

# **EBRD Extractive Mining Industries Strategy**

# 2018-2022

As approved by the Board of Directors on 13 December 2017



PUBLIC

### Abbreviations



- 1. ABI annual business investment
- 2. ADB Asian Development Bank
- 3. AIIB Asian Infrastructure Investment Bank
- 4. BAT best available technology
- 5. BGR Bureau of Governmental Research
- 6. CEE central and eastern Europe
- 7. CIT corporate income tax
- 8. CIS Commonwealth of Independent States
- 9. CO2 carbon dioxide
- 10. COOs countries of operations
- 11. CSR corporate social responsibility
- 12. DFID Department for International Development
- 13. DREA Atlantic Research Centre (part of DRDC)
- 14. EBRD European Bank for Reconstruction and Development
- 15. EC European Commission
- 16. EHS&S environment, health, safety and security
- 17. EIB European Investment Bank
- 18. EITI Extractive Industries Transparency Initiative
- 19. ESP Environmental and Social Policy
- 20. EU European Union
- 21. EVD Evaluation Department
- 22. FDI foreign direct investment
- 23. IBRD International Bank for Reconstruction and Development
- 24. ICMI International Conference on Machine Intelligence
- 25. ICT Information and Communications Technology
- 26. IFC International Finance Corporation
- 27. IFI international financial institution
- 28. KfW Kreditanstalt für Wiederaufbau (German development bank)
- 29. KIGAM Korea Institute of Geoscience and Mineral Resources
- 30. MIGA Multilateral Investment Guarantee Agency
- 31. O&M operations and management

- 32. OECD Organisation for Economic Co-operation and Development
- 33. OEM original equipment manufacturer/manufacturing
- 34. R&D research and development
- 35. RMI Raw Materials Initiative
- 36. SDG Sustainable Development Goals
- 37. SME small and medium-sized enterprise
- 38. SOE state-owned enterprises
- 39. TA technology assessment
- 40. TIMS Transition Impact Monitoring System
- 41. USAID United States Agency for International Development
- 42. WC working capital

### **Executive Summary**



Mining is a global industry which can create jobs, spur innovation and bring large-scale investment and infrastructure over longer time horizons. The Mining Industry is a large contributor to economic growth and social development in a number of the EBRD's resource-rich countries of operations (COOs), such as the Kyrgyzstan, Mongolia, Kazakhstan, Russia and Ukraine. Local communities also frequently benefit significantly from mining activities.

However, if managed poorly, mining operations can also lead to challenges including environmental degradation, displaced populations, inequality and increased conflict. Over the last two decades we have seen major improvements in the global understanding of how mining operations can be run more responsibly and with more attention paid to sustainability issues. Good practices to address environmental, health, safety and social (EHS&S) issues have made significant advances and continue to evolve. Good governance, stable and constructive institutional relations and good economic management have also been recognised as key issues that responsible companies should address. In particular, the importance of adhering to the highest standards of transparency and reporting in extractive industries (including mining) as enshrined in the principles of the Extractive Industries Transparency Initiative (EITI) is highlighted.

The Mining Strategy takes stock of these developments in the sector and identifies the remaining transition challenges in the COOs through the six transition qualities. It also sets out the Bank's operational response and approach to environmental, health, safety, social and gender inclusion issues. The Mining Strategy clarifies the rationale for the Bank's continued involvement in the sector and reaffirms the importance of mining in fostering transition. As such, the key cornerstones of the Mining Strategy are to: (i) **Support competitiveness** of the mining sector by helping mining companies to increase operational efficiency and become more competitive; (ii) **Support good governance** in the mining sector by promoting greater transparency and regulatory reform where necessary; (iii) **Support sustainability** of the mining sector by promoting environmentally friendly mining methods and resource efficiency; (iv) **Promote inclusiveness** in mining operations by supporting both the local servicing sector and the participation of women, young people and other inclusion target groups in the workforce, thereby maximising the multiplier effect on local economies.

The Bank recognises the macroeconomic impact of mining, in particular in smaller economies. The Bank intends to reflect this in the comprehensive approach that is developed through relevant Country Diagnostics and Country Strategies.

## **Table of Contents**



| Introduction  | Scope and structure of the new strategy<br>The Mining Strategy works in conjunction with all of the Bank's governance policies<br>Rationale for the Bank's involvement in mining   | 5<br>6<br>7                               |
|---|--|---|
| Section 1:<br>Reflection on the<br>previous strategy      | 1.1 EBRD mining operations 2012 – YTD 2017<br>1.2 Lessons learned in the last five years   | 8<br>9                                    |
| Section 2:<br>Mining sector<br>context                    | <ul> <li>2.1 Impact of mining on the Sustainable Development Goals</li></ul>   | 10<br>11<br>12<br>13<br>14                |
| Section 3: EBRD<br>approach and<br>areas of<br>engagement | <ul> <li>3.1 EBRD approach to mining activities</li> <li>3.2 EBRD policy engagement in the mining sector</li> <li>3.3 EBRD financial support for mining companies</li> <li>3.4 EBRD financial support for value chain companies</li> <li>3.5 Address the investment gap facing exploration and development</li> <li>3.6 Conclusion: what will the Bank do? (<i>Performance Monitoring Framework</i>)</li> <li>3.7 Working with other IFIs</li> </ul> | 15<br>16<br>17<br>18<br>19<br>20-21<br>22 |
| ANNEXES   | EU Critical raw materials, Project/Policy Examples, Licenses/ESP, Public Consultation<br>Mining country snapshots  | 24-29<br>30-46                            |

#### Introduction

# Scope and structure of the new strategy





- All COOs with particular attention paid to the metal and mineral rich countries, taking into account transition gaps.
- All industries involved in mining and processing of ores and minerals, including associated industries, such as steel and cement, through cooperation between Natural Resources, Manufacturing and Services, and Financial Institutions departments.
- Financing of coking coal projects.
- Only in exceptional circumstances, HSE&E improvement projects at uranium and thermal coal mining operations.
- All types of financial instruments used by the Bank, including investments in financial intermediaries.

#### What is not covered?

- The extraction of hydrocarbons, such as oil and gas, and the use of thermal coal, which are covered in the Bank's **Energy Strategy**.
- Uranium and thermal coal mining operations that the Bank does not finance (other than health and safety, operational safety improvements, or mine remediation).



#### Introduction

The New Mining Strategy will work in conjunction with all of the Bank's policies, procedures and strategies for Reconstruction and Development



European Bank

### Rationale for the Bank's involvement in mining



For resource-rich COOs, the mining sector is a critical contributor to economic activity at local, regional and national levels, and has important downstream value-chain linkages in the economy. Mining also has potential negative impacts when international environmental standards are not respected and economic diversification is not pursued. It is therefore important to develop mining activities sustainably and improve the resilience and integration of our COOs. This will be achieved by using new types of financing currently missing in the market, financial instruments to mitigate against commodity price shocks, and greater trade integration between new export markets and remote mining areas. The rationale for the Bank's involvement in mining is expected to be primarily based on the four transition qualities below:

**Competitive:** The mining sector in some of our COOs is often characterised by inefficient operational practices. To improve the mines' competitiveness, the EBRD will seek to increase private sector participation and the adoption of new technologies. The involvement of company restructuring in our projects will help achieve operational efficiency and lead our clients to be more cost-competitive.

**Well governed:** The EBRD will aim to finance projects that promote improvements in the corporate governance and corporate social responsibility of our clients, and that also try to achieve compliance with EITI principles at company and country level. These efforts will contribute to the application of good international governance standards and practices throughout our COOs.

**Inclusive:** The potential positive impact of mining operations in our COOs is often restricted by limited availability of technical skills, particularly in remote areas where mining operations are most prevalent. Our projects would bring inclusive growth by promoting the economic participation of women, youth and populations living in underserved areas, as well as by introducing high-quality training and transparent supply-chain management.

**Green:** Mining operations and rehabilitation can have significant environmental risks that require careful adaptation and mitigation at every stage of the project. Through supporting energy and resource efficiency, EHS regulations and other environmental management systems, the Bank has an important role in controlling the environmental impact of mining projects.

| Country    | Mining<br>as %<br>GDP | Mining<br>as %<br>exports |
|------------|-----------------------|---------------------------|
| Mongolia   | 27                    | 88                        |
| Kazakhstan | 18                    | 12                        |
| Kyrgyzstan | 11                    | 45                        |
| Russia     | 9                     | 6                         |
| Bulgaria   | 7                     | 14                        |
| Serbia     | 6                     | 1                         |
| Poland     | 6                     | 4                         |
| Ukraine    | 5                     | 8                         |
| Morocco    | 4                     | 8                         |
| Uzbekistan | 4                     | 1                         |
| Armenia    | 3                     | 44                        |
| Tajikistan | 3                     | 23                        |
| Albania    | 3                     | 11                        |
| Greece     | 2                     | 2                         |
| Montenegro | 1                     | 26                        |
| Georgia    | 1                     | 28                        |
| Turkev     | 1                     | 2                         |

Source: Various government statistics UNCTAD/SNL, Skarn Associates

\* For further detail please see respective Country Slides in "Annex G"

\*\* For further details on transition qualities please visit:

http://www.ebrd.com/ourvalues/transition.html

# EBRD mining operations 2012 – YTD 2017





\* For further details on transition achievements please refer to the latest EBRD transition report: <u>http://www.ebrd.com/transition-report</u>

## Lessons learned in the last five years



9

In the new strategy, the Bank is actively looking to use the lessons learned from the 23 mining projects, which were financed during the last five-year strategy.

| Challenges to implementation   | Learning methods  | Key lessons  |
|--|---|--|
| <ul> <li>Finite endowments</li> <li>State intervention</li> <li>Commodity price volatility</li> </ul>  | Civil society<br>engagement   | <ul> <li>Some COOs are now at a critical point in depleting endowment</li> <li>Issues that may influence government decision making (for example, in terms of licencing) or can lead to interference need to be carefully evaluated</li> <li>Effects of external shocks and client sensitivity to commodity prices need to be thoroughly assessed</li> </ul>   |
| <ul> <li>Effective implementation of<br/>environmental health and safety<br/>and social practices (EHSS)</li> <li>Engagement with civil society</li> </ul> | Project<br>monitoring<br>(TIMS)<br>Discussion<br>with partner<br>institutions | <ul> <li>The Bank's comprehensive approach to EHS&amp;S and strict implementation of the ESP have proven to be a robust tool to address environmental and social issues, and to increase client capacity to solve problems with governments</li> <li>To effectively ensure that health and safety standards at client level are met, it is important to insist on strict implementation at the start of projects</li> <li>Early engagement with civil society organisations has proven key to resolving potential conflicts</li> </ul> |
| <ul><li>Financing</li><li>Impact at a larger scale</li></ul>   | Clients' and consultants'   | Close cooperation with partner organisations increases leverage and can help encourage wider sector reform   |
| Transition impact assessment   | feedback -<br>Sector<br>reports and -<br>studies                              | <ul> <li>A solid monitoring framework and baseline assessment are required to<br/>adequately evaluate impact</li> </ul>  |
| <ul> <li>Capacity building with clients and governments</li> <li>Move towards international standards</li> </ul>   |   | <ul> <li>TA can increase technical capacity building in small to medium-sized projects, and can be a roadmap to advance transition with SOEs</li> <li>TA can contribute substantially to increasing resource efficiency and reducing environmental impacts, by improving standards at client level and enhancing national regulations</li> </ul>   |
|  | 7   |  |

**PUBLIC** 

# Impact of mining on the Sustainable Development Goals



The mining industry impacts all 17 of the Sustainable Development Goals to varying degrees through mining itself, social investments, taxes and investment of public revenues.



