

**DOCUMENT OF THE EUROPEAN BANK  
FOR RECONSTRUCTION AND DEVELOPMENT**

# **DRAFT MINING STRATEGY**

*Supporting Responsible Mining*

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## ABBREVIATIONS AND ACRONYMS

ATC	Assessment of Transition Challenges
ARD	Acid Rock Drainage
Bank	European Bank for Reconstruction and Development
BAS	Business Advisory Services
BEEPS	EBRD - World Bank Business Environment and Enterprise Performance Survey of 2009
CEB	central Europe and Baltics
CIS	Commonwealth of Independent States
CO <sub>2</sub>	Carbon Dioxide
COO	EBRD's Country of Operations
CSO	Civil Society Organisation, formerly Non-Governmental Organisation
DFID	United Kingdom Department for International Development
DIF / DLF	Direct Investment Facility / Direct Lending Facility
EBRD	European Bank for Reconstruction and Development
EC	European Commission
EEC	eastern Europe and Caucasus
EGP	Enterprise Growth Program (formerly Turnaround Management)
EHS&S	Environmental, health, safety and social
EIB	European Investment Bank
EI	Extractive Industries
EIR	Extractive Industries Review of the World Bank
EITI	Extractive Industries Transparency Initiative
ESAP	Environmental and Social Action Plan
ESIA	Environmental and Social Impact Assessment
ESP	EBRD's Environmental and Social Policy (12 May 2008)
ETC	Early Transition Countries (2012): Armenia, Azerbaijan, Belarus, Georgia, Kyrgyz Republic, Moldova, Mongolia, Tajikistan, Turkmenistan and Uzbekistan
EU	European Union
EUR, €	Euro
EvD	EBRD's Evaluation Department
FDI	Foreign Direct Investment
FMO	Financierings-Maatschappij voor Ontwikkelingslanden
FSU	Former Soviet Union
FYROM	Former Yugoslav Republic of Macedonia

GATT	General Agreement on Tariffs and Trade, forebear of the World Trade Organization
GDP	Gross Domestic Product
GHG	Green House Gas
GRI	Global Reporting Initiative
ICMM	International Council on Metals and Mining
IFC	International Finance Corporation
IFI	International Financial Institution
KfW	Kreditanstalt fuer Wiederaufbau
LBD	Local Business Development
LEF	Local Enterprise Facility
LPI	Logistics Performance Index of the World Bank
MRAM	Mineral Resources Authorities of Mongolia
MSME	Micro, Small and Medium Enterprise
OCE	EBRD's Office of the Chief Economist
OECD	Organisation for Economic Cooperation and Development
PP&R	EBRD's Procurement Policies and Rules
PR	Performance Requirement of EBRD's Environmental and Social Policy
PWYE	Publish What You Earn coalition
PWYP	Publish What You Pay coalition
SBS	EBRD's Small Business Support team
SEE	south eastern Europe
SEMED	southern and eastern Mediterranean Countries
SIC	Standard Industrial Classification
SME	Small and Medium Enterprises
SSF	EBRD's Shareholder Special Fund
SO2	Sulfur Dioxide
TC	Technical Cooperation
TFP	EBRD's Trade Facilitation Program
TIMS	EBRD's Transition Impact and Monitoring System
UNECE	United Nations Economic Commission for Europe
US	United States of America
USD, \$	United States Dollar
WTO	World Trade Organisation

## **PRESIDENT'S RECOMMENDATION**

This recommendation and the attached Report covering the Mining Strategy are submitted for consideration by the Board of Directors.

Mining is a chief contributor to economic growth and social development in a number of EBRD's countries of operations (COOs) that are resource-rich, such as Russia, Ukraine, Mongolia and the Kyrgyz Republic, with local communities often benefiting significantly from mining activities.

The potential benefits of resource dependence are contingent on whether mining and the associated revenues are developed and managed responsibly over time. Past experience shows that the extraction of mineral resources may have negative economic, environmental and social consequences, as it can result in increased macroeconomic volatility, reduced incentives to invest in physical and human capital, and weaken institutions and governance. Poor environmental and social management of mining projects can have significant long lasting effects on resources, biodiversity and local communities.

Over the last two decades there have been major improvements in the global understanding of how mining operations can be run more responsibly and with more attention to sustainability issues. Best practices in addressing 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 to be addressed by responsible companies. In particular, the Extractive Industries Transparency Initiative (EITI) has become the global standard for transparency and reporting in extractive industries and mining.

The EBRD Mining Strategy takes stock of these developments in the sector, identifies the remaining transition challenges in the COOs and sets out the Bank's operational response, as well as EBRD's approach to environmental, health, safety and social 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 cornerstones of the Mining Strategy are:

- **Responsible mining will be a guiding principle for EBRD operations.** Environmental, health, safety and social standards are currently applied to various degrees and with varied importance in the COOs. Through its involvement in the mining sector, the Bank has an opportunity to promote environmentally and socially responsible mining across its portfolio and to provide examples of best international practice to the relevant governments in areas such as environmental and social management, health and safety improvements, energy efficiency and revenue transparency. The Mining Strategy highlights current practices and addresses areas that call for special attention, particularly the expansion of the mining industry in some countries that currently lack sufficient legislation or enforcement of requirements in health and safety and environmental safeguards.

- **The Bank operations will focus on the remaining transition challenges.** Whereas the mining sector has the potential to play a significant role in advancing transition, there still exists a large number of transition challenges across several of EBRD's COOs. State ownership and intervention remains significant, particularly in the case of 'strategic' minerals; concentration in the mining industry has increased, restricting the ability of existing small independent players to compete. Moreover, the EBRD's COOs are relatively far from the technology frontier in the mining sector and still use older technologies and systems to manage their mining operations and lack supporting infrastructure. Countries dependent on natural resources extraction tend to have weaker institutions and governance, lower transparency and are more prone to corruption and rent-seeking behaviour. The legal and regulatory framework needs to be strengthened and aligned with best international standards.
- **The Bank will invest along the mining value chain.** Mining is a capital-intensive industry with the need for long-term financing, which is often not available in the COOs. The EBRD will apply its wide range of equity and debt products within the mining sector, to invest in extractive activities, as well as other activities along the mining value chain. As such, EBRD will support the positive effects that mining generates in local economies and for small business, and strengthen backward and forward linkages. It will also support the development of transport, energy, water infrastructure and waste management, and other added-value facilities and services linked to the development of large mining sites. Building on the Mining Strategy, the Bank will address transition challenges by supporting the development of sustainable and transparent legislative and regulatory frameworks and building reliable institutional capacity. The Bank will support improved transparency and good governance.

The Bank recognises the macro-economic impact of mining, in particular in smaller economies. The Bank intends to reflect this in the comprehensive approach developed in the context of respective country strategies.

I recommend that the Board of Directors approve this Mining Strategy substantially on the terms of the attached.

**Thomas Mirow**

## **SECTION 1 - FRAMING THE CHALLENGE: RATIONALE FOR THE BANK'S INVOLVEMENT**

### **1.1 OBJECTIVE OF THE STRATEGY**

The Bank has been lending to the mining sector in its countries of operations (COOs) since 1993,<sup>1</sup> and it intends to continue financing this industry. The purpose of the Mining Strategy (the Strategy) is to provide the approach the Bank will use to finance mining projects in an effort to achieve its transition mandate, apply sound banking principles and contribute to sustainability and the development of a responsible mining sector across the COOs.

This is EBRD's first comprehensive strategy document on the mining sector, which lays out an expanded assessment of transition challenges and operational priorities for the sector. It outlines how the Bank will apply its wide range of equity and debt products within the mining sector in accordance with the principles of sound banking. Moreover the document provides benchmark approaches for improving the overall performance of the sector, including the environmental, health, safety and social (EHS&S) performance. It consolidates EBRD's current approaches for controlling impacts and engaging stakeholders using best practices.

Section 1 sets the stage by describing the objectives and scope of the strategy, the overall rationale for the Bank's involvement in the mining sector, current trends in the industry that are relevant to the Bank, and its experience in financing the mining sector. Section 2 identifies the key challenges to transition affecting the mining sector in the Bank's COOs. In Section 3, the Strategy defines the Bank's operational priorities in its financing of mining sector projects, which are to address the remaining transition challenges. Finally, Section 4 presents how the Bank will contribute to the sustainability of the sector by addressing the key environmental, health, safety and social issues.

### **1.2 SCOPE OF THE STRATEGY**

The Strategy covers all the Bank's existing COOs and includes as well the southern and eastern Mediterranean countries (SEMED) that have requested to become COOs.<sup>2</sup> Mineral-rich countries are of particular importance for this Strategy.

The Strategy is relevant to the physical extraction and basic processing of ores and minerals, and as such will cover all projects in which at least some component of the investment goes towards such operations. This may in some cases include refining and manufacturing investments, provided that those investments are at least partially directed towards the upgrading or development of mining activities. The Strategy does not focus on interventions driven by other strategic areas for example, the transport of commodities by a third-party, but identifies opportunities and synergies in the relevant sectors.

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<sup>1</sup> EBRD involvement is supported since 1999 by the Natural Resources Operations Policy available at [www.ebrd.com/downloads/policies/sector/natural.pdf](http://www.ebrd.com/downloads/policies/sector/natural.pdf).

<sup>2</sup> As of February 2012, the following SEMED countries had made an official request to become EBRD COOs: Egypt, Jordan, Morocco and Tunisia.

The Strategy covers all types of financial instruments used by the Bank, including investments in financial intermediaries through which the Bank indirectly funds mining projects. It also takes into account projects which may have associated mines, but where the mines are not the focus of EBRD investment (e.g., iron ore mines associated with steel projects, limestone quarries associated with cement production).

The Strategy is designed to take into account existing EBRD policy and strategy documents. These notably include the 2006 Energy Operations Policy,<sup>3</sup> the 2008 Environmental and Social Policy,<sup>4</sup> the 2011 Public Information Policy<sup>5</sup> and the 2010 Procurement Policy and Rules.<sup>6</sup> Many of the existing Country Strategies contain detailed references to mining activities, and this sector Strategy will complement them.<sup>7</sup>

### *Ores and Minerals covered by the Strategy*

The Strategy covers mining of all ores and minerals except unbonded asbestos, any production or use of which is excluded from Bank financing by the Exclusion List in the Bank's Environmental and Social Policy (ESP). The Strategy does not cover the extraction of hydrocarbons such as oil and gas and the use of thermal coal, which are covered in the Bank's Energy Operations Policy approved in 2006. Therefore, the Strategy does not cover carbon-related issues such as the impact of thermal coal combustion on climate change, its role in the energy mix and its contribution to energy security in certain of the Bank's COOs. Oil and gas, and carbon-related issues of thermal coal, will continue to be covered by the Energy Operations Policy and its subsequent updates. The Mining Strategy will, however, cover other aspects of thermal coal mining activities, such as EHS&S issues. The Strategy will also include the following minerals:

- *Precious Metals and diamonds*: The Bank's support for the extraction of precious metals and diamonds relies on the wide range of applications and industrial uses for these minerals. Gold is used for jewellery as well as in industry, science, and medicine in the capacity of a material with unique physical parameters. It is particularly valuable in microelectronics for electric connections (electric, radio, and video equipment) or as gold-plating as a method of protection from corrosion. Gold is also used as a reserve asset for monetary authorities of many countries, as well as storage of value for private investors. Platinum group metals such as platinum and palladium are an essential component of catalytic converters for the automotive industry. Industrial diamonds are used as cutting material.

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<sup>3</sup> Available at: [www.ebrd.com/downloads/policies/sector/energy\\_policy.pdf](http://www.ebrd.com/downloads/policies/sector/energy_policy.pdf).

<sup>4</sup> Available at: [www.ebrd.com/downloads/research/policies/2008policy.pdf](http://www.ebrd.com/downloads/research/policies/2008policy.pdf).

<sup>5</sup> Available at: [www.ebrd.com/downloads/policies/pip/pipe.pdf](http://www.ebrd.com/downloads/policies/pip/pipe.pdf).

<sup>6</sup> Available at: [www.ebrd.com/downloads/procurement/ppr10.pdf](http://www.ebrd.com/downloads/procurement/ppr10.pdf).

<sup>7</sup> Country strategies that address the mining sector in detail are the:

- 2009 Strategy for Armenia available at: [www.ebrd.com/downloads/country/strategy/armenia.pdf](http://www.ebrd.com/downloads/country/strategy/armenia.pdf);
- 2010 Strategy for Kazakhstan available at: [www.ebrd.com/downloads/country/strategy/kazakhstan.pdf](http://www.ebrd.com/downloads/country/strategy/kazakhstan.pdf);
- 2011 Strategy for the Kyrgyz Republic available at: [www.ebrd.com/downloads/country/strategy/kyrgyz.pdf](http://www.ebrd.com/downloads/country/strategy/kyrgyz.pdf);
- 2009 Strategy for Mongolia available at: [www.ebrd.com/downloads/country/strategy/mongolia.pdf](http://www.ebrd.com/downloads/country/strategy/mongolia.pdf); and
- 2009 Strategy for the Russian Federation available at: [www.ebrd.com/downloads/country/strategy/russia.pdf](http://www.ebrd.com/downloads/country/strategy/russia.pdf).

- *Iron Ore and Coking Coal*: The Bank's support for the extraction of iron ore and coking coal relies on their importance in the steel industry including for the provision of coke in the process of producing hot metal in the blast furnace. Coke acts in three capacities, as a chemical reductant of iron ore, as a source of heat, and as a physical support of the material within the blast furnace. Whereas identifying substitutes for steel will reduce the demand for coking coal, steel remains a necessary input to many of the key technologies for decarbonisation - wind power, gas turbines, etc. In the COOs, steel is important to the overall economy, being a key supplier of raw input to a number of manufacturing industries. In addition, there are limited numbers of active coking coal operations globally, as producers reduced expansion plans since 2008. As such, coking coal supply is likely to be constrained in the medium term, which may lead to higher prices and increased price volatility. The Bank therefore recognises it has a role to play in supporting investments in steel-related mining such as iron ore and coking coal.
- *Uranium*: The Bank's support to uranium mining operations is restricted to improving the health and safety, and operational safety, of uranium mining operations. According to the Performance Requirement 9, annex 2 of the ESP, the financing of uranium mining by financial intermediaries is subject to referral to and sign-off by EBRD.

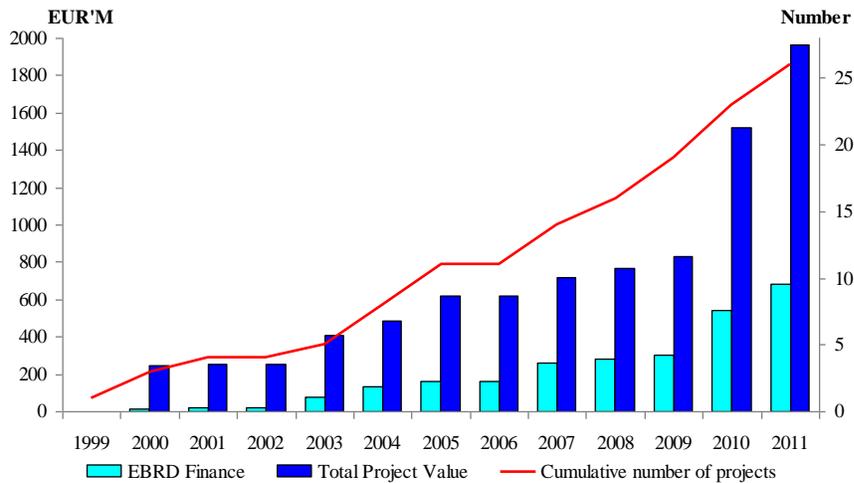
### **1.3 EBRD ACTIVITY IN THE MINING SECTOR**

#### **1.3.1 Project Portfolio Update**

This section presents the Bank's activities in the mining sector between 1999, when the Natural Resources Operations Policy was approved, and the end of 2011. It covers projects involving metal mining, coking coal mining and support activities for mining completed by the Bank. These figures include projects with associated mines, such as iron ore mines associated with iron and steel projects.

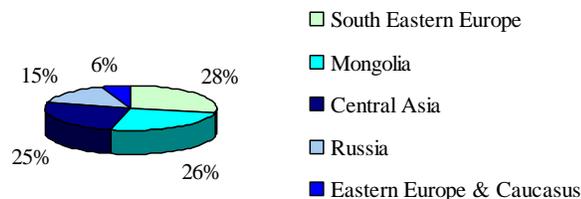
Between 1999 and 2011, EBRD financed 26 investments in the mining sector, totalling €685 million in EBRD financing for a total project value of €2.0 billion. Eighty-five per cent of the financing was with debt instruments and 15 per cent with equity. Over the period, the Bank stepped up the volume invested from €162 million invested between 1999 and 2005 to €523 million between 2006 and 2011. The average project size was €26 million, with three projects receiving more than €80 million and nine projects less than €10 million; see Figure 1.2 for more details.

**Figure 1.1** Cumulative Investment in Mining, Number of Projects, 1999 to 2011



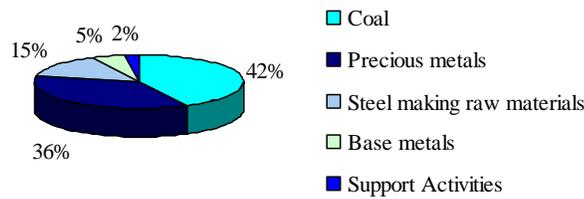
South eastern Europe (SEE) has been the largest recipient of these investments with €191 million in investments made by the Bank. This included two operations to finance a gold mine in Bulgaria (€43 million). Mongolia followed behind with €176 million of investments financed since it became an EBRD country of operations in 2006. This included a total of €111 million in financings for high quality coking coal operations, €58 million for other operators and support to two international service providers for a total of €15 million. Central Asia was also significant with investments of €174 million signed, half of which were for two financings for a gold project in the Kyrgyz Republic, and one third for a coking coal project in Kazakhstan (€74 million). Together with Mongolia, Russia has seen the largest investments during the 1999-2011 period with €91 million, half of which were for gold mining projects including one signed in 2011 for €37 million. During this period the highest number of Bank investments was in Russia (seven) and in Mongolia (five), with average EBRD financing per project of €13 million and €28 million respectively; see Figure 1.3 for more details.

