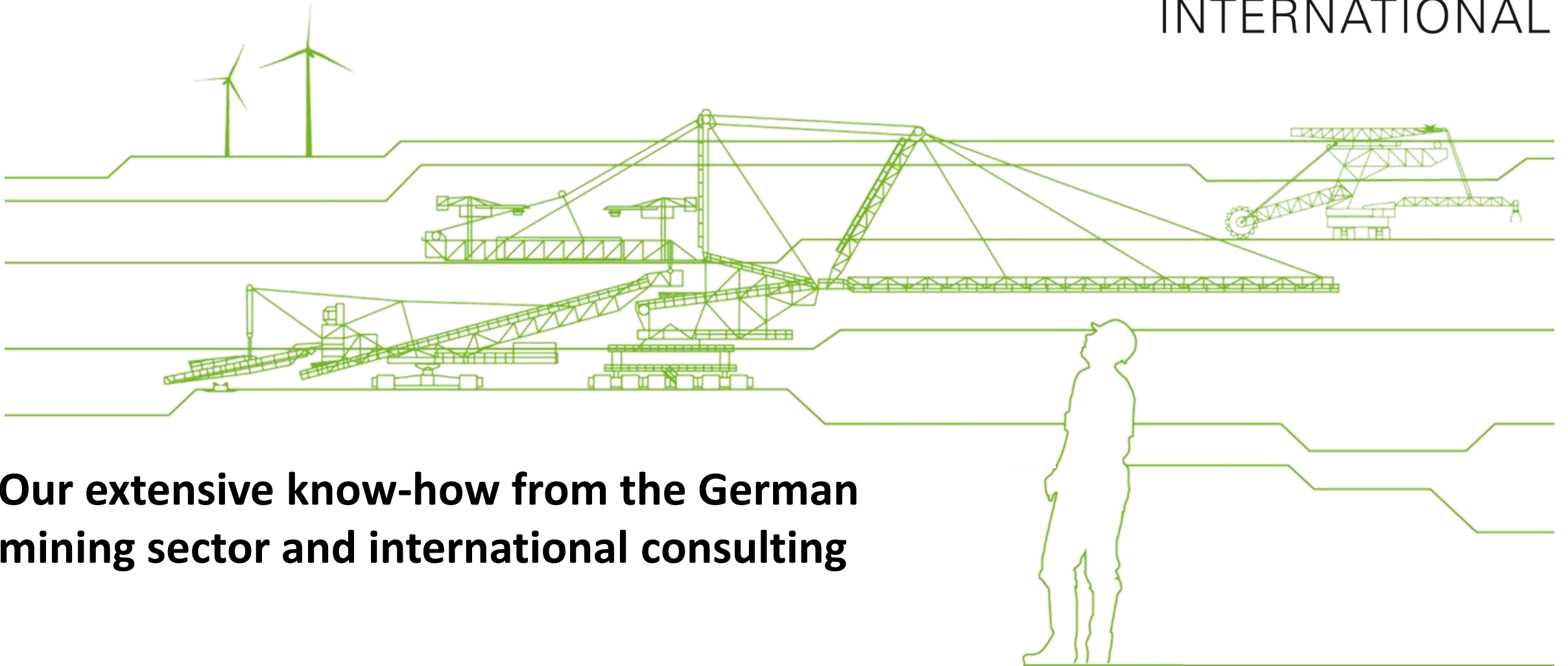




MIBRAG CONSULTING
INTERNATIONAL



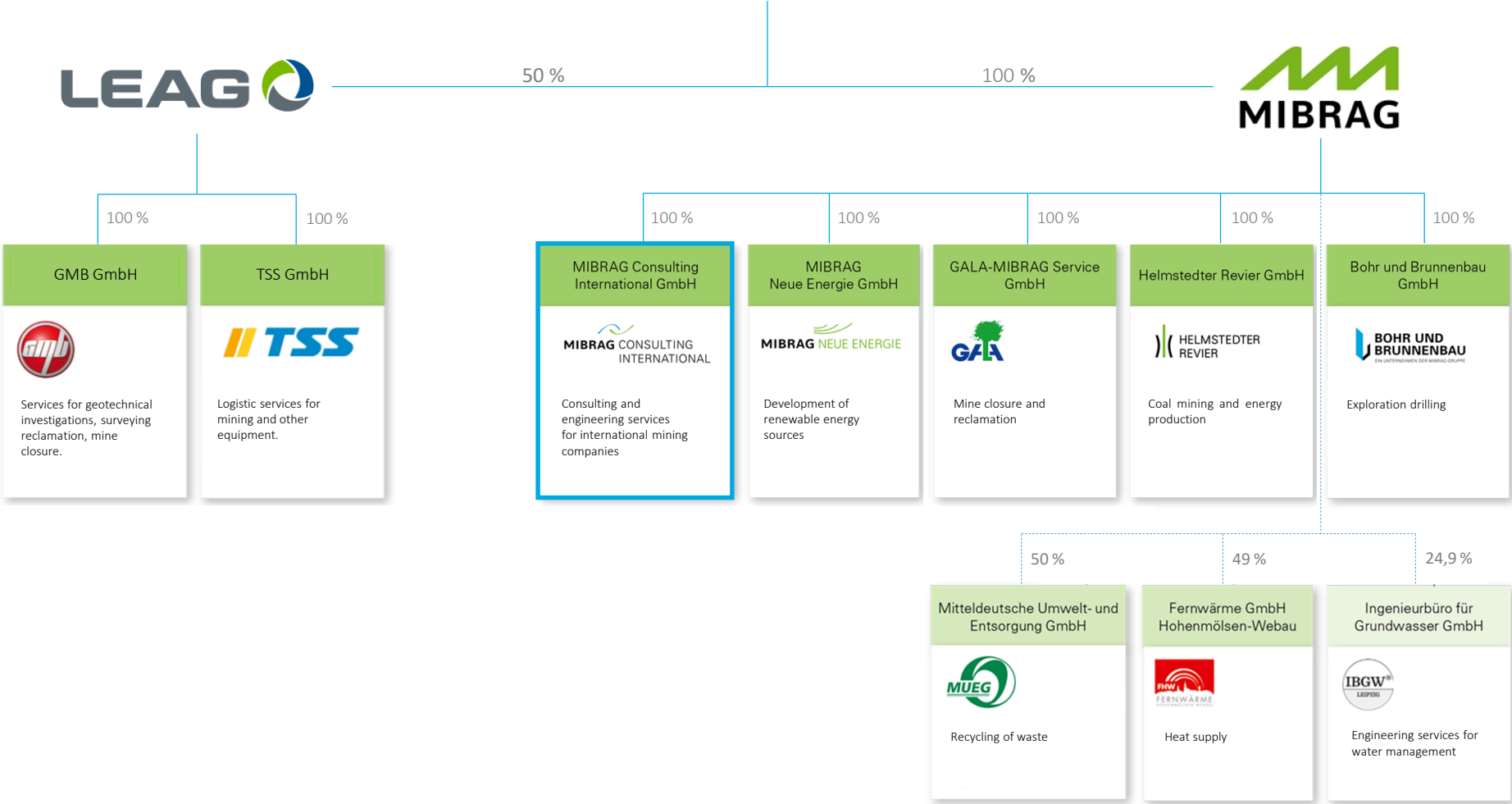
**Our extensive know-how from the German
mining sector and international consulting**



1 GENERAL INFORMATION EP HOLDING & MIBRAG CI

EPH

EPH is a vertically integrated energy group that owns and operates assets in the Czech Republic, Slovakia, Poland, Italy, the UK, Germany and Hungary, with their headquarters in Prague





