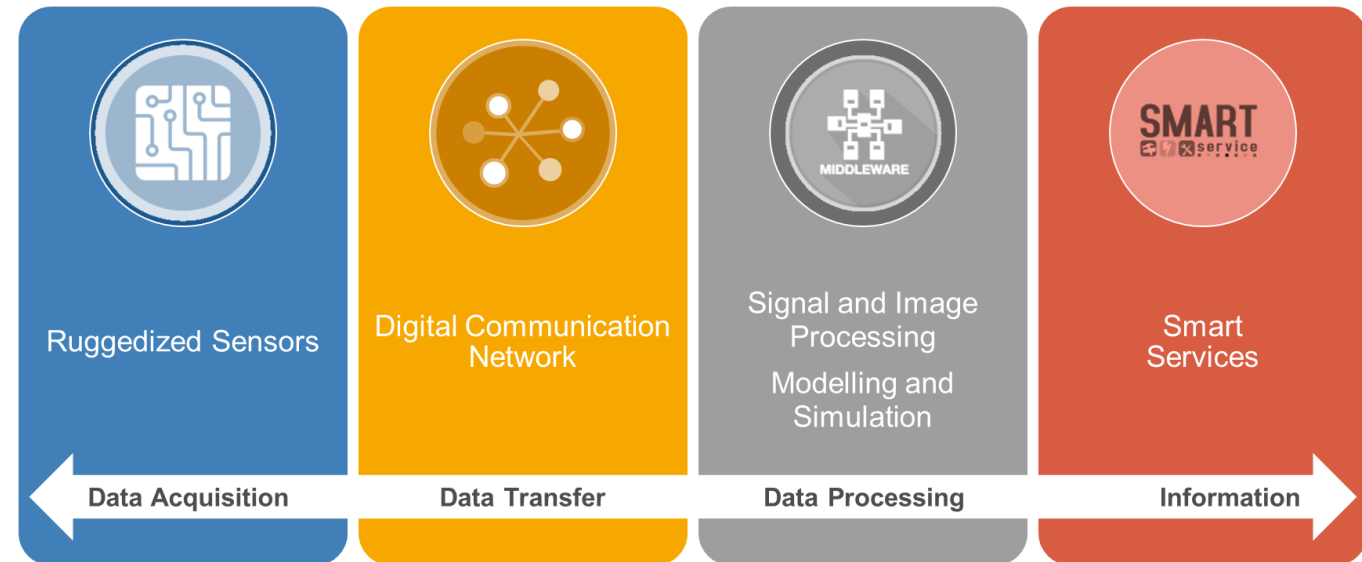


Achieving More Together



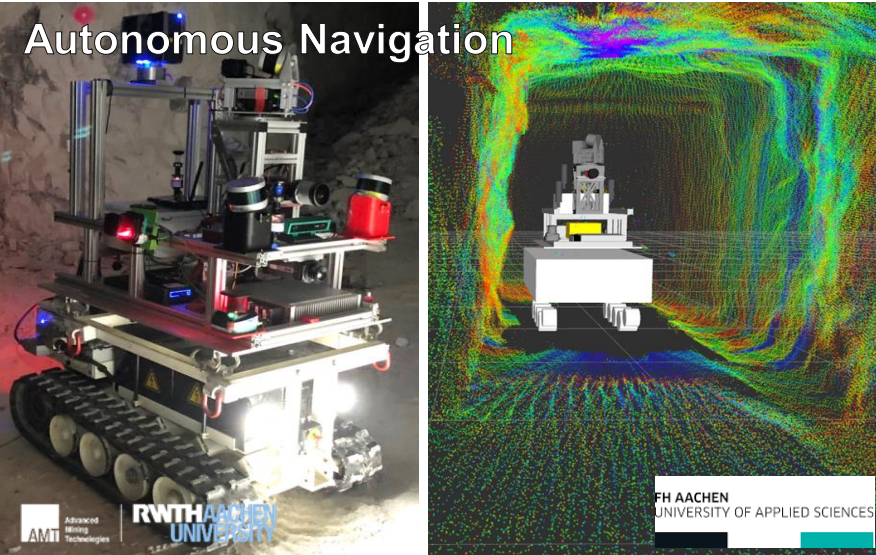
Research, Education and Transfer
for a safe, efficient and responsible raw materials extraction
by the automation and digitalisation of mining machinery and processes