**Figures 1.2** EBRD Mining Projects by Region, 1999 to 2011



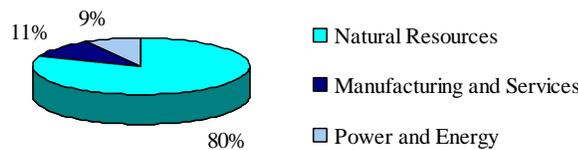
The portfolio is balanced between coking coal projects (€291 million) including two financings for a coking coal project in Mongolia, precious metals (€244 million), and iron ore and steel related raw materials (€101 million). The Bank has financed only a few base metal mines but market trends may allow the Bank to step up financing for these metals in the near future in particular copper projects. The Bank also financed two service providers to the mining industry; as presented in Figure 1.4.

**Figures 1.3** EBRD Mining Projects by Type of Mineral,<sup>8</sup> 1999 to 2011



Over the 1999-2011 period two-thirds of direct investments in mining were made by the Bank's Natural Resources team with €551 million signed. The largest Natural Resources mining project was for a regional gold mining project signed in 2010 for a total value of €111 million. The remainder of these investments were made by one Manufacturing and Services project (€74 million), and one Power and Energy project (€60 million); see Figure 1.5.

**Figure 1.4** EBRD Mining Projects by Sector Team, 1999 to 2011



The Bank financed five projects under the Bank's facilities for small and medium projects including three projects under the Direct Investment Facility (DIF) and the Direct Lending Facility (DLF), one in Mongolia (€4 million) and two gold projects in Armenia (€7 million and €3 million, respectively). Two projects were financed under the Local Enterprise Facility (LEF) in SEE for a total of €9 million.

*Quarries for limestone, gypsum and other construction materials*

Over the 1999-2011 period, the Bank financed 21 projects for the production of cement, construction materials and other non-metallic materials, which included a small portion of investments in limestone, sand and gypsum quarries related to these operations. It is estimated that approximately 10 per cent is attributable to associated mines and quarries, although it is not possible to identify systematically their share in these investments. The proportion of the investments going into the quarries is estimated at approximately €70 million.<sup>9</sup> Most of these investments were completed in Russia (29 per cent), in eastern Europe and Caucasus (EEC, 22 per cent), and in central Europe and Baltics (CEB, 19 per cent). The majority of the cement projects done by the Bank have been with large strategic sponsors who are committed to sustainable operations, including six projects signed with one sponsor.

<sup>8</sup> Coal: all coking coal projects with the exception of two projects in Serbia which involved thermal coal mining.

<sup>9</sup> For total project costs of the manufacturing of cement, building and non-metallic materials at €668 million.

### *Investments through financial intermediaries*

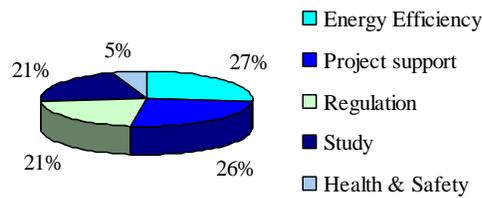
The Bank has made a number of indirect investments in mining and quarrying projects via equity funds, financial institutions (FIs) and through its trade facilitation programme (TFP) that are then on-lent to companies in the sector. The magnitude of this on-lending is difficult to measure given the size of EBRD's portfolio in the FI sector, which amounted to €9.5 billion with about 318 clients at the end of 2011. In addition mining clients usually comprise a marginal share of the respective portfolio of the partner banks. They can be broken down as follows:

- *Micro, Small and Medium-sized Enterprises (MSME) lines*: The Bank's exposure to mining through credit lines for MSME usually represents a very small portion of the client's portfolio as well as a small portion of any EBRD credit line. It is not possible to quantify exactly given the size of individual transactions. As an example, a microfinance bank in EEC with a portfolio of \$380 million and many credit lines outstanding including several EBRD MSME credit lines reported that only 29 loans with a total value of \$400,000, and not one loan larger than \$200,000, supported mining projects. Another FI in EEC on-lent \$2 million to quarries operations or the equivalent of 4.2 per cent of an EBRD MSME line.
- *Trade Facilitation Programme*: Since the TFP programme was created in 1999, 41 out of a total of 11,800 TFP transactions were related to trade with mineable commodities or mining equipment. This is about 0.3 per cent of the transactions. TFP has supported the shipment of mineable commodities and mining equipment totalling €143 million, comprising 2 per cent of the total volume of all TFP transactions.
- *Equity Funds*: Since 1999 the Bank has financed indirectly through equity funds four projects with mining components out of a portfolio of more than 1,000 companies. These equity investments, totalling €41 million, were in cement and construction companies, which involved some mining and quarrying components. Two companies remain in the Bank's portfolio.

### **1.3.2 TECHNICAL COOPERATION PROJECTS (TC)**

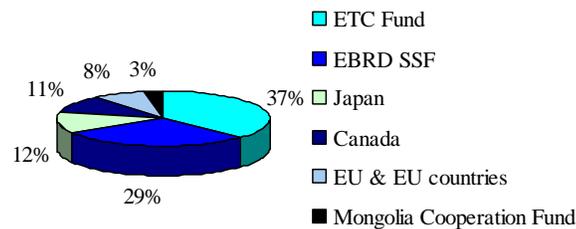
During the 1999-2011 period the Bank completed 19 technical cooperation projects related to the mining sector for a total value of €4.1 million, covering a wide variety of uses. Most TC projects were undertaken to support EBRD investments in mining projects including for technical, environmental and legal work for project due diligence and support. Five projects averaged €35,000 including €77,000 for business plan preparation for a project in Mongolia, €71,000 for environmental due diligence for a project in Serbia, and €26,000 for legal support for three small projects. TC contribution averaging €49,000 per project was important for introducing energy efficiency dimensions in five mining projects including an energy audit for a gold project in Bulgaria used to define EBRD-financed investments and two studies to identify investments qualifying for carbon credits in Ukraine.

**Figure 1.5** Number of TC Projects in Mining by Type, 1999 to 2012



The largest TC project provided for regulatory support to the Mongolian authorities for the development of a digital geological information system for a total of €2.2 million, including half provided by the Early Transition Countries (ETC) Fund and half by EBRD’s Shareholder Special Fund (SSF) agreed in January 2012. This TC is jointly managed by the Bank’s Legal Transition and Natural Resources teams. This follows two previous TCs aimed at improving regulatory frameworks in the Mongolian mining sector, including assistance in the implementation of the EITI for €500,000 in 2011 and a TC for capacity building of the Mongolian mining authorities for €50,000 in 2006. TC has also been used for studies of the Russian alluvial gold sector completed in 1999 and 2000 for a total of €500,000, see Figure 1.6.

**Figure 1.6** Volume of TC financing in Mining by Donor Country, 1999 to 2012

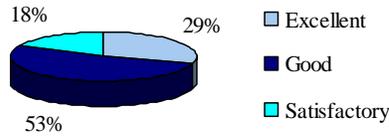


The largest volume of TC financing was provided by the ETC Fund mostly for regulatory support in Mongolia (totalling €1.5 million) and support for a small project in Central Asia. The ETC Fund is a €71 million multilateral fund, with five countries comprising 75 per cent of the financing (Netherlands, Japan, UK, Spain, Norway). Canada contributed to the alluvial gold mining study in Russia (€406,000). The EU and a few EU countries (Italy, United Kingdom, the Netherlands) financed six smaller projects averaging €53,000. Finally, the SSF has contributed significantly to TC projects since 2010 with €1,200,000 financed.

#### 1.4 TRANSITION IMPACT OF THE BANK’S PORTFOLIO

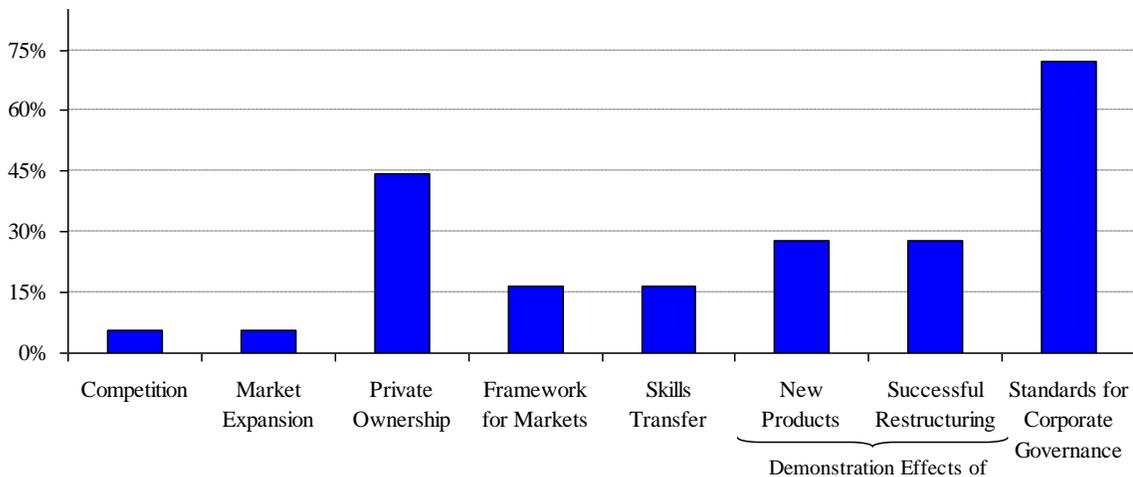
The Bank assesses the transition impact of every project. In the period starting in 2000, when the Bank adopted the transition assessment methodology, to end-2011, a total of 17 mining projects were rated ex-ante by the Office of the Chief Economist (OCE). Of these, fourteen projects, or 82 per cent, were rated ‘Good’ or ‘Excellent’, above the institution-wide target of 80 per cent of projects to be assessed as ‘Good’ or better. Figure 1.8 presents the breakdown of mining projects by rating.

**Figure 1.7** Breakdown of transition rating by number of mining projects, 2000 to 2011



Five projects were rated ‘Excellent’ ex ante. Two of those projects support the expansion of private sector participation in the largely state-dominated coal mining sector in Mongolia, with additional transition sources stemming from introducing best international, corporate and environmental standards. One project supported power sector reforms in Serbia, the long-term aim of which was to comply with the EU Energy directives and participate in the SEE regional energy market; another project promotes more widespread private ownership through privatisation and restructuring of a Kyrgyz gold mining company. A fifth project, a primary metal manufacturing project in Kazakhstan was rated Excellent recognising its contribution to substantial sector-wide improvements in health and safety standards. Only three operations (17 per cent of total) were assessed as having a ‘Satisfactory’ transition impact potential. Two of these were rated ‘Satisfactory’ due to the limited scope of planned corporate governance improvements, and the remaining one was an extension to an existing project with largely achieved objectives, thus with only limited incremental transition impact potential.

**Figure 1.8** Key transition objectives of rated mining projects (in percentage), 2000 to 2011



The key transition objectives of mining projects reflect the Bank’s response to the main challenges in the mining sector in the Bank’s countries of operations, namely, dominance of the state in terms of ownership and a low level of business standards and practices. Therefore, as Figure 1.9 shows, the key transition objectives across projects in the mining sector have been to introduce better corporate practices and business standards and promote private ownership (72 and 44 per cent of all mining operations, respectively). Additionally, 28 per cent of all projects in the mining sector have demonstrated the benefits of introducing new and more advanced technologies.

All active operations in the mining sector which are under implementation (i.e. at least six months from signing and which have been monitored for their transition impact at least once)<sup>10</sup> have a rank that spans between 1 and 6 according to the Bank's Transition Impact and Monitoring System (TIMS).<sup>11</sup> The average rank of the active TIMS portfolio for mining sector projects stood at 3.5, which is better than the target set for the Natural Resources team. An analysis of the active TIMS portfolio shows that five out of seven active projects in the mining sector (or 71 per cent of the total) are proceeding successfully; the remaining two operations have mostly achieved their desired transition impact.

Six operations in the mining sector do not form part of the active TIMS portfolio as they have already been completed. The analysis of their performance shows that all of them have successfully achieved their envisaged transition potential. This includes one project in Russia whose potential was upgraded as a result of better than expected achievements in improving corporate standards.

#### *Quarries for limestone, gypsum and other construction materials*

Since 2000, a number of operations were rated, which involved the extraction of limestone, sand and gypsum in the context of the production of cement and building materials. It is estimated that approximately 10 per cent of the costs of those cement and construction materials projects is attributable to associated mines and quarries. Seventeen of these projects were rated and ninety-four per cent of these projects were rated 'Good' or 'Excellent'. The main transition objectives were the demonstration of successful restructuring and improved business standards – 65 and 41 per cent of all operations in these sectors targeted one of these objectives, respectively; 29 per cent of all mining-related projects addressed increased competition. Among the 11 TIMS-monitored active projects the average rank for these operations equals 4.3, below the institutional target for 2011. Three out of 11 operations (or 27 per cent) have mostly achieved their envisaged potential, whereas eight (73 per cent) are mostly on track to achieving their transition objectives. Four out of five completed operations have performed well from a transition perspective. Only one operation was unsuccessful due to shortcomings in management practices.

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<sup>10</sup> Out of the 17 projects rated at the time of Board approval 6 projects are completed and 4 projects were signed recently and have not yet been TIMS-monitored, and as such, do not form part of an active TIMS portfolio. 7 projects are therefore active and TIMS-monitored.

<sup>11</sup> The rank is a combination of the transition impact potential rating and risks to transition impact. The expected transition of each operation is usually monitored once a year and is ranked numerically from 1 to 8, with 1 to 3 indicating mostly realised impact, 3 to 6 – generally on track to achieve transition objectives, and 7 to 8 – minimum transition impact achieved or excessive risks.

## 1.5 LESSONS FROM EVALUATION OF EXTRACTIVE INDUSTRIES

The Bank has gained much experience, and has drawn a number of lessons from past investments in mining projects, presented in the draft Extractive Industries Sector Strategy Review in preparation by the Evaluation Department (EvD), which has yet to be completed. The draft report presents EBRD's operations in Extractive Industries (EI, including oil & gas) in its COOs. It concludes that the overall performance of the Bank's activities in implementing the extractive industries sector policies and operations is rated Successful, following the OECD evaluation criteria.

The EvD's draft report concludes that:

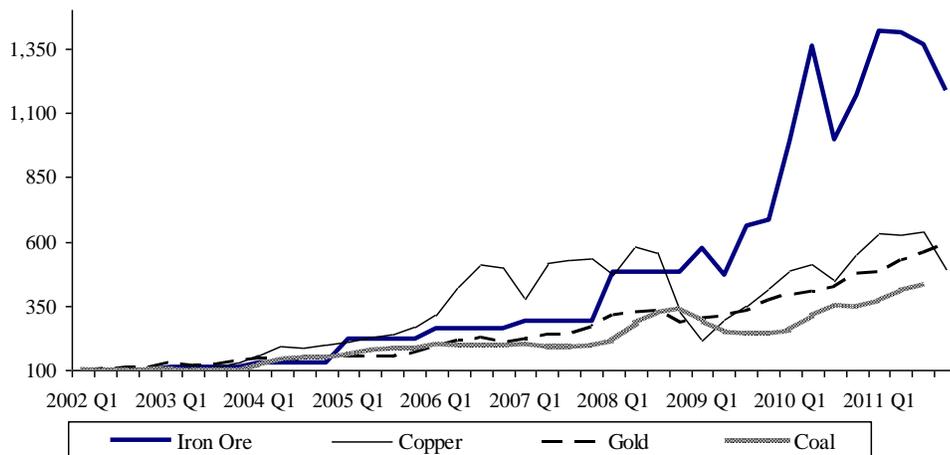
- "The EI sector is very important to the economies of many COOs. The development of the sector has many associated challenges. (...) It is therefore essential that the EBRD has a clear policy framework related to EI." And "although the content of current EBRD policies in the EI sector is highly relevant, the coverage of the policies is not comprehensive. The Bank is developing a Mining Sector Strategy which will address the main gaps in the coverage." This is the rationale for the present Strategy.
- "The Strategy needs to address activities that are related to EI, such as equity funds, TFP, leasing, etc., but not under the control of the NR banking team." As presented in section 1.2 the scope of the Strategy is not restricted to mining projects completed by the Bank's Natural Resources team.
- "In some countries there is more potential for the EBRD to carry out wider activities beyond the scope of individual projects, particularly more focused policy dialogue with national governments to encourage sector reform. Inclusion of more TC support could help to raise the capacity of national and local government in specific areas." The Bank's operational priorities allows for activities beyond individual projects as presented in Section 3 of the Strategy.
- "The EI sector has a high profile related to sustainability, in particular the potential environmental damage from spills, as well as safety related to mining. The sector can lead to very positive social impacts on the national and local economies, and particularly on employment. (...) It is important that the EBRD maintains high standards for environment, health and safety performance, including emergency response, for all projects in the EI sector." Section 4 of the Strategy presents the Bank's comprehensive approach to EHS&S issues.
- "There has been much positive feedback from clients about the Bank's handling of projects. (...) These activities would strongly benefit from continuing to increase the banking team resources based in the resident offices of the main EI countries", while "the Bank could have benefited from having a mining engineer and an oil and gas engineer permanently". The Bank is currently acquiring such resources as detailed in Annex 1.

As part of this exercise, the EvD team conducted a review of lessons from past experience from the Bank's investments in the mining sector. A number of the most relevant lessons from mining investments are summarised in Annex 1, along with an indication of how the Bank will be addressing these recommendations going forward.

