

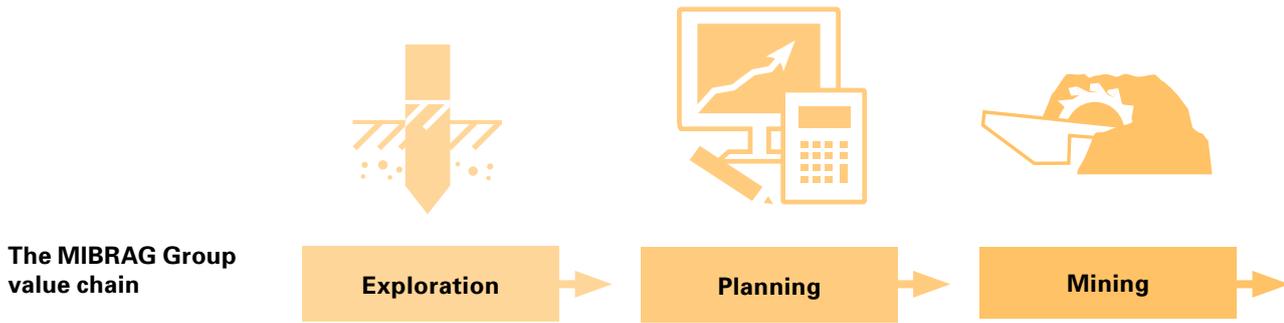
MINING SECTOR

Professional Training & Institutional Strengthening

- Development and Training made in Germany -



Our mining know how for your company



Who we are

MIBRAG Consulting International mbH (MCI) is a wholly owned subsidiary of Mitteldeutsche Braunkohlengesellschaft mbH (MIBRAG) and part of the MIBRAG Group. Its task is to represent the Group's comprehensive engineering expertise in the international markets. For more than ten years, MCI has been advising governmental organisations and mining enterprises around the world on how to change and optimise processes and structures. This activity also includes expert training programmes.

The lignite mining company MIBRAG was incorporated in 1994 and has been one of Germany's top three lignite producers ever since. Out of the company's approximate 2,000 staff, 160 are trainees. Annual production of raw lignite reaches approx. 20 million tonnes. Apart from two opencast mines, the company

operates beneficiation facilities, i.e. three industrial power plants, a dust factory and a briquette factory. MIBRAG's expertise is closely linked to the Central German region's longstanding mining tradition.

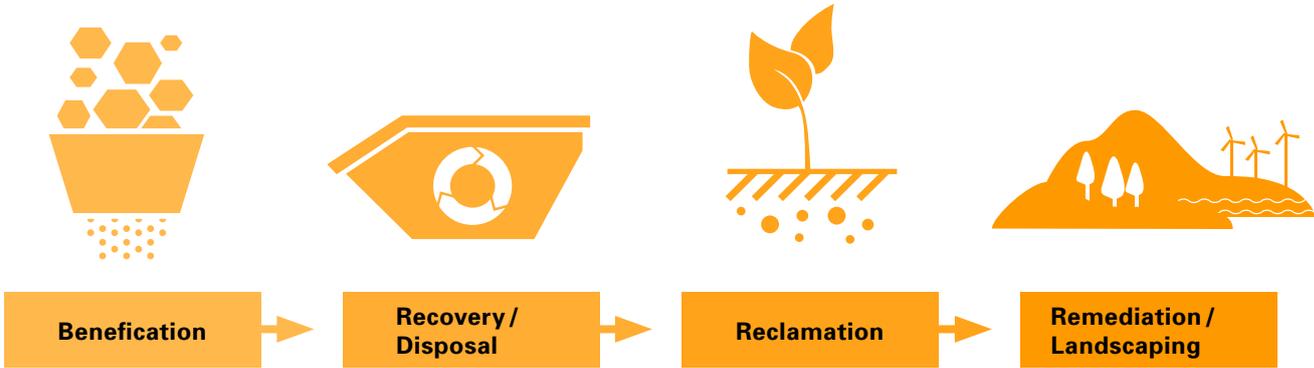
Apart from MCI, the MIBRAG Group has some more subsidiaries as well as stakes in other companies.