Developing novel solutions for the autonomous, green and safe mine

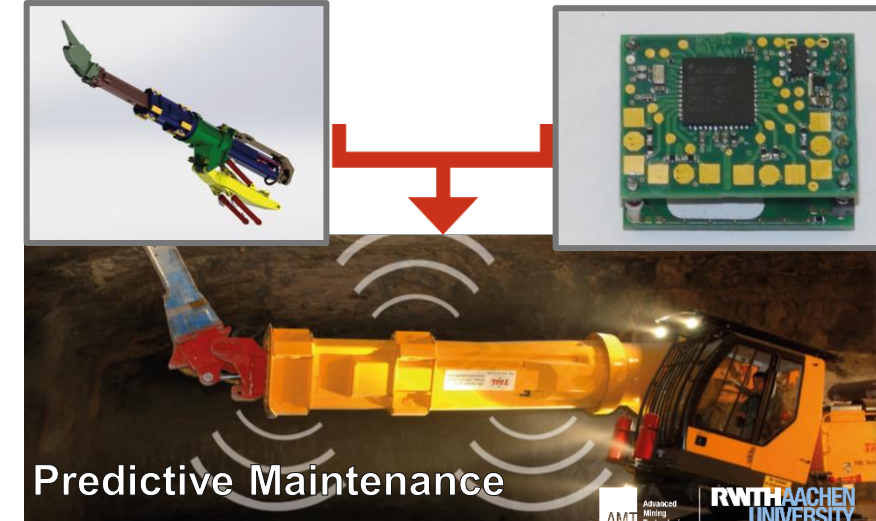
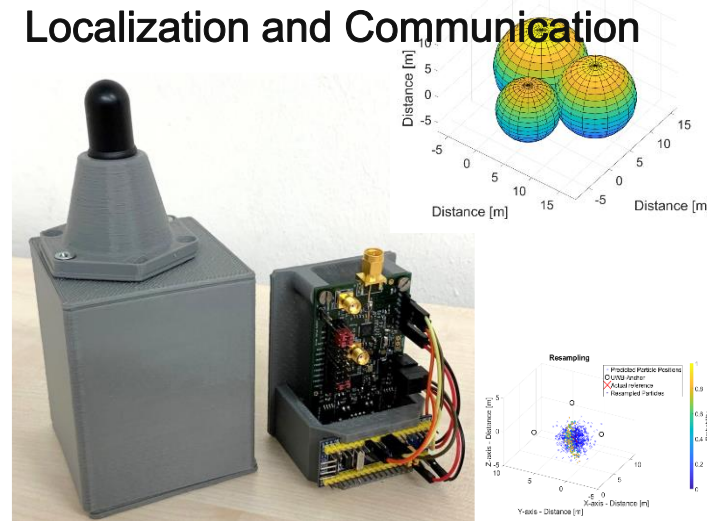