## 1.6 EXPECTED DEVELOPMENTS IN THE SECTOR

*Growth in the mining sector.* After decades of relatively abundant supply and low commodity prices for many metals and minerals, the last 10 to 15 years have seen some major changes in the underlying drivers of the mining sector globally. Continued rapid growth in large developing economies such as China, India, and other countries especially in Asia has created a significant, sustained increase in demand for metals and minerals that has largely outstripped the mining sector's ability to keep pace on the supply side. The result has been a rapid rise in most metal and mineral commodity prices – also due in some specific cases to investor-led demand such as with gold. The supply side challenges are partly due to the long lead times that are often necessary to bring green field mining projects on line (typically 5-7 years), partly due to decreasing ore grades – and, therefore, productivity - at many existing mine sites, and partly due to the financial crisis which restricted capital availability and investment appetite for new big budget mine projects. Whereas the recent sluggishness of global economic growth took some pressure out of the markets, so that commodity prices either stabilised or fell slightly, the underlying increase in commodity price levels is likely to be sustained with continuing volatility. Increased metals prices have also resulted in increased costs as demand for mining services pushed up prices and capital equipment. As a result, the basic economics of mining projects and the associated investment decisions have changed significantly and investors and mining companies are making decisions accordingly. Lower grade ore deposits that were previously not commercially feasible have become profitable investments. Exploring and developing resources in countries where the political and investment climate or infrastructure limitations have deterred mining investment in the past have become more attractive propositions. This, however, often carries with it a range of additional political, environmental and social challenges. The high commodity prices and the higher margins of service companies are also attracting new companies into the market, particularly local companies that work on a national and local level.

**Figure 1.9** Price variation of four commodities, 2002 to 2011 (Rebased 100 in 2002, source Bloomberg)



*Control over natural resources.* One consequence of the upward shift in underlying commodity prices for metals and minerals is the action by a number of governments in resource-rich countries to capture – mainly through additional taxes and levies – some of the additional profits being made by mining companies. This is partly driven by the need to balance national budgets that have suffered due to the financial crisis and partly in response to public demand for a fairer sharing and distribution of the wealth being created from the country's natural resources. In some countries, particularly where state control is dominant, there has also been a tendency to reverse the recent trend towards increased market privatisation in the mining sector and put certain strategic minerals back under state control via state-owned mining companies. This action towards private (and particularly non-domestic) firms is not pervasive in the Bank's COOs but tends to be more pronounced amongst countries which are resource-rich and/or less advanced in their transition process, and is susceptible to being captured by special interest groups with close ties to governing bodies and political agents in the country in question.

*Higher standards.* Another major trend in the mining sector has been the development of better EHS&S standards and practices across the lifecycle of a mining operation. With their large scale and a potential risk to have severe impacts on a wide range of sustainability issues, large international mining companies are increasingly aware of the need to meet good international practice in their operations. This follows demands formulated by external stakeholders, including investors and Civil Society Organisations (CSOs) for transparency, accountability and reporting from companies on their management of issues related to sustainability. Whilst sustainability reporting still remains largely a voluntary activity for companies in most countries, the scope and rigor applied to developing and publishing these reports is beginning to approach that of company annual reports for large national and multinational companies. Organisations such as the Global Reporting Initiative (GRI) have created a framework and a benchmark for sustainability reporting, which remains largely a voluntary activity for companies in most countries. Industry associations such as the International Council on Mining and Metals (ICMM) have created sustainability principles and associated assurance standards (that align with the internationally recognised AA1000 sustainability assurance standards) to which their members adhere.

*The Extractive Industries Transparency Initiative.* In a related development, and in an effort to help ensure that the extraction and use of natural resources also benefits the broader society and citizens, a coalition of governments, companies, CSOs, investors and international organisations created the Extractive Industries Transparency Initiative (EITI). Its major aim is to strengthen governance by improving transparency and accountability in the extractive sectors. It does so through the verification, full publication, and reconciliation of company payments and government revenues from oil, gas, and mining. With a similar objective, a global network of CSOs created the Publish What You Pay (PWYP) and Publish What You Earn (PWYE) coalitions that call on extractive sector companies and recipient governments to be transparent about payments and contracts related to oil, gas, and mining revenues and concession awards. Active in over 30 countries around the globe, the coalition comprises over 600 CSOs. The EITI and the PWYP initiatives are complemented by the adoption of a number of international commitments, regulation and guidelines such as the Equator Principles and the environmental and social Performance Requirements (PRs) of

EBRD which set clear requirements for clients on a comprehensive range of issues. National and supra national legislations are gradually incorporating the principles and criteria set by the EITI. This is the case for the Dodd-Frank act in the United States of America (US) and the new rules being developed within the European Union (EU).

*New standards for human rights protection and community engagement.* Business ethics, particularly related to issues of resettlement, indigenous people, and the use of security personnel to protect mining assets have come under scrutiny as mining companies expand their exploration and development activities into regions of the world where the protection of human rights remains a significant challenge. A number of management and performance standards for mining companies to adhere to have emerged. These include the United Nations Guiding Principles on Business and Human Rights<sup>12</sup> and the Voluntary Principles on Security and Human Rights.<sup>13</sup> Initiatives focused on specific minerals and regions have been created such as the Kimberley Process, which was established to help certify revenues generated from the trade of rough diamonds.<sup>14</sup> A similar standard is in the process of development by the World Gold Council, which would seek to ensure that the benefits of gold production are used to stimulate developmental objectives. Over the lifecycle of a project, and due to the volatility of prices, larger mining projects have the potential to create a 'boom and bust' economic cycle, particularly when the mining project becomes the dominant source of employment and the main business partner for local communities and businesses in the area. Over the last decade particular attention has been given to these challenges for local communities and has led to the development of a number of standards and best practice guidelines such as EBRD Environmental and Social Policy and Performance Requirements and the EBRD/IFC Guideline on Worker Accommodation. In addition, the increasing importance of the perspectives of different communities on issues such as local economic development, biodiversity, environmental management and stewardship, and community engagement, has pushed mining companies to engage more actively and strategically with their local communities.

*Environmental management.* From an environmental perspective, the trends in the mining sector are mixed. Many of the large global mining companies have made significant investments and improvements in the environmental performance of their operations including reduction in air emissions (particularly SO<sub>2</sub> from smelters and refineries), improved dust management practices, more careful management of hazardous materials such as cyanide (e.g. the International Cyanide Management Code for the Gold Mining Industry,<sup>15</sup> which sets auditable standards for dealing with chemicals used in processing of gold ore), improved mitigation of acid rock drainage (ARD), and better management of tailings and the

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<sup>12</sup> *Guiding Principles on Business and Human Rights: Implementing the United Nations 'Protect, Respect and Remedy' Framework*, endorsed by the UN Human Rights Council on 16 June 2011: [www.business-humanrights.org/media/documents/ruggie/ruggie-guiding-principles-21-mar-2011.pdf](http://www.business-humanrights.org/media/documents/ruggie/ruggie-guiding-principles-21-mar-2011.pdf).

<sup>13</sup> Principles agreed by the governments of the United States, the United Kingdom, the Netherlands and Norway, companies in the extractive and energy sectors, and non-governmental organizations in 2000: [www.voluntaryprinciples.org](http://www.voluntaryprinciples.org).

<sup>14</sup> As of February 2012 the following COOs were participants in the Kimberley Process: Armenia, Belarus, Croatia, Russia, Turkey, and Ukraine.

<sup>15</sup> As of February 2012, 34 mining companies were signatories of the International Cyanide Management Code, including 9 companies operating in the COOs and 4 EBRD clients.

risks of catastrophic tailing dam failures, and improved assessment and protection of biodiversity. Much of this has had a positive impact in countries where the quality or implementation of environmental standards may be lagging as global mining companies introduce and share best practices when they start or take over mining operations in these countries. However, many smaller mining companies have been slower to adopt leading-practice standards and on-going issues with artisan and small-scale mining still present significant challenges from the environmental perspective.

*Closure and decommissioning.* Mine closure planning has received significant attention from governments and authorities in the Western world over the last two decades. Typically, mining companies are required to plan, and set aside sufficient funds for the eventual decommissioning, closure and long-term maintenance of the mine site. In many transition countries, including many COOs, mine closure regulations are either lacking or are poorly implemented and enforced. As mining activity increases in transition countries, this presents both a major environmental and financial legacy issue that gives rise to uncertainty and liability at a time when the resource itself is depleted and unlikely to generate adequate funds for the necessary actions at this stage of the project and other stakeholders.

## **1.7 MACRO-ECONOMIC IMPACTS OF MINING**

Commodities extraction in resource-rich countries can represent a unique opportunity to boost growth and economic development. However, a mining boom is also associated with large economic and policy challenges since it may increase macroeconomic volatility, reduce incentives to invest in physical and human capital outside of the mining sector, and create pressure on economic and political institutions. In order to ensure that commodities extraction brings about long term sustainable and equitable growth, these challenges must be taken into consideration when promoting the development of the mining sector.

There are three key challenges posed by a boom in the extraction of natural resources extraction:

- First, given the high volatility of commodity prices, the dependence of an economy on commodities can lead to macroeconomic volatility since the economy experiences booms when prices are high and busts when these prices drop.
- Second, a commodity boom can lead to the so-called ‘Dutch disease’, by which an appreciation of the real exchange rate leads to a decrease in the competitiveness of the non-mining tradable sectors,<sup>16</sup> and to their contraction. This potential change in the structure of the economy away from tradable sectors could have long-lasting consequences. Should mining activity cease fairly abruptly or commodity markets prove

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<sup>16</sup> A decline in competitiveness in the tradable sectors may be triggered through the following channel. Rising inflows associated to the commodity boom would lead to higher demand for non-tradable, and therefore higher prices for these goods, which would in turn lead to an appreciation in the real effective exchange rate. This appreciation increase labour cost across all industries (through equalisation of wages across sectors) which negatively affects the competitiveness of the tradable sectors and may decrease the share of these sectors in the total output and employment.

volatile, the economic activity lost in the mineral boom may not recover, making the country worse off than it might have been without any mineral revenue. While the economic policies that are required to benefit from mining and prevent a ‘Dutch disease’ are well understood, their implementation represents a challenge for politicians in the absence of mature institutions, as most governments find it difficult to resist political pressure, whether from elite groups in an autocracy or from the broader population in democracies.

- Third, appropriate institutional and regulatory frameworks are also necessary to secure a proper management and redistribution of resources and achieve equitable benefits across society. The appropriation of commodity rents by a small portion of the population, and the resulting inequalities, may undermine social cohesion. Because of the large size of the potential rents to be appropriated, the development of strong institutions is particularly challenging.

To enable the mining sector to realise its full potential in terms of economic growth and to achieve an equitable distribution of benefits across society, policies should focus on: (i) containing the impact of natural resources extraction on macroeconomic volatility, (ii) ensuring that mining development does not crowd out the development of other sectors, and (iii) allowing for appropriate redistribution in society of the revenues from this sector.<sup>17</sup>

EBRD has a role to play in support of this agenda by: (i) supporting responsible mining projects; (ii) promoting transparency at project/company level as part of their investments, and (iii) engaging in policy dialogue to promote institution building and the establishment of appropriate frameworks for the management and redistribution of revenues generated by the sector.

The Bank has also a role to play in promoting the economic diversification of resource-rich COOs. This approach will be reflected in country strategies.

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<sup>17</sup> For more details on policy options in the case of Mongolia, see EBRD working paper No. 138: Isakova A., Plekhanov A. and J. Zettelmeyer (2012), *Managing Mongolia's resource boom*; available at: [www.ebrd.com/downloads/research/economics/workingpapers/wp0138.pdf](http://www.ebrd.com/downloads/research/economics/workingpapers/wp0138.pdf).

## **1.8 RATIONALE FOR THE BANK'S INVOLVEMENT**

The Bank has an important role to play in the mining sector by ensuring that Bank policies and best international standards are adhered to. This is because:

- The mining sector continues to have large transition challenges which affect the mining sector specifically but also the wider economy. Addressing those challenges is thus central to the Bank's transition mandate.
- In many of the Bank's COOs the mining sector represents a critical contributor to sustainable economic activity at local, regional and national levels. Mines can stimulate regional development through the improvement of, for example, logistic networks such as rail and road infrastructure. This can have additional benefits for economic activity, by encouraging entrepreneurial activity, private sector participation, and encouraging the transition towards market principles and institutions.
- The mining sector in the Bank's COOs was for a long time the product of a centrally planned economy and at times remains characterised by inefficiency and poor operational practices. There also remain significant improvements to be achieved with regards to EHS&S performance in mining in many COOs. The Bank recognises that even the best-run mining operations can have significant environmental and social risks and impacts that require careful management and mitigation. No single mine can be sustainable since it exploits a finite local resource. The projects, however, can bring about other benefits and improvements, such as economic activities, management of historic environmental and social problems, and these can, individually and collectively, contribute to more sustainable societies and economies.
- There is often limited availability of long-term capital in the countries of operations for a mining industry which is heavily capital intensive. The Bank can further leverage its investments through syndicated financing.
- With its experience, the Bank is well suited to finance mining projects that promote transition and in particular make a positive contribution to achieving best international standards and practices, while following its key principles of sound banking

## **1.9 COLLABORATION WITH INTERNATIONAL FINANCIAL INSTITUTIONS**

IFIs working in close cooperation can significantly increase the impact of their individual activities. The Bank has always placed a high priority on close coordination with these institutions in developing and coordinating country strategies, policy initiatives and co-investing in important projects, and it will continue to do so going forward. The Bank will actively seek participation with various IFIs and global institutions, including the World Bank, the IFC, the EIB, the African Development Bank and the Asian Development Bank. Further engagements are planned with DFID, the KfW, FMO, the Agence Française de Développement and other bilateral financial institutions.

Moreover the Strategy is intended to complement the existing policy and strategy documents of the World Bank and of other IFIs, which are detailed in Annex 3.

When co-financing with other IFIs and donors, the Bank will continue to exploit complementary strengths and synergies with these institutions from coordination of project financing. Building on success of such coordination so far, the Bank believes that by strengthening these relationships further it will be able to promote transition more effectively going forward. It will also consider practical mechanisms by which EBRD can strengthen its cooperation with other IFIs.

## SECTION 2 – ASSESSMENT OF TRANSITION CHALLENGES

The Assessment of Transition Challenges (ATC) details progress in transition in the mining sector and identifies the remaining transition gaps or challenges ahead. The sectoral analysis presented in Annex 2 shows that, despite two decades of reforms, significant transition challenges remain in the mining sectors throughout the EBRD region. As for other sectors,<sup>18</sup> challenges, or remaining transitions gaps, are greatest in Russia, Central Asia and eastern Europe and Caucasus (EEC), while the smaller gaps are typically in central Europe and Baltics (CEB), followed by south eastern Europe (SEE) and Turkey.

The ATC is based on an evaluation of the size of the remaining reform challenges in two main areas: market structure and market-supporting institutions and policies. The former refers to the balance between the private sector and the state in the market; the degree of openness and competition in the mining sector; the extent and quality of the supporting infrastructure; and the degree of development of backward and forward linkages along the mining value chain. The latter refers to the institutional, regulatory and policy framework that is necessary for the correct functioning of the market. To enable the mining sector to realise its full potential in terms of economic growth and to achieve an equitable distribution of benefits across society, it is critical to establish not only good governance and strong institutions, but also clear, stable and effective legislative and regulatory frameworks, as well as rigorous environmental and social safeguards. These are key milestones in the transition process at the sector level. Whether resource abundance is a blessing or a curse critically depends on the institutional, political, economic and regulatory set-up of a country, and these are not immutable features. Table 2.1 below presents the size of the transition gaps in market structure and market-supporting institutions for each of the EBRD COOs, including SEMED countries that have requested to become COOs. Based on the ATC analysis, the key remaining transition gaps in mining can be summarised as follows:

**State ownership and intervention remains significant, particularly in the case of ‘strategic’ minerals and in economies heavily reliant on natural resources extraction.** Although the share of mining and quarrying in the gross domestic product (GDP) and the degree of private ownership in the sector vary substantially across EBRD’s COOs, there tends to be a positive correlation between resource abundance and the prevalence of state ownership, at least for so called strategic minerals or deposits. Coal is by far the largest mineral group that remains under state control, primarily because of energy security concerns and a tendency to vertically integrate coal supply with power generation assets. There are also significant environmental legacy issues associated with coal mining operations for which many private companies are unwilling to accept responsibility. Mining operations, with the exception of coal and other strategic minerals, have been mostly privatised in CEB. In Central Asia, where the mining sector’s contribution to output is large, the state maintains a strong direct and indirect influence in the extractive sector. In the SEMED region, the state dominates the extraction and processing of phosphates and other metals in all countries except Jordan.<sup>19</sup>

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<sup>18</sup> See Transition Report 2011 available at: [www.ebrd.com/downloads/research/transition/tr11.pdf](http://www.ebrd.com/downloads/research/transition/tr11.pdf).

<sup>19</sup> As of February 2012 Jordan had made an official request to become a COO.

**Table 2.1** Transition Gaps in Mining

	Market Structure	Market Institutions
<b>Central Europe and Baltics</b>		
Croatia	Medium	Small
Estonia	Small	Medium
Hungary	Negligible	Medium
Latvia	Medium	Small
Lithuania	Small	Small
Poland	Medium	Small
Slovak Republic	Small	Medium
Slovenia	Medium	Small
<b>South Eastern Europe</b>		
Albania	Small	Medium
Bosnia and Herzegovina	Medium	Large
Bulgaria	Medium	Large
FYR Macedonia	Large	Large
Montenegro	Medium	Medium
Romania	Large	Medium
Serbia	Large	Large
<b>Turkey</b>		
	Medium	Large
<b>Eastern Europe and Caucasus</b>		
Armenia	Medium	Large
Azerbaijan	Large	Medium
Belarus	Large	Large
Georgia	Medium	Large
Moldova	Medium	Large
Ukraine	Medium	Large
<b>Russia</b>		
	Large	Large
<b>Central Asia</b>		
Kazakhstan	Large	Large
Kyrgyz Republic	Large	Large
Mongolia	Medium	Large
Tajikistan	Medium	Large
Turkmenistan	Large	Large
Uzbekistan	Large	Large
<b>SEMED</b>		
Egypt	Medium	Large
Morocco	Large	Medium
Tunisia	Medium	Medium
Jordan	Medium	Medium

**While prices have been liberalised and mineral commodities are traded internationally, explicit export tariffs and other distortions limit competition and free entry into the mining sector of some of the EBRD's COOs.** Export restrictions persist for selected commodities in some of the resource-rich COOs. These restrictions are mainly intended to ensure adequate domestic supply, promote the downstream beneficiation industry or give a privileged access to certain minerals for domestic industries. Another market distortion in the mining sector in some of EBRD's COOs is the presence of implicit or explicit subsidies

for production inputs, such as electricity. This can directly affect competition. Moreover, by lowering the cost of production, cheap energy lowers incentives for investment in more energy efficient technology. Similarly, the existence of local processing requirements (such as within the customs union of Belarus, Kazakhstan and Russia) may distort competition and affect the type of products that mining and processing companies are able to produce and sell on global markets.