How we can benefit your company

Like so many other mining companies, MIBRAG has had to face significant global challenges and still does: changes in political and economic circumstances, demographic change as well as the use of modern innovative technologies are the yardstick against which the company's future development will be measured.

An overview of the MIBRAG Group's subsidiaries and stakes in other companies:





MIBRAG has successfully mastered these challenges and is now a competitive company with high standards in environmental and labour protection. The mining company has turned into an innovation driver and a reliable partner for the region. To a large extent, this is due to the continuing training and development of managerial and technical staff and the company-owned training facility for qualifying young skilled workers.

continuing with coal extraction and beneficiation and ending with recovery of waste and land, and reclamation. Our portfolio furthermore comprises material issues of environmental protection and occupational safety as well as good corporate governance and social responsibility of a mining company. Institutional strengthening of governmental mining organisations has also become an integral part of our services.

In the light of the current global economic developments and the continuously increasing demand for highly qualified technical staff and competent managers, MCI has expanded its existing programmes of mining specific training with a view to “Resourcing the Future”.

Our expert team is made up of experienced specialists from a range of mining professions commanding a wealth of knowledge and practical experience in this field.

MCI’s training portfolio now covers the entire value creation chain of a mining company – beginning with exploration and planning,

Why don't you benefit from our experience and comprehensive know how!

MUEG Mitteldeutsche Umwelt- und Entsorgung GmbH
Waste and residual matter recovery and disposal

50% ↑

Fernwärme GmbH Hohenmölsen-Webau
District heating

49% ↑

Ingenieurbüro für Grundwasser GmbH
Water management engineering services

25% ↑

Our professional training for your value

Our offer

- Single-source know how
 - Knowledge transfer based on practical experience
 - Tailor-made training courses
 - Best practices
 - Highest standards
 - National and international partnerships
 - Corporate social responsibility
- 

What we can offer you

Single-source know how

We offer training opportunities from one source along the entire value chain of a mining company.

Knowledge transfer based on practical experience

Our experienced workers impart their knowledge directly to you.

Tailor-made training courses

Our training solutions are made to measure for your individual needs and intentions.

Best practices

Our training presents the processes and technologies applied and tested within MIBRAG.

Highest standards

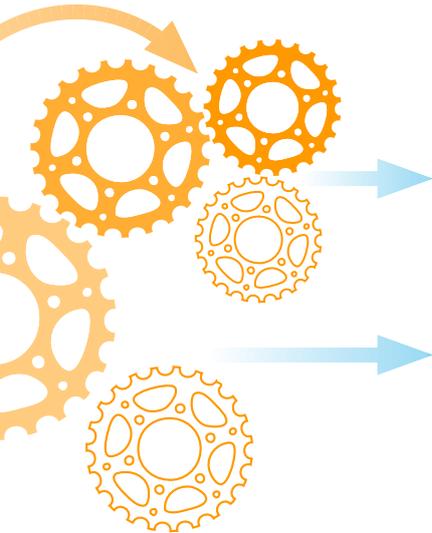
Our training conveys internationally acclaimed, high German standards in the fields of quality management, occupational safety and environmental protection.

National and international partnerships

We provide services in co-operation with competent national and international partner companies.

Corporate social responsibility

Our training courses are enriched by long-standing experience in social commitment to our region.



Your benefit

- Value added to your company
- Competitiveness
- Improved product quality
- Cost reduction by means of improved equipment and plant availability
- Cost reduction by means of optimised equipment and plant operation
- Staff qualification and motivation
- Improved public acceptance and reputation

How you can benefit

Value added to your company

Vocational qualifications enable your company to invest capital and human resources at low risk and your staff's performance to meet demands. This generates value for your company.

Competitiveness

Continuing training of technical and managerial staff positively helps your company in becoming and staying competitive.

Improved product quality

Detailed knowledge of production processes enables qualified staff to continuously improve the quality of your products and to generate innovative ideas.

Cost reduction

Qualified staff can increase plant and equipment availability by efficiently organising operations. Subsequently, production costs can be lowered, thus increasing your company's efficiency.

Staff qualification and motivation

High performing members of staff are the main asset of any company and therefore most valuable. Target oriented training and qualification programmes improve your staff's motivation and make your company more attractive at the same time.