### Current market trends in the mining industry



#### Price and cost pressures

- The end of the price super-cycle. This lasted through the first decade of 2000, with high metal prices and strong demand growth. China's remarkable industrialisation drove metal markets: its annual steel production grew eight fold to over 800 million tons. As China slows and its growth becomes less infrastructure-and materials-intensive, so its demand for materials will slow and could even fall for some products. Much of the world's population still use low levels of metals per head, and the long-term potential for growth in global demand use remains high. However, the medium-term outlook is uncertain.
- Cost pressures. Rich, low-cost resources will continue to be found. But the new mines needed to replace depleting mines and meet growth will usually contain lower grade ore and pose more challenges. Over a long period, advances in technology, management and scale have helped offset such pressures, but this may be difficult to maintain. The COO countries have a larger share of higher-cost underground mines than their global peers.
- Exploration shortfall. Global exploration spending is highly cyclical, and is failing to enable larger, higher-grade orebodies to be discovered. Most of the COO countries have received a disproportionately low share of global exploration spend

#### Climate change and resource efficiency

- Climate change creates significant challenges for the mining and metals industry. These include flood and storm damage to infrastructure, transport disruption affecting supply chain reliability and increased competition for climate-sensitive resources, such as water and energy.
- Increasing scarcity of resources. Adapting to climate change and a more efficient use of resources can improve efficiency, productivity and sustaining the industry (four per cent of the world's power is used in crushers and grinders).

#### **Evolving Corporate and Social Responsibilities**

- EHSS requirements. These will become more challenging to meet as standards are tightened. At the same time, mining is more likely to be taking place in sensitive locations as declining ore grades require greater inputs and produce more waste. The industry will need to deal with more stringent environmental permitting and higher upfront and operating costs to limit impacts.
- Communities increasingly expect mining companies to contribute to the local economy and provide a springboard for local development, while ensuring human rights are respected. Mining companies are increasingly encouraged to incorporate relevant Sustainable Development Goals into their business operations. While some areas are under companies' control, many are not. These will require partnerships with government and others to make progress.
- Workforce dynamics. In many countries, miners are faced with aging workforces and the need to broaden their recruitment, training and leadership programs, to meet not only diversity and equality expectations but also their own operational needs.

#### **Government Policies**

- Increased politicised sector and risk of fiscal nationalisation. The mining sectors in most of the EBRD's COOs have changed remarkably over the last 20 years and are largely privately owned and run. But as more countries depend on it, mining has become a more politically sensitive sector and the resource nationalisation risk has increased (often via taxes and fines). Too high a taxation and too great a level of uncertainty deters needed exploration and investment.
- Increased focus on critical raw materials. This has led to concerns about the secure market supply of some raw materials. The EU has a strategy to secure the supply of a number of critical raw materials for European industries by aiming to remove unfair trade barriers, foster European supply and improve efficiency of use. Individual countries have adopted a number of initiatives. Such initiatives pose opportunities and risks for producing countries and investors. The rapid growth in clean energy technologies, renewables, and hi-tech information technology caused a substantial demand increase for a number of minerals and metals and for these critical raw materials. (See annex B).

#### Section 2: Mining sector context

# Importance of mining in the economies of the EBRD Countries of Operations (COOs)



European Bank for Reconstruction and Development

Countries with high risk reliance on mining



Countries with long-term mining business potential

Countries with low to medium mining business potential

Countries with leading international mining companies

- **11 key mining countries:** Greece, Kazakhstan, Mongolia, Morocco, Russia, Poland, Serbia, Tajikistan, Turkey, Ukraine, Uzbekistan.
- 6 COOs have high reliance on mining and an uncertain future in mining: Albania, Armenia, Bulgaria, Georgia, Kyrgyzstan and Montenegro.
- 9 COOs have limited mineral endowments: Azerbaijan, Bosnia and Herzegovina, Egypt, Croatia, Hungary, FYR Macedonia, Romania, Slovak Republic, Tunisia.
- 10 COOs host little mining activity due to insignificant endowment: Belarus, Cyprus, Estonia, Jordan, Kosovo, Latvia, Lithuania, Republic of Moldova, Slovenia, Turkmenistan
- 22 of the top 150 international mining companies operate in 15 COOs.

# Challenges in the mining industry through the six transition qualities



#### Competitive

• Mining costs: Prices of mining commodities are usually set on international markets with little company control. Ensuring efficient management and cost control are thus essential to the competitiveness of our clients. The sector can be helped to be more competitive by investing in exploration for new resources, innovative new technologies and reform of state-owned companies (including privatisation).

#### Well governed

- **Transparency:** Mining can suffer from a lack of transparency that undermines investor and public confidence, weakens governance and deters investment. The EITI now includes transparency about payments to governments, contracts and beneficial ownership. By embracing initiatives such as EITI, governments and companies can attract private investment to the sector and enhance development outcomes.
- Regulatory and Legal framework: Mining companies often operate in weak legal and institutional frameworks. With better regulations, and fair and predictable tax regimes, governments can provide an enabling environment for the sector to develop.

#### Inclusive

- Access to employment and skills: Miners in our regions face challenges in attracting qualified and diverse talent into their operations. Through the introduction of training and work-based learning opportunities in partnership with local education institutions, miners can diversify their workforce, tap into new talent pools and up-skill their staff.
- Sharing benefits. Through the more effective use of government revenues generated at national and local levels, and improved supply chain and community programmes, mining can bring benefits to local populations in the least developed regions.

#### Green

• Environmental footprint: Miners can minimise their impact by promoting resilience to expected climate change impacts, as well as through applying good international standards, such as minimising mine waste, recycling water, handling chemicals more effectively and improving energy efficiency.

#### Resilient

- Financial Diversification: Many COOs still lack access to financing instruments that can improve the resilience of local capital markets and improve diversification of funding, and/or alleviate maturity or currency mismatches.
- Financial instruments, such as futures contracts, can help improve the resilience of our clients, by mitigating against commodity price downturns.

#### Integrated

- Local and national links: Mining operations are most prevalent in remote areas. Supply and labour relations can help integrate these mining areas with the national economy through transport infrastructure projects.
- International trade: New infrastructure, products and standards that facilitate exports to non-accessible countries can enhance the global and regional integration of our COOs.

#### Section 2: Mining sector context

# **EBRD** mining projects and the six transition qualities



Through its investments, the Bank strives to implement a number of processes in the mining industry that help advance transition to a well-functioning market economy. Some examples of those are shown in the table below for each transition quality.

| Competitive   | Well governed   | Inclusive  | Green  | Resilient  | Integrated  |
|---|---|--|--|--|---|
| Company<br>restructuring through<br>operational efficiency  | Positive impact on the<br>mining sector through the<br>application of good<br>corporate practices such<br>as: | Local employment,<br>including recruitment and<br>training programmes for<br>disadvantaged groups                                      | Application of good practice<br>policies (see Annex F) by<br>companies such as:  | A new type of<br>financing that will spur<br>the development of<br>local capital markets   | International cross-border<br>ownership, financing,<br>management and<br>supply/services flows<br>through significant FDI |
| Links with new<br>suppliers and locally<br>sourced raw<br>materials (investing<br>in upgrading value<br>added processing) | Transparent processes,<br>through CSR reporting,<br>cyanide management and<br>health and safety<br>management | Potential special role of<br>mining in bringing<br>benefits to remote,<br>underserved regions and<br>reducing regional<br>inequalities | Management and pollution<br>control through the<br>introduction of environmental<br>management systems and<br>disclosure of relevant<br>environmental data       | New types of financial<br>instruments to<br>mitigate against the<br>impact of price shocks | New infrastructure /<br>products / standards<br>leading to exports to new,<br>currently inaccessible<br>markets           |
| Introduction of<br>efficient new<br>technology (eg: heat<br>recovery system)  | Contract and tax payments<br>disclosure (see Annex E),<br>and compliance with EITI<br>principles              | Gender-diversity focus in<br>employment, supply chain<br>management and<br>community programmes  | Climate mitigation and<br>adaptation actions (eg:<br>resource efficiency ) to<br>manage the impacts of<br>climate change (including<br>CO2 emissions evaluation) |  | Use of mining infrastructure<br>(eg: road transport) by local<br>businesses and<br>communities                            |
| Helping to privatise<br>the operations of a<br>formerly state-run<br>mine   | Partnerships with<br>communities and<br>governments to enhance<br>mine impacts                                | Partnerships with<br>communities and<br>governments to enhance<br>mine impacts   | Improvement of energy<br>efficiency and EHS<br>regulations   |  |   |
|   | Developing tailored<br>corporate governance<br>action plans   |  | Appropriate closure<br>procedures and rehabilitation<br>of mined areas   |  |   |

# EBRD approach to mining activities



Country diagnostics shows scope for policy actions to enhance transition. The Bank's most effective focuses are on (i) countries where mining is important today but at risk due to lack of new investment/exploration, and (ii) countries with high mining potential. The EBRD's efforts will achieve the best results when working effectively with governments in what can be a politically sensitive sector.



# EBRD policy engagement in the mining sector



Countries with a good business environment, fair mining potential and willingness to address barriers to new exploration and development are likely to be good opportunities for EBRD technical assistance. To maximise the impact of these opportunities, EBRD helps induce or reignite reforms through 3 different types of policy engagement:

|               | Business Environment |                                   |  | Type I: Policy advice is provided by or un  |  |
|---------------|----------------------|-----------------------------------|--|---|--|
|               |                      | Weaker                            |  | Stronger  | the leadership of EBRD experts on policies<br>and legal/regulatory frameworks, based or  |
| ntial         | Higher               | Serbia                            | Kazakhstan,<br>Mongolia, Russia.<br>Ukraine,<br>Uzbekistan,<br>Tajikistan,<br>Morocco, | Greece, Poland,<br>Turkey,  | further analytical work. The EBRD offers po<br>options to authorities who are committed to<br>reform in the mining industry and who have<br>requested such services from the Bank.                   |
| Resource Pote | Î                    | Armenia,<br>Egypt,<br>Kyrgyzstan  | Albania, Bulgaria,<br>Georgia, FYR<br>Macedonia,<br>Montenegro, Tunisia,               | Jordan  | Type II: Capacity-building technical<br>assistance to institutional counterparts so<br>to support policy reform implementation.  |
|               | Lower                | Belarus, Moldova,<br>Turkmenistan | Azerbaijan, Bosnia &<br>Herzegovina, Kosovo,<br>Romania                                | Croatia, Cyprus,<br>Estonia, Hungary,<br>Latvia. Lithuania,<br>Slovenia, Slovakia | general or particular reform agenda points.<br>provides analytical evidence of problems,<br>shares knowledge on good practices and<br>'nudge thinking' and gauges reform appetite<br>and commitment. |

# EBRD financial support for mining companies The industry has many different miners serving a diverse demand for about 300 types of metal and 4,000

types of mineral. The industry description below is simplified and shows the EBRD's financial support.



|                | Minerals and m   | etal cost leaders   | Critical raw materials   |  |
|----------------|--|---|--|--|
| Narrower range | Key success factors:<br>• Economies of scale<br>• Mining cost control<br>• Efficiency, productivity<br>• Outsourcing services<br>• Digitalisation, robots<br>• Attracting young labour<br>Typical EBRD finance:<br>• Project finance | Most miners in the EBRD<br>region extract a few<br>metals or industrial<br>minerals for sale as world<br>bulk commodities. Some<br>such metals and minerals<br>are dominated by global<br>players (eg: iron ore,<br>borates, talc).   | <ul> <li>Key success factors:</li> <li>Resource control</li> <li>Supply chain control</li> <li>Supply risk mitigation</li> <li>Material and metal<br/>stewardship</li> <li>Typical EBRD finance:</li> <li>Exploration finance</li> </ul>   | Supply risks are higher for a<br>number of industrial minerals<br>(eg: magnesia, graphite,<br>fluorspar) and Rare Earth<br>Metals. These are key to many<br>industries and renewable<br>energy technologies. The EC is<br>facilitating supply to EU. This is<br>an emerging opportunity for<br>miners in the EBRD region.  |
|                | Construction materials<br>One-stop shop  |   | "Know-how minerals"<br>for advanced industrial applications  |  |
| Wider range    | Key success factors:<br>• Economies of scope<br>• Efficient logistics control<br>• One-stop shop<br>• Build brand, service<br>Typical EBRD finance:<br>• Multi-product facility<br>• M&A facility                                    | The EBRD region has<br>many dispersed mines<br>supplying a wide scope of<br>minerals used locally for<br>construction materials.<br>Such mines are mostly<br>owned by construction<br>material groups operating<br>large distribution networks<br>and 'one-stop shops' for<br>minerals and rocks. | <ul> <li>Key success factors:</li> <li>R&amp;D in mineral use to<br/>develop new markets</li> <li>Customer partnerships</li> <li>Deepen the R&amp;D<br/>ecosystem with high-<br/>tech clients and<br/>university research</li> <li>Typical EBRD finance:</li> <li>FDI risk comfort facility</li> </ul> | Many industrial minerals are sold<br>with technical support (involving<br>deep in-house R&D) to meet user<br>needs. Innovative supplier-client<br>product partnerships are only<br>found among miners of industrial<br>minerals and not really seen<br>among metal miners. This mining<br>segment is currently small in the<br>EBRD region. Attracting FDI<br>could help grow the segment. |
|                | La   | arge bulk Pro   | duct market Smal   | l niche  |