**Over the past few decades, concentration in the mining industry has increased, restricting the ability of existing small independent players to compete.** This can be partly explained by the fact that mining operations often exhibit economies of scale which may limit the number of extraction companies in each country. New market entry and competition in the mining sector in some countries of operations is limited and may have been discouraged by the presence of large, state-owned companies that hold the licences and dominate the production of some strategic minerals (for example, coal production in Bulgaria and Poland or phosphates in Morocco).<sup>20</sup>

**Structural problems remain along the whole value chain and constrain the development of higher value metal production, supply and distribution.** A well functioning market implies the development of adequate associated infrastructure enabling mining companies to produce and deliver output with higher value added. The key remaining structural problems in the EBRD's COOs relate to the limited availability of transport infrastructure, poor quality of the logistic services, the low reliability and access to power and municipal services and inadequate access to processing and refining facilities. The legacy of disinvestment in the former Soviet Union, together with old rolling stocks, has led to a comparatively low quality of the logistic networks across many of the COOs. The physical transport of mined and processed output is all the more challenging in landlocked countries, especially those with vast mountainous areas such as the Kyrgyz Republic or Tajikistan. While in general there is always some level of primary processing situated close to mining operations, many of the COOs lack further processing facilities, such as smelting and refining, and are unable to beneficiate the mineral ores into higher value final products.

**Several COOs still face large transition gaps with respect to technology adoption and acquisition of specific mining management skills.** Almost without exception, the EBRD's COOs are relatively far from the technology frontier in the mining sector and still use older technologies and systems to manage their mining operations. Resource-rich countries that have received investment from large global mining companies have often benefited from technology transfer. However, small local firms still lag behind as they have more limited access to capital or less engineering experience and knowledge to adopt industry-leading mining technologies. Countries with a strong mining tradition tend to have dedicated institutions and facilities that support research and development into mining technologies and processes, often connected with local mining universities and faculties. There are however major mineral rich countries that face significant shortages of skilled workers, engineers, and mine managers (e.g. Kazakhstan, the Kyrgyz Republic and Mongolia) as they lack both local education institutions and the incentives for local skilled labour to remain in the country and for foreign skilled migrants to settle in permanently.

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<sup>20</sup> As of February 2012 Morocco had made an official request to become a COO.

**Countries dependent on natural resources extraction tend to have weaker institutions and governance, lower transparency and are more prone to corruption and rent-seeking behaviour.** Due to the large size of potential rents to be appropriated in the natural resources extractive sector, the development of strong market supporting institutions is probably more important and at the same time more challenging than in any other industry. The degree of complexity of the institutional framework in the Bank's COOs varies by region. In many countries (particularly some of the FSU countries which have not engaged with the EU over accession), the regulatory authorities are not independent from the legislative and executive branches of government. These are the same countries which have high levels of state ownership. This type of conflict of interest can create significant competitive disadvantages and barriers to entry for private sector investors trying to access promising mineral deposits or acquire existing mining assets, as state-owned entities are often able to bypass or favourably influence legislative processes and regulatory decisions related to the sector, in particular those related to the award of prospecting and exploration rights and licences. Good governance over the sector also implies full transparency and accountability. A number of resource-rich countries across the EBRD's region of operations remain characterised by weak political accountability related to the extractive industries and a clear lack of transparency over extractive revenues' management.

**The legal and regulatory framework needs to be strengthened and aligned with best international standards.** Several COOs still suffer from weak regulatory and institutional capacity. While most countries have explicit laws regulating mining activities, their scope and clarity varies, largely in line with the geographical distinction made earlier between CEB and the less advanced countries in Central Asia. The design and award of concessions on a first come, first-served basis resulting from negotiations between the government and the mining companies is still common practice in, for instance, the Kyrgyz Republic, Tajikistan, Turkmenistan, and Uzbekistan. An unstable regulatory and tax regime may also negatively affect the attractiveness of a country as an investment destination and may discourage foreign direct investment in the mining sector. For instance, the government of Mongolia introduced in 2006 a controversial windfall tax on mining profits that was later repealed in 2009.

**The coverage and depth of EHS&S legislation and practices falls short of best international standards in the less advanced countries of EEC and Central Asia.** As explained in more detail in Section 4, there are significant disparities between the countries in CEB and SEE, and the remainder of the COOs with respect to EHS&S legislation. In general, in the most advanced countries of CEB, legislation addresses issues such as occupational health and safety, use of hazardous chemicals, emergency response protocols, water rights and usage (including resulting pollution such as acid mine drainage), and mine closure planning. This depth of legislation does not always exist in other countries further east, where the regulatory framework may not be sufficiently comprehensive to monitor the industry's performance on health and safety standards and environmental protection.

Based on the gaps identified above, the key remaining transition challenges in the mining sector of the EBRD's COOs are to:

- Reduce direct state ownership and intervention in the mining sector by privatising or closing down old, inefficient and poorly run state-owned mines; support greater involvement of private sector mine operators; promote greater foreign direct investment in the mining sector;
- Improve market access and trade by removing existing tariff and non-tariff trade barriers; and reducing price subsidisation of inputs, such as electricity;
- Lower the degree of ownership concentration in the sector by encouraging the entry of junior, private players;
- Develop further the network and improve service quality of supporting railways and roads infrastructure, especially in Central Asia;
- Ensure that the mining sector has a multiplier effect in terms of wealth generation and economic growth, by developing the whole mineral value-chain from extraction to processing and refining, as well as strengthening backward and forward linkages;
- Support the adoption of best available techniques in the mining sector and the transfer of skills and technology through increased FDI; further develop human capital through technical education;
- Strengthen market institutions by promoting the establishment of an independent regulatory authority for the award of concessions and licences; support capacity building; reinforce the mechanisms through which authorities are held accountable for their decisions;
- Increase transparency over payments and contractual terms and ensure a more effective and transparent management of resource revenue from mining activities;
- Establish appropriate, fair and stable tax and royalty regimes; and
- Develop mining and EHS&S legislation in line with international best standards.

## **SECTION 3 – BUILDING A SUSTAINABLE FUTURE: OPERATIONAL PRIORITIES**

### **3.1 DEVELOPMENT OF PRIVATE OPERATORS**

In the context of the recent emergence of resource nationalism outlined in sections 2 and A2.1.1 (Annex 2), the Bank has an important role to play in supporting private operators in the COOs especially in minerals, where direct state control over mining assets and operations remains important. The Bank has the opportunity to help tackle alternative types of state intervention when governments exert control over the mining sector using less interventionist means. This can include *inter alia* increased taxations; re-nationalisation of contracts; state expropriation; legislation that restricts attributions of mining licenses; or the ownership of strategic assets by foreign companies; or allows governments to exercise pre-emptive rights on mineral assets or subsoil licenses. As outlined in section 2 and A2.1.2 (Annex 2) the Bank has also a role to play in lowering the degree of concentration in the mining sector by assisting new or small operators in its COOs.

#### **Bank Approach:**

- The Bank will support independent private mining companies, where state-owned operators are important or where there is a strong concentration of mining operations, in order to increase the degree of competition and lower barriers to entry. The Bank will seek to support small independent or new mining operators in this context too.
- The Bank will promote private sector access to mining deposits, which are subject to indirect state restrictions or control. This will be, where possible, combined with policy dialogue on improving the licensing regime and relaxing restrictions on foreign ownership.
- The Bank will support the effort to privatise and restructure state-owned mining entities including through changes in the field of management systems, corporatisation, institutionalisation of good governance, and overall corporate performance.
- The Bank will also consider financing the private sector components of joint ventures with state-owned enterprises. The Bank will act as an *honest broker* in those partnerships and will promote the development of an independent management. The Bank will recommend that the private sector operator obtains majority shareholding in these ventures.

#### ***Engagement with the Junior Mining Industry***

Junior mining companies can play an important role in the mining industry, and are particularly important to the development of complex and small deposits that large mining companies would not be considering operating due to economies of scale or the early stage of development. These companies will generally not have the skills or the financial resources of larger mining houses, the lack of which may impair EHS&S performance. It is therefore necessary that there are strong institutional structures in place to ensure that junior miners adequately allocate capital and efforts to meeting best standards in the industry.

The Bank will pay careful attention to the project's ability to meet the Bank's standards on environment, health and safety, and social issues, given the significant costs of implementing commitments and often the limited size of the funding and the leverage the Bank has to ensure the commitments are met.

**Bank approach:** The Bank will support investment at small operators including by selectively financing exploration projects. By supporting junior mining companies the Bank will focus on raising the practices and standards for their operations to international levels.

### **3.2 INTRODUCTION OF BEST TECHNOLOGIES, STANDARDS AND PROCESS**

As presented in sections 2 and A2.1.4 (Annex 2), a major factor which will contribute to the development of a competitive mining industry across the Bank's COOs is the adoption of leading technologies and management systems. In particular, the Bank recognises that there is an important opportunity to invest in efficiency- and productivity-enhancing technologies, offering mine operators opportunities to operate both more sustainably and responsibly. This includes technology in areas such as occupational health and safety, energy efficiency, waste management, emissions control and environmental protection. Performance in all of these areas can be significantly enhanced through the adoption of newer technologies, improved mining methodologies and systems, and improved knowledge and skills of both labour and management in mines.

Many mine operators in the Bank's COOs may struggle to justify the high capital outlays required as well as potentially long payback periods for some technologies. To mitigate this barrier, EBRD works with clients to identify relevant efficient mining extraction technologies, energy efficient technologies, and other relevant measures that have a positive effect on the profitability of the investments. The Bank will work with its clients to identify the above opportunities and finance these improvements in mining and processing operations.

A further opportunity for the Bank is to use proven technologies to help address legacy mining waste challenges. This can be addressed for example by extracting useful energy or mineral product through recycling and processing of old coal slag heaps and mineral waste tailing ponds that were created during the use of older, inefficient mining technologies. Other opportunities for involvement lie both in supporting the capture and use of fugitive coal bed methane gas at coal mine sites and the support of wider resource efficiency in mining operations.

#### **Bank Approach:**

- The Bank will contribute to the adoption of the best technologies available for mine development by its clients, as this will have a demonstration effect on the COOs and allow for a transfer of technology to local operators.
- The Bank will support the involvement of international mining and engineering companies, which introduce proven technologies in local mining operations. This will include supporting capacity building of local management and engineering teams with a subsequent transfer of management responsibilities for the mine to local personnel.

- The Bank will support projects, which use proven technologies to address legacy mining waste challenges and contribute to remediation and rehabilitation of mining sites.
- The Bank will work with its clients on the introduction of proven technologies and process in mining operations to improve resource efficiency and mitigate environmental and social risks. In particular, for gold mining, the Bank will aim at supporting mining companies that develop management control systems in line with International Cyanide Management Code, and to have those systems and their operations independently verified.

### **3.3 TRANSPARENCY AND REPORTING**

As demands from a variety of stakeholders have grown for increased corporate social responsibility, so have the demands for increased transparency and reporting by companies on their sustainability commitments, institutional relationships, risks, opportunities, performance and management approaches. Whilst sustainability reporting still remains largely a voluntary activity for companies, the scope and rigor applied to developing and publishing these reports is beginning to approach that of company annual reports for large national and multinational companies. Similarly the number of companies issuing reports (either online and/or via hardcopy format) and providing 3rd party assured performance data has increased, and continues to increase, rapidly. With their large scale and long-term potential to negatively impact across a wide range of sustainability issues, mining companies attract specific attention and demands from improved transparency and reporting.

In a commendable development, major investors and banks now regularly demand regular reporting from mining companies to show they are meeting their sustainability commitments, performance standards and action plans agreed to as part of the project design and operational risk and impact mitigation plan.

#### ***Extractive Industries Transparency Initiative (EITI)***

As outlined in sections 2 and A2.2.1 (Annex 2), there are important benefits which may flow to governments that follow an internationally recognised transparency standard that demonstrates commitment to reform and anti-corruption, including improvements to the tax collection process and enhanced trust and stability in the mining sector. Companies also benefit from a level playing field in which all companies are required to disclose the same information. A further benefit is an improved and more stable investment climate in which companies can better engage with citizens and CSOs. Citizens and civil society benefit from receiving reliable information about the sector and a multi-stakeholder platform where they can better hold the government and companies to account.

The EITI was first announced by the UK Prime Minister at the World Summit of Sustainable Development in Johannesburg, South Africa, in September 2002. Since 2002 EITI has been implemented in 35 resource-rich countries around the world and has become the global standard for revenue transparency in the extractive industry.

### **Case Study 1: Capacity building for EITI in Mongolia**

In Mongolia, the EBRD has sought to promote transparent reporting within their investments while also offering assistance in the building of capacity to enable Mongolia to effectively implement and sustain the global standards of the EITI. In December 2005, the Government of Mongolia committed to implement EITI, becoming an EITI Candidate in September 2007. In early 2007, a World Bank grant financed the creation of the Mongolian EITI Secretariat and the country succeeded in 2010 in being one of the first worldwide to become an EITI Compliant country by the EITI Secretariat. At the EITI Global Conference in March 2011, Mongolia received the Chair's Awards for consistent improvement in EITI reporting.

To support the further development of the EITI and Mongolia's revalidation in 2015, EBRD recently launched a €500,000 Technical Cooperation (TC) project in support of the further development of EITI in Mongolia. The TC project supports post validation implementation of EITI, assistance to the Mongolian EITI Secretariat, as well as fund outreach and training events for EITI in the capital city and in mining regions. With this support, Mongolia has the potential to continue leading global good practice. The EBRD TC will also support the drafting of an EITI law; help to develop a medium- to long-term implementation strategy; and help with training and capacity building of the institutions responsible for implementation.

In addition to further strengthen institutions and transparency a €2.2 million technical cooperation grant project has been offered by EBRD to the Mineral Resources Authority of Mongolia (MRAM) to support the digitisation of historic paper-based geological information. This grant supports a broader digitisation effort by MRAM aimed at increasing transparency and long term sustainable development in the sector, building on an earlier World Bank funded project which digitised MRAM's mining license cadastre. Linking the process of EITI implementation in the country, with its own investments, the EBRD has already covenanted in two Mongolian operations private sector compliance with EITI, thus requiring high governance and transparency standards.

Moving to the next level of EITI implementation will require further institutionalisation of the initiative, and the Bank's project will help to involve CSOs operating in Mongolia, as they possess invaluable experience in the issues prevalent in mining sector development today. Where appropriate, EBRD will also look to build on its experience in Mongolia in expanding this type of support activity to other resource rich countries of operations.

To implement EITI principles and criteria, countries bring together companies, civil society and government representatives to monitor and account for payments being made to governments by extractive companies operating in their countries. EITI principles and criteria are presented in Annex 4. Countries that have met all the reporting and operational indicators set under the EITI guidelines and completed a vigorous validation process are then considered to be EITI compliant, establishing that the country's revenue reporting standards in its extractive sectors have achieved a greater level of transparency.

As of February 2012, among the Bank's COOs, Azerbaijan, the Kyrgyz Republic and Mongolia were EITI, Compliant whereas Albania and Kazakhstan were EITI Candidate countries (which need 2.5 years to be monitored and validated to become EITI compliant countries). Ukraine has signalled officially its interest to implement EITI. Norway was the first OECD country to implement the EITI. At the launch of the Open Government Partnership in New York in September 2011, the US declared that they would also implement the EITI principles and criteria. In addition to countries and CSOs several industry associations and companies support EITI. This includes the ICM, which brings

together 21 of the world's leading mining and metals companies as well as 31 national and regional mining associations. Several of EBRD's extractive industries clients officially support EITI, among them Arcelor Mittal, Centerra Gold, Dundee Precious Metals, Rio Tinto, and RWE.

The EITI's principles and criteria are subject to modifications and updates, taking into account the suggestions and proposals of all parties involved (countries, CSOs, companies, etc.). Following the 18<sup>th</sup> EITI Board meeting held in Jakarta on 25 – 26 October 2011, the EITI Board decided to form two Strategy Working Groups, one of them focusing on improvements to the EITI's principles and criteria within the current framework, and a second group focusing on developing a completely new framework. This approach was confirmed during the 19<sup>th</sup> EITI Board meeting held in London on 14 and 15 February 2012. Following a new round of public consultations scheduled for the fall of 2012, it is expected that a final decision will be taken at the beginning of 2013.

**Bank approach:**

- The Bank will continue to adhere to best governance, transparency and revenue management standards by encouraging its clients to implement principles and criteria of the EITI. In countries that do not apply the EITI principles and criteria, the Bank will work with mining operators to improve transparency and disclosure.
- Through active policy dialogue with the authorities and its clients the Bank will act as an *honest broker* between governments, companies and CSOs to improve transparency in all aspects of mining operations.
- The Bank will promote the core requirements set in the new EU regulations on transparency of extractive industries as soon as they will come into application.
- The Bank will promote sustainable and efficient utilisation of resource wealth from extraction, to other stages such as processing and transport. The Bank will assist mining companies to disclose the environmental and social aspects of its operations, including through regular corporate responsibility reports.
- The Bank will promote with the relevant authorities the introduction of fair and transparent procedures for awarding and monitoring licences.
- The Bank will implement best international corporate governance standards in its investments.

