

Mining Energy Environment

Your cluster „Made in Germany“



GKZ
Freiberg



Castilla y León – EU Cluster Matchmaking Event

9 - 10 April 2019

Santa Bárbara Foundation

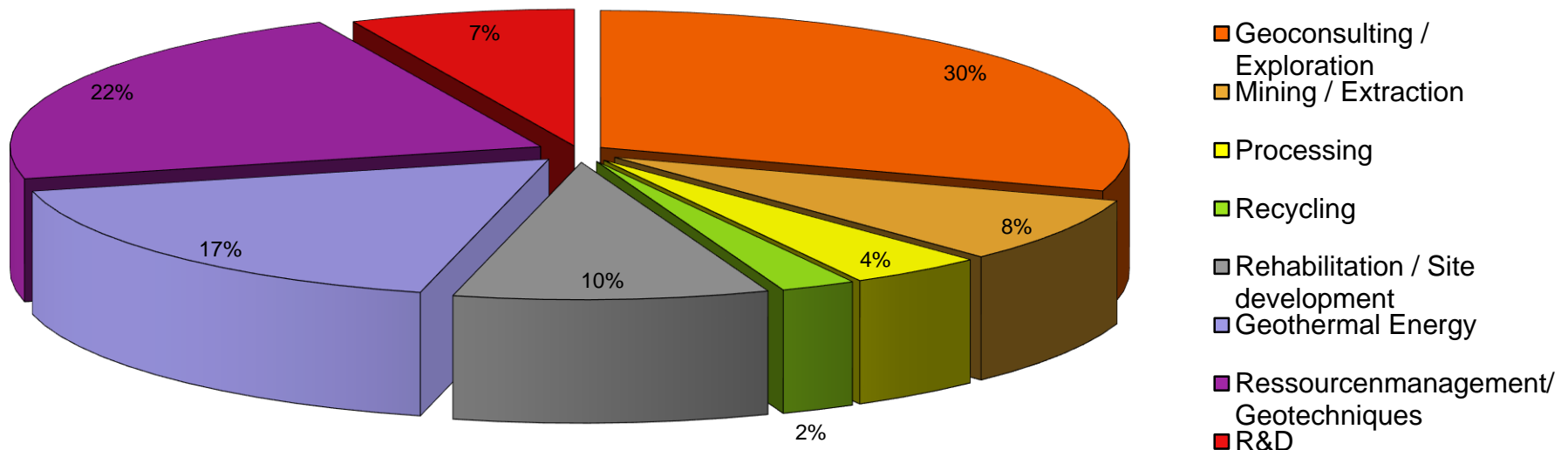
C/ Aguilonjos s/n, 24310 La Ribera de Folgado, León, Castilla y León

Who we are



- Non-profit triple helix organisation (industry-research-administration) located in the federal state of Saxony/Germany
- 160 members with business fields along the whole value chain of raw materials (spars and ores, aggregates, natural rock) and geothermal energy, nuclear depository
- GKZ bundles entrepreneurs, organisations, industry, research, administration to increase the impact of smart specialisation by: *networking, lobbying, improving framework conditions, raising raw material awareness, knowledge exchange*