### EBRD financial support for value chain companies



|           | Universal excavation   | and buildings works   | Tailored installations services and mine O&M   |  |  |
|-----------|--|---|--|--|--|
| Services  | <ul> <li>Key success factors:</li> <li>Working capital</li> <li>Geo presence</li> <li>New technologies</li> <li>Attracting younger<br/>skilled labour</li> <li>Typical EBRD finance:</li> <li>WC finance and back-<br/>up for guarantees</li> <li>SME contractor credit<br/>lines</li> </ul> | Universal works are mostly<br>provided by integrated<br>companies providing<br>construction services to<br>various industries,<br>including mining. Local<br>SMEs are very often<br>subcontracted and add<br>local impact to projects.                                      | <ul> <li>Key success factors:</li> <li>Resilient balance sheet</li> <li>Deep mining know-how</li> <li>Alliances / partnerships</li> <li>Bear hugs with vendors</li> <li>Attracting skilled talent</li> <li>Typical EBRD finance:</li> <li>O&amp;M contract finance</li> </ul>  | Tailored installations and mine<br>O&M require very high expertise<br>and close relationships with<br>technology vendors. Mine<br>contracting usually involves a<br>longer-term O&M contract,<br>which only the most resourceful<br>contractors can handle. Mine<br>contracting can be an effective<br>way to turnaround an SOE.               |  |
|           | Universal construction OEMs  |   | Mining-specific OEMs   |  |  |
| Equipment | <ul> <li>Key success factors:</li> <li>Dealership coverage</li> <li>After-sales support</li> <li>Risk diversification</li> <li>Upgrade to latest<br/>automation</li> <li>3<sup>rd</sup> party vendor finance</li> <li>Typical EBRD finance:</li> <li>Fleet and trade finance</li> </ul>      | OEMs in this segment<br>are more resilient to the<br>mining cycle. Some are<br>able to provide very<br>sophisticated vendor<br>finance for miners and<br>offer equipment with the<br>latest digitisation and<br>automation. This is<br>crucial to productivity in<br>mines. | <ul> <li>Key success factors:</li> <li>R&amp;D into BAT with clients<br/>for productivity</li> <li>After sales support</li> <li>Resilience to cyclicality</li> <li>BAT supplier of choice</li> <li>Modular systems</li> <li>3<sup>rd</sup> party vendor finance</li> <li>Typical EBRD finance:</li> <li>Project finance</li> </ul> | Mining-specific OEMs are more<br>vulnerable to the sector's<br>cyclicality and want a bear-hug<br>relationship with solid miners.<br>These niche OEM players also<br>pursue higher resilience<br>through offering adjacent<br>businesses, such as energy<br>and water treatment,<br>maintenance and training<br>services to support equipment. |  |
|           | General cons   | struction Mining act  | tivity focus Mining  | ı tailored   |  |

### A combination of technical cooperation and finance is needed to address the investment gap facing exploration and development



| Ore exploration   | Mine development  |
|---|---|
| Continued exploration investment                          | Metals production   |
| Crucial for long term metals supply                       | Global competitiveness is crucial: resource quality, logistics and infrastructure costs, economies of     |
| • Vital for realising the potential of under-explored     | scale, efficient production and cost control  |
| EBRD countries  | Most metals trade at international prices: product differentiation and offtake deals and similar are rare |
| • High-failure risk, lengthy pay-back; needs right        | Financial structure is important to develop large long-term projects and deal with the price cycle        |
| terms and conditions to attract risk capital (5-10        | • For a few commodities (e.g. aluminium and iron), businesses can be run as integrated chains             |
| years to discover and develop a new deposit)              |   |
| • Role of large and small companies varies between        | Potential roles for the EBRD:   |
| products and over time                                    | Equity, project finance loans and mobilisation  |
|   | Support for good practice and standard-setting in sustainability and enhancing local benefits             |
| Potential roles for the EBRD:                             | Encourage simplification, transparency and attractiveness of COO mining codes                             |
| Focused policy support:                                   | Encourage governments to use reputable advisors in negotiations with mining companies                     |
| <ul> <li>Support national geological data hubs</li> </ul> |   |
| $\circ$ Support countries in developing the best          | Construction materials  |
| legislation on subsoil use                                | Most often focused on supply to local or national markets   |
| $\circ$ Support COOs in promoting their exploration       | Often small scale with some large-scale global operators in sectors such as cement                        |
| potential to investors; level the playing field for       |   |
| licensing and permitting                                  | Potential roles for the EBRD:   |
| $\circ$ Build institutional and technical capacity of     | Limited when small scale and needs to meet EBRD requirements. Some potential with appropriate             |
| relevant government bodies                                | large operators   |
| o Encourage governments to use reputable                  |   |
| advisors in negotiations with mining companies            | Fertilizers   |
| o Support equity investments to fund exploration          | Relatively few large private companies and a strong involvement of state companies across regions         |
| and development-appraisal projects.                       |   |
| $\circ$ Indirectly fund exploration through support of    | Potential roles for the EBRD:   |
| mining company programmes that include                    | Financing private expansions, state privatisations and energy efficiency                                  |
| exploration components                                    |   |
|   |   |

#### Section 3: EBRD approach and areas of engagement

### Conclusion: what will the Bank do?



### **Performance Monitoring Framework**

| COMPETITIVE: Support competitiveness of the mining sector by helping mining companies to reduce costs and increase output |   |  |  |  |
|---|---|--|--|--|
|   |   | Tracking   | indicators   |  |
| Specific objectives   | Activities  | Outputs  | Outcome  |  |
|   |   |  | (for relevant countries tracked in Country Strategies)   |  |
| 1.1 Innovative or new<br>technologies and processes that<br>lead to cost reductions<br>introduced                         | Investments   | <ul> <li>Number/volume of investments financing innovative technologies and processes in mining</li> <li>Number/volume of TCs supporting introduction of new technologies</li> </ul>   | <ul> <li>Number of clients (and qualitative account)<br/>introducing innovative/new technology</li> <li>Average increase in profitability/total number of<br/>clients reporting increase in profitability</li> </ul>   |  |
| 1.2 Improved operational efficiencies in mining through organisational restructuring                                      | <ul> <li>TCs designed and<br/>funded</li> <li>Capacity building</li> <li>Policy engagements</li> <li>External partnerships</li> </ul> | <ul> <li>Number/volume of investments supporting<br/>organisational restructuring of mining companies</li> <li>Number/volume of relevant TCs and capacity-building<br/>activities</li> </ul>   | <ul> <li>Number (and qualitative account) of mining<br/>companies undergoing restructuring</li> <li>Improved performance or efficiency metrics after<br/>restructuring</li> </ul>  |  |
| 1.3 Increased private-sector<br>ownership and participation in<br>mining  |   | <ul> <li>Number/volume of investments designed to support<br/>privatisation and private-sector-led mining</li> <li>Number/volume of TCs supporting private-sector<br/>participation</li> <li>Number of policy dialogue activities</li> </ul>   | <ul> <li>Number (and qualitative account) of mining<br/>companies undergoing privatisation/increased private<br/>sector</li> <li>Improved performance or efficiency metrics after<br/>privatisation/increased private sector involvement</li> </ul>                                    |  |
| WELL GOVERNED: Support gov  | vernance in the mining sect   | tor by promoting transparency and regulatory reform wh   | nere necessary   |  |
| 2.1 Improved transparency<br>standards in mining, including<br>on environmental and social<br>aspects                     | <ul> <li>Investments</li> <li>TCs designed and</li> </ul>   | <ul> <li>Number/volume of investments supporting improved transparency, and environmental and social standards in mining</li> <li>Number/volume of TCs supporting better standards</li> <li>Number of policy dialogue activities aimed at improving transparency in mining at a country level</li> </ul> | <ul> <li>Number (and qualitative account) of clients<br/>introducing better disclosure/transparency (EITI,<br/>environmental and social, etc.)</li> <li>Improved transparency in mining on a country level<br/>(qualitative account/ number of countries adopting<br/>EITI)</li> </ul> |  |
| 2.2 Improved corporate<br>governance in mining<br>companies through action plans<br>based on OECD standards               | funded<br>Capacity building<br>Policy engagements<br>Advocacy<br>External partnerships  | <ul> <li>Number/volume of investments aimed at improving corporate governance, including through adopting CGAPs</li> <li>Number/volume of TCs and capacity-building activities supporting clients' corporate governance improvements</li> </ul>  | <ul> <li>Number (or qualitative account) of supported mining<br/>clients that improved their corporate governance<br/>(implementing CGAPs)</li> </ul>  |  |
| 2.3 Improved institutional<br>capacity of mineral bodies and<br>enhanced regulatory<br>frameworks                         |   | <ul> <li>Number/volume of TCs supporting regulatory and<br/>institutional improvements in mining</li> <li>Number of policy dialogue activities</li> </ul>  | <ul> <li>Improved institutional capacity of supported<br/>mining/mineral bodies (qualitative account)</li> <li>Improved regulatory environment in mining in<br/>supported countries (qualitative account)</li> </ul>   |  |

Note: (i) The Performance Monitoring Framework has been designed to align with the Bank's approach in relevant. Outcomes tracked across all activity types and aggregated at country level where relevant, based on a Country Strategy Results Framework under a relevant transition quality.

Section 3: EBRD Approach and Areas of Engagement

### Conclusion: What will the Bank do... (continued)



Tracking indicators

#### GREEN: Support sustainability of the mining sector by promoting environmentally friendly mining methods and resource efficiency

|   |   | Tracking ind  |  |
|---|---|---|--|
| Specific objectives   | Activities  | Outputs   | Outcome  |
|   |   |   | (for relevant countries tracked in Country Strategies)   |
| 3.1 Reduce environmental impact<br>and resource intensity through<br>financing good available<br>technologies and practices | Investments     Too designed and  | <ul> <li>Number/volume of investments financing good "green"<br/>technologies and practices in mining</li> <li>Number/volume of TCs and capacity building aimed at<br/>introducing green technologies and practices in mining</li> </ul>  | <ul> <li>Total CO2 reduced or avoided (ton/yr)</li> <li>Total energy saved (GJ/y)</li> <li>Number of clients with improved environmental management practices and standards (eg: ICMI)</li> </ul>  |
| 3.2 Promote good-practice water<br>and waste management   | funded<br>• Capacity building<br>• Advocacy<br>• Policy engagements   | <ul> <li>Number/volume of investments supporting improved water and waste management in mining</li> <li>Number/volume of relevant TCs and capacity-building activities</li> </ul>   | <ul> <li>Total water saved (m3/y)</li> <li>Total material reduced/recycled (tons/y)</li> </ul>   |
| 3.3 Support environmentally<br>responsible mine remediation and<br>remediation of contaminated sites                        | <ul> <li>Policy engagements</li> <li>External<br/>partnerships</li> </ul>   | <ul> <li>Number/volume of investments designed to support sustainable mining closure and remediation of contaminated sites</li> <li>Number/volume of relevant TCs, capacity-building and advocacy activities</li> <li>Number of relevant policy dialogue activities</li> </ul>                                | <ul> <li>Number (and qualitative account) of mines operating in<br/>line with international standards</li> <li>Number (and qualitative account) of mines operating in<br/>line with good practice mine closure plans</li> </ul>  |
| <b>INCLUSIVE:</b> Promote inclusiven  | ess in mining operation   | s by supporting the local servicing sector, facilitating female a   | and youth and other inclusion target groups'   |
| participation in the workforce a  | nd maximising the mult  | iplier effect on local economies  |  |
| 4.1 Increase local impact and inclusiveness of operations and supply chains through support of action planning in mining    | <ul> <li>Investments</li> <li>TCs designed and funded</li> <li>Capacity building</li> <li>Advocacy</li> <li>Policy engagements</li> <li>External</li> </ul> | <ul> <li>Number/volume of investments aimed at improving access to<br/>skills or standards enhancing economic opportunities for<br/>underserved groups across the value chain</li> <li>Number/volume of TCs supporting improved skills or standards,<br/>including capacity-building for suppliers</li> </ul> | <ul> <li>Number of clients/suppliers/distributors with improved standards (HR, procurement etc.)</li> <li>Number of new suppliers offering training and work-based learning opportunities to a specific target group</li> </ul>  |
| 4.2 Increase access to skills<br>development and employment<br>opportunities for inclusion target<br>groups                 |   | <ul> <li>Number/volume of investments supporting improved access to skills development and employment opportunities for inclusion target groups</li> <li>Number/volume of TCs supporting improved skills or standards at company level</li> </ul>   | <ul> <li>Number of people (F/M) target group employed by the client</li> <li>Tailored training/capacity building/work-based learning programmes developed and implemented</li> <li>Number of people receiving new/improved skills as a result of training, by inclusion target group</li> </ul>                                    |
| 4.3 Improve quality of institutions for employment and education  | partnerships  | <ul> <li>Improving quality of institutions for employment and education</li> <li>MOU signed with relevant government authority</li> <li>Number/volume of TCs supporting new or strengthened<br/>partnerships between private sector and education providers</li> </ul>  | <ul> <li>Number of cooperation or partnership agreements<br/>established or strengthened between private sector and<br/>education providers</li> <li>Number of improved legal, institutional or regulatory<br/>frameworks in target areas (removing restrictions for<br/>employment of women and youth in mining, etc.)</li> </ul> |

Note: (i) The Performance Monitoring Framework has been designed to align with the Bank's approach to results measurement. Outcomes tracked across all activity types and aggregated at country level where relevant based on Country Strategy Results Framework under a relevant quality.