Mitteldeutsche Braunkohlengesellschaft mbH (MIBRAG)

- Wholly owned subsidiary of EPH
- Focus on mining and processing of lignite
- Operate two lignite mines in central Germany
- DIN EN ISO 50001 certified



Lausitz Energie Bergbau AG and Lausitz Energie Kraftwerke (LEAG)

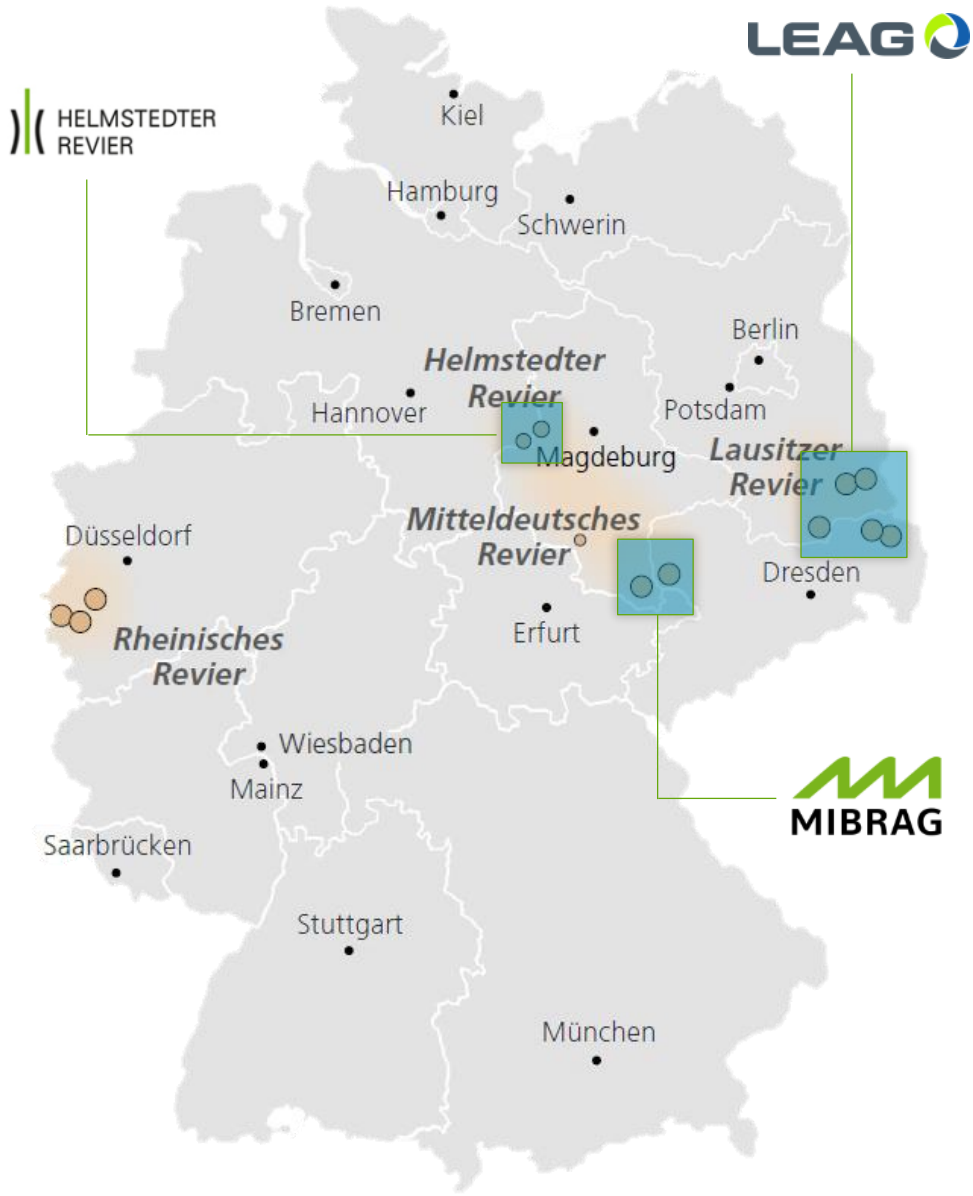
- Jointly owned by EPH and PPF Investments
- Focus on mining and processing of lignite
- Operate four lignite mines and power plants in Lusatia
- DIN EN ISO 14001 and DIN EN ISO 50001 certified
- and power generations

MIBRAG Consulting International GmbH (MIBRAG CI)

- Wholly owned subsidiary of MIBRAG
- Distribute Know-How of MIBRAG and LEAG
- International consulting along entire mining value chain
- Focus on open pit mining with continuous equipment, usage of IPCC systems