Improved public acceptance and reputation

Social commitment improves your company's regional and nationwide position and attractiveness.

Let's invest in your company's future together!

Our integrated training approach

Globally, companies feel the pressure of international competition. The opportunities and the viability of a company's products are determined by its competitors' ideas and products and to what extent and in what way it can adapt to internal as well as external factors.



Great efforts are required to get an edge over your competitors. Professionally training your technical and managerial staff becomes a vital prerequisite for encountering the markets' challenges.

Our training solutions integrate your company's objectives. They contain the necessary training schemes for technical and managerial staff based on individual analyses of your training requirements and thus contribute to your company's sustainable success.

Analysis of your training needs

To warrant the success of a training course, we recommend analysing the training requirements of the respective members of technical and/or managerial staff beforehand. This analysis juxtaposes a member of staff's predefined DESIRED performance with their ACTUAL

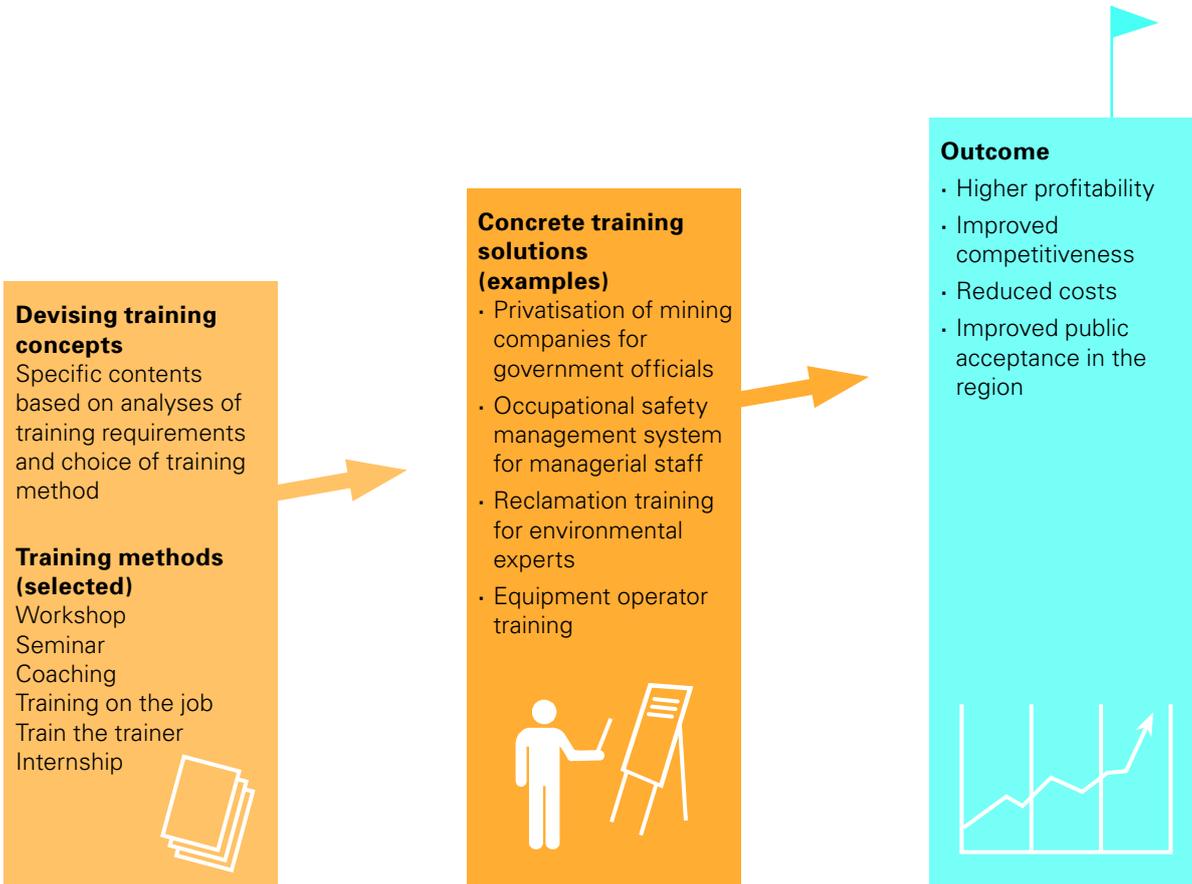
performance, thus identifying deviations from the target and proposing the requisite activities.