# Working With Other IFIs





\*Including: USAID, DFID, FMO, KfW, DEG, BGR, Australian AID, CESO, Government of Canada, GIZ, Government of Finland, Swiss Agency for Development and Cooperation, KIGAM, Czech Republic, BGR, Eurasian Development Bank.

- In Mongolia, the World Bank (IFC, MIGA, IBRD) participated in financing Oyu Tolgoi. ADB and the World Bank are also active in financing regional infrastructure for mining, and extensive policy dialogue on transparency, licencing and regional inclusion. Active bilateral agencies are from countries including Germany (GIZ, BGR, KfW), Korea (KIGAM), Canada, Australia and Czech Republic.
- In the **Kyrgyzstan**, the Bank is working closely with USAID, DFID and the World Bank on EITI implementation assistance.
- In Kazakhstan, apart from the EBRD there are no other IFIs currently involved in financing mining projects or engaged in policy dialogue with the government.
- In **SEMED**, IFC is active in financing junior mining projects in Morocco. AfDB has financed OCP in Morocco and is engaged in policy dialogue on governance through the African Legal Support Facility.
- In Central and Eastern Europe, the rest of the CIS and Turkey, IFC and the EBRD have been the only IFIs financing projects. Policy dialogue is limited.
- AllB and ElB have no outstanding financing for mine development in EBRD countries of operations.





Annex A: General messages from public consultations

Annex B: Critical raw materials for the EU

Annex C: Two examples of past EBRD projects

Annex D: An example of policy dialogue: economic and gender inclusion in natural resources (Kazakhstan)

Annex E: Subsoil contracts and licenses

Annex F: The Environmental and Social Policy and The Extractive Mining Industries Strategy

Annex G: Mining snapshot country slides:

| 1.      | Albania    | 10. Montenegro |
|---------|------------|----------------|
| 2       | Armenia    | 11. Morocco    |
| 2.<br>2 | Bulgaria   | 12. Poland     |
| J.<br>⊿ | Duigana    | 13. Russia     |
| 4.      | Georgia    | 14. Serbia     |
| 5.      | Greece     | 15. Tajikistan |
| 6.      | Kazakhstan | 16. Turkey     |
| 7.      | Kyrgyzstan | 17. Ukraine    |
| 8.      | Mongolia   | 18. Uzbekistan |

## **General messages from Public Consultations**



Feedback from discussions with civil society groups, industry bodies, mining companies and general public can be summarised as follows:

- There is a growing importance of climate change to the industry, which pose threats and opportunities.
- The industry must focus more to align outcomes with sustainable development goals (SDGs).
- Miners should work together to advance reforms in in the fields of trade, education and infrastructure.
- Transparency requirements from IFIs, EITI and Stock Exchanges have important impacts, albeit uneven. It is particularly important to advance disclosure on-line, which are easy to find and review.
- EBRD should:
  - Support private infrastructure with mines as anchor tenants operated as open access.
  - Robustly support transparency, human rights and local civil society.
  - Recognize progress made by countries to encourage reformers.
  - Take account of climate change and encourage governments to take a long term strategic approach.
  - Require good cost benefit analysis by governments while EBRD should include use of carbon shadow costs, full mine life analysis and account for cumulative impacts from multiple developments.
  - Work with smaller companies less able to manage complex and competing issues.
  - Account for water issues including catchment area impacts, conflict avoidance and bio-diversity loss.
  - Take a broad approach to gender issues in mining including management and entrepreneurship.

Annex B

### Critical raw materials for the EU



**The EU's Raw Materials Initiative** (RMI) is a response to the challenges of accessing raw materials. The three parts of the RMI are: (i) ensuring a level playing field for access to resources in third countries; (ii) fostering a sustainable supply of raw materials from European sources, and (iii) boosting resource efficiency and promoting recycling.



# Two examples of past EBRD projects



|                                | Oyu Tolgoi copper mine, Mongolia  | Lydian Amulsar gold mine, Armenia   |
|--------------------------------|---|---|
| Project snapshot               | A twelve-billion-dollar mine with over 50 years mine life and peak<br>annual output of more than 500,000 tons of copper. Gold and other<br>metals are also produced. Decades of exploration led to ore being<br>discovered in 2001, with the first extractions from the mine 13 years<br>later.   | A 500-million dollar mine with annual production of about 250,000 ounces of gold over 10 years. Exploration began before 2007 and first extractions scheduled for 2018.   |
| EBRD roles                     | A 1.2 billion-dollar EBRD project loan with USD 800m syndicated to commercial banks. Cooperation with IFC, MIGA and ECAs.   | EBRD equities with a total of CD 16.3m over 2012-2016.<br>Cooperation with IFC.   |
| Expected transition<br>impacts | <ul> <li>Competitive</li> <li>An increase in private-sector copper production in Mongolia to<br/>over 60 per cent</li> <li>Efficiency improvements in mine operations resulting in a<br/>decrease in the average cash cost of production</li> <li>First use of block-cave mining technology</li> <li>Inclusive <ul> <li>Establishment of mining vocational centres, professional training<br/>courses and colleges</li> <li>Greater employment of locals in the construction and mining-<br/>related workforce</li> </ul> </li> <li>Well governed <ul> <li>Compliance with EITI</li> <li>Higher standards set for E&amp;S and community programmes,<br/>including capacity building on biodiversity protection and<br/>mitigating biodiveristy depletion</li> </ul> </li> </ul> | <ul> <li>Competitive</li> <li>One of the first private-sector mining investments in Armenia, which constitute 1 per cent of GDP. The investments should lead to more competitive gold production, the success of which should encourage further private investment</li> <li>Extensive local supply chain through linkages with local suppliers and contractors</li> <li>Well governed</li> <li>Payment to the government and terms of that payment have been made public</li> <li>Support for Armenia's compliance with EITI</li> <li>Application of good-practice E&amp;S standards that meet national, EBRD and IFC standards</li> <li>Certification under the international cyanide management code</li> </ul> |
| Particular project<br>issues   | Extensive political debate about the terms, revenue management and E&S approach for this large scale project.   | E&S management of water and other local amenities. Short mine life, if no further resources are discovered*   |

# An example of policy dialogue: economic and gender inclusion in natural resources (Kazakhstan)



#### **Business problem**

- Despite its natural resources endowment, Kazakhstan's exploration and processing activities have lagged behind. This has constrained regional economic development, particularly in remote areas. The main reasons for this are a lack of new technologies and skilled personnel, and to the challenges of retaining, developing and engaging the country's best talent.
- Additionally, women do not enjoy equal access to mining-related employment opportunities. Article 16, section 27 of the 2016 Kazakhstan Employment and Labour Code still bars women from 287 roles mainly concentrated in the mining, metallurgy, hydrocarbon-processing, construction and transport sectors.
- EBRD mining clients sought the Bank's support to address a skills mismatch, overcome a heavy male bias in staffing, and realise the benefits of a truly diverse workforce, where opportunities are not restricted by age, gender or region.

#### Solution

- In 2017, the EBRD launched its *Integrated Approach to Economic Inclusion in Natural Resources* through a set of measurable and achievable project- and policy-level inclusion transition goals in the sectors of natural resources, and power and energy.
- The background for this approach is an indicative set of projects amounting to one billion US dollars of EBRD investments across 10 projects that are currently in the pipeline.

#### Expected outcomes

- An enhanced local provision of quality vocational training through partnerships between vocational schools and employers;
- An improvement in the quality and accessibility of local workbased learning opportunities, including internships, traineeships and apprenticeships;
- Establishing national skills standards as part of developing Kazakhstan's National Qualifications Framework in disciplines relevant to the sectors of natural resources, and power and energy;
- The removal of legal barriers to allow women to work freely across high-value sectors. This could be achieved by working with the government and leveraging the Bank's private-sector clients.

#### Achievements to date

- The EBRD's policy dialogue and representation on behalf of its mining clients was reflected in the goals and action plan of Kazakhstan's *Concept on Gender and Family in Kazakhstan to 2030*. This is a national strategy launched in 2017, and the first of its kind to tap into the private sector's potential to intensify efforts to promote gender equality.
- The Minister of labour and social protection committed to submit, by the end of 2017 'concrete proposals' to 'optimize the list' of jobs that prohibit women's employment.
- The EBRD continues to work with clients and the State Secretary to identify priority jobs that can be removed from prohibited list.

### **Subsoil contracts and licenses**



Transparency over the award of, and payments under, subsoil contracts and licenses, which include host-government agreements and production-sharing contracts, is a useful tool for a country's civil society. It can be used to hold a government accountable for the way in which national extractive assets are attributed and in which the revenues generated are spent.

The Bank will encourage its clients to make public the subsoil contracts and licences of the project. One year from the date of the approval of this strategy, the Bank will also require that, in the case of mining projects which it finances, the principal contract or licence with government should be made public. The principal contract or licence sets out the key terms and conditions under which a resource will be exploited, and any significant amendments to that contract or licence. The Bank will allow the redaction of commercially proprietary information that is not essential to understand the terms and conditions under which the resource is to be developed and that would not create a competitive disadvantage for the client.

The Bank may accept, in lieu of disclosure, that the client publishes a summary of the key terms and conditions under which the mining resource is to be developed. This summary shall include the life of the contract or licence; any material payments due to government under the contract or licence; other material fiscal terms and conditions; and a summary of any significant stabilisation clauses. In cases where the Bank provides financing for multiple corporate purposes rather than for one specific project, the requirement for contract or license disclosure shall only apply to the principal investment for which funds are to be used.

### Annex F Environmental and Social Policy and Extractive Mining Industries Strategy



The Environmental and Social Policy (2014) and associated Performance Requirements (PRs) establish the criteria for any EBRD financing.

The PRs are applied practically on a risk basis. As mining is generally considered "high risk", the PRs are strictly applied to all mining sector projects. The PRs set the minimum environmental and social requirements for financing. The Bank may seek performance that exceeds the Performance Requirements.

The issues typically faced on mining projects include overall environmental and social management; labour and working conditions; pollution prevention; water management; waste management; the health and safety of workers and communities; compensation for economic and/or physical displacement; impacts on biodiversity caused by land take and/or habitat fragmentation; the preservation of cultural resources; and the provision of meaningful consultation with local communities to ensure that they are aware of site activities and operations, and to ensure that communities understand how to seek additional information and how to file a grievance.