Member structure by 2018



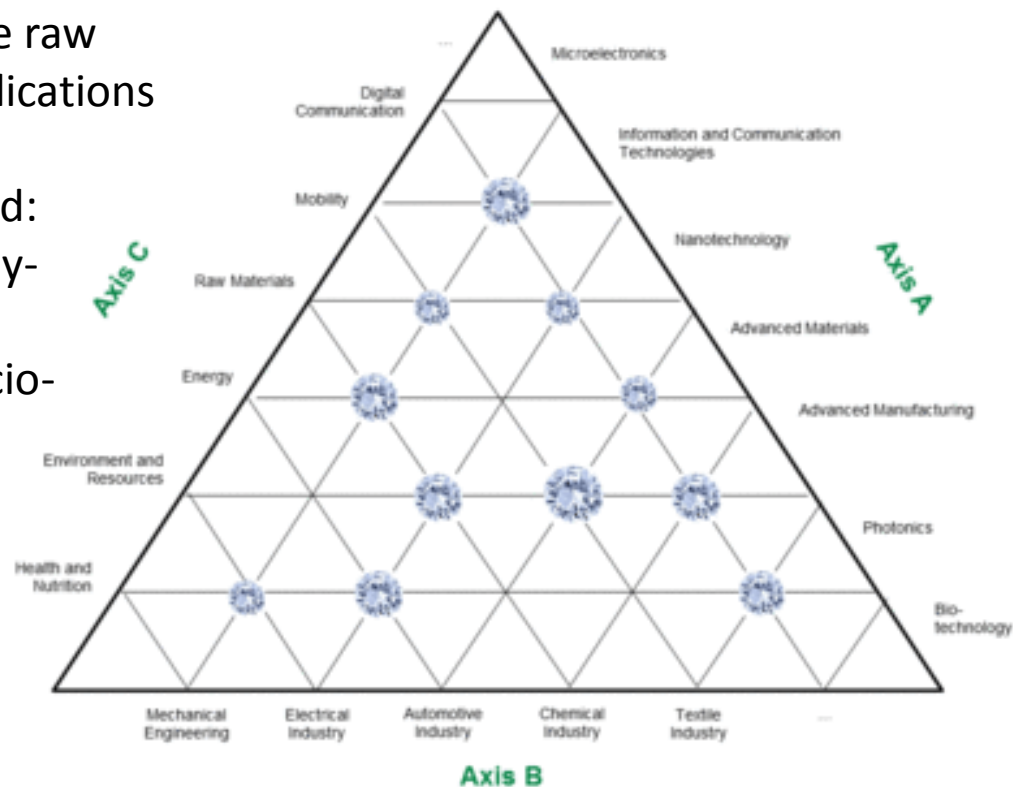
Where we come from

Saxony...

- defines raw materials as an integral part of its policies (Innovation Strategy; Raw Materials Strategy) – there is a strong commitment to mining and metallurgy
- is a hub in raw materials research & development at federal and EU level
- owns a strategic potential of valuable raw materials for present and future applications and technology developments
- has a strong metallurgical background: operation of Sn, Ni, Co, Cu, Zn, Pb + by-product smelters
- Faced a number of industrial and socio-economic regional transitions

Raw Materials: a focal point at the interfaces of traditional and future sectors and KET