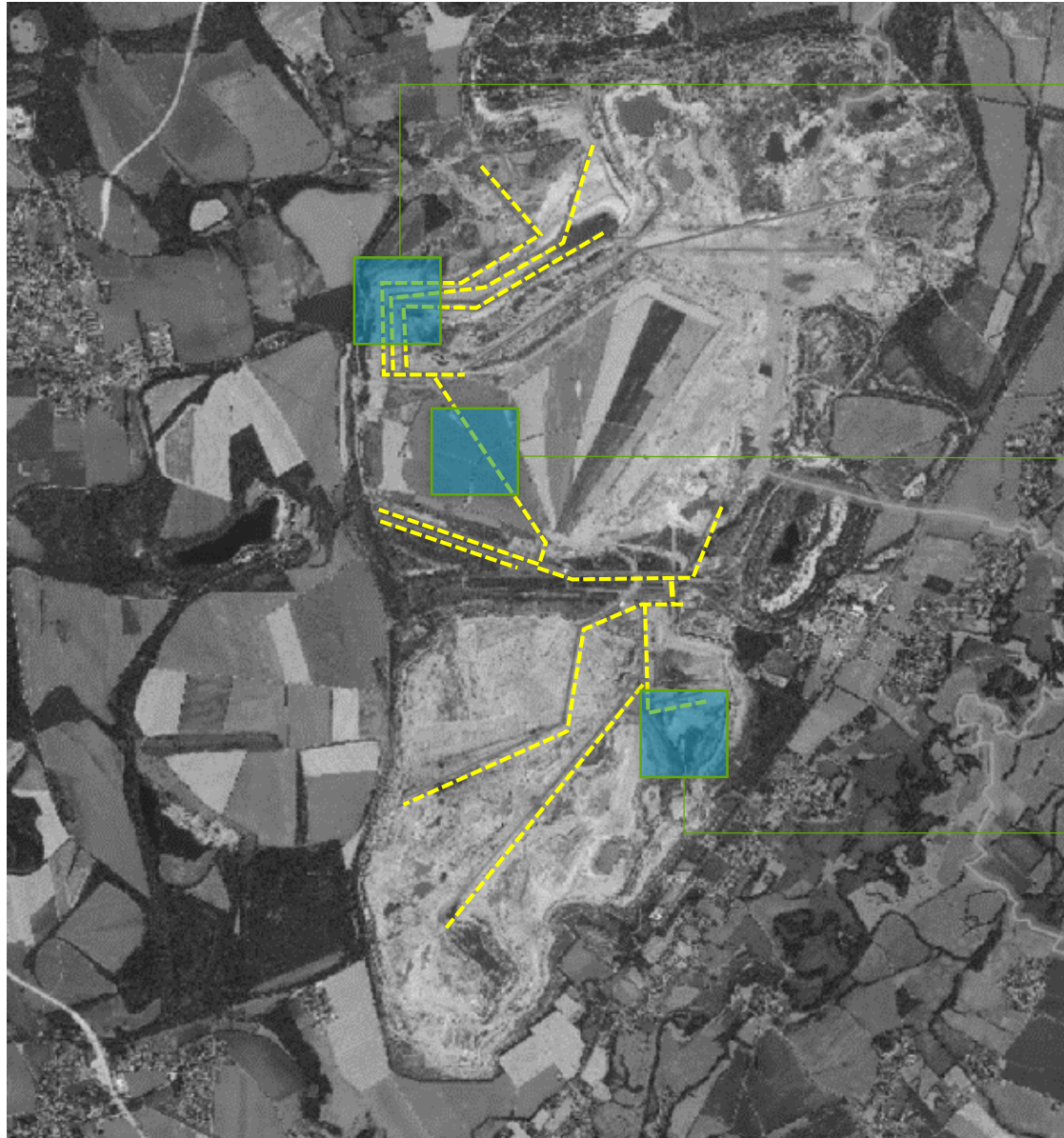
GENERAL INFORMATION ABOUT EP HOLDING



Open cast mines in operation		Overburden removal (Mm³/a) 2019	Lignite mining (Mt/a) 2019	Dewatering (Mm³/a) 2019
Profen	MIBRAG	19	6	55
Schleenhain	MIBRAG	33	8	35
Jänschwalde	LEAG	86	7	123
Welzow-Süd	LEAG	96	17	51
Nochten	LEAG	80	15	78
Reichwalde	LEAG	69	13	94
Σ		383	66	436

Open cast mines under reclamation		Start	End (preliminary)
Schöningen	HELMSTEDTER REVIER	2016	2025
Cottbus Nord	LEAG	2017	2026

MIBRAG – PROFEN OPEN CAST MINE



HANDLING

- Conveying system of 34 km
- Overland and shiftable conveyors
- Width of 1.6 - 2.0 m
- 2 Distribution points
- Trucks



INFRASTRUCTURE

- Wind power park
- Stockyard of 300 kt
- 1 stacker and 1 reclaimer
- Coal laboratory and CQMS
- Water treatment facility



MINING

- 2 Spreaders
- 4 BWEs
- 3 Chain excavators
- Hydraulic excavators

MIBRAG – SCHLEENHAIN OPEN CAST MINE



INFRASTRUCTURE

- Stockyard of 400 kt
- 1 stacker and 1 scraper
- Crushers and CQMS
- Water treatment facility
- Recycling of TPP waste



HANDLING

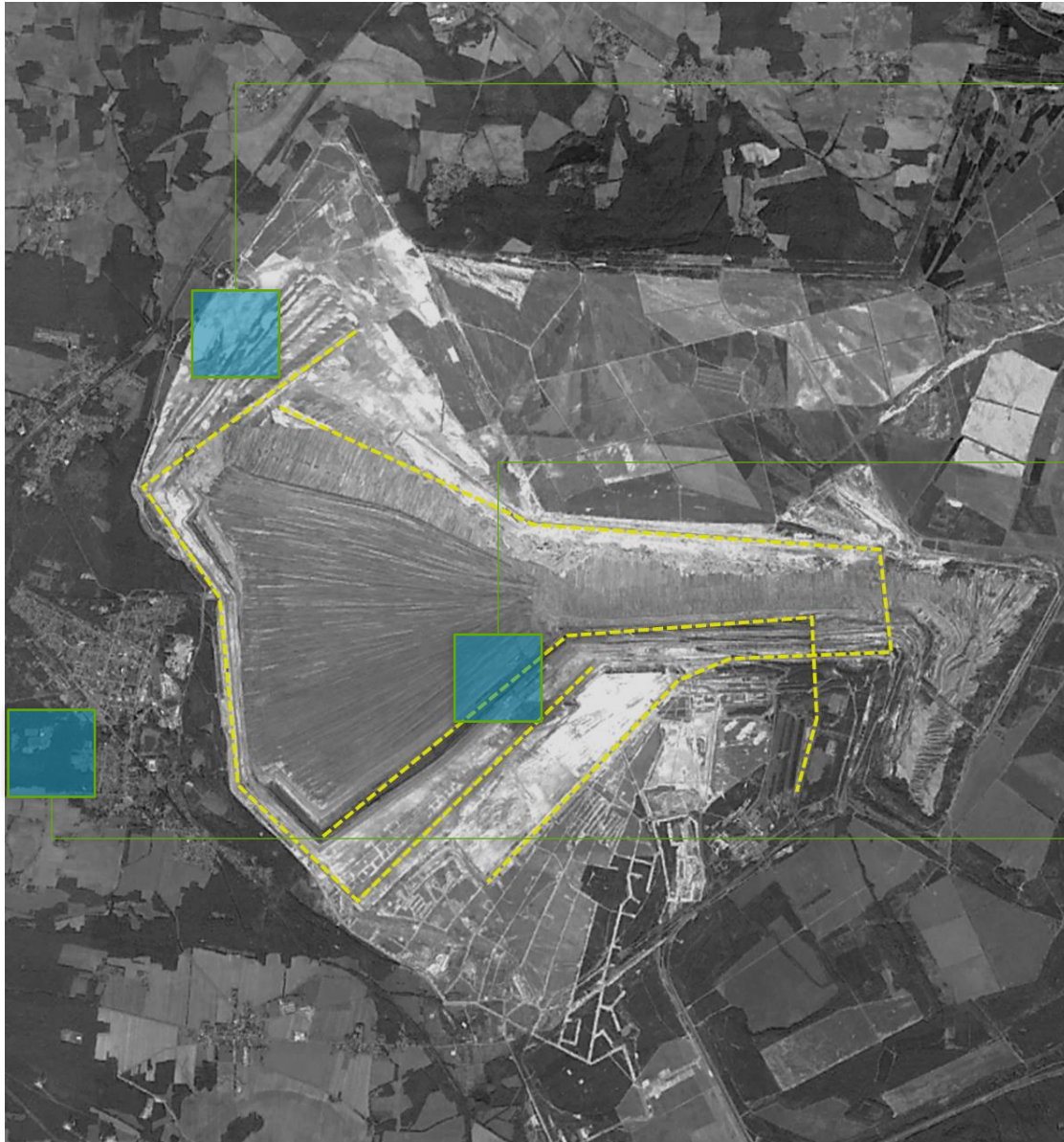
- Conveying system of 36 km
- Overland and shiftable conveyors
- Width of 1.6 - 2.0 m
- 1 Distribution point
- Trucks



MINING

- 2 Spreaders
- 6 BWEs
- 2 Chain excavators
- Hydraulic excavators

LEAG – OPEN CAST MINES (EXAMPLE OF WELZOW PIT)



MINING

- 7 Spreaders
- 15 BWEs
- 20 Chain excavators
- Hydraulic excavators



HANDLING

- Conveying system of 110 km
- Overland and shiftable conveyors
- Width of 2.0 - 2.5 m
- Overburden bridge
- Trucks



INFRASTRUCTURE

- 3 Stockyards
- 6 Stockyard equipment units
- Water treatment facility
- PV park
- Wind power park



 **MIBRAG CONSULTING INTERNATIONAL GMBH**

KEY FACTS

21

Successful cooperation with mining companies worldwide over **21** years

2

Distributing the know-how and experience of **two** big mining companies MIBRAG and LEAG