Developing novel solutions for the autonomous, green and safe mine

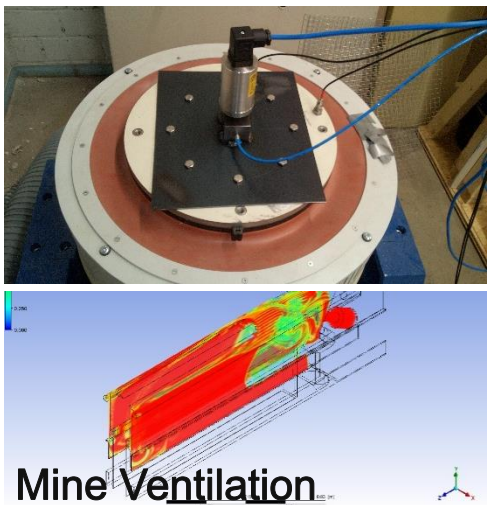
Autonomous Navigation



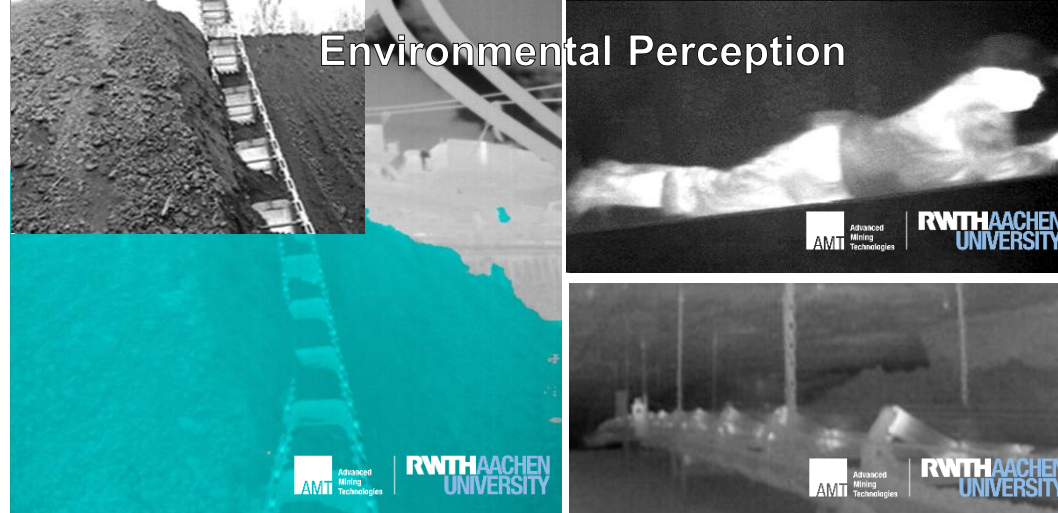
Localization and Communication



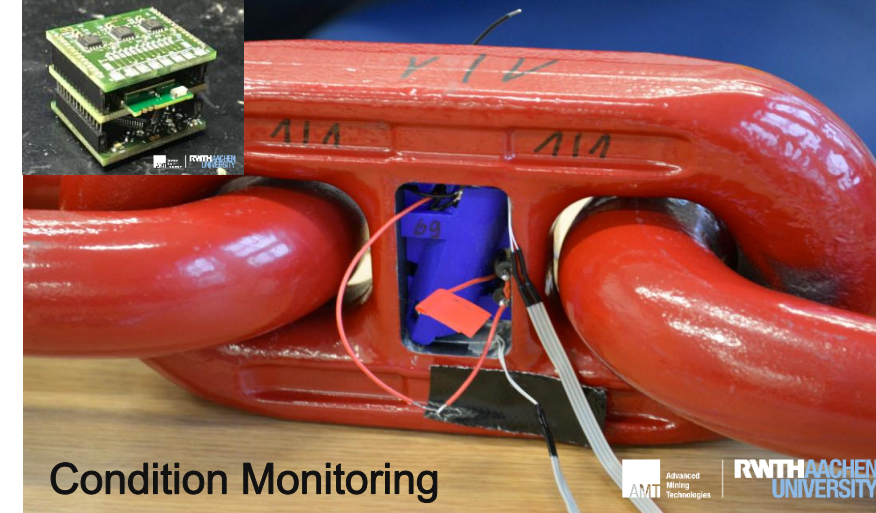
Predictive Maintenance



Mine Ventilation



Environmental Perception



Condition Monitoring

Reallabor Nivelstein: Industrial use, nature conservation and research in balance



Lokales / Nordkreis / Herzogenrath: Pilotanlage in Kooperation mit RWTH in den Sandwerken

Kooperation der Nivelsteiner Sandwerke mit der RWTH Aachen

Pilotanlage zu Qualitätsverbesserung und Ressourceneffizienz

7. DEZEMBER 2018 UM 17:29 UHR | Lesedauer: 3 Minuten



Auftakt zum Pilotprojekt neben der Sandwäsche: Zu den Spaten griffen (v.l.) Prof. Dr.-Ing. Hermann Wotruba, Prof. Dr.-Ing. Elisabeth Clausen, Prof. Dr.-Ing. Ulrich Epple, Dr.-Ing. Rebeca Böhner, Prof. Dr.-Ing. Karl Nienhaus, Charles Russel, Raphael Jonas und Bürgermeister Christoph von den Driesch. Foto: Beatrix Oprée