Details of the Environmental and Social Policy can be found at: <u>http://www.ebrd.com/news/publications/policies/environmental-and-social-policy-esp.html</u>

# Mining country snapshot: Albania



Albania is not a significant producer of minerals, except chromite (~2.5 per cent of world production). The country also has deposits of coal, copper, iron and nickel. A number of small- and medium-scale mines exist, but only a couple of larger mining companies operate in the country. Overall, the country's mineral potential is largely untapped, despite being mapped extensively before the 1980s. The country's mining licence regime is a key deterrent to foreign investors. Several foreign exploration and mining companies have raised concerns about the mining investment climate.

| Key country mining statistics |   |
|-------------------------------|---|
| Mining workforce              | 5,000 (0.4% of total workforce). Chromium mining:                       |
|                               | 66% of the mining workforce (EITI 2015)                                 |
|                               |   |
| Mining % of GDP               | Not available   |
| Mining % of state budget      | 1% of total revenue in the national budget                              |
| Mining % of exports           | 11% (approx. USD 208m)  |
| Corruption rank               | 83/176 Transparency International Corruption Index                      |
| -                             | 58/190 World Bank ease of doing business index                          |
| EITI                          | To be assessed against 2016 standard                                    |
| Mines                         | AKBN reported 597 mining licences, of which 116                         |
|                               | licensees were for chromium (Dec 2015)                                  |
| Value chain                   | Two ferrochrome smelters operated by AlbChrome.                         |
| Endowment                     | <ul> <li>Medium. Chrome resources are dominant.</li> </ul>              |
| Mine license regime           | 2010 mining law. Licences are granted on                                |
| wine license regime           | application and by tender when reserves are known.                      |
|                               | Financial guarantees required from bidders.                             |
|                               |   |
| Foreign companies             | <ul> <li>Cunico, Arian Resources, EnerGulf, Tirex Resources,</li> </ul> |
|                               | Jiangxi Copper Co., Beralb A.B.   |
| Reform challenges             |   |

Reform of mining law to reduce financial guarantees and allow longer licence tenure.

Implement the EITI standard.

Take initiatives to encourage FDI into exploration and development.

#### Profile of the mining sector economy

#### Well governed :

• Lack of transparency is a deterrent to investors.

 The 2010 mining law discourages exploration due to short licence life, concerns over security of tenure and opaque tenders.

#### Competitive:

- The sector is dominated by chrome which struggles to compete globally against cheaper supply from Kazakhstan and South Africa.
- High copper mine costs. Copper production is currently suspended.

#### Green:

The mining sector has a legacy of poor EHS&S practices.

#### Inclusive:

- Medium gender equality in mining (15%) and little gender pay gap at 6% (INSTAT 2016).
- Moderate labour skills gap.

#### **Resilient:**

- Lack of downstream value-added capacity makes the sector more sensitive to cyclical commodity prices.
- Limited access to long-term finance

#### Integrated:

- Reasonable infrastructure (roads). Port and rail requires upgrade.
- Poor ICT infrastructure.
- Little FDI in mining despite some potential.











PUBLIC

# Mining country snapshot: Armenia



Armenia sits within the Tethyan tectonic belt, which is highly prospective for large copper and gold orebodies. The country has significant deposits of gold, copper and molybdenum, with smaller deposits of zinc, lead, iron, rhenium and silver. Mining constitutes about 50 per cent of GDP, driven in part by new mine developments such as the Vallex's Teghut copper mine. Copper concentrate and gold provide half of the country's exports. Domestic copper smelting capacity can handle less than 10 per cent of requirements in 2017. Mining is a key sector for the government.

#### Key country mining statistics

| Mining workforce         | 9,300 or 0.9% of workforce (Armstat)                          |
|--------------------------|---|
| Mining % of GDP          | 3.4% (Armstat)  |
| Mining % of state budget | Not available   |
|                          |   |
| Mining % of exports      | 44% (World Bank 2015)   |
| Corruption rank          | 113/176 TI Corruption index                                   |
|                          | 38/219 World Bank ease of doing business index                |
| EITI                     | Joined in March 2017, yet to be assessed                      |
| Mines                    | More than 400 out of 850 known deposits are                   |
|                          | being exploited by 474 companies. 30 metal                    |
|                          | deposits  |
| Value chain              | The Alaverdi copper smelter requires an upgrade.              |
|                          |   |
| Endowment                | Medium. Mainly copper-molybdenum, gold and                    |
| Endownienc               | zinc.   |
| Mine license regime      | Relatively progressive mining code (2012)                     |
|                          |   |
| Foreign companies        | <ul> <li>Polymetal, Cronimet, Lydian, Orogen Gold,</li> </ul> |
| - · ·                    | GeoProMining  |

#### **Reform challenges**

Proactively encourage transparent FDI into exploration and development.

Implement EITI and increase transparency of private companies.

Review sustainable options for value chain (smelter) upgrade.

|                |                       | _ |
|----------------|-----------------------|---|
| Profile of the | mining sector economy |   |
|                |                       | - |

#### Well governed:

- Revenue and production reporting should improve with EITI membership.
- Corruption perception has fallen since 2014 (Transparency Int.)
- Positive new mining laws enacted in 2012 in collaboration with IFIs.

#### Competitive:

- Relatively low-grade copper ore deposits.
- Mining costs of existing operations appear average-to-high.
- Reasonable electricity prices.
- Copper mines at disadvantage due to low product (concentrate) grade. Increased local smelting capacity would help.

#### Green:

- Weak reporting by miners on sustainability programmes.
- Value chain requires upgrade to meet environmental standards.
- Strict environmental standards for new mining projects are needed Inclusive:
- Female share of employment in mining is 13% (ILO).
- Large skills gap in mining labour force.

#### Resilient:

- Reasonably successful in diversifying risks in the mining sector.
- Limited access to long-term finance

#### Integrated:

- Good infrastructure, but landlocked.
- No export restrictions on minerals, except EU export licence on gold.







# Mining country snapshot: Bulgaria



Bulgaria has a well-established mining industry that extracts lignite, coal, lead-zinc, copper and industrial minerals. State companies account for a large share of the important coal and lignite sector and represent about 33% of the workforce. The country is the third largest European producer of gold and copper. Copper accounts for the majority of exports, followed by lead, zinc and gold. Local and international companies are investing to meet EU standards for sustainable development. Mining FDI has collapsed from €302m in 2013 (22 per cent of total FDI) to €14m in 2016 (2 per cent of total FDI).

| I                        | Key country mining statistics                           |
|--------------------------|---|
| Mining workforce         | 35,100 (1.2%) of total workforce Q1 2017                |
| Mining % of GDP          | 3.8% (NSS Bulgaria)                                     |
| Mining % of state budget | Not available   |
| Mining % of exports      | 14.1% (UNCTAD 2015), predominantly copper               |
| Corruption rank          | 75/176 TI Corruption Index                              |
|                          | 37/219 World Bank ease of doing business index          |
| EITI                     | Not a member  |
| Mines                    | Chelopech (copper, gold), Panagurishte (copper),        |
|                          | Zlatograd (lead), Krumvograd (gold, silver), Khardzhali |
|                          | (zinc)  |
| Value chain              | Well-developed value chain for copper, zinc and lead.   |
|                          | German-owned copper smelter and refinery (Aurubis).     |
| Endowment                | Medium, with 218 known metal deposits.                  |
|                          | Copper, gold, silver, lead, zinc                        |
| Mine license regime      | Underground Resources Act 1999                          |
|                          | Environment and Waters Protection Act 2002              |
|                          | Concession Act 2006                                     |
|                          | Licences are issued by the Ministry of Energy           |
| Foreign companies        | Dundee Precious Metals, Euromax, Mundoro Capital,       |
|                          | Harmony 2012  |
|                          |   |

#### **Reform challenges**

Improve transparency of SOEs and mining revenues, ideally as EITI member.

Encourage exploration and continue to attract FDI into the mining sector.

#### Profile of the mining sector economy

#### Well governed:

- Transparency in production and revenue reporting could be improved.
- Good licensing and environmental regulation; well applied for FDI.

#### Competitive:

- Good adoption of new technology to manage costs and productivity.
- Mining has low cost power and average costs.
- Medium-scale copper and gold resources but some arsenic in ores.
- Low taxation and royalties (corporate income tax 10%, royalty 1.5%).

#### Green :

• Clean power is increasingly available for the mining sector.

#### Inclusive:

• Good rating for workforce gender equality in mining (21% women).

#### **Resilient:**

• High reliance on mining exports of gold and copper.

#### Integrated:

- Extensive railway and road system.
- Access via Danube and Black sea to international markets.

#### Mining revenue as % of COO total





PUBLIC





# Mining country snapshot: Georgia



Georgia has more than 300 known deposits and 148 mines operated by seven SOEs and many smaller private companies. Copper concentrates and manganese alloys represent more than 25 per cent of total country exports. Georgia supplied 40 per cent of global manganese in the 1990s but this has declined to less than 2 per cent, as supply has increased elsewhere and the grade of Georgia's ores has declined over time. Mining represented 2.3 per cent of the country's total FDI in 2016. The government plans to modernise the legal and regulatory framework for mining, and improve overall transparency.

| Ke                       | ey country mining statistics  |
|--------------------------|---|
| Mining workforce         | <ul> <li>5,710 in total (excluding coal and energy) or 0.3%<br/>of total workforce (GEOSTAT 2015)</li> </ul>    |
| Mining % of GDP          | <ul> <li>0.9% for mining and quarrying (GEOSTAT 2016)</li> </ul>  |
| Mining % of state budget | Not available   |
| Mining % of exports      | <ul> <li>28% (USD 583m) from copper concentrates,<br/>manganese alloys and precious metals (GEOSTAT)</li> </ul> |
| Corruption rank          | 44/176 TI Corruption Index  |
|                          | 16/190 WB ease of doing business index  |
| EITI                     | Not a member  |
| Mines                    | <ul> <li>Zinc: Adjari. Copper-gold: Sakdrisi and Madneuli,<br/>Kvemo-Bolnisi. Manganese: Chiatura</li> </ul>    |
| Value chain              | <ul> <li>Well developed for steel and ferroalloys</li> </ul>  |
| Endowment                | <ul> <li>Small to medium endowments in copper, gold,<br/>manganese, lead-zinc and antimony.</li> </ul>          |
| Mine license regime      | The Mining Law of 1996 needs substantial revision   |
| Foreign companies        | <ul> <li>Lydian International, Georgian Mining Corp.,<br/>Georgian American Alloys, GeoSteel</li> </ul>         |

#### Reform challenges

Modernise mineral legislation, including the royalties and licensing regime.

Review the options for large-scale export-led mining and small-scale explorations.

Improve transparency in revenue and production reporting ideally through EITI membership.

#### Profile of the mining sector economy

#### Well governed:

- Inadequate legislation; exploration licence period is too short.
- Poor availability of geological information is deterring investors.
- Front-loaded fiscal burden on miners due to minimum price of licences.
- EHS&S: poor safety record has caused industrial action and hunger strikes.

#### Competitive:

- Low grade manganese. Attractive copper and gold deposits.
- Labour costs are low but productivity is also modest.
- Low corporate income tax (15%) but royalties are linked to planned (not actual) extraction.
- There is a concentration of mining ownership within Rich Metals Group (RMG).
- Outdated prospecting data, it is recommended to undertake new exploration

#### Green:

Lack of ESIA requirement has caused weak environmental practices.



Insufficient sustainable technology used in mining projects.

#### Inclusive:

• Weak gender balance in the mining sector (11% women).

#### Resilient:

- High sensitivity to gold prices.
- Limited access to long-term finance.

#### Integrated:

• Major mining area close to Black Sea access but rail and road infrastructure is inadequate.