**3.4 SUSTAINABLE LEGISLATIVE AND REGULATORY FRAMEWORK**

Mining projects often require very large capital investments up front – often into the billions of US dollars yet several years may pass before any revenues are seen, therefore, the stability of the regulatory regime is very important for investment decisions. Whereas mining companies recognise that governments may make different financial demands on them as commodity prices fluctuate (for example, through windfall taxes), the ability to predict these costs is a critical component of investment decisions of mining companies. As such, the stability of the regulatory framework, as well as the focus of taxation (between for example taxing profits or production volumes) will significantly affect investment decisions and appetite in a given country.

At time of high mineral prices, mining companies tend to make larger profits. In these situations, citizens and governments have begun to demand that a greater portion of the profits made from exploiting the countries' natural resources be returned to the state and it citizens instead of flowing exclusively to the mining companies' shareholders. As a result, many countries have begun implementing measures to recover larger shares of the wealth created, for example, through implementing 'windfall taxes' which levy additional contributions as commodity prices moved above a certain threshold.

As outlined in sections 2 and A2.2 (Annex 2), lack of continuity in countries which repeatedly adjust the regulatory framework, or which have opaque regimes related to mining, as well as will tend to deter investors, or require from them that they put in place additional safeguards to hedge against these risks. These factors directly affect the costs of a project and hence the appetite for investment in the country. Given the complexity of the impacts of mining, which can go beyond the project level, EBRD may lend itself to support sector-level involvement.

**Bank Approach:** Through its investments in mining projects, which have a national reach in a COO, the Bank will develop policy dialogue and technical cooperation support to the authorities, including possibly through an Integrated Approach,<sup>21</sup> with the following objectives:

- Support the creation of transparent, stable and open legislative and regulatory frameworks for the attribution and monitoring of subsoil licenses as well as institutional capacity building within the authorities to allow for a reliable, fair and transparent procedures for awarding subsoil licences;
- Support the development of mining legislation and its implementation in line with international best practices;
- Support market reform to reduce market and price distortion such as input subsidisation, and promote the sale of commodities at market related prices, without price distorting effects;
- Support the introduction of efficient and transparent local content regulations, allowing for the removal of the need for local content requirements in the long-term following the improvement of the competitiveness of the local industry;
- Support the establishment of fair and transparent open tendering and bidding processes for the award of mining rights, licences and contracts; and
- Support the establishment of appropriate, fair and stable tax and royalty regimes.

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<sup>21</sup> An Integrated Approach entails the combination of a series of investment projects, associated policy dialogue and technical assistance to enhance the Bank's potential impact at the sector level in its COOs.

## **3.5 THE MINING VALUE CHAIN**

### **3.5.1 Promoting Backward and Forward Linkages**

As presented in sections 2 and A2.1.3 (Annex 2), the Bank recognises that mining and the revenues that flow from it can offer unique opportunities to develop more resilient and diversified local economies which will continue to prosper after the closure of the mining project. The mining industry is a significant consumer of products and services from other industries (such as capital goods, services, mining equipment and consumables), and products produced by mining companies are in turn used as inputs to many other industries. These backward and forward linkages provide opportunities for mining companies to support the development of local and regional economies and promote inclusiveness. In addition it allows these economies to continue to prosper once mining operations have ceased.

The Bank's involvement in these projects via its financing can be an important opportunity to help develop the mining value chain vertically through the promotion of backward and forward linkages. In particular, the Bank's support can help develop key suppliers of a mine such as equipment manufacturers, services providers and downstream processing and marketing activities and economic use of by-products of mining activities such as, e.g., gravel or coal waste.

Achieving long-term economic development through company-supported initiatives can be complex and challenging. Frequently, the management is too busy with investment plans or daily operations and their efforts take the form of philanthropic donations with limited long-term benefits for the local economy. On the other hand mining companies have an interest in supporting local businesses, including developing or raising standards of local suppliers to increase local procurement, reducing costs of production for the mine. Mines also benefit from the creation of a local business community, particularly in remote areas, that improves conditions for employees. Successful initiatives create shared value by aligning EBRD mining clients' business goals with the development of the local business market.

Turning the development of a mine into a long term development opportunity for the local communities and the broader region depends on careful planning, and inclusive engagement with local stakeholders. The Bank's involvement in these projects via its financing can be an important opportunity to help develop the mining value chain vertically through the promotion of backward and forward linkages. In particular, the Bank's support can help develop key suppliers of a mine such as equipment manufacturers, services providers and downstream processing and marketing activities. This can be combined with a specific EBRD support to local businesses and MSME through its Business Advisory Services (BAS) and Enterprise Growth Programme (EGP) and in partnership with mining clients. The Bank aspires that local businesses benefit from mining projects and promotes inclusiveness.

### **Case Study 2: Supporting local business and communities in Mongolia**

The EBRD acquired a 5 per cent equity stake in an independent Mongolian mining company in 2008 worth €14.4 million to support start of production in April 2009. By the end of 2009, the company had produced and exported 1.39 million tonnes of coking coal from its deposit in the country.

Transition impact for the project stemmed from a strong support to a private operator in the context of dominant state owned coal producers in the country. In order to support the sustainability of the project, support economic linkages and address the needs of the local community, the company worked with EBRD's EGP/BAS Programme to develop small private businesses in its mining cluster. The company provided grant co-financing for a programme, which helped train and develop skills of local contractors and SMEs.

In 2010, EBRD provided a €92 million debt facility for the company to finance the introduction of coal washing plant and related infrastructure at the company's mine. Designs followed current 'international best practice' and quality process equipment, electrical, instrumentation and process control systems were used. This investment shows how companies can move up the product value chain and become more competitive whereas at the same time adhering to international best practice and promoting high social and environmental standards. It is therefore expected to have an important demonstration effect on other producers and help boost private sector growth in the Mongolian mining sector.

### **Bank Approach:**

- The Bank will support upstream value chains of the mining industry by financing mine services and support companies directly involved in engineering, procurement, construction and management roles at mines.
- The Bank will support the development of downstream activities in its COOs through investments in mineral processing facilities, marketing outfits and the economic use of b-products of mining.
- The Bank will work with its clients to develop Local Business Development (LBD) programmes that support local businesses and promote inclusiveness of local communities. The Bank will seek to use the EGP and BAS programmes to promote entrepreneurship, set commercial or environmental standards and link local businesses with partners and financial institutions. Where possible the Bank will seek co-financing opportunities from mining clients.

### **3.5.2 Supporting Infrastructure**

Many mining products are bulk commodities that require reliable, extensive and modern infrastructure to reach the market. However, as presented in sections 2 and A2.1. (Annex 2), many of the COOs have limited, older and degraded logistic networks that constrain the competitiveness of the industry in a number of ways. Firstly, older and less efficient logistics can directly add to the operational costs of a mine. In particular, a number of the COOs are relatively far from global markets (e.g., Uzbekistan, Tajikistan), are landlocked (e.g., Mongolia, the Kyrgyz Republic), or have very limited logistic networks (e.g., Armenia, Belarus). This creates additional expenses in getting the product to the market, which dampens mining company revenues and thus investment in new projects.

In addition mining operations depend heavily on the availability of key utilities such as electrical power, water supply and waste management services. Through its Power & Energy and Municipal and Environmental Infrastructure teams the Bank has the opportunity to enhance the sustainability of mining operations through the development of utilities that service the mine as well as benefit the local community.

There is also a major opportunity to upgrade and develop processing infrastructure and metal ore smelting and refining capacity in many of the COOs, as they have focused investment primarily on the extraction side of the industry, and underinvested in processing. This constrains their ability to move into higher value adding activities (beneficiation e.g., metal ore smelting and refining), limiting the contribution mining makes to the overall economy.

### **Bank Approach:**

- The Bank will contribute to reducing transport bottlenecks affecting the mining industry. The Bank will aim to finance railway and infrastructure, wherever possible, as well as the acquisition of rolling stock, particularly for those landlocked countries which face significant barriers in getting goods to market.
- The Bank will envisage financing the development of power capacity and electrical transmission lines which benefit mining operations and related local communities. The Bank will seek to support the development of water supply infrastructure and waste management services that improve the environmental and social impact of mining operations.
- The Bank will contribute to developing processing infrastructure, aimed at creating higher value products in domestic economies, benefiting from efficiency gains, and deepening the mining value chain.

## **3.6 ENERGY EFFICIENCY AND CLIMATE CHANGE**

*Energy Efficiency:* The mining sector (including ore processing, smelting and refining) is a major energy user and a significant contributor to greenhouse gas emissions (GHG). Depending on the process, ore processing in the mine requires large amounts of heat or electricity which may be generated on site or drawn from the electricity grid. Mine sites are also major users of fuel for vehicles and equipment that are used for running on-site ore milling and concentration processes. Beneficiation and ore processing operations are usually significantly more energy intensive than the extractive process itself, and so add disproportionately to the emissions of an integrated mine-to-refined-metal operation. Methane, a potent greenhouse gas, that is trapped in coal deposits and in the surrounding strata is also frequently released during normal mining operations in both underground and surface mines. As estimated by the International Council on Mining and Metals, the mining sector is responsible for approximately 1.8 per cent of GHG emissions.<sup>22</sup> This estimate is likely to increase when emission from processing mined materials are included.

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<sup>22</sup> This estimate is based on a) direct emissions from operations: emissions from use of fuel in mining and processing operations and from fugitive methane emissions at coal mines; and b) indirect emissions from

In particular, the coking coal and steel industry generates GHG emissions estimated at seven to eight per cent globally. These emissions mainly arise in primary iron and steelmaking; one third of steel is made through the electric arc furnace route, which uses power and scrap, and is much less emissions-intensive, but there is a finite limit to scrap availability. The steel industry has recently been researching ways of making steel with a lower carbon footprint (especially in the EU and Japan). There are three processes which would reduce emissions substantially if combined with carbon capture and sequestration.

*Adaptation to climate change:* Mining activities and the associated infrastructure (e.g., rail networks, ports, etc) can be vulnerable to short-to-medium term physical risks and impacts of climate change. Increased flooding and storm severity can create major disruptions to mining activities as was witnessed in Queensland, Australia in early 2011. These potential risks and impacts need to be identified early on, factored into the mine design, operation and closure planning, and regularly revisited and reassessed during the life of the mine. Although mine plans will usually include an assessment of the above risks, with increasing risks from climate changes the plans should be regularly revised and adapted. Apart from these direct risks, there are also indirect risks as mines and their immediate processing facilities utilise a range of other natural resource inputs, in particular fresh water. Changing weather patterns driven by climate change can affect the availability and quality of water. Therefore, the inclusion of newer and more efficient technologies during the design phase are critical in ensuring that production capacities are decoupled as much as possible from resource usage.

*Opportunities:* There are strong reasons for mines to adopt efficient and clean technologies, over and above the concern for reducing environmental impact and improving safety. Newer and cleaner technologies are often more cost efficient, and are able to achieve higher production throughputs than older, dirtier technologies. New mine process technologies are being developed, which significantly reduce energy consumption. The ageing operational and transport infrastructure associated with much of the mining activity in the COOs also offers significant opportunity for improvement, efficiency gains and cost savings. Good examples of these energy efficiency improvements by mining companies in the Bank's COOs were investments to reduce energy consumption in gold mining in Bulgaria. Investments items were first identified by an energy audit and then included in the proceeds of an EBRD loan to in 2010. The investments are expected to improve energy efficiency by reducing fuel consumption by around 50 per cent per tonne of ore produced. A further opportunity for the Bank is to help address legacy mining waste challenges to reduce the need for additional coal or mineral ore extraction and in this way offset energy use and associated GHG emissions. Other opportunities for involvement lie both in supporting the capture and use of fugitive coal bed methane gas at coal mine sites and the support of wider resource efficiency in mining operations.

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electricity use: electricity use, primarily in refining and smelting operations. Source: ICMM "Measurement, reporting and verification and the mining and metals industry", and <http://www.globaldialogue.info/AMackenzie%20-%20ICMM%20-%20IGF%20presentation.pdf>, accessed on 9 February 2012.

### **Case Study 3: Introducing coal waste recycling technology in Ukraine**

In December 2011 the Bank agreed to provide a loan of up to \$36 million to a Ukrainian coal group to finance the establishment of a coal recycling business to produce energy coal from waste dumps and tailing ponds in eastern Ukraine. The project will finance the construction of four waste coal reprocessing plants with total annual capacity of 3.6 million tonnes. Equipment is to be purchased from world-class manufacturers and installed by a local engineering firm. The first stage of the investment will include construction of a tailing pond reprocessing facility and a spoil heap reprocessing facility. The second stage will include at least another two waste coal reprocessing facilities. Use of proceeds will also include the purchase of stocks of waste coal.

The project will use modern technology and international best energy efficiency practices that would lead to increased competitiveness, as well as clear environmental remediation benefits and CO<sub>2</sub> emissions reduction (from the spontaneous combustion resulting in uncontrolled emissions and the avoided methane releases of un-mined coal). The amount of emissions reduction estimated over an average life time of the project is about 290,000 tonnes of CO<sub>2</sub> per year. The client is already active in waste recycling, but uses at present outdated equipment able to achieve a maximum recovery rate of approx. 25 per cent. The technology employed will greatly increase recovery rates to 60 per cent or more and is superior to what currently used in Ukraine. The client will also be the first to recover coal from tailing ponds as well as dumps. Given the abundance of waste coal material in Eastern Ukraine, the potential for replication could be very high. Furthermore, the coal waste recycling technology and business model can be utilized in other energy intensive industries (cement, pulp/paper, etc) and the Bank is discussing other project opportunities in Ukraine.

Through the implementation of the environmental and social action plan, the client will set a new benchmark for the Ukrainian coal sector in terms of EHS&S policies and by implementing the respective management systems, i.e. energy and environmental, along with provisions aiming at improving EHS&S performance also at the underground mines owned by the client.

The Bank is working with the client to develop and register a carbon finance scheme for the avoided methane emissions from the coal waste recycling facilities. The project will come under the Joint Implementation Track II process in order to monetise the sale of the respective Emission Reduction Units generated. The work is being developed through a TC effort to provide the necessary support to the client in developing and registering the carbon transaction. As only a second such waste coal-to-energy projects registered under the Joint Implementation mechanism in Ukraine, it will facilitate private and commercial replication of similar structures to tap a large potential of waste coal recycling projects. This will provide a strong demonstration effect of the importance of the Joint Implementation segment of international carbon market at a time of regulatory uncertainty under the international climate negotiations. Registration under Joint Implementation Track II (with international independent validation and verification) will demonstrate the highest and replicable standards of environmental integrity of such transactions.

### **Bank Approach:**

- The Bank will support the introduction of proven technologies and standards in mining operations and processing to improve energy efficiency, reduce emissions and help identify and mitigate the impacts of climate change.
- The Bank will engage with its clients to address wider resource efficiency issues including water efficiency and waste minimisation, and will continue to invest in projects that address both legacy mining waste challenges and mine closures.

- The Bank will continue to promote monetising of GHG emission savings through available international and local carbon financing schemes.

## **3.7 FINANCING INSTRUMENTS**

### **3.7.1 Range of Instruments**

The Bank has been at the forefront of various innovations in financing in the COOs, such as in project finance and convertible instruments. The Bank can offer all types of financing from sovereign-guaranteed to private financing, whether through debt, equity, mezzanine or convertible instruments, including using local currency. Some forms of financing can be converted from being on a sovereign basis to non-sovereign or to private in nature, by using mechanisms to release guarantees (e.g., where creditworthiness has improved) or to convert to investments in privatised entities (in cases where the Bank has invested when the entity was still state-owned). Various forms of guarantees can also be provided, including partial risk and partial credit guarantees which cover specific events.

The Bank is also active in promoting co-financing in its projects and the syndication of loans. Attracting co-financing enhances the Bank's additionality and leverages the impact of its involvement across a broader area of the sector. The Bank will therefore continue to cooperate with official institutions, including the EU, other IFIs and bilateral donors, and with private lenders and investors to increase official and commercial financing for the sector in the COOs. In order to improve the investment climate in its COOs, the Bank will also take account of important issues raised in its dialogue with potential investors and use them as input to the direction of reform and restructuring in the sector.

The Bank will place a renewed emphasis on equity transactions where the opportunity arises to invest alongside experience sponsors or qualified financial investors which have a well developed strategy. Equity is an important instrument to advance transition and, if investments are well executed, has a significant demonstration effect. Both foreign strategic investors and local entrepreneurs or business partners in general look to EBRD to share risk and to use the experience of EBRD in transition and change.

Financing in the mining sector carries certain industry specific risks, including legal risks relating to the award of licenses, the quality and ease of extraction of ores and the volatility of commodity prices, which can be mitigated through due diligence and the use of conservative price assumptions. The Bank will assess the risk associated with volatility of commodity prices on a case-by-case basis and appropriate financing structures to mitigate such risks will be considered. In particular the Bank will consider innovative financing structures that could also potentially have a demonstration effect. Such measures to ensure sound banking will be applied just as rigorously as Bank standards and policies to achieve transition impact and support responsible mining.

### 3.7.2 Mining Operations through Financial Intermediaries

The Bank will continue to make indirect investments in mining and quarrying projects via credit lines and equity investments in financial institutions (FIs) that are then on-lent to companies in the sector. These investments can be realised through a variety of different financing instruments such as equity funds, direct equity, trade facilitation, leasing, energy efficiency, or MSME credit lines. Several of the transactions under the Bank's Trade Facilitation Programme (TFP) cover transactions in products from the mining sector. Going forward it is expected that most of the Bank's exposure to mining through the Bank's FI clients will continue to come from MSME credit lines. It is unlikely the Bank will provide many leasing financings to acquire mining equipment as the Bank's maximum exposure per sub-lease is between €125,000 and €750,000, thresholds which are too low to acquire mining equipment.