Based on the comparison of the employees' actual qualification and the qualifications required for the future we devise your individual training programme.

Training solutions

Our mining training portfolio comprises modular core training areas, which, according to requirements and targets, give an overview of a topic or address specific items in depth. Exercises and applications as well as the exchange of experience are part and parcel of each seminar.

Our customer's requirements always come first. The modules defined in our training portfolio can be extended and adapted to your individual needs at any time.



Target groups

Our programmes are targeted at administrative and supporting staff in mining ministries and companies as well as organisations related to the mining industry, i.e. government officials, technical and managerial staff, and training supervisors.

Training methods

We offer you the opportunity to expand your existing knowledge in workshops, seminars, individual or group courses, to tie in practical experience or to apply it while taking part in internships and training on the job programmes. Coaching is also used as a proven method of continuously training managerial staff. We also implement specific train the trainer programmes, in order to activate disseminators for knowledge transfers across the target country.

Seminars and practical experience can be offered on your premises as well as on ours and in our mines.

Secure your company's success with our specific training solutions!



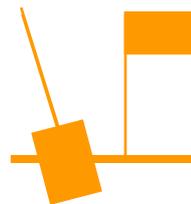
Our Training Portfolio



General management



Institutional strengthening



Planning, exploration and operational mining business



Occupational safety



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Maintenance



Transport /logistics



Environmental and waste management



About our training programmes

MCI offers its comprehensive expertise by way of seven training modules. Six modules cover further training requirements along the entire mining value creation chain. On top of that, a separate seventh module addresses the issues of institutional strengthening of government organisations and mining related organisations.

The modules are devised according to core areas as described on the following pages.

Our company’s compelling customer value proposition describes the MIBRAG Group experts’ specific competences and long years of experience in individual mining professions.

The implementation of our training courses to date has created substantial added value for our clients.



I. General management

Management of medium sized mining enterprises

- Suitable organisational structures and processes
- Introducing external and internal accounting
- Investment controlling
- Introducing a central integrated IT system
- Organising an internal revision system
- Risk management
- Corruption prevention

Company level transformation from a planned to a market economy

- Technical, economic, social and organisational adaptations during transformation processes
- Implementation of new legal requirements in the company
- Necessary investments for mining companies

Project management

- Planning/ organisation/ implementation of mining projects

Human resources and organisational development

- Contents of a sustainable human resources development concept
- Demographic change and required HR responses
- Organising processes of change
- Planning and implementing human resources development

Training and further training

- Identifying short-term and long-term further training requirements
- Training and qualifications of technical and managerial staff
- Managing a training facility for skilled workers

Public relations / management of resettlements

- Creating a positive image
- Social commitment to the region
- Arranging an optimum resettlement process

Energy management

- Organising energy management
- Optimising revenue from power sales
- Cost cutting potentials

Organising stock management, central purchasing

- Evaluating central and decentralised purchasing systems
- Introducing a central, computer assisted stock management system

Lignite and by-product sales

- Introducing a contract management system
- Efficient pricing
- Innovative coal sales approaches



Compelling customer value:

- Expertise and experience in organising and managing a private sector mining enterprise
- Experience in adapting the company IT system to specific mining needs
- Minimising business risks through systematic and targeted risk management
- Experience in restructuring a mining enterprise from planned to market economy
- HR development considering processes of change and demographic change
- Experience in managing a company-owned training facility for skilled workers
- Presenting the consultant's own well-tryed resettlement procedure
- Experience of a mining enterprise's social commitment to the region



Teambuilding in processes of change



II. Institutional strengthening

Privatising mining industries

- Institutions for the preparation and implementation of privatisation
- Process of privatisation
- Financing opportunities
- Elaborating master plans
- Tendering procedures
- Requirements of managerial staff during process of privatisation
- Tasks for the Ministry of Mining/Energy