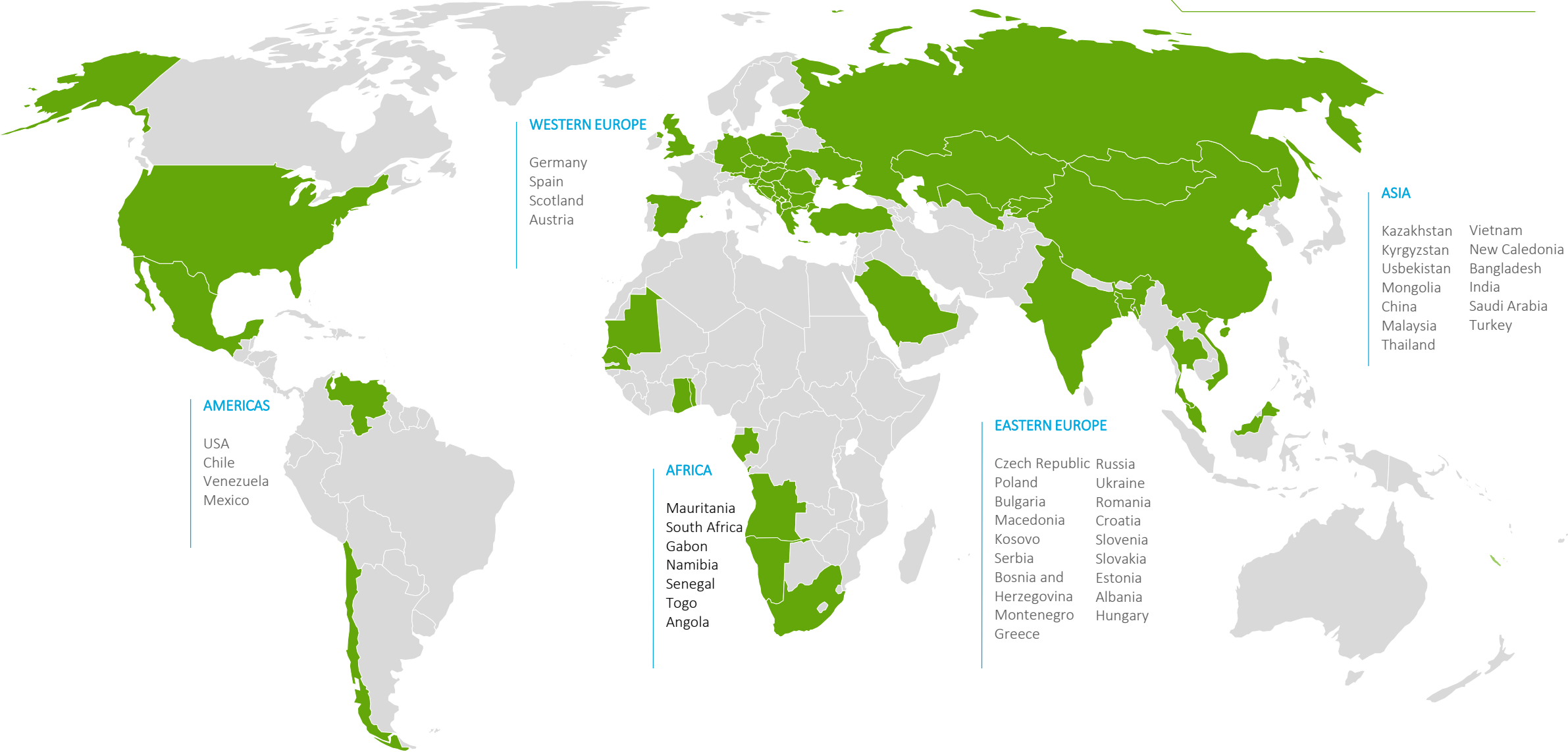
6,500

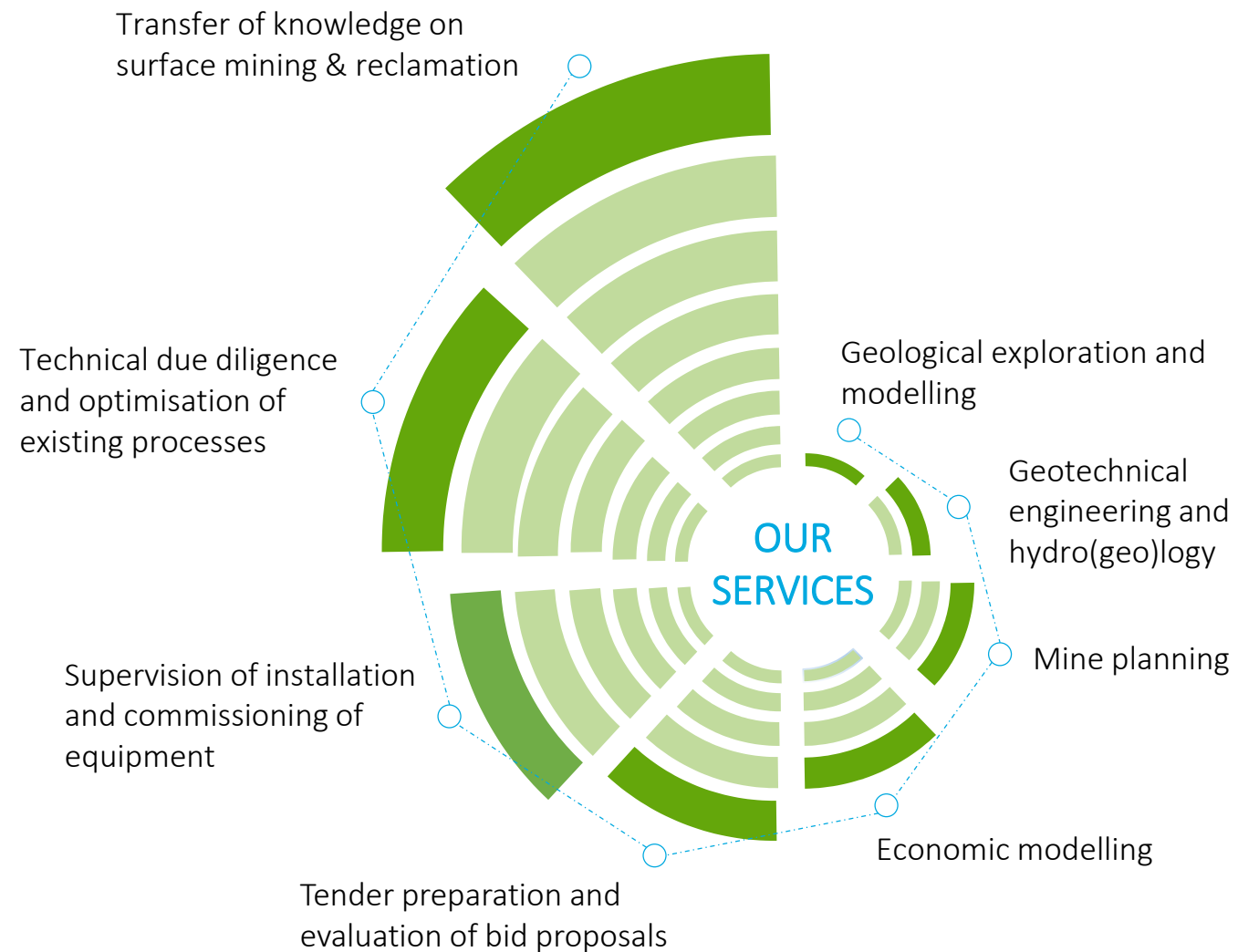
More than **6,500** experts in different fields related to mining