Mining revenue as % of COO total







# Mining country snapshot: Greece



Greece is a major global supplier of several key industrial minerals, notably bentonite (6.2 per cent of global supply), perlite (20 per cent) and magnesite. The country has a substantial endowment of gold, silver, zinc, lead, copper, bauxite and nickel. The mining industry is dominated by locally-owned conglomerates and indebted SOEs. Aborted privatisation attempts, bureaucracy and opposition from NGOs have eroded investor confidence. Hence mining FDIs are few. A Canadian payer, Eldorado Gold, is currently developing three gold and copper mines. In the industrial minerals sector, the French company Imerys acquired S&B in 2015.

| Key country mining statistics |  |  |
|-------------------------------|--|--|
| Mining workforce              | <ul> <li>15,000 direct and indirect in mining (0.3% of workforce)</li> </ul>                         |  |
| Mining % of GDP               | <ul> <li>2.1% (approx €4bn (ELSTAT 2015) including<br/>smelting</li> </ul>                           |  |
| Mining % of state budget      | Not available  |  |
| Mining % of exports           | 1.7% (€0.9bn): 43% aluminium, 21% nickel (2015)  |  |
| Corruption rank               | <ul> <li>69/176 TI Corruption Index</li> <li>61/190 WB ease of doing business index</li> </ul>       |  |
| EITI                          | Not a member   |  |
| Mines                         | About700 mines active in 2013  |  |
| Value chain                   | Well developed for aluminium and nickel  |  |
| Endowment                     | Medium endowment with potential upside   |  |
| Mine license regime           | <ul><li>2012 revision to the1973 Mining Law.</li><li>Regulations for licenses and permits.</li></ul> |  |
| Foreign companies             | Eldorado Gold, Imerys  |  |

#### **Reform challenges**

- Continue privatisation processes.
- Reduce regulatory burden and time-consuming permitting process.
- Improve environmental regulation.
- Assess whether EITI membership could help further increase revenue transparency.

#### Profile of the mining sector economy

#### Well governed:

- Slow implementation of EU directives relevant to the mining sector.
- Lengthy licensing and permitting processes.

#### Competitive:

- High electricity costs for private miners, while SOE miners are subsidised.
- SOEs have high debt and are unable to modernise ageing technology.
- High taxes (corporate income tax: 29%) and low royalties.
- World-class gold and copper deposits.
- Lack of modern exploration is limiting new mineral discoveries.

#### Green:

Poor sustainability and environmental control at state-run mines.

#### Inclusive:

Female share of employment in mining is 8% (ILO).
Significant labour skills gaps.

#### **Resilient:**

• Reasonably diverse output of commodities mitigates against the price cycle.

#### Integrated:

Good access to ports and ocean freight.

#### Mining revenue as % of COO total



Mining revenue split (2015)

#### 18 December, 2017

# Mining country snapshot: Kazakhstan



Kazakhstan has world-class reserves and a world-leading supply position in chromite, zinc, copper, gold, titanium sponge, rhenium and manganese. The country is also a global leader in uranium supply. A number of SOEs remain, but the government is seeking further privatisations. Corruption issues around the Eurasian Natural Resources Corporation continue to impact investor perception of the country. Adopting a new mining code (modelled on a watered-down version of Western Australia's mining code) has been delayed until January 2018.

|                          | Key country mining statistics                                  |
|--------------------------|--|
| Mining workforce         | 80,000 in metals and ore.                                      |
|                          | <ul> <li>0.9% of work force (EITI 2015)</li> </ul>             |
| Mining % of GDP          | 18% (UNCTAD)   |
| Mining % of state budget | ■ 3% (2015 EITI)   |
| Mining % of exports      | 12% (UNCTAD 2014/15)   |
| Corruption rank          | 131/176 TI Corruption Index                                    |
|                          | 35/190 WB ease of doing business index                         |
| EITI                     | To be assessed against 2016 standard                           |
| Mines                    | About 3,000 mines including coal, copper, zinc, gold,          |
|                          | iron ore, chrome and uranium                                   |
| Value chain              | <ul> <li>Well developed for copper, zinc and steel</li> </ul>  |
| Endowment                | <ul> <li>Large resource endowment: uranium, chrome,</li> </ul> |
|                          | titanium, zinc   |
| Mine license regime      | Subsurface Use Law 2010.                                       |
|                          | A new Subsoil Use Code is planned for approval by              |
|                          | Parliament by the end of 2017.                                 |
|                          | Competitive tender for licences.                               |
| Foreign companies        | Glencore, Rio Tinto, Iluka Resources, Central Asia             |
|                          | Metals, Areva Sa, ArcelorMittal, Russian Copper,               |
|                          | Polymetal and Rusal  |

#### **Reform challenges**

Implement the government's plans to decrease SOEs' share of mining.

Improve transparency in mining operation and ownership.

Encourage investment in modernisation of aging mining equipment.

Improve and fully implement safety standards.

Improve cumbersome approval and permission processes for mining projects.

#### Profile of the mining sector economy

#### Well governed:

- New legislation is needed to improve access to geological data, streamline resource evaluation and simplify licensing processes.
- EHS&S needs to improve and reduce fatalities.
- The national welfare fund Samruk-Kazyna dominates the entire value chain for natural resources.

#### Competitive:

- Cheap electricity, relatively low cost of mining.
- Large natural resources but often low grade in copper.
- High tax take if Mineral Extraction Tax is included.

#### Green:

Aging processing plants and smelters; legacy environmental issues.

#### Inclusive:

 Female share of employment in mining is 19% (ILO). Pervasive legal and regulatory barriers to women wishing to compete for mining jobs.
 Significant labour skills gaps.

#### Resilient:

 Limited access to long-term finance leads to weak capitalisation and an inability to withstand the industry's price volatility.

#### Integrated:

- Geographical distances create logistics challenges.
- Poor and aging infrastructure, although rail network is reasonable.
- Landlocked, limited access to Europe.

#### Mining revenue as % of COO total







# Mining country snapshot: Kyrgyzstan



Gold is the primary metal mined in the Kyrgyzstan. The sector is dominated by a single mine, Kumtor Gold. It makes up approximately 8 per cent of the country's and 17 per cent of the government's revenues. It is also the largest private-sector employer, accounting for around 1.9 per cent of the total workforce. Attracting new investment into robust mining projects soon to the sector is essential, as Kumtor reaches the end of its productive life in 2026. New FDI may be forthcoming as a result of welcome improvements to the mining code (2012), coupled with a well-publicised dispute between the government and Centerra that seems to have been recently resolved.

#### Key country mining statistics

| Mine license regime      | Allows for licensing (by application) and production-                 |
|--------------------------|---|
| Endowment                | Sizeable gold resources; small-scale copper-silver                    |
| Value chain              | Some gold refining  |
| Mines                    | Gold, copper, antimony, rare earths                                   |
| EITI                     | Suspended in 2014, but compliance expected soon                       |
| Corruption rank          | 136/176 TI Corruption Index<br>75/190 WB ease of doing business index |
| Mining % of exports      | 45% (IMF 2016)  |
| Mining % of state budget | Not available   |
| Mining % of GDP          | 8.4% (UNCTAD 2015)  |
| Mining workforce         | A total of 8,745, including 3,524 at Kumtor 4.9% of total workforce   |
|                          |   |

Continue to enhance transparency in mining and comply with EITI.

Review of royalties and licensing processes so as to attract good-quality FDI.

Create a digital mining data register and an international system of reporting reserves (CRIRSCO).

#### Profile of the mining sector economy

#### Well governed:

- The Kyrgyzstan was suspended from EITI in 2014, but it is very likely to comply with the Initiative soon.
- Concerns over corruption and lack of clarity in licence allocation.

#### Competitive:

- Medium endowment with potential to host world-class deposits.
- High mining revenue royalties (8-27%).
- Weak service sector.

#### Green:

- Lack of environmental impact controls and reclamation bonds.
- High energy consumption for new gold projects due to complex ore.

#### Inclusive:

• Female share of employment in mining is 22% (ILO).

#### **Resilient:**

- Short remaining mine life (2026) at largest gold mine, Kumtor.
- Limited access to long-term finance.

#### Integrated:

- Poor transport infrastructure.
- FDI predominantly focussed on one mine.

#### Mining revenue as % of COO total Kyrgyzstan <sup>2%</sup> Rest of COO 98% Excludes coal, mineral sands, phosphate, chrome, rhenium



PUBLIC

# Mining country snapshot: Mongolia



The mining sector is dominated by the Oyu Tolgoi state- and privately owned cooper mine and the Erdenet state-owned copper mine. The sector also has substantial coal, gold, iron ore, uranium and other resources. Mining has been prominent in national politics in recent years. A recently-agreed IMF stability package bodes well for political and economic reform. Mining investors increasingly anticipate that the past populist pressure to pay higher taxes will ease and that important reforms tied to IMF lending will be carried through.

#### Key country mining statistics

| Mining workforce         | <ul><li>42,600 in extractive industries (EITI 2015)</li><li>3.7% of the national workforce</li></ul>  |
|--------------------------|---|
| Mining % of GDP          | 27% (NSO 2016)  |
| Mining % of state budget | 19% in 2015 vs. 20% in 2013 (EITI)  |
| Mining % of exports      | 88% (NSO 2016)  |
| Corruption rank          | <ul> <li>87/176 TI Corruption Index</li> <li>64/190 WB ease of doing business index</li> </ul>  |
| EITI                     | Member since 2007   |
| Mines                    | <ul> <li>Major copper mines (Oyu Tolgoi and Erdenet),<br/>coal, iron ore, gold and fluorspar</li> </ul>   |
| Value chain              | Little capacity   |
| Endowment                | <ul> <li>World-class copper and coal deposits</li> <li>Excellent exploration potential for metals</li> </ul>  |
| Mine license regime      | <ul> <li>Direct application or tender where the state has previously identified mineralisation</li> <li>Minerals Law 2006 (amended 2015)</li> </ul> |
| Foreign companies        | Rio Tinto   |

#### **Reform challenges**

Consolidate the mining code (many revisions have added complexity).

Facilitate responsible commercial use of strategic deposits and the competitive privatisation of Erdenet.

Increase capacity to implement environmental controls.

#### Profile of the mining sector economy

#### Well governed:

- Revenue reporting is fairly transparent with good progress on EITI.
- Past allocation of some mining licences has been opaque.
- Implementation of environmental controls requires more transparency.

#### Competitive:

- Low-to-moderate mining costs, but high resource quality.
- Skilled mining professionals.
- Shortfall in service sector and ICT infrastructure.

#### Green:

- Weak capacity to implement environmental impact controls.
- Significant concerns about water management and dust.

#### Inclusive:

- Female share of employment in mining is 16% (ILO).
- Significant mining labour skills gap.

#### Resilient :

- Highly reliant on mineral exports to China.
- Restricted access to long-term finance leads to weak capitalisation of many mines and the inability to withstand commodity price volatility.

#### Integrated:

- Sparse transport infrastructure.
- Substantial FDI, but highly concentrated on a few projects.

#### Mining revenue as % of COO total

Mining revenue split



# Mining country snapshot: Montenegro



Montenegro mines a limited number of minerals in small quantities including mainly lignite, coal, red bauxite, lead and zinc. The country hosts one of Europe's largest bauxite deposits (Nikšić) and has domestic alumina refining (with gallium as a by-product) and aluminium smelting capacity at KAP. KAP fell into bankruptcy in 2013 following low metal prices, high debts and inefficient technology. KAP was recently acquired by a local businessman, who will attempt to revive operations. Montenegro also has a steel plant operated with imported iron ore and scrap. The regulation of the mining industry is well established.

| Key country mining statistics |  |
|-------------------------------|--|
| Mining workforce              | 1,600 including coal<br>0.9% of total labour force (Monstat)                         |
| Mining % of GDP               | 1.1% (Monstat)   |
| Mining % of state budget      | Not available  |
| Mining % of exports           | 26% (Metalliferous ore and scrap: Jan-May 2017)                                      |
| Corruption rank               | 64/176 TI Corruption Index<br>51/190 WB ease of doing business index                 |
| EITI                          | Not a member   |
| Mines                         | Predominantly Rudnici Boksita bauxite  |
| Value chain                   | Alumina refining and aluminium smelting<br>Steel plant (but no domestic ore)         |
| Endowment                     | Small resource endowment. Bauxite, coal, zinc.                                       |
| Mine license regime           | Energy Law 2013<br>Law on Concession (tender process)                                |
| Foreign companies             | Few foreign companies: Balkan Zinc plc. recently ceased exploration, Metalfer (coal) |

#### **Reform challenges**

Encourage FDI into ailing and inefficient state-owned mines.
 Enhance mining transparency.

Review economic diversification strategy.

#### Profile of the mining sector economy

#### Well governed:

• EU standards drive the regulation of the mining industry.

#### Competitive:

- Mostly state-owned mines.
- Long-term electricity costs as basis for metals processing is a concern.
- Old smelter technology, low productivity and high energy consumption.
- Bauxite quality is less competitive than cheaper global supply.
- Small-scale underground mines are economically marginal.
- The bauxite resource has high export costs to China and Poland.