Source: Innovation Strategy of Saxony



Where we are located – the Freiberg Cluster

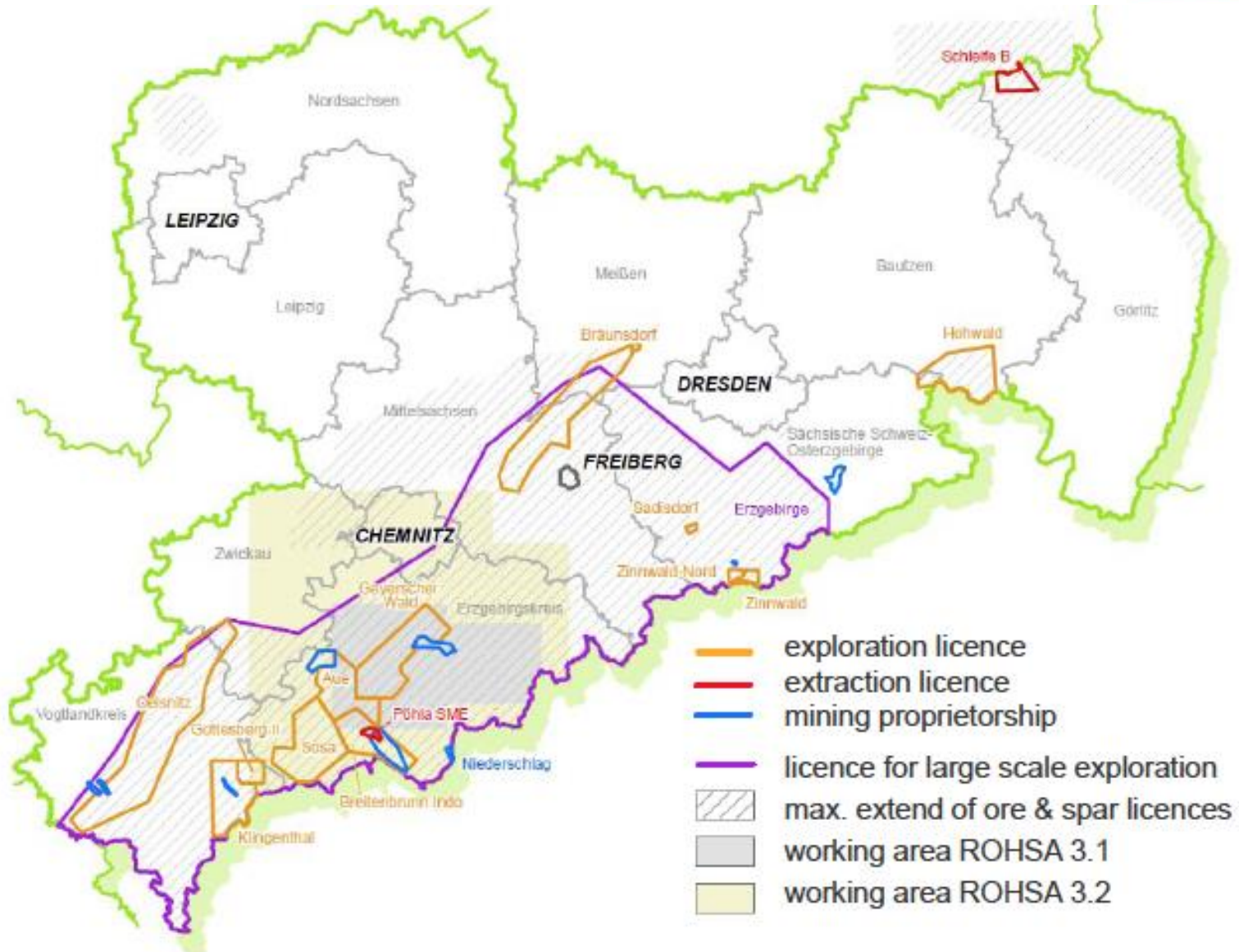


- **Helmholtz-Society / Fraunhofer Institute** – Top Federal Research Facilities
- **TU Bergakademie Freiberg** - Resource University since 1768 – Research mine
- **Feinhütte Halsbrücke** – one out of four remaining EU tin smelters
- **Befesa** – Zinc smelter
- **Muldenhütten** – Lead smelter
- **Freiberg Compound Materials** – world market leader in GaAs Wafer production
- **Solar World** – photovoltaic panels
- **Technical Consultancies** - innovative, applied research & consulting, mine developers
- **German Combustion Research Centre** - R&I on coal and gas, caverns, nuclear depository
- **Saxon Supreme Mining Agency**
- **Saxon State Geological Survey**
- **Saxon Mining Archive**

Source: GKZ, FCM Freiberg



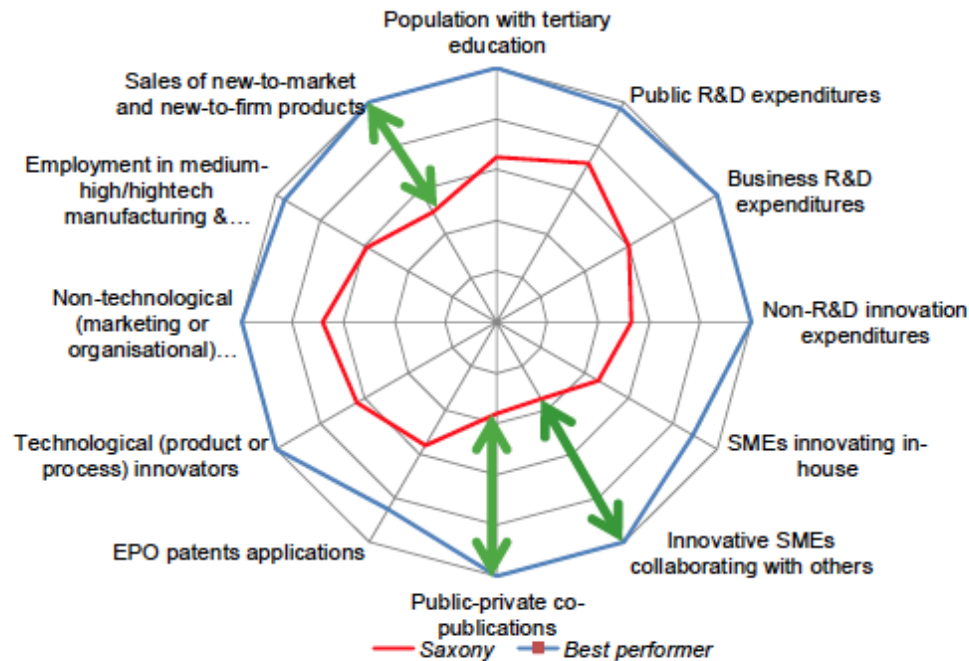
Our resources



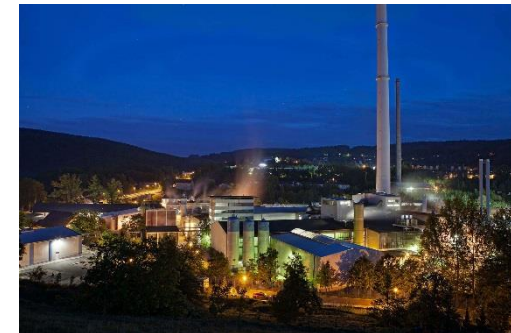
Saxony: innovation indicators and value chains