42

Realised and ongoing projects in **42** countries







Geological Exploration

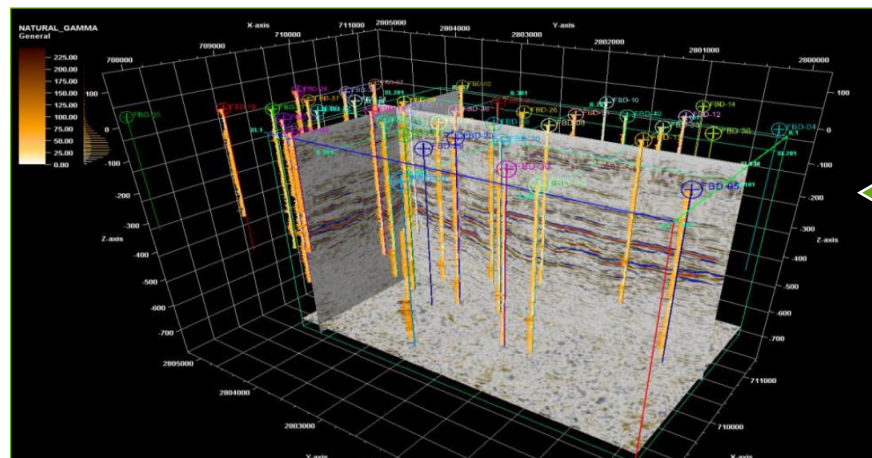
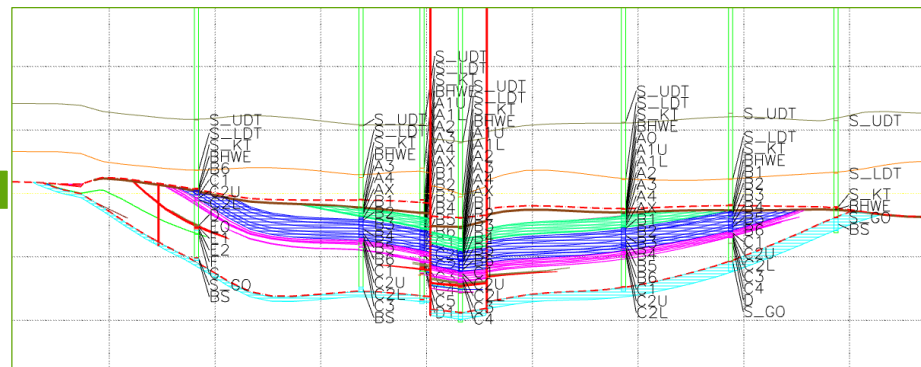
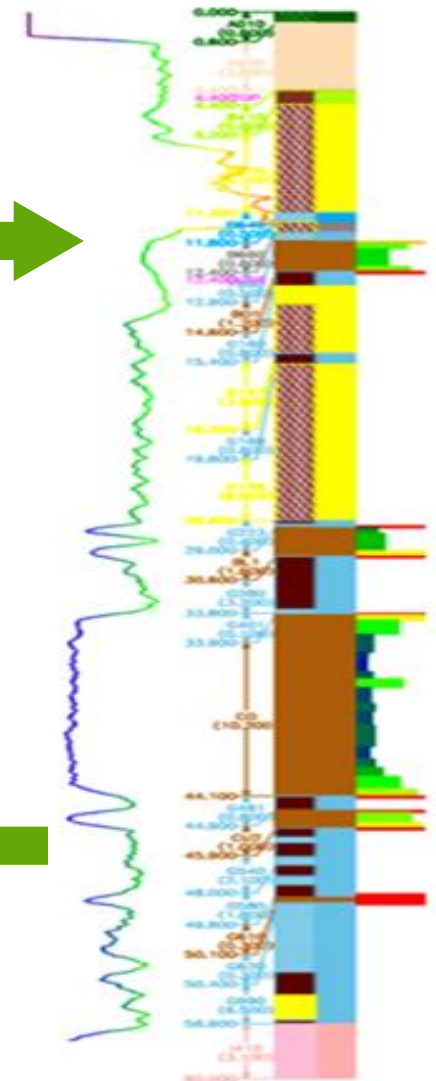
- Project evaluation and coordination
- Planning and implementation of drilling programs
- Geological mapping
- Sedimentology and Petrology
- Quality control of sampling routines and data management
- Correlation of geological, geochemical and geophysical results
- Geological and geotechnical core logging



Geological Modelling

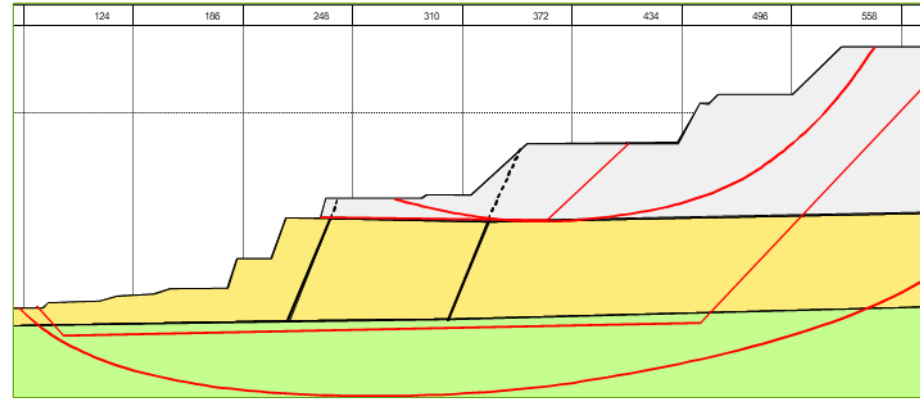
- Evaluation of existing exploration data (development of a follow-up program, if necessary)
- Creation of geological databases
- Development of 3D-geological models (stratigraphic models, block models, etc.)
- Calculation of Resources according to international standards for selected commodities (e.g. JORC Code)

SLHOLENAME	SLTOP	SLBASE	SLINTERVAL	SLLITHTYPE	SLLITHDESC1	SLLITHDESC2
G_10587	0	1.3	1F11	SO		nxp
G_10587	1.3	1.6	1CL11	SL		nxp
G_10587	1.6	5.2	1CY11	CY1	f	nxp
G_10587	5.2	5.8	1sa11	SA		nxp
G_10587	5.8	5.8	S_NXP			"
G_10587	5.8	7.8	cl2a	CL	f	kct3x
G_10587	7.8	8.6	1F12	F	cl	kct3x
G_10587	8.6	9.6	1F12	F	cl	kct3x
G_10587	9.6	11.4	1F12	fzz	cl	kct3x
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G_10587	16.8	17.5	1sa14	GV1	ss	kct3x
G_10587	17.5	21.5	1sa14	SA	cl	kct3x
G_10587	21.5	25.2	1sa14	fzz	cl	kct3x
G_10587	25.2	29.2	fcl2	CL	f	kct3x
G_10587	29.2	31.3	fcl2	F	cl	kct3x
G_10587	31.3	33.5	fcl2	F	cl	kct3x
G_10587	33.5	36.5	fcl2	SA	cl	kct3x
G_10587	36.5	39.6	fcl2	CL	f	kct3x
G_10587	39.6	40.2	fcl2	F	cl	kct3x
G_10587	40.2	41.4	fcl2	GV	cy1	kct3x
G_10587	41.4	41.4	S_KCT			"
G_10587	41.4	42.2	bsmt	CL3		bsmt
G_10587	42.2	42.8	bsmt	GR		bsmt
G_10587	42.8	46.3	bsmt	GR		bsmt