#### Green :

• Modernisation needed for refining and smelting operations.

Weak environmental sustainability is the focus of a UN programme.

#### Inclusive:

• Female share of employment in mining is 13% (ILO).

#### **Resilient:**



#### Integrated:

Port access for exports and imports overseas.

Mining revenue as % of COO total

#### Mining revenue split







# Mining country snapshot: Morocco



Phosphates account for over 90 per cent of Morocco's mining revenues. The country hosts about 70 per cent of global phosphate reserves (USGS) and produces 12 per cent of the global supply. The state-owned OCP has the sole right to phosphate production. The government aims to rebalance the mining economy through tripling non-phosphate mining revenues by 2025. Managem is the other leading local mining company; it produces silver, copper, zinc and cobalt. There is a lack of basic geological data for more than 60 per cent of the country, which discourages investors into exploration.

#### Key country mining statistics

| Mining workforce         | 40,000 or 0.3% of the workforce (2015, ONHYM)                      |
|--------------------------|--|
| Mining % of GDP          | 4.3% (UNCTAD)  |
| Mining % of state budget | Not available  |
| Mining % of exports      | 8.3% (UNCTAD 2014/15)  |
| Corruption rank          | 90/176 TI Corruption Index   |
| -                        | 68/190 WB ease of doing business index                             |
| EITI                     | Not a member   |
| Mines                    | <ul> <li>Khouribga, Gantour and Boucraâ (phosphate),</li> </ul>    |
|                          | Imiter (silver), Bou Azzer (cobalt), Akka (gold)                   |
| Value chain              | Production of fertilizers and phosphoric acid                      |
| Endowment                | Medium resource endowment : potential for large                    |
| Endownone                | precious and base metals deposits                                  |
| Mine license regime      | New progressive mining law adopted in 2015                         |
| Foreign companies        | <ul> <li>Kasbah (tin exploration), Maya Gold and Silver</li> </ul> |

#### **Reform challenges**

- Expand availability and quality of basic geological data.
- Increase transparency, including through EITI membership.
- Pursue opportunities to reduce skills gaps and gender inequality.
- Increase private sector cooperation with state-owned mines.

#### Profile of the mining sector economy

#### Well governed:

- Revenue reporting is not fully transparent.
- Corruption is a significant concern among investors.
- The mining licensing regime is fairly supportive of private investment.

#### Competitive:

 Significant resource endowment with potential for major metal deposits; but the country has not been sufficiently explored.



- Moderate mining costs, but poor water and power access in remote areas.
- Fairly well developed mining service sector and good ICT capacity.

#### Green:

- Gaps in environmental controls, water and waste recycling.
- Relatively little provision for environmental control in issuing permits

#### Inclusive:

- High level of workforce gender inequality.
- Significant skills gaps.

#### Resilient:

 Restricted access to long-term finance leads to weak capitalisation of many mines and the inability to withstand commodity price volatility.

#### Integrated:

- Infrastructure gaps with need for more power, roads, railways and ports.
- Although the mining code is supportive and tax rates moderate, FDI is limited, partly due to the industry slowdown and lack of geological data.





# Mining country snapshot: Poland



Poland is a large metallurgical coal producer in Europe. The country is also host to one of the world's largest vertically integrated copper and silver producers (KGHM) and is a significant producer of the very rare earth metal, rhenium. Little exploration has been undertaken over the last few decades. That has resulted in a limited number of new developments with promising potential in coking coal, lead, zinc and copper. Companies generally report mineral reserves under the Polish classification system, rather than under internationally-recognised codes, which deters some international investors.

| Key country mining statistics |  |  |
|-------------------------------|--|--|
| Mining workforce              | 200,000 (mostly coal) or 1.3% of the country's workforce. KGHM employs over 30,000 |  |
| Mining % of GDP               | 5.7% (UNCTAD 2015)   |  |
| Mining % of state budget      | Not available  |  |
| Mining % of exports           | 3.6% (UNCTAD 2014/15)  |  |
| Corruption rank               | 29/176 TI Corruption Index   |  |
|                               | 24/190 WB ease of doing business index   |  |
| EITI                          | Not a member   |  |
| Mines                         | Coal, copper-silver, zinc, industrial minerals                                     |  |
|                               | (feldspar, gypsum, salt, aggregates)   |  |
| Value chain                   | Vertically integrated: mine to smelter to first use                                |  |
| Endowment                     | Medium resource: significant coal and copper                                       |  |
| Endownion                     | Lack of recent exploration for zinc and lead                                       |  |
| Mine license regime           | Based on Polish system   |  |
|                               | Environmental permit required for exploration                                      |  |
| Foreign companies             | Balamara Resources, Rathdowney Resources,  |  |
| i oreign companies            | New World Resources (in administration)  |  |
|                               | Part state control: KGHM, JSW S.A. (coking coal)                                   |  |

#### **Reform challenges**

Review mining tax and royalties on copper and silver.

- Reduce the near-monopoly of KGHM in exploration concessions.
- Encourage exploration and investment away from coal.

Review whether the environmental permit process discourages exploration investors.

#### Profile of the mining sector economy

#### Well governed:

- Transparency is good in SOEs but Poland is not EITI member.
- The legal framework for mining is broad and not very developed.
- Weak safety performance at hard coal and KGHM mines.

#### Competitive:

- High tax take after introduction of 2012 Mineral Extraction Tax.
- Low-cost competitiveness.
- Mostly underground mines for copper and lead/zinc.

#### Green:

- 2016 KGHM smelter modernisation to lower costs and GHG emissions.
- Poland is still to implement requirements of the EU Waste Framework Directives and Water Framework Directive.

#### Inclusive:

- Female share of employment in mining is 10% (ILO).
- Low youth employment (about 13% below 30 years old).

#### **Resilient:**

Insufficient exploration into base and precious metals.
 Limited access to finance for mining exploration.

Mining revenue as % of COO total

#### Integrated:

- Good infrastructure but dominated by KGHM and coal producers.
- Poland has good access to European zinc and copper smelters.











# Mining country snapshot: Russia



The Russia hosts some of the largest reserves of metals in the world, accounting for 50 per cent of mined value (excluding coal) in the COOs. It is the largest global producer of diamonds, nickel and palladium and also a key world producer of platinum, gold, iron ore and coal. Although one of the largest world producers of aluminium, Russia is a net importer of bauxite. There are a number of very large, often publicly quoted but tightly controlled local companies. Mining is challenging for foreign companies and in some Russian regions a local partner is often required to help handle the permitting and bureaucracy. Non-domestic listed mining companies are required to submit mine plans based on Russian classification (GKZ) and convert to external standards (e.g. JORC, NI-43 101) for foreign investors and SEC regulations. Russia has a well established domestic mining service industry, but often lags behind global standards and innovation.

| Key country mining statistics |   |  |  |  |
|-------------------------------|---|--|--|--|
| Mining workforce              | >1 million including coal or 1.6% of total workforce<br>(Norilsk: 81,000; Rusal: 61,000)                  |  |  |  |
| Mining % of GDP               | 8.5% mining and quarrying (GKS 2016)  |  |  |  |
| Mining % of state budget      | Not available   |  |  |  |
| Mining % of exports           | 6.1% (UNCTAD 2014/15)   |  |  |  |
| Corruption rank               | <ul> <li>131/176 TI Corruption Index</li> <li>40/190 WB ease of doing business index</li> </ul>           |  |  |  |
| EITI                          | Not a member  |  |  |  |
| Mines                         | <ul> <li>Bauxite, diamonds, coal, gold, copper, zinc, nickel,<br/>industrial minerals etc.</li> </ul>     |  |  |  |
| Value chain                   | <ul> <li>Fully established vertical integration from mine to<br/>smelter/refinery to first use</li> </ul> |  |  |  |
| Endowment                     | <ul> <li>Very large resource base across most commodities</li> </ul>                                      |  |  |  |
| Mine license regime           | GKZ Russian system: deterrent to FDI  |  |  |  |
| Foreign companies             | <ul> <li>Kinross, Barrick Gold, Auriant Mining AB,<br/>Petropavlovsk, Trans-Siberian Gold plc.</li> </ul> |  |  |  |
|                               |   |  |  |  |

#### **Reform challenges**

Increase transparency, ideally as an EITI member (perhaps gradually, on a regional basis).

Encourage growth of small companies and improve attractiveness to FDI.

Strengthen HSE&S standards and their application.

#### Profile of the mining sector economy

#### Well governed:

- Weak transparency in procurement. Not an EITI member.
- Poor safety in mining. Further modernisation required.
- Local legislation, bureaucracy and size of capital investment. needed are main barriers to FDI.

#### Competitive:

- High concentration of ownership.
- Low- to mid-ranking in terms of cost competitiveness.
- Mining sector not affected by international sanctions.

#### Green:

Dependent on coal and natural gas for energy.

• High-energy intensity due to beneficiation chain and complex ores.

#### Inclusive:

- Lack of qualified specialists as mining education lags behind global levels
- High mining workforce gender inequality: 8% women in the industry.

#### Resilient:

• Large resource base across a wide range of commodities.

#### Integrated:

- Limited infrastructure in remote locations for greenfield projects.
- High transportation costs due to large distances and inadequate rail capacity.

#### Mining revenue as % of COO total













# Mining country snapshot: Serbia



Serbia has the geological potential to host world-class orebodies, as demonstrated by the Jadar (Rio Tinto, lithium) and Timok (Nevsun, copper) development projects.

Thanks to a supportive mining code, the country is currently the most mining-friendly of the Balkan states, and a quiet mining investment boom is underway. As a consequence, there are now relatively few opportunities to peg new ground for exploration in the country. Mining is the only source of employment opportunities in many regional cities. Thus, training and education for employment is an increasing focus.

| Key country mining statistics                       |   |  |  |
|---|---|--|--|
| Mining workforce                                    | 22,388 (of which 13,099 are involved in coal) or  |  |  |
|   | 1.1% of the workforce (SORS 2015).  |  |  |
|   | 5,000 employees at RTB Bor  |  |  |
| Mining % of GDP                                     | 5.8% (UNCTAD, 2015)   |  |  |
| Mining % of state budget                            | Not available   |  |  |
| Mining % of exports                                 | Mining metal ores and quarrying :0.4% (SORS 2016)   |  |  |
|   | Refined copper: 1.1% (2015)   |  |  |
|   | Aluminium: 1.6% (2015)  |  |  |
| Corruption rank                                     | 72/176 TI Corruption Index  |  |  |
|   | 47/190 WB ease of doing business index  |  |  |
| EITI  | Not a member  |  |  |
| Mines   | 325 mining enterprises, including 14 energy related   |  |  |
|   | companies (2014)  |  |  |
|   | RTB Bor (copper, gold an silver)  |  |  |
| Value chain   | RTB Bor (smelter, refinery, foundry and rod plant)  |  |  |
| Endowment   | Medium, with high upside from exploration.  |  |  |
| Mine license regime                                 | New supportive mining law adopted in 2015   |  |  |
| Foreign companies                                   | <ul> <li>Rio Tinto, Nevsun, Medgold, Tethyan Res., Euromax<br/>Resources, First Quantum, Orogen Gold</li> </ul> |  |  |
| Reform challenges                                   |   |  |  |
| Improve elevity and datail of the 1000 minoral code |   |  |  |

Improve clarity and detail of the 1999 mineral code.

Improve mining sector transparency, ideally as an EITI member.

Encourage privatisation of SOEs in the mining sector.

#### Profile of the mining sector economy

#### Well-governed:

- Recent updates to mining code are very positive. No public tender to acquire exploration licences and licences are transferrable.
- Not a member of EITI.

#### Competitive:

Prospective geology with high potential for large high-grade orebodies.



• Major copper-gold and lithium projects in development, which will increase investors' confidence.

#### Green:

• Many state-owned coal mines in poor EHS&S condition.

#### Inclusive:

• Female share of employment in mining is 17% (ILO).

#### Resilient:

• Potential to produce diverse range of mined commodities.

• Access to mining finance for stronger capitalisation is still limited.

#### Integrated:

 Access to transport logistics could be improved. Country is landlocked with rivers lacking intermodal terminals but has reasonable road infrastructure.