HERZOGENRATH. Rohstoffe sind die Basis von Wohlstand und wirtschaftlichem Erfolg. Doch die natürlichen Ressourcen werden nicht unendlich zur Verfügung stehen. Umso wichtiger ist die Effizienz bei ihrer Gewinnung und Aufbereitung. Eine Pilotanlage in den Nivelsteiner Sandwerken soll bei der Forschung auf diesem Sektor maßgeblichen Anteil haben.

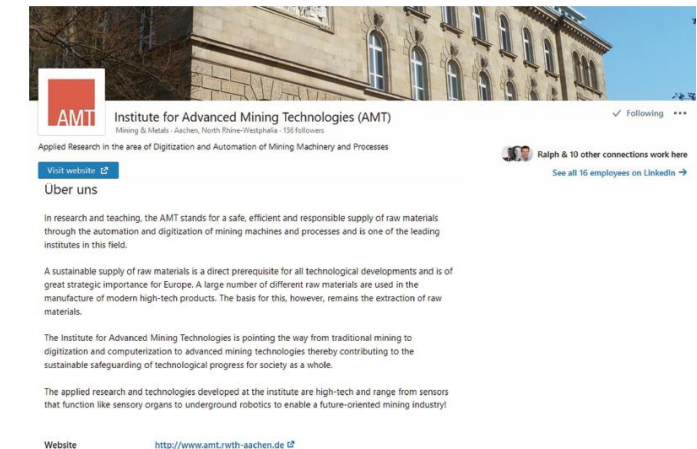
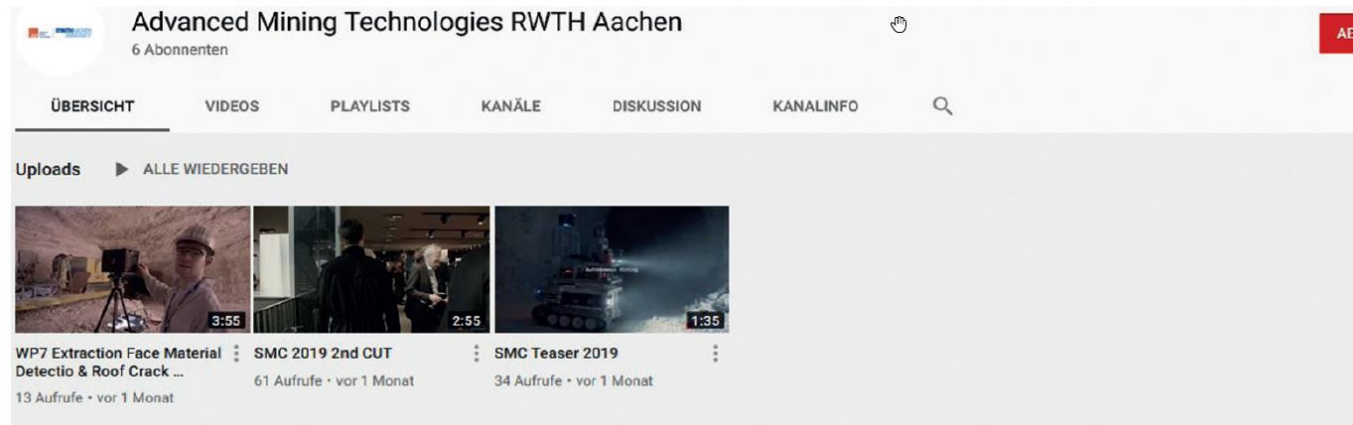
Reallabor Nivelstein: Industrial use, nature conservation and research in balance



Achieving More Together



Knowledge and technology transfer with actors outside the science system



Glückauf !

RWTH Aachen University

Institute for
Advanced Mining Technologies

www.amt.rwth-aachen.de



Univ.-Prof. Dr.-Ing. Elisabeth Clausen

eclausen@amt.rwth-aachen.de





Introduction & Networking of Participants in Breakout Rooms