The ESP requires that financial intermediaries conduct environmental and social due diligence on their sub-projects and that these projects meet national health, safety, environmental, labour, transparency and corporate governance requirements. Financial intermediaries can only realistically be expected to monitor client compliance against national laws, but not against other standards for which there is no in-country infrastructure for measuring, monitoring, inspection, and enforcement. The Bank views this as appropriate for the majority of financial intermediaries. In addition the Bank requires financial intermediaries to use the following additional safeguards to deal with any potentially environmentally sensitive sub-projects when utilizing Bank funds (see the Financial Sector Strategy for further background):<sup>23</sup>

- All financial intermediaries undertake to adhere to the Bank's FI Environmental Exclusion and Referral List. This includes a range of prohibited activities as well as the obligation to refer certain potential sub-projects to the Bank for approval prior to financing. This notably includes projects in sensitive locations. When receiving a referral, the Environment and Sustainability Department will advise the financial intermediary on due diligence requirements and performance standards required for EBRD approval; e.g., if a project involves involuntary resettlement it would only be acceptable if Performance Requirement 5 on Land Acquisition, Involuntary Resettlement and Economic Displacement was implemented.
- In line with PR9 of the ESP, where financial intermediaries are providing project finance under an EBRD credit line with an estimated total project capital costs of \$10 million or more for sub-projects involving (i) new developments or (ii) expansion or upgrade of an existing facility where changes in scale or scope may create significant additional environmental or social impacts, such sub-projects will be required to meet PRs 1-8 , 10.
- The Bank also has the option to demand additional standards or procedural requirements (i.e., additional to national laws) on a case by case basis and the Bank will continue to so impose such requirements if the nature of the financial intermediaries' portfolio so requires.

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<sup>23</sup> Approved on 15 November 2010, available at: [www.ebrd.com/downloads/policies/sector/financial\\_2010.pdf](http://www.ebrd.com/downloads/policies/sector/financial_2010.pdf).

### 3.7.3 Technical Cooperation Funds

Technical cooperation (TC) funds can contribute decisively to support the implementation of the operational priorities outlined in the Strategy and more broadly to fulfil the Bank's mandate. In the mining sector TC funding can be an important catalyst for know-how and skills transfer, promotion of energy efficient technologies and best EHS&S standards and development of the mining value chain at the project level, as well as for improvement of regulatory and institutional frameworks at regional or national levels. As such the use of TC funds can fall into one of two categories, (i) TC funding at project level that are closely linked to EBRD investments, and, (ii) TC funding at country level for broader capacity building, policy dialogue and regulatory support.

**Project-level TC funding can be important to support due diligence during project preparation, introduce best technologies and standards, promote energy efficiency improvements, or encourage the development of carbon finance.** In order to achieve this, TC funds are aligned with the objectives and transition goals of EBRD projects. Each TC funding has structured objectives and indicators and reports upon their achievement. Examples of potential uses for TC funds include to:

- Support preparation of technical and financial feasibility studies for projects with important contribution to transition;
- Promote introduction of modern management systems and process, through management and financial consulting, and best available technologies;
- Assist procurement, project management and monitoring during project implementation;
- Finance energy efficiency audits of existing and potential EBRD clients, and assist with energy management training and capacity building;
- Support EGP and BAS projects;
- Provide management training and capacity building to comply with best international standards for EHS&S and implement the Bank's ESP;
- Assist companies in complying with the principles of International Cyanide Management Code for the gold mining industry and become signatories to the Code;
- Support remediation of environmental legacy; and
- Support overall development of management skills.

**TC projects can also contribute to successful implementation of policy dialogue and institutional improvements at regional or national levels.** EBRD has the opportunity to support its COOs in developing, adopting and implementing specific policies, regulations and institutions that can improve regulation, strengthen institutional frameworks and foster transparency. Although these TC projects are closely linked and integrated in specific EBRD projects, they can have a regional or national reach beyond the project-level. In some cases TC funding can be considered in the context of an Integrated Approach, which is intended to help deliver transition impact beyond a project-by-project approach. TC funding can be used as a component of an Integrated Approach combining an EBRD project, policy dialogue and coordination with other IFIs to optimise the contribution to transition. Examples of potential uses for country level TCs would include to:

- Support capacity building and provide legal and technical advice to regional and national institutions to improve legislative and regulatory framework in the mining sector;
- Improve public awareness, and technical, EHS&S and legal knowledge-sharing and engage in information dissemination and training; and
- Support the adoption and implementation of EITI in its COOs.

**Bank Approach:** The Bank will seek TC funding to support and improve EBRD projects in line with the Bank’s mandate and the operational priorities outlined in the Strategy. The Bank will actively seek to identify instances where cost sharing opportunities with mining operators can be exploited. The Bank will, where feasible, seek cost sharing from private international mining clients for TC funding, in particular in the context of contracting and/or monitoring of consultants and of the development of the mining value chain and EGP / BAS projects.

The use of TC funds will be further defined in the Bank’s forthcoming Grant Co-Financing Strategic Review. The Strategy will not address the question of non-TC support or incentive fees for energy efficiency projects, which will be addressed in the forthcoming revised Sustainable Energy Initiative.<sup>24</sup>

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<sup>24</sup> An introduction to the Sustainable Energy Initiative is available at: [www.ebrd.com/pages/sector/energyefficiency/sei/strategy.shtml](http://www.ebrd.com/pages/sector/energyefficiency/sei/strategy.shtml).

## **SECTION 4 – SUPPORTING RESPONSIBLE MINING: APPROACH TO EHS&S ISSUES**

### **4.1 KEY ENVIRONMENTAL AND SOCIAL ISSUES**

Mining can cause significant adverse environmental and social impacts, including permanent ones. In the last half of the previous century, proven technologies and practices have developed to address these impacts, not least by simply recognizing that they may occur. Such recognition in turn now allows the potential adverse and positive impacts to be considered in basic decision-making by developers and governments, and by financial institutions. This section outlines many of the diverse EHS&S issues that are raised by mining projects in the COOs and beyond. These issues include some of the more significant and systemic sustainability challenges faced by the mining sector in the Bank's countries of operations and around the world.

The Bank's mandate of promoting environmentally sound and sustainable development is guided by the ESP of 2008 and associated Performance Requirements (PRs).<sup>25</sup> Application of the ESP informs EBRD decisions on all projects the Bank proposes to finance. The ESP has proven sufficiently robust to allow the Bank to address the wide variety of environmental and social issues that are raised by many mining operations, and to help its clients improve their environmental and social performance. What follows in this section is not intended to modify the ESP. Rather, it describes how the Bank applies the ESP to mining projects. Each of the following subsections briefly identifies one or more of the key issues noted by the Bank in its operations and describes the overall approach the Bank has taken and/or intends to take as it addresses each of them within its mining projects. In each project financed the Bank will take into account the unique environmental and social conditions found at each project in working with mining companies to devise the optimum approach to meeting the Bank's PRs.

### **4.2 PROJECT AREA OF INFLUENCE, APPRAISAL, IMPLEMENTATION AND MONITORING**

As presented in the ESP, all EBRD-financed projects undergo environmental and social appraisal both to help EBRD decide if an activity should be financed and, if so, the way in which EHS&S issues should be addressed. It is the responsibility of the mining company to ensure that the required due diligence studies, information disclosure and stakeholder engagement are carried out in accordance with the PRs as described in the ESP, and submitted to EBRD for review. The EBRD provides guidance on the scope of studies required and ensures that the scope of due diligence is commensurate to the risks posed and consistent with ESP requirements. One of the first tasks to be completed by EBRD is to assess the business activity for which EBRD financing is sought and to assign a category to reflect the level of potential impacts and to determine the extent of investigations required as part of the appraisal process. The Bank's approach can also be affected by issues such as the nature of EBRD's investment (direct or indirect financing; equity or debt), the stage of the project (exploration, development or expansion), regional issues, such as cumulative impacts, among others.

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<sup>25</sup> The 2008 Environmental and Social Policy, including the associated Performance Requirements, replaced the earlier 2003 Environmental Policy, and took into account the Bank's experiences and lessons learned.

Once the project is categorised, EBRD assists in defining the environmental and social appraisal that is needed. The scope of issues to be appraised is not only for the defined project, but also for the project's Area of Influence. In mining projects, the Area of Influence can include power lines, access roads, quarries, processing facilities, and other assets that are included in the security package for the investment. The Area of Influence can also include communities that are impacted or potentially impacted by the project's activities, and facilities or businesses that are not funded by EBRD and may be separate legal entities from the mining company, yet whose viability and existence depend exclusively on the project and whose goods and services are essential for successful operation of the project. Whereas the full requirements of the PRs may not apply to a designated Areas of Influence, the potential environmental and social impacts and issues must be appraised so that the potential impacts of the project are understood and that adverse impacts can be avoided, minimised, or otherwise managed.

This definition of the Area of Influence is one of the core challenges for the Bank and the mining company; mines can require haul roads covering hundreds of kilometres, reliable water resources may be drawn from many kilometres away, a constant source of energy must be obtained (from a dedicated power station (whether on- or off-site) or drawn from the grid via major transmission lines to the site, etc. Due to the large areas of land that can be affected by mining projects, and the potential for significant environmental, health, safety and social impacts to occur, particular attention needs to be given to the appraisal of baseline environmental and socio-economic conditions in the Area of Influence of the proposed project. This forms the starting point for the assessment of the potential impacts, risks, opportunities, and required mitigation measures across all phases of the project life cycle, from initial exploration and pre-feasibility studies through to post-closure care and maintenance. In many of COOs, financing may be provided for existing brown field mines which plan to extend operations or to redevelop inactive existing mines. With existing facilities, the importance of obtaining a baseline assessment is critical, as environmental and social planning may have been conducted to a low standard historically, leaving behind legacy issues which are challenging to manage and improve upon.

Central to the project appraisal of those projects requiring Environmental and Social Impact Assessment (ESIA) is the engagement of stakeholders at every stage of the process (see below for further detail). The failure to understand and address the concerns and perceptions of key stakeholders, including local communities, indigenous peoples, local CSOs, local authorities, etc, can lead to major delays in project development and even the revocation of the mining license for the proposed project. Key elements during appraisal, therefore, include (i) the assessment of environmental and social baseline conditions and potential impacts and issues associated with the proposed project; (ii) fully developed stakeholder engagement planning; (iii) the capacity and commitment of the mine developer to address these impacts and issues; (iv) the role of third parties or contractors who can further exacerbate the potential sustainability risks, impacts and mitigation measures; and (v) the level of expertise and competency engaged in the evaluation of sensitive risks such as property rights; land tenure, cultural heritage, authority to access and the level of community support.

The result of the Bank's due diligence generally results in development of an Environmental and Social Action Plan (ESAP). The ESAP includes the commitments of the Client with regard to environment and social issues, health and safety, issues, transparency and disclosure of information, and stakeholder engagement. This ESAP then becomes part of the financing agreement between the Bank and the client and is monitored by the Bank.

In addition to direct investments in the mining sector, the Bank makes indirect investments in mining and quarrying projects via equity investments, loans, project finance under EBRD credit lines or under the Bank's Trade Facilitation Programme. The Bank's ESP requires that Financial Institutions (FIs) that receive such investments adhere to EBRD's Environmental and Social Exclusion and Referral List and implement environmental and social due diligence monitoring procedures to ensure that all the key aspects of EBRD's requirements for FIs are met. The procedures assist the FI when considering EHS&S issues at the appraisal stage in order to determine whether portfolio companies or investments are likely to have significant EHS&S impacts (and therefore require further investigation), or whether risks are likely to be minimal. As with all FI-financed projects, EBRD delegates responsibility for undertaking EHS&S appraisal and risk management on portfolio companies or investments to the FI.

If the FI considers financing projects in environmentally or socially sensitive locations, such projects are referred to EBRD for approval prior to financing. The ESP has an Exclusion and Referral Lists for FIs.<sup>26</sup> The Exclusion List contains those activities for which EBRD financing is prohibited and the Referral List indicates which types of projects (normally higher risk) need to be referred to EBRD for review of due diligence prior to financing decision to ensure that adequate environmental and social appraisal has been or will be undertaken. If the transactions are approved, such activities are required to comply not only with national law but also with the relevant requirements of PRs 1-8 and 10. EBRD strongly encourages FIs to discuss such transactions informally with EBRD's environmental and social staff as early as possible in the transaction process in order to avoid delays at a later stage. EBRD's environmental and social staff can advise on the recommended nature and extent of environmental and social due diligence, any additional information needs, the relevant PRs, and assist with determining appropriate mitigation measures. An environmental review or audit by environmental and/or social experts should be carried out for all companies classified as medium-high environmental and social risk.

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<sup>26</sup> PR9 Annex 1 and Annex 2.

#### **Case Study 4: EBRD environmental and social appraisal of a cement project**

In 2009, the Bank completed a follow-up transaction under an earlier approved EUR 300 million multi-project facility with a large cement company that covered the acquisition, modernisation, expansion, construction and operation of manufacturing facilities in the cement, lime, aggregates and ready-mix concrete sectors. One project included construction and operation of a green field cement facility, including an associated 400-hectare quarry. Environmental and social due diligence identified a number of potentially significant adverse impacts and led to improvements in project design and performance.

Although scoping considered alternative locations for the cement plant, the fixed location of the quarry limited this option of the assessment, and the ESIA focused on potential impacts and the identification of measures to avoid or reduce impacts to acceptable levels. These were also the issues of concern to stakeholders. Among the more important measures developed as part of the due diligence process were the following:

- A comprehensive visual impact assessment led to restrictions on the size of quarry stockpiles.
- A full ecological assessment of the quarry, cement plant, and conveyor connection locations led to development of a biodiversity protection plan based on expertise provided by both local and international experts. This in turn led to elevation of the conveyor over ground depressions and all drainages to minimise any restriction on animal movement
- A quarry rehabilitation plan was designed to allow restoration and re-landscaping on an on-going basis as operations are completed in quarry sections, and to minimise long-term impacts after operations end.
- To limit transport-related impacts, the design includes a 5.2km overland conveyor to carry clay and limestone from the quarry to the plant. The conveyor will be fully enclosed, with air pollution controls on each end, to minimise fugitive dust and protect public safety.
- ESIA investigations discovered the site of a Neolithic settlement. This was brought to the attention of the relevant authorities and the route of the conveyor was then adjusted to avoid any disturbance, and an archaeologist supervised construction along the entire conveyor route.
- Following full acoustic modelling, project design included noise impact attenuation to minimise impact on the local village.
- Consultations with local and regional stakeholders resulted in changes to worker accommodation and planned controls for the construction workforce, as well as a full discussion on environmental issues and mitigation measures.

The FI's responsibility is to ensure that all portfolio companies are in compliance with applicable national laws on environment, health, safety and social issues and any standards established within those laws. In the case where a FI is considering a mining or quarrying investments located in the accession countries seeking EU membership, the client company should also have a plan to meet forthcoming EU environmental standards over time; newly constructed facilities should be designed to meet EU requirements from the start. The investment agreements should also require any environmental and social mitigation measures or corrective action plans which have been agreed with the company to improve the environmental and social performance of the enterprise.

No FI investment should be made in a company whose operations do not comply, in all material respects, with host country health, safety, labour and environmental regulations and standards, unless the investee company has agreed to implement corrective measures to address any such non-compliance issues within a time frame acceptable to the FI and to the regulatory authorities.

**Bank approach:** As outlined above, the key steps in this part of the process are performed by EBRD and include the following:

- Categorisation of the project;
- Identification of the scope of work required for the project due diligence;
- Definition or establishment of the Area of Influence;
- Review of the studies and reports for comparison to the requirements of the relevant PRs;
- Review of and response to periodic monitoring reports on environmental and social performance and the status of implementation of the ESAP.

If the project is a Financial Intermediary, these steps are undertaken by the FI and not by EBRD directly.

### **4.3 STAKEHOLDER ENGAGEMENT AND CONSULTATION**

The range of stakeholders affected by or interested in mining projects can be significant, given the variety of environmental and social issues. Stakeholder interests can also change over the lifecycle of the mine or processing facility and in response to any events; therefore communication needs have to be routinely evaluated and revised on an on-going basis. Protecting the ‘social licence to operate’ and maintaining a good corporate reputation have become central to the business strategies and long-term commercial viability of the larger mining companies, but are often a challenge for smaller domestic companies.

Stakeholders may include national, regional, and local government authorities, CSOs, unions, and local communities, to name but a few of the different groups with the potential to influence the design and operation of a mining project. Many stakeholder groups have strong views, concerns and influence on particular mining processes and projects, and communication needs to be as carefully planned as other aspects of the business to avoid the risk of major disruption to the project and future operation. Understanding, engaging with, and responding to stakeholder concerns is, therefore, a key business performance factor for companies operating in the mining sector.

Whilst there are many key stakeholders that need to be engaged, local communities, representative local civil society organisations, and local authorities require particular attention. Depending on the specific circumstances associated with the mining operation in question, their concerns can cover a wide variety of issues including water resource management, dust fallout and soil contamination, job creation, traffic impacts, air pollution, long-term capacity building to minimise dependency and to create a more diverse local economy, tax revenues, tailings dam management and emergency prevention and response, and local infrastructure improvement. Active engagement on these issues with the relevant stakeholders, for example through ongoing consultation, training of individuals, SMEs in the local community, and through social investments in local infrastructure, is critical to the long-term success of a mining project. It is essential for mining companies to keep in good communication with their stakeholders, to understand their concerns and to respond in as open and transparent a way as possible. Public consultation during the design stages of the mine is often required by law and usually an integral part of the pre-feasibility planning as well as the environmental and social impact assessment studies.

It is also best practice to keep routine engagement throughout the project life, and particularly in abnormal situations, such as an incident or emergency.

The situation in many of EBRD's COOs with respect to stakeholder engagement is challenging. Historically, community concerns have often been overlooked in the interest of production output whereas enforcement of environmental and safety standards has been poor, creating significant legacy issues. As a result, little has been done to address situations where whole communities have essentially become dependent on the local mine or smelter for economic livelihood. Mechanisms for stakeholder engagement has often been lacking or poorly applied and experience in good stakeholder engagement and management is often lacking, both by companies and authorities. As is the case elsewhere in the world, it is common in EBRD's COOs for local communities, which often bear the brunt of environmental damage and social destabilization as a result of mining activities, to criticise projects because they have not been adequately engaged during development of mining activities. In addition to the perceived lack of engagement by local stakeholders, they can also be concerned about the equity of tax revenue and other benefit dispersion for local communities.