Mining revenue as % of COO total

Serbia

0.6%



Copper

83%







## Mining country snapshot: Tajikistan



Tajikistan is well endowed with antimony, gold and base metals deposits. It reportedly has 600 partially explored deposits awaiting investment. The mining industry remains very underdeveloped with slow progress on the reforms required to attract investment. The most recent EITI assessment noted shortcomings in license allocation, contract disclosure, state participation, SOEs and various transparency issues. The biggest external investors are Zijin (Zerafshan, gold) and Tajik-China Mining (Altyn Topkan, zinc). The country is mountainous with significant infrastructural challenges.

#### Key country mining statistics Mining workforce 7,368 or 0.69% of workforce (Q1 2017 gov. stats) 3.1% (EITI, 2014) 5.5%% (2016 gov. stats) Mining % of GDP Mining % of state budget 4.2% (EITI, 2014) 23.25% (EITI, 2014), including aluminium Mining % of exports 151/176 TI Corruption Index **Corruption rank** 128/190 WB ease of doing business index Member (2013): made inadequate progress; EITI scheduled for review in September 2018. Jilau, Andrasman and Aprelevka (gold /silver), Mines Altintopkan (lead/zinc), Anzob (Antimony) Value chain Aluminium smelting (imported alumina) Large endowment. Gold, antimony, lead/zinc. Endowment World-class undeveloped silver deposit (Konimansur). Significant deposits by tender; otherwise by Mine license regime application. 1994 law, amended in 2010. Zijin Mining, Comsup, Tajik-Chinese Mining, China Foreign companies Nonferrous Gold Ltd (formerly Kryso)

#### **Reform challenges**

Encourage clarification of licensing versus tendering processes and aim to clarify investor rights.

Provide assistance to re-comply with EITI standard.

Assist with (re)tendering of larger projects.

#### Profile of the mining sector economy

#### Well governed:

- Transparency is a cause for concern, given the country's current suspension from EITI
- Concerns over clarity in allocation of licences.

#### Competitive:

Large resource endowment with potential to host world-class deposits.

#### Green:

- Lack of environmental impact controls.
- Large materials efficiency and water efficiency gaps.

#### Inclusive:

• Female share of employment in mining is 14% (ILO).

• Large skills gaps.

#### **Resilient:**

• Access to mining finance for stronger capitalisation is limited.

• Lack of domestic bauxite/alumina.

#### Integrated:

- Poor transport infrastructure.
- Landlocked, power capacity shortfall, poor road and rail transport.
- Low level of FDI and undeveloped service sector.







PUBLIC

# Mining country snapshot: Turkey



| Turkey is Europe's largest gold-producing country and a producer of copper and ferrochrome as  |  | Profile of the mining sector economy   |                               |  |
|--|--|--|-------------------------------|--|
| well as the 6th largest lignite producer country in the World. It produces a diverse range of commodities, including industrial minerals, nickel, aluminium and chrome. Dimension stone is the country's most important mined export by value. Turkey has the largest Boron reserves in the world. They are fully under state control through the state-owned company ETI MADEN ISLETMELERI GENEL MUDURLUGU. Several investors have raised concerns about long delays in permitting. |  | <ul> <li>Well governed:</li> <li>Revenue reporting is relatively transparent, but Turkey is not an EITI member.</li> <li>Well-established rule of law, but concerns over political interference.</li> <li>Delays in permitting due to procedural changes and uncertainties.</li> </ul>   |                               |  |
|  | Key country mining statistics  | Competitive:   |                               |  |
| Mining workforce   | 125,000 (TSI 2016)   | Medium/high resource endowment wit   | h high exploration potential. |  |
|  | 0.46% of the country's workforce   | Low/moderate costs, with moderate resource quality and ore grades.   |                               |  |
| Mining % of GDP  | 0.8% (TSI 2015)  | • Good local mining expertise, service sector capacity and ICT capacity.   |                               |  |
| Mining % of state budget   | Not available  |  |                               |  |
| Mining % of experts  | 2% or USD 2 6hp (TSI 2016)   | Green:   |                               |  |
|  | - 2% 01 05D 2.6011 (151 2016)  | Scores well for sustainable energy and   | waste management.             |  |
| Corruption rank  | <ul> <li>74/176 If Corruption Index</li> <li>60/100 WP eace of daing business index</li> </ul> | · Poor score for water efficiency.   |                               |  |
| FITI   | Not a member   | -<br>Inclusive:  |                               |  |
| Mines  | Major mines: Afsin-Flbistan, Manisa-Soma, Cavirban   | <ul> <li>Female share of employment in mining</li> </ul>   | (is 3% (II 0)                 |  |
|  | Kutahva-Tuncbilek, Kısladağ, Efemcukuru, Cöpler, Bergama                                       | <ul> <li>Moderate labour skills gap.</li> </ul>  |                               |  |
|  | (gold); Küre, Caveli, Murgul, Madenköy, Lahanos (copper);                                      | ····· Bala   |                               |  |
|  | Divriği (Iron); Guleman, Aladağlar (chromium); Kırka, Emet,                                    | Resilient:   |                               |  |
|  | Bigadiç, Kestelek (Eti Maden-boron, industrial minerals  | Well-developed capital markets and ba  | nk financing.                 |  |
| Value chain  | Aluminium smelting; significant metal semi-finished product                                    |  |                               |  |
|  | manufacturing capacity   | Integrated:  |                               |  |
|  | Copper smelting capacity bottleneck  | <ul> <li>Good transportation infrastructure through the second secon</li></ul> | ugh road but railway          |  |
| Endowment  | Located on the Tethyan Belt: highly prospective for base and                                   | infrastructure still underdeveloped for  | freight.                      |  |
|  | precious metals  | Mining revenue on % of COO total   | Mining revenue enlit          |  |
| Mine license regime  | Mining Law 1985, amended February 2015   | Mining revenue as % of COO total   | winning revenue spirt         |  |
|  | Licensing by direct application to Ministry  | - Turkey 4%  | Iron Ore 13%Zinc 7%           |  |
| Foreign companies  | (TÜPRAG) Alacer Gold Teck  |  | Silver 5%                     |  |
|  | Beform challenges  | -  | Nickel 4%                     |  |
|  |  |  | Copper Lead 3%                |  |
| Reduce uncertainty over permitting process to attract private mining investors.  |  | l l l l l l l l l l l l l l l l l l l  | 24% Manganese 1% Bauxite 1%   |  |
| Promote greater water efficiency.  |  | Rest of  | Gold 42%                      |  |
| Strengthen basic mining trades and skills education.   |  | COO<br>COO<br>Excludes coal  | dimension                     |  |
| Enhance mining sector transparency and consider EITI membership.   |  | Stone, phosph  | ate, chrome                   |  |
|  |  |  |                               |  |

PUBLIC

# Mining country snapshot: Ukraine



Five per cent of the world's natural resources are located in Ukraine, including significant amounts of thermal and coking coal, iron ore, manganese and uranium. Low-grade iron ore is generally upgraded to high-grade premium pellets for export. The country hosts around 20 per cent of global titanium resources. GDP has continued to improve since 2014-15 and encouraging reforms are also ongoing. However hostilities, lack of transparency and endemic corruption remains a deterrent to local and foreign investment.

| Key country mining statistics |  |  |  |  |
|-------------------------------|--|--|--|--|
| Mining workforce              | <ul> <li>A total of 255,000 in all extractive industries (EITI 2015)</li> <li>1.4% total workforce</li> </ul>                  |  |  |  |
| Mining % of GDP               | 5% (EITI 2015)   |  |  |  |
| Mining % of state budget      | • 0.1% in 2015 vs. 4.3% in 2013 (EITI)   |  |  |  |
| Mining % of exports           | 8.4% (UNCTAD 2014/15)  |  |  |  |
| Corruption rank               | <ul> <li>131/176 TI corruption Index</li> <li>80/190 WB ease of doing business index</li> </ul>                                |  |  |  |
| EITI                          | To be assessed against the 2016 standard   |  |  |  |
| Mines                         | <ul> <li>Coal, iron ore, manganese, ferronickel, titanium.</li> <li>54 metal mines and more than 300 coal deposits.</li> </ul> |  |  |  |
| Value chain                   | <ul> <li>Well-developed iron ore to steel and manganese .</li> </ul>   |  |  |  |
| Endowment                     | <ul><li>Large endowment for steel making</li><li>Little exploration for other metals</li></ul>                                 |  |  |  |
| Mine license regime           | <ul><li>Competitive tender</li><li>Code of Ukraine on the Subsoil</li></ul>  |  |  |  |
| Foreign companies             | Arcelor Mittal, (Ferrexpo LSE listed)  |  |  |  |
| Reform challenges             |  |  |  |  |

Increase transparency and reduce corruption to attract investors.

Improve clarity and detail of the mineral code 1999 and require company public reporting.

Encourage exploration and investment away from coal and steel.

Review the value chain at risk from the ban on raw materials from separatist controlled zones.

#### Profile of the mining sector economy

#### Well governed:

- High levels of corruption and hostilities are stymying mining.
- Lack of transparency within tax and customs institutions.
- The regulatory framework for mining is not developed.
- Poor supervision and implementation of HS&S.

#### Competitiveness:

upgrading.

Large low-cost iron ore resource. But it is low-grade, and requires



- High dependence on coal, uranium (52.3%) and gas imports.
- Significant scope to improve legacy environmental issues.

#### Inclusive:

Green:

- Scores well on social inclusion with 50% youth employment.
- Female share of employment in mining is 22% (ILO).

#### Resilient:

Over-reliance on mineral exports.



· Very limited access to long-term finance to build resilence against volatile pricing within the mining sector

#### Integrated:

- Key rail and port logistics are dominated by producers.
- Aging infrastructure with damaged railways and mines due to hostilities.
- Few large firms control output and restrict FDI.



Mining revenue split



## Mining country snapshot: Uzbekistan



Uzbekistan is a significant mining country, which ranks in the top five COOs for mining revenues. Much of this revenue comes from gold and copper production by two SOEs, Navoi GMK and Almalyk GMK. Foreign interest in the country is currently quite limited. Rio Tinto suspended copper exploration activities in 2016, citing low prices as the reason. Investors may still be influenced by Newmont's experiences in the mid 2000s. The country faces substantial transition challenges in mining.

#### Key country mining statistics

| Mining workforce         | Data not available                                     |
|--------------------------|--|
| Mining % of GDP          | 4.1% (Stat Uz 2016)                                    |
| Mining % of state budget | Not known but likely relatively high                   |
| Mining % of exports      | <b>5</b> % (2016)                                      |
| Corruption rank          | 156/176 TI Corruption Index                            |
|                          | 87/190 WB base of doing business index                 |
| EITI                     | Not a member   |
| Mines                    | Muruntau (gold), Almalyk (copper, zinc), uranium,      |
|                          | coal   |
| Value obain              | Almalyk smelting and refining complex                  |
| value chain              | Some production of semis and steel                     |
| Endowment                | World-class copper and gold deposits                   |
|                          | <ul> <li>Significant diverse metal deposits</li> </ul> |
| Mino liconso rogimo      | Law on the Subsoil (No. 444-II, December 2002)         |
| wine license regime      | Civil law-based licences awarded by tender or          |
|                          | negotiation with a state committee                     |
| Foreign companies        | Predominantly domestic companies                       |

#### **Reform challenges**

New approach needed to welcome foreign private investment in exploration and development.

Consider transparent and competitive privatisation of stakes in SOEs.

Enhance transparency throughout mining sector, ideally as an EITI member.

Clarify licence transfer terms.

#### Profile of the mining sector economy

#### Well governed

- Revenue reporting is not transparent. The country is not a member of EITI.
- Investors are concerned with corruption and a lack of clarity in allocating mineral licences.

#### Competitive:

- Large endowment with high potential to host world-class deposits.
- Low/moderate costs and high resource quality, although deposits. often have complex geology and metallurgy.
- Poor service sector and ICT capacity.

#### Green:

- Lack of environmental impact controls and reclamation bonds.
- Significant materials efficiency gap.
- Moderate water efficiency gap.

#### Inclusive:

Medium rating for workforce gender inequality and labour skills gaps.

#### Resilient :

- Highly reliant on mineral exports.
- Very limited access to long-term finance to build resilence against volatile pricing within the mining sector

#### Integrated:

- Poor transport infrastructure.
- Low level of FDI.

Mined revenue value as % of COO total

Mining revenue split



PUBLIC