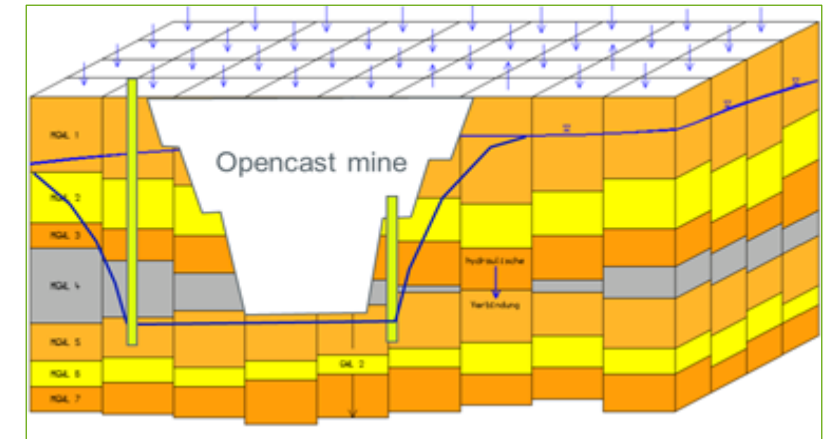
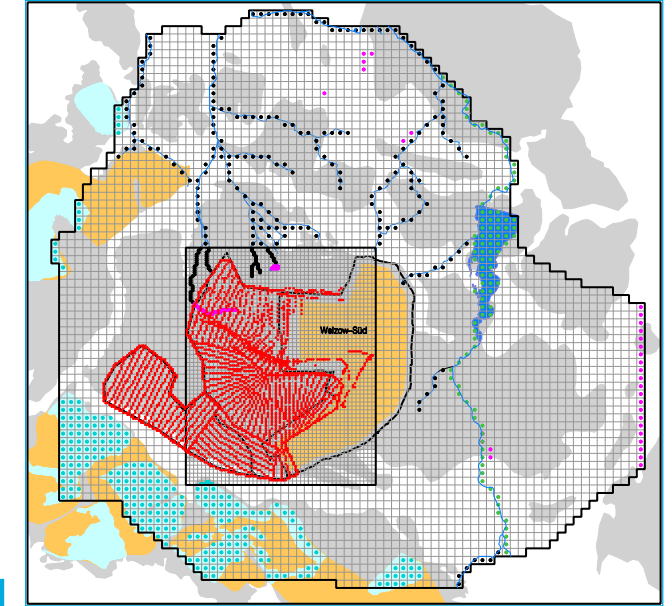
Geotechnical Engineering

- Assessment of existing data and reports on geotechnical conditions
- Planning (location, drilling method, drill hole depth, sample tube diameter and length, etc.) and supervision of geotechnical sampling during drilling and sampling programs
- Preparation of laboratory test program for soil samples (soil mechanical tests such as shear tests) suited to the specific site conditions
- Supervision of laboratory tests such as shear tests, consolidated-unconsolidated, etc.
- Setup of geotechnical models for various slope stability calculations (for final slope and active slope systems), under consideration of seismic loads, if necessary
- Dimensioning of batter/ berm configuration for hard and soft rock slopes
- Our geotechnical engineers are certified „assessor for slope stability“



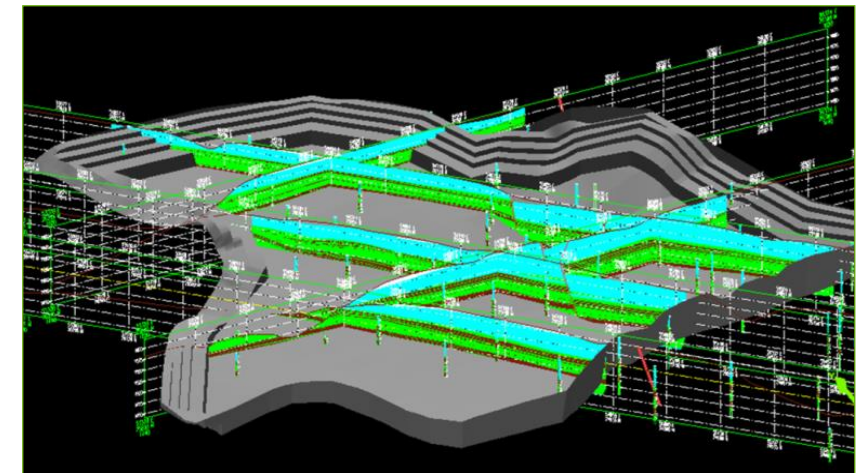
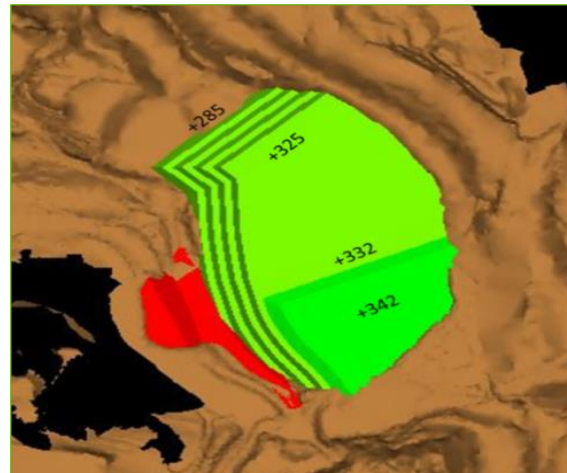
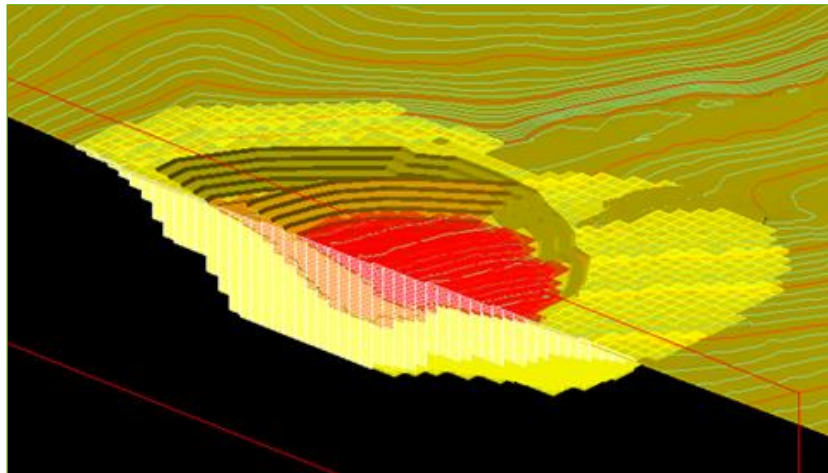
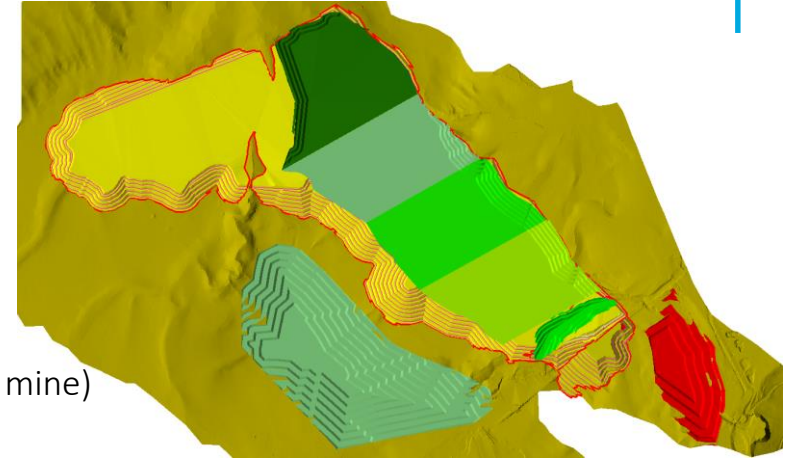
Hydro(geo)logy and Dewatering