Transformation from a planned to a market economy on governmental levels

- Modifying laws for a market economy system
- Structures and processes in a market economy
- Requirements of government officials

Educational systems and training facilities in mining

- Analysing existing educational and training systems – training/education of skilled workers, engineers and managers
- Proposals for optimising existing educational and training systems
- Analysing existing training facilities in the mining sector
- Proposals for improving structures/management of training facilities

International project management for institutions

- Planning and implementing international projects
- Formulating bids in international tenders
- Criteria for a project manager for an international team
- Project supervision
- Effective reporting system

Compelling customer value:



- Transferring the consultant's own experience in privatising mining enterprises – "Lessons learnt"
- Presentation of the specific road taken by East Germany in privatising the mining sector
- Transferrable know how and experience in organising the transformation from structures and processes of a planned economy to a market economy in mining enterprises
- Specific expertise in the Russian method of privatising the mining sector
- Specific knowledge of the system: planned economy in ex-Soviet countries, and market economy: immanent features, organisational forms and management systems
- Comprehensive knowledge of planning and implementation of international mining projects



III. Planning and exploration, operational mining business

Exploration

- Analysis, methods and evaluation of deposit exploration

Mining planning

- How state spatial planning regulations influence mining permits and mining planning in Germany
- Planning mining operations across the life cycle
- Influencing factors of mining operations

Coal extraction

- Mining planning as a basis for an ideal control over mining processes
- Use of GPS in large opencast mining equipment
- Equipment operator training – large opencast mining equipment and auxiliary equipment

Coal quality management (CQMS)

- Quantifiable advantages of CQMS
- Definition of activities for warranting and optimising needs-oriented supplies to customers and efficient exploitation of deposits

Mining subsidence

- Predictive calculations of mining subsidence
- Management/ regulation of mining subsidence pursuant to German law

Engineering

- Use of remote sensing applications/ photogrammetry
- Monitoring system for registering soil and slope movements
- Introduction of Geographical Information Systems, line cadastres, operations information systems
- Technical supervision

Compelling customer value:

- | | |
|---|--|
| <ul style="list-style-type: none"> • Ready-to-use well tried know how in exploration and extraction of lignite deposits • Evolution of MINCOM-software for lignite (multi-) seam deposits • European standard top training of equipment operators in the MIBRAG mines • Training in applications of "PCGEOFIM" geofiltration and geomigration simulation software for optimising water management | <ul style="list-style-type: none"> • Introduction of coal quality management systems • Comprehensive experience in determining preventive measures for regulating mining subsidence and managing acute mining subsidence in accordance with German law • Introduction of specific monitoring and geographical information systems • Development and application of specific monitoring facilities for operational safety |
|---|--|





IV. Occupational safety

Occupational safety as a strategic target

- Dimensions of occupational safety
- Increasing efficiency with occupational safety
- Implementing German legal requirements

Reducing costs with occupational safety

- Cost/ benefits of occupational safety
- Cost reduction potentials

Organising occupational safety

- Introducing efficient occupational safety systems
- Supporting activities for organising occupational safety

Occupational safety as a management function

- Rules for employees to comply with occupational safety
- Measures for implementation of occupational safety management systems

Risk assessment, preventive and immediate action

- Securing workplaces
- Improving working conditions

Personal protective gear and its importance

- When to use protective gear
- Cost-benefit-analysis of protective gear

Accident analysis and prevention

- Identification and evaluation of accidents and near-misses
- Statistics and their effective use

First Aid/ Occupational health

- Importance of occupational health
- Organising first aid/ occupational health
- Safe methods of dealing with health hazards

Ergonomics and job design

- Job design requirements

Hazardous materials

- Types of hazardous materials
- Guide to safe handling of hazardous materials

Fire protection

- Organising fire protection

Compelling customer value:



- Training seminars carried out by a company repeatedly awarded for its European "Best Practices" in occupational safety (by ROSPA¹)
- Concept strategy for occupational safety systems based on specific accident analyses (actual accidents and near misses)
- Training seminars on how to set up and implement occupational safety management systems for surface mining