The level and quality of stakeholder engagement not matching legitimate external expectations and concerns can result in implications for reputation, project progress, business or operational continuity and licence to operate. These issues often stem from mine management having a lack of local cultural awareness or concern. Managing expectations of the benefits of the mining project and the schedule of these benefits can help address unrealistic expectations, particularly in remote areas where few in the local community have the skills required.

In the EU, accession countries and the CIS countries, many governments have signed and ratified the UNECE Aarhus Convention which requires them to develop legislation granting public rights to access environmental information; to participate in environmental decision-making, such as environmental impact assessment; and to have access to justice in environmental matters.

**Bank approach:** EBRD's stakeholder engagement requirements are found throughout the ESP and Performance Requirements and the Public Information Policy. PRs 1, 2, 4, 5, 6, 7, 8, and 10 all have information and consultation provisions. The Bank has also committed to the spirit and the principles of the Aarhus Convention.

For mining projects, the Bank will put particular importance in identifying stakeholders at the earliest possible stage, particularly any vulnerable groups, and this information will help inform the social assessment. Best practice will be to work with local communities on the Stakeholder Engagement Plan so that they can advise on the best means of communication for their needs. EBRD's requirements to routinely provide information to locally affected populations will be particularly important for mining projects, as will be the requirements for grievance mechanisms, both for workers and for the public.

#### 4.4 SOCIAL ISSUES

In Deloitte's annual report about the "Top 10 Issues" facing the mining industry, project stakeholders and the social license they command were listed in third and fourth place of the top challenges in 2011<sup>27</sup> and 2012,<sup>28</sup> respectively.

It should be noted that despite much progress the overarching socio-economic and political issues the mining industry faces today are still very similar to the ones identified about a decade ago in the World Bank Group Extractive Industries Review and Management Response, namely (i) the need for good governance and transparency to enhance the levels of trust the industry enjoys; (ii) the need to ensure that mining benefits reach the poor, notably those directly affected by mining operations; and (iii) the need for environmental and social impacts to be identified in a transparent and participatory manner and to be managed according to the accepted good practice to avoid, reduce, mitigate or compensate for impacts.

The planning and implementation of a proper impact assessment process in view of building a social license to operate is especially important in the mining sector. This is because the industry suffers from a series of fairly unique and sometimes paradoxical social risks and challenges (e.g., generally low levels of trust but high expectations of employment and wider development impacts). It also lacks some of the flexibility in project siting and design that could help avoid or minimise significant impacts on local communities (such as involuntary resettlement) as well as eliminate some real and perceived risks (such as the need for tailings dams).

National legislation in the COOs rarely requires social impact assessments. In addition, nationally mandated stakeholder engagement activities are typically focused on consultation with local authorities and are thus usually too limited to provide for sufficient levels of involvement of project affected people throughout the process of preparing the Environmental and Social Impact Assessment. EBRD's ESP and Performance Requirements lay out the applicable standards aimed in part at addressing these challenges. They identify the key environmental, health and safety, and social areas likely to require relatively detailed impact and risk assessments and the development of management systems or specific action plans; and they emphasise the importance of identifying opportunities to enhance and share project benefits. The following paragraphs discuss some of the more critical social issues and challenges frequently encountered by the mining industry.

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<sup>27</sup> *Tracking the trends 2011, The top 10 issues mining companies will face in the coming year*, Deloitte, 2011, available at: [http://www.deloitte.com/assets/Dcom-Canada/Local%20Assets/Documents/EandR/Mining/ca\\_en\\_energy\\_Tracking\\_the\\_trends\\_2011\\_113010.pdf](http://www.deloitte.com/assets/Dcom-Canada/Local%20Assets/Documents/EandR/Mining/ca_en_energy_Tracking_the_trends_2011_113010.pdf).

<sup>28</sup> *Tracking the trends 2012, The top 10 trends mining companies may face in the coming year*, Deloitte, 2012 available at: [http://www.deloitte.com/assets/Dcom-Canada/Local%20Assets/Documents/EandR/Mining/ca\\_en\\_energy\\_Tracking\\_the\\_trends\\_2012\\_113011.pdf](http://www.deloitte.com/assets/Dcom-Canada/Local%20Assets/Documents/EandR/Mining/ca_en_energy_Tracking_the_trends_2012_113011.pdf).

### ***Involuntary Resettlement, Economic Displacement and Population Influx***

Mine operations and their associated facilities can have large footprints, but what really distinguishes the industry is that a mine site is determined by the location of the resource to be exploited. This fundamentally limits the alternatives of project siting, an otherwise useful tool to avoid or minimise significant impacts on local communities.

Involuntary resettlement and the loss of livelihoods are notoriously difficult to mitigate and should be avoided as much as possible. The resulting socio-economic disruptions are significant and challenging to manage but they also offer opportunities to improve the lives of those displaced if mitigation measures are developed and compensation is carried out in a timely manner and with the informed participation of those affected. Whereas in some cases, mining projects are located in areas with artisanal and small scale mining activity, mining companies in EBRD's COOs will more frequently face the challenges of either safeguarding traditional livelihoods, such as farming, hunting, or herding, or finding appropriate alternatives to replace or complement these activities where they are no longer sustainable or aspired to by those affected.

Rapid and sustained population influx creates a series of potential EHS&S impacts to host communities and in-migrants alike. Influx of a predominantly male population can be substantial during construction and can quickly overwhelm host communities. Mining projects are particularly susceptible to this type of in-migration due to their high requirements for labour, goods, and services, their frequent remote location (meaning labour and services needed cannot be fully met by the local workforce or suppliers), as well as the opportunities they present for compensation and other benefits.

Influx can put considerable pressure on local infrastructure and services such as housing supply, sanitation systems, waste management, education and health or medical systems both in terms of capacity and demand, potentially driving up prices and increasing the vulnerability of marginal groups. It can also create a cash economy that distracts local communities from their more sustainable, long-term development pathways. Health, safety and security issues can include increased substance abuse, prostitution, proliferation of communicable diseases, domestic violence and other criminal activity, pollution and an increase in road accidents. All of these issues need to be recognised, understood, and managed. Such rapid demographic changes may thus affect the way communities perceive their environment, culture and sense of belonging. Resettlement, livelihood changes, and population influx can erode cultural traditions, lifestyles and identities and result in damage to cultural heritage, loss of knowledge of traditional livelihood activities, customs, and norms, changes in power relationships, and diminished social cohesion.

**Bank approach:** For EBRD, the proactive implementation of good international practice for the management of unavoidable physical and economic displacement impacts is necessary not only to significantly reduce social impacts and risks but also to improve overall project performance by avoiding potential project delays, cost-overruns, etc. whilst simultaneously helping to maintain a project's social license to operate.

In many of the Bank's COOs, governments hold responsibility for overseeing land acquisition and resettlement processes associated with mining projects, including the determination of compensation and levels of local community engagement. Clients are responsible, however, to close any gaps between any government-led resettlement and EBRD's requirements. PR5 emphasises that "the direct involvement of the client in resettlement activities and an assessment at the earliest stage possible in project design, can result in cost-effective, efficient, and timely implementation of those activities, as well as promoting innovative approaches to improving the livelihoods and standards of living of those affected by resettlement".

Where in-migration is of particular concern, the Bank may require the development and implementation of an influx management plan, including measures to promote local economic development and diversification, to establish buffer zones and careful spatial planning, hiring strategies discouraging convergence of people at mine site, and increasing the capacity of local infrastructure and services, among the many activities to ensure clients manage adverse impacts stemming from rapid population growth.

### ***Women as Key Stakeholders***

Women in the mining workforce and in affected local communities typically face more challenges than men and often do not benefit from mining operations to the same degree as men do. Gender bias tends to manifest itself in three broad areas: (i) the cultural or regulatory barriers to employing women in the mining workforce; (ii) the degree to which local consultations involve and represent the views and needs of women; and (iii) the degree to which women benefit from spin-off business opportunities created by the mine project. Additionally, compensation and royalty agreements tend to be negotiated with men "on behalf of" families and communities. This may restrict women's access to the financial benefits of mining whereas further exacerbating women's economic dependence on men in these communities.

Mine projects also have a number of more subtle, indirect impacts on women. For example, where women are responsible for meeting the subsistence needs of families and surrounding farming or herding lands are impacted by mining activities through land-take, degradation, pressures from influx migrant workers, or pollution, meeting these needs can become even more demanding than normal. Where men may have been involved in subsistence economies and are being employed by a mine, women and/or children need to take on the men's tasks as well. Further, where there is a shift to a cash-based economy with associated inflationary pressures, the rising cost of basic goods can put additional pressure on women in the host communities.

Beyond mitigating potentially adverse impacts from mining on women, there is a trend toward large mining projects seeking to proactively identify actions to promote women's economic empowerment and ensure that women benefit from spin-off businesses and joint ventures developed between mining companies and their host communities. These actions include microfinance training programs and microcredit schemes, literacy and skills training programs, employment counselling, among others.

**Bank approach:** Good practice suggests that the social, economic, and environmental performance of mining projects would be much improved through gender-sensitive mining practices and gender analysis and planning. EBRD's PRs emphasise the importance of looking at vulnerable groups in the affected population and how these (i) may be disproportionately affected by adverse impacts; (ii) are less able to engage in public consultation processes; and (iii) may not be able to access some of the benefits offered by a project. Women are often, but not invariably, part of this category of vulnerable people. As a result, special consideration must be given to them during project scoping, the gathering of baseline information, and the assessment of how they are impacted, so that specific measures can be put into place to address "gender bias" where it exists.

### ***Involvement of Local Communities***

The importance of involving local communities in mining projects is today recognised as best practice for maximizing the benefits for affected communities. Local can be restricted to immediate project host communities or defined to encompass regional or national level stakeholders for larger projects, and the involvement covers a range of elements such as direct employment, contractors, the purchase of goods and services needed at the mine or in its area of influence, including within local communities. Capacity building and access to finance are at the centre of a wide array of activities aimed at increasing the participation of the local population in the economic opportunities created by the mine.

Offsetting adverse impacts has in the past tended to take the form of philanthropic investment whereby financial assistance is granted to local projects and initiatives such as the construction of a new hospital or support to the local school football team. However, a more strategic approach to community investment has emerged over the past decade, particularly among the major global mining companies. This focuses on careful engagement, from the earliest stages of the mine project cycle, with local community stakeholders to help identify common long- term strategic socio-economic development aims for the local communities as well as gaps in the existing market. A core theme underpinning this is the desire to create and support the development of resilient, diverse local economies that have the ability to sustain themselves beyond the life of the mine.

Successful community investment requires the involvement of many different stakeholders, including local, regional and state authorities, and other private sector players in the same area. Done well, it can not only help to avoid or offset the boom-and-bust cycle of mines, address gender issues, mitigate problems associated with population influx, and improve community health and safety conditions; by involving the local population in shaping these programmes, it can identify the opportunities around mine development and enhance those positive impacts that ultimately help to improve people's lives.

**Bank Approach:** The Bank will seek wherever practicable to encourage project sponsors to provide a greater degree of EHS&S benefits than that afforded by meeting national standards. This would be particularly true in large category A mine developments where companies have the expertise, skills and other resources to contribute positively to local development impacts, often through community investment and capacity building activities aiming at increasing the local content in hiring, contracting and purchasing of goods and services.

Many elements of the Bank's Environmental and Social Policy promote the realisation of additional benefits, such as socio-economic benefits, to affected communities (EBRD ESP, paragraph 5), opportunities for displaced persons and communities to benefit from the project, (PR 5.30), and meaningful engagement with affected communities to examine options for community development programmes that would benefit them (PR 10.20).

#### **4.5 OCCUPATIONAL HEALTH AND SAFETY**

Mines present a wide range of safety hazards, including flammable environments, rockfall, poor illumination, movement of equipment and vehicles, flooding, low-oxygen or high-dust atmospheres, electrical hazards, explosives and hazardous materials. Mining is a significantly high risk sector, with undesirable events occurring regularly in all areas of the globe. The inherent natural hazards make the likelihood of an event occurring at a mine and the severity of a loss if one should occur significantly higher than in most other business sectors. As a result, there are unacceptably high numbers of work-related deaths and injuries around the world, including in EBRD's COOs. As a result, there is a need for improved infrastructure and strong safety management systems which follow best international practises in order to reduce the probability of events and to minimise consequences when events occur.

Much of mine safety management revolves around integrity of organisational controls, safety of processes, and suitability of equipment, all of which require a high level of training, leadership, and resourcing. These key elements allow the identification of hazards and the introduction of mitigation measures to control the risks to a tolerable level. Major challenges exist at many mining operations in the Bank's COOs due to a combination of out-dated equipment, insufficient training, and poor safety culture, all of which may result in unnecessary unsafe acts and/or conditions occurring. Although some COOs have national strategies to improve occupational health and safety in the mining sector, behavioural changes are difficult to implement and enforcement is not always a priority.

Poor management of mine safety risks not only leads to loss of life and/or disabling injuries, it also represents a major source of reputational risk to companies and for EBRD. Accidents can also result in potential business interruptions and the loss of business opportunities. It is noteworthy that investment by the major international mining operators in local mining sites in the Bank's COOs can lead to rapid and significant improvements in safety of workers due to these companies' group safety standards, which generally exceed the most stringent local health and safety requirements, being implemented into all business regardless of national requirements.

Beyond matters of safety, the nature of mining creates a number of disabling occupational health hazards for mine workers. These include occupational deafness, musculo-skeletal disorders and various respiratory diseases which can have latent effects and go unnoticed for many years, such as pneumoconiosis, emphysema and chronic bronchitis, which can be complicated by high rates of smoking and endemic diseases such as tuberculosis.

Fatigue is another serious hazard in the mining sector - working in hot, underground mines or at high altitudes and on long shifts can create stressful conditions that lead to fatigue and associated health problems. It is also the case that many open-cast operations in the Bank's COOs require outdoor working for extended periods in winter where temperatures fall well below zero. Remoteness of locations and long rotations can lead to isolation and stress and a high turnover in the workforce.

Most COOs have rules and regulations that aim to protect workers, including requirements for employers to identify hazards and mitigate risks. In some cases, the laws may be so strict as to be unworkable due to the economic situation in a particular country and the overly ambitious targets of enforcement authorities. This can result in a culture of accepting violations and unnecessary risk as a norm. Where mining laws exhibit such characteristics, EBRD may consider opportunities to improve the regulatory framework.

**Bank approach:** In all cases, EBRD requires that clients demonstrate compliance with national laws. In addition, the Bank requires that projects are structured to meet international best practises, including compliance with EU occupational health and safety requirements and, for areas where there are no EU standards, International Labour Organisation guidelines. Projects must implement health and safety management systems and report on their implementation to ensure all hazards have been identified and risks controlled to a tolerable level. In addition, clients are generally required to track and report to the Bank on key occupational health & safety statistics, including work hours, lost-time incidents, serious injuries, etc.

#### **4.6 WATER MANAGEMENT**

Mines both require and affect water, and careful attention to water management –acquisition, use, storage, and discharge - is necessary for responsible development. Mines often require large quantities of water for ore processing or other purposes, which in arid areas in particular can compete for and/or deplete available water resources. It is also often the case that mining activities generate large quantities of water through the interception of water-bearing strata and such produced waters require appropriate handling and discharge. Such water that has to be evacuated from mines as well as water used in ore and mineral processing can contaminate surface and ground water with elevated turbidity, heavy metals, acidity, and other chemicals used in ore processing activity. These in turn can have major implications for aquatic and terrestrial biodiversity as well as local and downstream water users. Similarly, construction can affect water resources if watercourses are disturbed or interrupted, as by uncontrolled river crossing or temporary diversions.

Attention should be given to establishing baseline conditions as the water resources in mining areas may have elevated levels of compounds due to natural conditions (i.e., caused by the natural interaction of water with the ore bodies). The baseline should also include information on the quantity of resources available and the linkages between the various water systems (surface water, shallow groundwater and deep groundwater) to enable a full evaluation of impacts to the water cycle from the mining activities. Because the Bank invests in mine expansions and upgrades, and because some new mines in which the Bank finances are in previously mined areas, surface and ground waters can already be contaminated before

the Bank is involved, or before a new project begins. Such legacy issues present special challenges and expectations for operators and for the Bank. A related issue is that because water problems caused by mines can persist for decades or even centuries after mining ends, new and expanding mines in such areas face complex planning challenges in securing adequate supplies of clean water, in avoiding making conditions even worse in the future, and even in assuming responsibility for the results of past practices.

In the past several decades, more effective practices have come into use to reduce water usage and water contamination and proven technologies have been developed. These are in common usage at mines where large international mining companies are involved, but many companies and operations in the Bank's COOs, particularly smaller operations, use older practices or less effective technologies.

**Bank approach:** Requirements of the Bank are set forth in the Performance Requirements as part of the ESP. The Bank expects clients who seek financing for mines or mining-related projects to comply with the pertinent PRs; in terms of water management, this generally includes requirements for the following (also see the next section on Waste Management):

- Perform adequate baseline studies to identify the quantity and quality of water resources in the area.
- Design facilities such that extraction of water for site needs or the generation of produced water via mining activity does not adversely affect the environment, any other water body (surficial or groundwater) or the supply of water to any other user or potential user.
- Design facilities such that there is no adverse affect to water quality of any body of surface water or groundwater.
- Minimise water use to the extent possible, and then maximise options for recycling and reuse of water.
- Do not release or otherwise discharge any effluent that exceeds permitted standards or pertinent EU standards.

#### **4.7 WASTE MANAGEMENT**

Most mining and ore processing activities, including all of those associated with metal ores, generate large volumes of solid waste. Much of this comprises waste rock and overburden; however a significant portion can also include tailings from ore crushing and concentration processes that may, depending on the type of ore and the processing being used, contain heavy metals, reagents from processing, thickening agents, etc. Waste rock piles or tailings containing sulphide mineralisation (referred to as Acid Rock Drainage (ARD) or Acid Mine Drainage) can generate a sulphuric acid solution when in the presence of air and water. This solution may in turn dissolve heavy metals remaining in the waste or surrounding rocks. Facilities must be designed to control possible generation and migration of ARD as this can degrade the environment.