- Creation of hydrogeological and hydraulic ground water models
- Goal: optimised dewatering requirements for safe opencast mining and dewatering forecasts
- Surface dewatering flow chart of rivers and flood protection for opencast mines
- Monitoring of all wells and pumping stations
- Controlled water collection, flood protection
- Control and compliance with limit values
- Targeted distribution of water in a dewatering system



Mine Planning

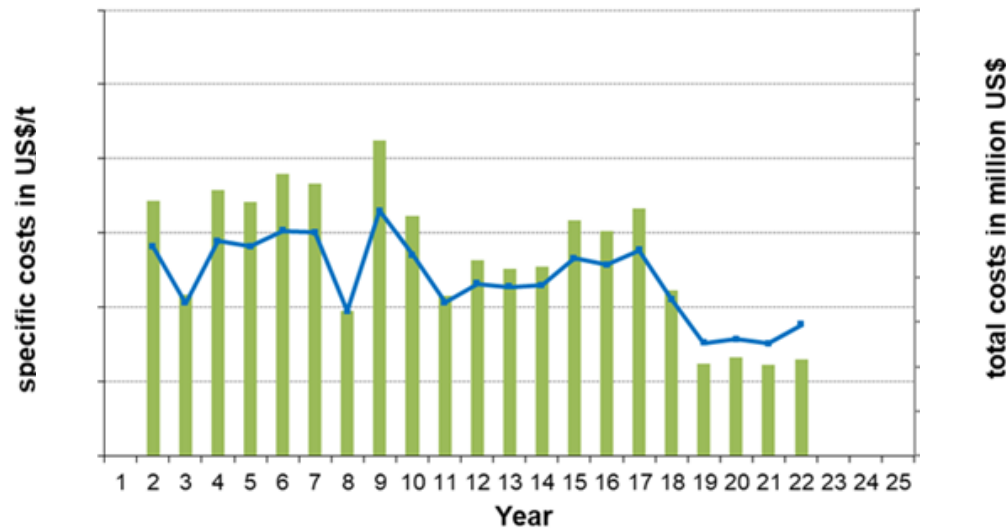
- Calculation of minable reserves, economic pit shell optimisation
- Preparation of mine and dump designs
- Optimisation of existing mining processes - both on the production side and on the dump side
- Selection of suitable material transport methods (e.g. conveyor, dump truck, road train)
- Preparation of a mass balance and production schedule for mine operation (short, medium, long, life of mine)
- Economic modelling of mining processes and profitability calculations
- Reserve reporting (JORC reporting)



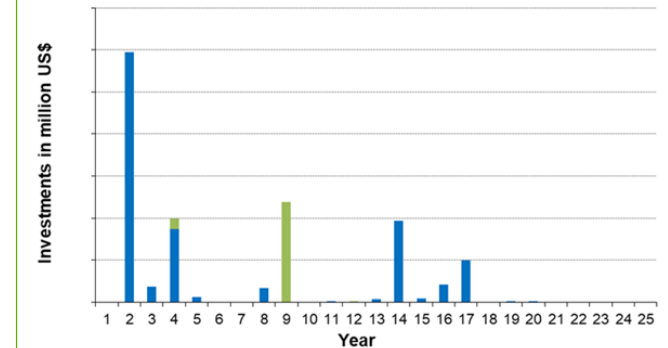
Economic Modelling

- Financial evaluation of mining projects
- NPV, IRR, payback period, cost per tonne/ m³, OPEX, CAPEX
- Financial comparison of alternative mining options
- Calculation of mine closure costs

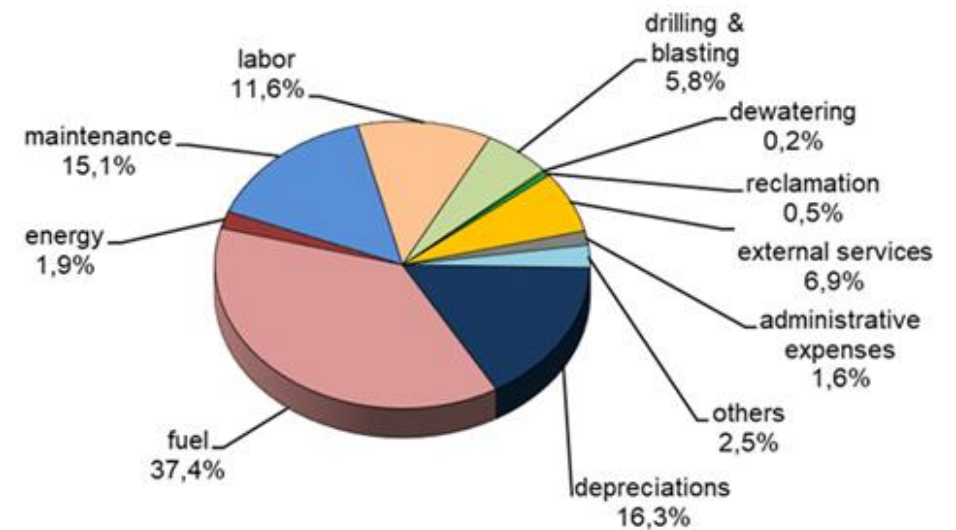
Development of specific costs and total costs