¹ ROSPA – Royal Society for the Prevention of Accidents



v. Maintenance

Mechanical and electrical maintenance of technical equipment

- Evaluating the technical condition of equipment
- Organising a wear parts management system
- Introduction of condition-oriented maintenance
- Technical specifications for investments and maintenance tasks

Organising maintenance

- Suitable approaches to maintenance
- In-house services v outsourcing
- Computer assisted spare and replacement part strategies
- Suitable ways of organising equipment maintenance

Compelling customer value:

- Transfer of experience and know how in introducing and managing efficient maintenance systems
- Drawing on experience in introduction of cross-company networks for developing individual modern maintenance strategies
- Cost optimisation by means of condition-oriented mechanical and electrical maintenance of technical equipment based on proven diagnostic methods



Retrofit of a bucket-wheel excavator



VI. Transport/logistics

Material transport

- Removal of extracted material from deposit
- Technical, technological and economic criteria for choice of means of transport
- Road works requirements
- Transport of residual matter
- Interfaces with public logistics companies
- Contractual frame conditions with third parties on transport of extracted/ residual materials

Organising internal logistics

- Infrastructure concept for railway system
- Cost-benefit-analysis for use of conveyors v railway
- Effective use of vehicles

Compelling customer value:



- Practical experience in organising and implementing transport by conveyor, railway and road
- Experience in reverting from railway to conveyor transport in opencast mines
- Advising international mining companies on how to organise material transport
- Experience in transporting any mining products, incl. hazardous materials



Use of various means of transport

VII. Environmental and waste management



Environmental protection and mining

- Implementing German legal requirements in the company
- Cultivating temporarily disused areas to reduce dust and erosion
- Mining impacts on water balance
- Climate change impacts on mining and reclamation planning

Water quality management

- Water treatment measures
- Planning/ construction/ operation of water treatment plants
- Planning and sizing of water collectors and water discharge systems
- Model based calculations of scientific fundamentals for technical planning

Reclamation of mining areas

- Recovery of mining land for agriculture and forestry
- Compensatory and substitution measures in environmental protection and nature conservation
- New systems of utilisation
- Ground water table after mining
- Concepts for further use of mining land

Waste recovery/ disposal

- Implementing German legal requirements for waste recovery/ disposal
- Waste recovery/ disposal after lignite beneficiation/ combustion processes
- Operation of waste recovery equipment
- Groundwater hydraulic constraints for landfill water management
- Planning/ construction/ operation of landfills for residual matter

How to deal with existing contamination

- How to deal with the hazards from new and existing contamination
- Underground spread of contamination

Compelling customer value:

- Transfer of practical know how on implementation of European environmental standards and company level requirements
- Conveying the experience in cooperation with affected communities in environmental protection
- Development and application of new reclamation systems
- Development of reclamation training seminars
- The role of water balances in active mining planning and reclamation planning under consideration of climate change
- Transfer of practical know how on recovery and disposal of waste from lignite combustion processes



International footprints

■ **Specific international experience**

● **Examples of selected projects**



Ukraine

- Professional training programmes for officials in the Coal Mining Ministry on transforming the coal sector, privatisation, occupational safety, environmental protection, management training, incl. study trips and train the trainer programme
- Training course for managerial staff in the Ukrainian coal mining industry on restructuring state-owned coal companies for the private economy