Analysis of external context (national/international)

Key innovation indicators



Source: European Commission (2012), Regional Innovation Scoreboard



Source: Nickelhütte Aue, GKZ, ESF



How we are networked at regional, national and European level



LANDESAMT FÜR UMWELT,
LANDWIRTSCHAFT
UND GEOLOGIE



Freistaat
SACHSEN

SÄCHSISCHES
OBERBERGAMT



Freistaat
SACHSEN



Federal Ministry
for Economic Cooperation
and Development



Bundesministerium
für Wirtschaft
und Energie



Bundesministerium
für Bildung
und Forschung



Bundesanstalt für
Geowissenschaften
und Rohstoffe



DECHEMA
Gesellschaft für Chemische Technik
und Biotechnologie e.V.



Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH

Raw Materials
Alternate
Recycle
Extract



**EUROPEAN TECHNOLOGY PLATFORM
ON SUSTAINABLE MINERAL RESOURCES**



**EUROPEAN
CLUSTER COLLABORATION
PLATFORM**
.eu

Where we are partners



**Interreg
Europe**



European Union | European Regional Development Fund



**EUROPEAN UNION
EUROPEAN REGIONAL
DEVELOPMENT FUND**



Europäische Union

Europa fördert Sachsen.



**Interreg
Polska-Sachsen**



EUROPEAN UNION



Bundesministerium
für Wirtschaft
und Energie



**UNTERNEHMEN
REGION**
Die BMBF-Innovationsinitiative
Neue Länder



Bundesministerium
für Bildung
und Forschung

Development Co-operation

Capacity building, good governance



References

- Partner search in resource efficiency and management, Vietnam
- Institutional strengthening of the mining administration in Mozambique
- Training and education of young professionals from Mozambique in Saxony
- Curricula development for a mining academy in CEMAC, Africa

GKZ is an official partner of:



Source: GKZ,

Technical Co-operation

Expert pools in raw materials
R&D and consulting



Reference: Republic of Togo – Re-evaluation of a phosphate deposit

- Optimization of exploitation and preprocessing
- Economic evaluation and improvement of product flow, valorisation
- Viability report for privatisation of deposit

Market Entry

Fact-finding Mission and Brokerage



Reference: Greenland market survey

- Environmental friendly and economic processing
- Surveying technologies
- Energy efficiency and infrastructural development
- Research and vocational training

Know how transfer

Business delegation in Germany and Partnerships



Reference: China

- Resource management and energy supply
- Mine safety
- Energy efficiency
- Green tech and environment

Technical cooperation: international dialogue



e.g. Republic of South Africa:

- Green Tech
- Small scale mining
- Energy efficiency
- Training

Technical cooperation: good governance



e.g. CEMAC:

- Developing a curricula for setting up a mining academy
- Strengthening relationship to partner countries
- Door opener to industry



Federal Ministry
for Economic Cooperation
and Development

Technical cooperation: Vocational training

Elaboration of Job description for fiscal and technical inspection in the fields of geology, mining, oil- and gas industry including professional qualification and necessities for hiring at governmental institutions in Mocambique



Source: BGR, wikipedia



Research and Innovation projects

Management, exploitation and dissemination



Reference: The FAME project:

Flexible And Mobile Economic Processing technologies of:

- low grade, complex Sn, W ores and by-products
- at European scale
- to secure domestic raw material supply
- and to engage mining entrepreneurship



What we are looking for:

Crafts:

- Digitisation, securing skilled labor force
- Qualification: BIM, language skills
- Attracting young people to join branch/sector

Natural stone:

- Promotion and policy making (awareness building of consumers, administration and Vergabe; sustain construction
- Branding / Labelling of EU products and services

Material Heritage and Regional Development

- Valorization of industrial and natural heritage
- Regional transition from mining to green tec

Raising raw material awareness and securing raw material supply by CSA



What we are looking for:

Mining/Processing:

Research partnerships on

- Valorization of low grade and complex ores (exploration, processing, metallurgy)
- Microbiological applications in mining and remediation
- Extraction of by-products in construction materials

Job creation and education

- Attracting young people to join branch/sector
- Raising awareness of branch/sector

Circular economy:

Research partnerships on

- Carrier metals
- Turning waste into resource
- Recycling

Resource Efficiency





Mining Energy Environment

Your cluster „Made in Germany“

Contact:

Dr. Wolfgang Reimer

Managing Director

Phone +49 3731 773715

Mobile +49 17610208119

Email wolfgang.reimer@gkz-ev.de

Skype saxmonti