Development of investments

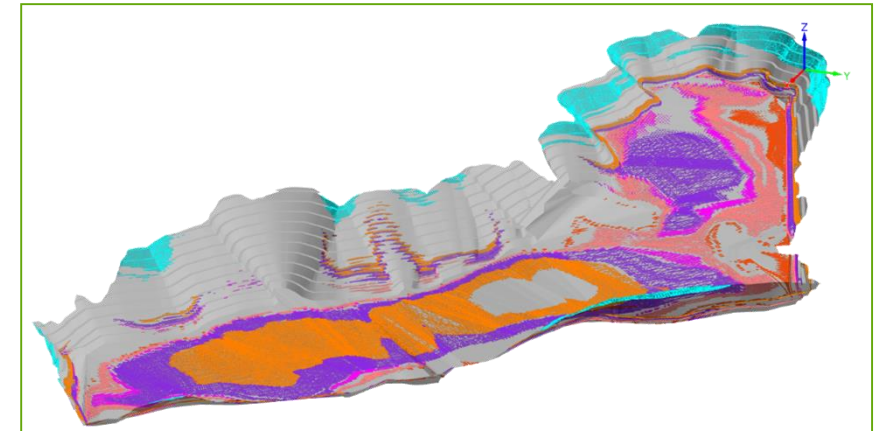


Average specific costs per ton of



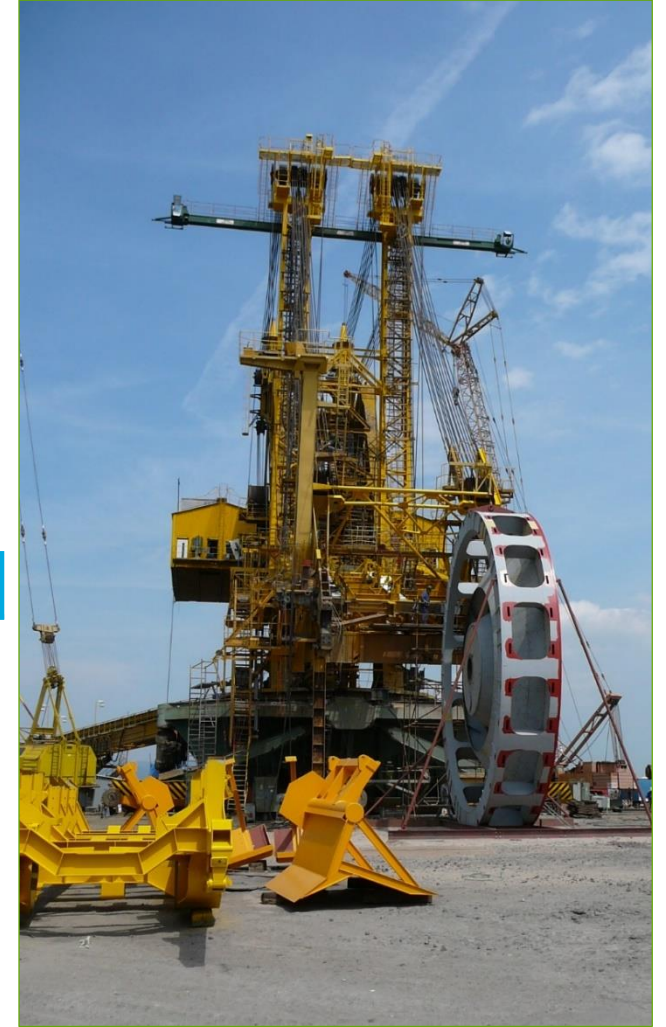
Transfer of knowledge on surface mining & reclamation

- Tailor-made training courses
- Training based on practical experience, process and successfully applied technologies along the mining value chain within the MIBRAG-LEAG-Group
- Site visits to LEAG/ MIBRAG lignite operations
- Mine planning, geotechnical engineering
- Hydrology, Hydrogeology



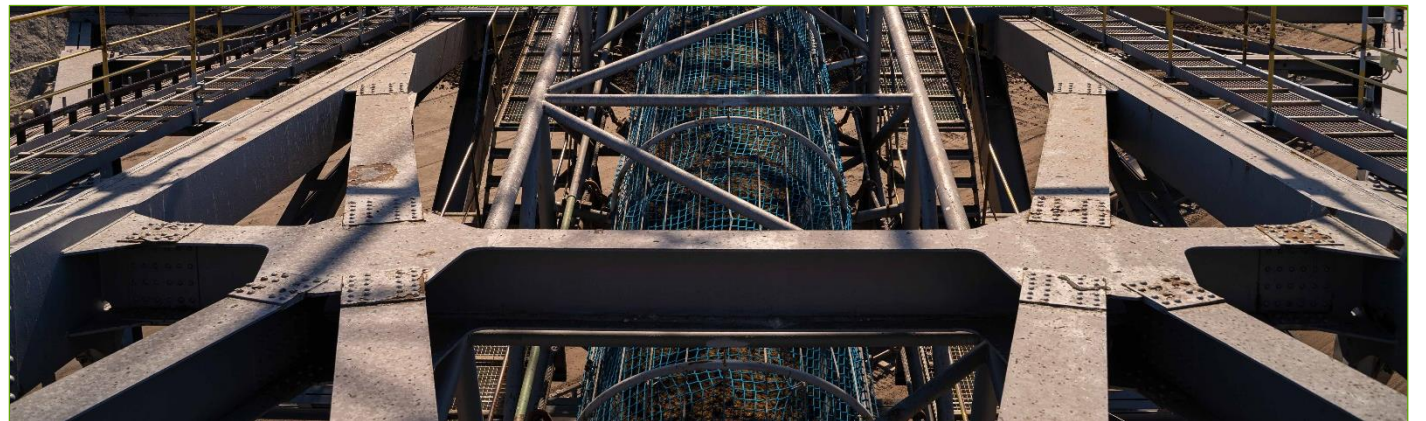
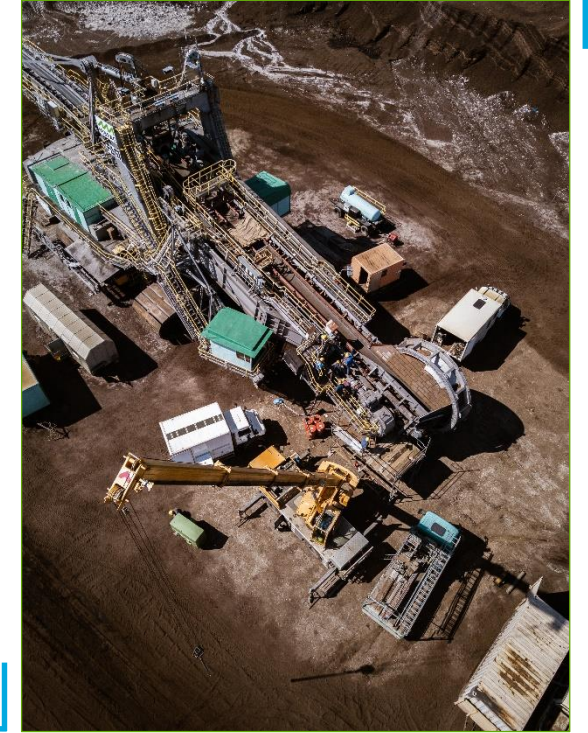
Tender preparation & evaluation of bid proposals

- Preparation of tender documents for clients
- Independent review of tender documents prepared by client
- Ensuring equal opportunities for all tenderers
- No unjustified reference of brands or types of equipment
- Assist in technical and financial evaluation of tender proposals
- Ensuring unbiased evaluation in line with international standards of the procurement guidelines
- Review of prices and data
- Report of tender evaluation including recommendations for approval or rejection



Supervision during installation & commissioning of equipment

- Ensure design of equipment (mobile and stationary) is in accordance with tender specifications
- Aim to unify technical solutions as much as possible
- Attendance at design meetings and workshop tests (main components)
- Participation in factory acceptance tests and verification of delivered equipment in respect to compliance and conformity with technical specifications
- Supervision of commissioning tests and trial run operation
- Supervision of warranty tests and issuing of completion and acceptance certificates
- Assistance in negotiations and settlement of any claims by the owner, (sub)contractor, and supplier
- Assistance in negotiations and settlement of any disputes in connection with, or arising out of the contract



Technical due diligence & optimisation of existing processes

- Coordination of external technical, legal and financial consultants/ banks
- Evaluation of current mining situation, including geology, hydrology, hydrogeology, geotechnical, Reserve/ Resource estimation
- Development of different market scenarios (energy/ commodity prices/ political)
- Analysis of organisational structure
- Analysis of equipment, maintenance, infrastructure – maintenance philosophy
- Assessment/ plausibility check recultivation & mine closure plans, recultivation provisions
- Risk assessment & classification



Project Management and Monitoring

- Coordination, review and approval of detailed design, manufacturing, supply and installation, commissioning works performed by Contractor
- Control of critical path activities, minimise delays and conflicts, identify possible issues, assist owner in mitigating risks for future conflicts
- Anticipate & identify potential difficulties/ delays in implementation of project and effect on implementation schedule, develop & implement steps to overcome these and to avoid delays
- Evaluation and supervision of technical amendments and changes in scope of work
- Review of invoices and reconciliation with completed works – recommendation for payment
- Enforcement of regular project reports on project implementation (including technical aspects)
- Establishment of effective time – and cost control instruments
- Coordination and witnessing of functional and operational tests
- Review and confirmation of acceptance certification
- Analysis of the performance tests