Kosovo

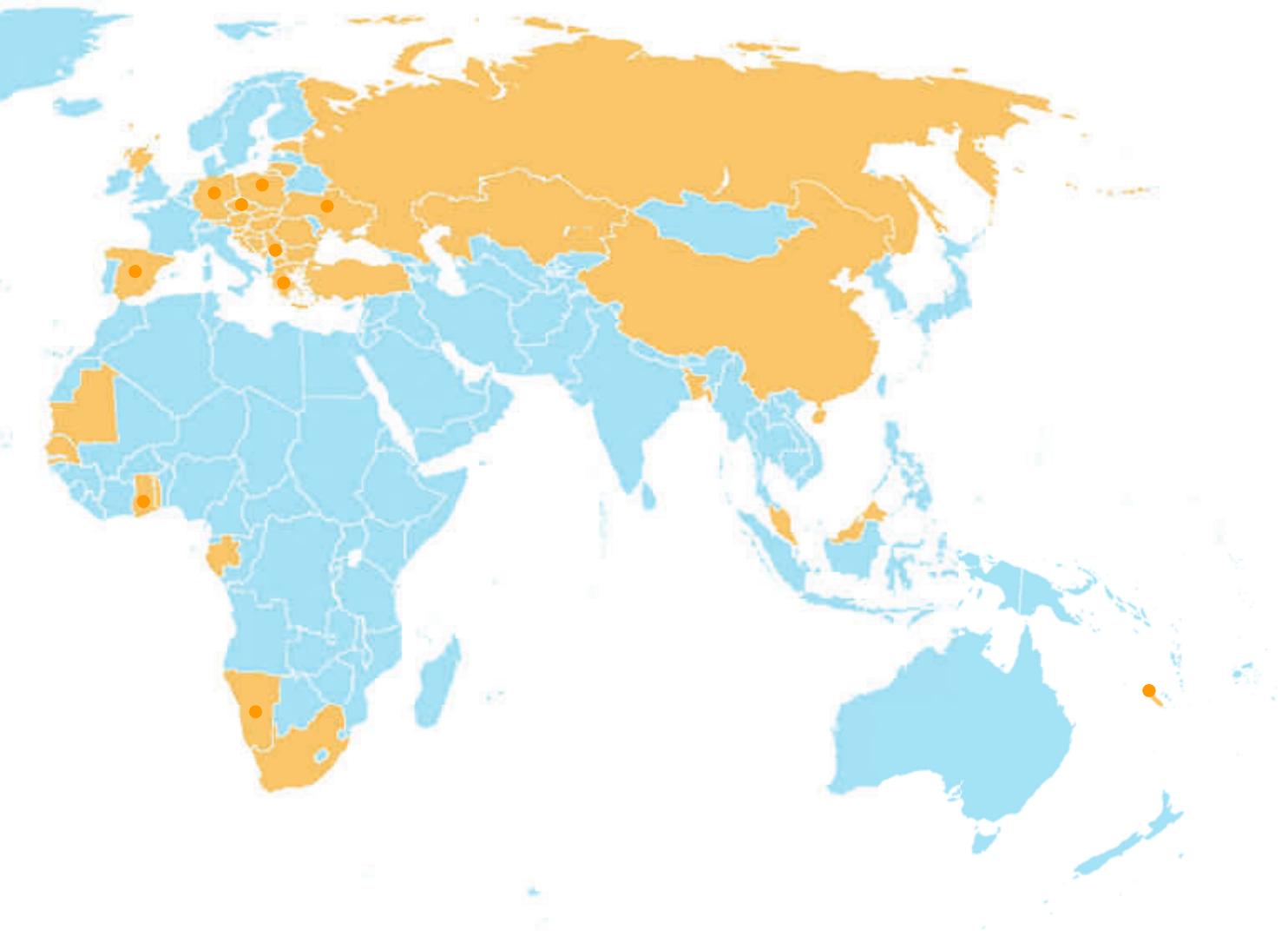
- Setting up a training facility for coal mining and power generation company incl. management training, training prospective trainers
- Technical training for engineers and equipment operators
- Occupational safety seminars
- Study trips

Poland / Greece / Czech Republic / Spain / Germany

- Identifying environmental protection Best Practices in mining companies for mining regions (dust and emissions protection, reclamation, land recovery) – developing handbooks
- Exchange of experience and knowledge transfer on Best Practices in environmental protection

Ghana

- Institutional strengthening of the Minerals Commission as well as the Ministry of Land, Forestry and Mining by evaluating existing HR structure and proposals for further training and additional staff requirements
- Further training of expert staff in situ
- Study trips and training seminars in Europe



Namibia

- Institutional strengthening of Ministry of Mining and Energy by evaluating existing systems of training and further training in the mining sector
- Analysis of existing training facilities in the mining sector
- Devising a project for extending the educational programmes of a mining training facility

New Caledonia

- Evaluation of existing systems of education and further training in the mining sector
- Identifying proposals for optimising and extending them
- Analysis of existing training facilities in the mining sector
- Devising study programmes for reclamation experts
- Devising further training seminars for equipment operators



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