Tailings are typically retained in an engineered facility and pose long-term risks due to potential migration of leachate and/or catastrophic failure of the engineered facility which can result in release of tailings to the environment. Historically, there have been a number of notable tailing dam failures with serious environmental and public health impacts (e.g., the Baia Mare cyanide spill in Romania in 2000 and the failure of a red mud storage facility at an alumina refinery in Hungary in 2010). As a related issue, tailings, as well as waste rock piles, if not properly managed can also generate a dust dispersion problem that can result in contamination of surrounding land and soils, presenting potential health risks to local communities.

Qualified geotechnical engineers or other competent persons are required to develop solutions for wastes in the extractives industry, including the design of tailings dams and waste rock piles. Oftentimes there is a preference for passive treatment systems (when required) as active treatment and retaining requirements can pose problems for post-closure care. Care should be taken when examining these issues on existing facilities prior to acquisition as addressing existing problems (i.e., legacy issues) will be expensive. Designing new facilities and operations – whether Greenfield or brownfield - to avoid future problems can increase the capital cost of mine development, but it can also significantly reduce future costs to correct or stabilise problems.

**Bank approach:** In accordance with the Bank’s ESP and Performance Requirements, the Bank requires clients to consider the following in terms of waste management on mining projects:

- Comply with relevant requirements of the Mining Waste Directive (2006/21/EC) and the Amendment to the Seveso II Directive (2003/105/EC) of the European Parliament and the European Commission Reference Document on Best Available Techniques for Management of Tailings and Waste Rock in Mining Activities (January 2009).
- Ensure that the design, construction and maintenance of waste rock facilities and tailings facilities promote safe operation and do not pose significant risks to human health or the environment.
- Control surface water runoff at mining facilities to prevent offsite migration of possible contamination and to prevent undermining of waste rock and tailing facilities.

#### **4.8 MATERIALS MANAGEMENT: MERCURY, CYANIDE, EXPLOSIVES**

Ore processing techniques often involve the use of a range of hazardous substances and materials including cyanide (used primarily for gold recovery but also for copper concentration), mercury (used historically for recovering gold from ore), acids and bases, solvents, and a variety of other reagents to help concentrate and extract the desired metals and minerals. In addition, mining itself – both underground and aboveground – typically involves the use of explosives. If not carefully managed, the use of these materials and substances can present significant risks to local environment as well as to the health and safety of mine workers, contractors, artisanal miners and local communities.

### *Cyanide*

The development of cyanide leaching processes for extracting gold revolutionised the gold industry in the 1980s by allowing economic recovery from much lower-grade ores. As a result, cyanide is widely used around the world. In the two decades following development and widespread use of cyanide leach processing for gold recovery, there were a number of highly publicised spills and releases that had significant adverse effects on river ecosystems and raised concerns about cyanide transport, use and disposal. Some of these occurred in Bank's COOs, including one at a project financed by the Bank in the Kyrgyz Republic. Transport of cyanide to the mine site can also be problematic and emergency prevention and response planning needs to be undertaken for transport as well as for the mine site.

Largely as a result of well-publicised incidents in the 1990s and early 2000s, the international community, including major gold mining companies, under the guidance of the United Nations Environment Programme and the International Council on Metals & the Environment, developed the International Cyanide Management Code for the Manufacture, Transport, and Use of Cyanide in the Production of Gold. This voluntary program sets out a systematic approach to managing cyanide from manufacture to use and represents current international best practice.

**Bank approach:** Although it has been formally adopted primarily by large companies and mines, the Code's systematic management approach is equally suitable for smaller operations as well. The Bank's practice has been to require clients to develop management control systems approximately equivalent to those of the Code, and to have those systems and their operations independently verified. Emergency response plans for the mine site and transport of hazardous materials are reviewed as part of due diligence and monitoring.

### *Explosives*

Explosives are widely used in aboveground and underground mines to facilitate access to ore. Use of explosive presents a number of safety, security, and environmental challenges. Accidents, often fatal, can and do happen when explosives used for blasting are not carefully managed. In addition, explosives can be attractive targets for theft.

**Bank approach:** EBRD generally expects clients who use, store, and/or transport explosives to demonstrate strict management controls of explosive materials in line with international best practice to prevent and/or mitigate risks to safety, security and the environment. In addition to meeting national requirements, key international benchmarks include the IFC Environmental, Health, and Safety Guidelines for the mining industry and relevant International Labour Organization codes of practice.

### *Mercury*

Mercury has historically been used in the chemical extraction of certain hard-rock metals, especially gold, from their ores. Although the use of mercury for gold processing is now banned in many countries, it has created environmental and public health legacy issues (e.g., contaminated tailings dams and disused leach piles) in many countries. It is also still used, sometimes illegally and nearly always in an uncontrolled manner, by artisanal miners in many developing countries around the world.

Mercury, which can seep into the surrounding soils, groundwaters and surface water courses, is highly toxic to mammal and aquatic life and is bio-accumulative. Modern gold ore processing techniques no longer use mercury but naturally occurring mercury in some gold ores can become concentrated and carried through to the smelting process, where it can be released as a highly toxic vapour. Careful controls and monitoring are needed to avoid inhalation by employees and contractors working in or near on-site gold refineries.

**Bank approach:** The Bank has only once had a project where mercury had been used at the site previously and in that case it built a decontamination and monitoring programme into the client's commitments. The Bank has not funded a mining project that was actively using mercury; however, it is aware that there are a large number of artisanal miners in Mongolia, for example, where this is still a practice. One key international benchmark is the International Council of Mining and Metals (ICMM) 2009 Position Statement on Mercury Risk Management that includes emphasis on larger mining companies participating in government-led partnerships to transfer low-to no-mercury technologies to artisanal miners in locations where ICMM member companies have operations close to artisanal mining activities. Where practicable, the Bank will consult with national authorities and encourage clients to sponsor such technology transfers.

#### **4.9 BIODIVERSITY**

Mining operations typically require the occupation and disturbance of large areas of land. The impacts on surrounding ecosystems and local biodiversity, if not carefully managed, can be significant and irreversible. It can involve direct impacts such as the degradation or destruction of local habitats through land clearing, and diversion of water. Such impacts occur to make way for siting process plant and for the actual mine development and expansion – particularly if it is opencast – for waste rock and tailings disposal, and for access roads.

There can also be indirect impacts related to air pollution (e.g., sulphur dioxide emissions); heavy metal-contaminated dust emissions; the pollution of, or excessive use of, water resources; and impacts associated with creating access roads into what were otherwise difficult-to-reach and sensitive ecosystems or previously pristine or natural habitat. This may result in habitat fragmentation. Additional risks that need to be addressed include, for example, the risk of tailing dam failures which can have widespread and long-term impacts on aquatic and/or terrestrial biodiversity both locally and even regionally depending on the consequences of the release.

Acid rock drainage can also influence biodiversity through impacts to local water resources both during the life of the mine and, potentially, for many decades, and even centuries, after mining ends. Whilst mine sites located in or close to biodiversity-rich areas present the most obvious risk, sites located in seemingly low biodiversity-rich areas such as deserts can still face challenges if these areas contain unique endemic species of animals or plants in ecosystems that are very finely tuned and vulnerable to change.

It is important, therefore, to have a detailed understanding of the biodiversity values at stake, including baseline assessments categorising the types and vulnerabilities of ecosystems, fauna, and flora which may be impacted within the project site and the area of influence before the commencement of operations. Care should be taken to understand seasonal fluctuations and to ensure baseline studies are planned with an understanding of this. Plans for mine closure and rehabilitation should be considered early to allow for development of on-site nurseries to grow local species and to allow experience of rehabilitation prior to actual mine closure.

#### **Case Study 5: Addressing biodiversity and natural habitat challenges in the South Gobi Desert**

The Bank already is and will continue to be involved in natural resources projects in the Gobi Desert area of Mongolia. The environmental conditions in this region are fragile and support a diverse and often endangered variety of species. Knowledge of the distribution and behaviour of these species is sparse and there is a lack of biological data, both on the regional and local scale. With little or no information, it is difficult to estimate impacts on habitats, and to know where priorities should be placed in terms of the protection of both species and habitats. Further, most of the environmental impact work that has been completed or is planned for this region has been completed on a site-specific basis, although the species of interest occupy large areas of land and therefore conservation of these species must be addressed on a regional scale.

For these reasons, the Bank sponsored a workshop on biodiversity issues in the Gobi Region in Ulaanbaatar in March 2010 (funded by the Bank's Special Shareholders Fund), seeking to pool and share existing data and knowledge, and to promote a comprehensive understanding and consistent approaches to conservation in this region. The workshop included local and international academics specialising in the fauna present in the region; national and local Mongolian regulators; representatives of the main mining companies operating in the region and CSOs. This workshop brought several parties together and helped facilitate cooperation and data sharing which continues today.

Currently, the Bank is working with key industry and government stakeholders to map out a regional approach to conservation, ultimately aiming to introduce best international practice on protecting biodiversity and to contribute to developing a better regulatory system for protecting biodiversity. A planned future phase of the project envisages capacity building within the Mongolian Government, assisting them in the management of protected areas and species and training to allow them to apply a landscape level approach (i.e., a regional approach) to conservation in this area. Given the rapid development of mining in this area, these efforts are urgently required.

**Bank approach:** The Bank requires clients to consider at least the following items related to biodiversity when structuring a mining project for EBRD finance:

- The specific requirements for the Bank are presented in PR 6.
- PR 6 requires the application of the mitigation hierarchy to avoid, minimise, mitigate, and only lastly to offset potential impacts to biodiversity.
- Project proponents must ensure staff are qualified to perform the technical duties, and in the case of biodiversity offsets, this will require specialist technical input.
- Areas with sensitive biological resources should be avoided if possible. Where that is not possible, PR6 requires that projects be structured so there is no net loss, or a net gain, of biodiversity.

- Where mining operations may affect protected areas or protected species, the Bank requires that clients should complete studies equivalent to those of the Habitats Directive (Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora).
- When developing projects in large areas of previously little to no development (thereby requiring new transportation infrastructure) clients should look to work with the government and other project proponents to address biodiversity on a regional scale.

#### **4.10 CLOSURE AND FINANCIAL ASSURANCE**

Exploitation of any ore body is necessarily finite, even if it may last for decades before the ore body is exhausted or reaches a non-economic level for recovery. Some mines, particularly metal and coal mines, carry the potential to contaminate land and water for extended periods of time if they are not stabilised and properly closed. International best practice has come to realise that proper stabilization and closure needs to begin at the initial design stage and to be adjusted throughout the mine's active life. It is often the case that closure can be technically and financially challenging, but when closure planning is not taken into account before and during operation, closure may also then need to include extensive and expensive rehabilitation and remediation works. This in turn results in a higher financial cost than would be the case if the issue is addressed at an early stage.

It is also important to note that the time of maximum expenditure for mine closure occurs when cash flow is ending as the mine nears and reaches the end of its active life. This presents a major problem if resources have not been set aside to pay for clean closure. Similarly, mining companies may fail or ownership may change, leaving limited or no resources; as a result, public resources may need to be used for stabilisation, closure, and rehabilitation works unless adequate resources have been set aside throughout the life of the mine and safeguarded for those purposes. It is a particularly challenging issue in countries without adequate mining closure requirements, as funds may need to be safeguarded for closure and reclamation purposes.

**Bank approach:** In general, with regard to the technical issues around mine closure and restoration, the Bank applies the relevant provisions of the EU's Mining Waste Directive (Directive 2006/21/EC), the associated Best Available Techniques reference document, and the Amendment to the Seveso II Directive (2003/105/EC). Although provisions within the Directive 2006/21/EC regarding waste management, monitoring, and other technical issues can be applied and required even where there is no corresponding requirement in national law, an issue arises when competent authorities in a country of operations do not have the legal authority to require sufficient financial assurance for closure, particularly in case of company default or other interruption of service. In such cases, and in line with the Bank's Environmental and Social Policy, the Bank requires that the Project demonstrate that appropriate financing mechanisms for closure provisions are in place.

#### **4.11 OTHER EHS&S ISSUES**

Mining operations can invoke many complex issues, like other large industrial projects. These include such issues as social impacts due to migrant labour and accommodation, the need for specialised emergency preparedness and response plans and procedures, the need for special attention to indigenous peoples, community health, safety and security, potential impacts on cultural resources and lifestyles, as well as issues related to air quality, energy efficiency and climate change.

**Bank approach:** Although there may be some unique aspects at mining projects, these issues are similar to those at many other types of projects and are addressed in accordance with national and EU standards and the ESP and PRs.

## **ANNEX 1: Extractive Industries Sector Strategy Review: Summary of Recommendations and Management Response**

A number of the most relevant lessons from mining investments presented in the draft Extractive Industries Sector Strategy Review, which is being prepared by the Evaluation Department (EvD) is summarised in the table below, along with an indication of EBRD management's response on how these recommendations will be addressed going forward.

<b>Recommendations</b>	<b>Management Response</b>
<p>The EBRD should develop a new Mining Sector Strategy. The Bank will need to be clear whether this new strategy includes thermal coal mining operations related to the energy sector, which at present are covered in the Energy Operations Policy (2006).</p>	<p>The present document addresses these recommendations. The Strategy does not cover the extraction of hydrocarbons such as oil and gas, which are covered in the Energy Operations Policy approved in 2006. The Strategy covers EHS&amp;S issues associated with thermal coal mining, but not the issues of thermal coal and climate change, its role in the energy mix and its contribution to energy security in certain of the Bank's countries of operations. These aspects will continue to be covered by the Energy Operations Policy and its subsequent updates.</p>
<p>Although a strategy that closely matches the responsibilities of the NR banking team is recommended, the strategy should be clear about the Bank's approach related to other activities in the Extractive Industries (EI) sector outside the NR banking team (e.g., equity funds, TFP, leasing, etc). This strategy should also be clear about EBRD's approach related to captive mines and quarries that are components of projects in other teams (e.g., steel and cement plants).</p>	<p>The Strategy is relevant to projects undertaken by the Bank's Natural Resources team, as well as other sector team including Manufacturing &amp; Services, Power &amp; Energy and Financial Institutions. The Strategy covers all types of financial instruments used by the Bank including investments in financial intermediaries through which the Bank indirectly funds mining projects. It also takes into account projects which may have associated mines, but where the mines are not the focus of the investment (e.g., iron ore mines associated with steel projects, limestone quarries associated with cement production).</p>
<p>The Bank could consider modifying its coding system so that projects that fall in more than one category (e.g., captive mines) are captured. This would result in more accurate accounting to the Board, and may allow for better capturing of EI components of projects in all sectors.</p>	<p>The Bank will consider implementing the proposed measures.</p>

<p>The current Standard Industry Codes (SIC) are used, within EBRD, more as a division of responsibility than as an industry accounting system. However, this information is also used to report to the Board and external users on the distribution of EBRD's investments. The SIC codes should be used for their primary purpose of accountability of investments. Therefore it is important to assign secondary SIC codes to all EI related projects, so that the full extend of the EI portfolio can be accounted for.</p>	<p>The Bank will consider implementing the proposed measures.</p>
<p>In view of the importance of sustainability in the sector, a specific section is needed in the strategy on environmental and social aspects.</p>	<p>A section of the Strategy is dedicated to Environment, Health, Safety and Social, issues.</p>
<p>The strategy needs to be clear about the approach to defining the boundaries of projects with respect to the applicability of EBRD standards.</p>	<p>The 2008 Environmental and Social Policy defines the concept of a Project's area of influence (its boundaries), and this is described in the Strategy.</p>
<p>Preparation and implementation of a more detailed strategy for the NR banking team.</p>	<p>The strategy for the Natural Resources banking team will be articulated in two documents: the Mining Strategy and the 2006 Energy Operations Policy and its subsequent updates. Every year the Natural Resources team plan on an annual basis the current and developing portfolio and specific objectives for the coming year.</p>
<p>Preparation and implementation of specific focus country action plans for the NR banking team (for the priority countries). Even in countries where there are integrity concerns, such strategies could target specific types of projects, such as environmental loans.</p>	<p>The Strategy includes an assessment of transition challenges for each COO. Specific country action plans will continue to be covered primarily in the EBRD Country Strategies.</p>
<p>Continuing to increase the resident office NR staff resources.</p>	<p>Since 2006 the Natural Resources banking team has appointed two sector bankers in Ulaanbaatar, one banker in Kiev, one banker in Istanbul, one banker in Almaty and one additional banker in Moscow for a total of three bankers in Moscow.</p>

Greater inclusion of the use of sector-specific TC in the country action plans.	This is envisaged by the Strategy.
Recruiting mining, oil and gas engineers to the NR banking team.	The Natural Resources banking team hired a petroleum engineer in 2011 and will be hiring a full-time mining engineer in 2012.
Formalising procedures in the Bank to improve team linkages for regional development related to major projects in the EI sector, so that opportunities in transport and Municipal and Environmental Infrastructure, for example, are identified.	This is envisaged by the Strategy.
Development of marketing and demonstration materials (e.g., project case studies), and carrying out more actions to facilitate the demonstration of transition impact (e.g., through conferences), which could contribute to business development.	These materials exist and are regularly updated. The team is regularly speaking at relevant conferences and seminars.

## **ANNEX 2: Assessment of Transition Challenges**

This Annex details progress in transition in the mining sector of the Bank's COOs and identifies the remaining transition gaps or challenges ahead.

The Assessment of Transition Challenges (ATC) is based on an evaluation of the size of the remaining reform challenges in two main areas: market structure and market-supporting institutions and policies. The former refers to the balance between the private sector and the state in the market; the degree of openness and competition in the mining sector; the extent and quality of the supporting infrastructure; and the degree of development of backward and forward linkages along the mining value chain. The latter refers to the institutional, regulatory and policy framework that is necessary for the correct functioning of the market.

Table A2.1 provides more details on the criteria used to assess market structure and market-supporting institutions, their respective weight, as well as a sample of indicators used to assess the performance of each country against the different criteria. The scoring for each component is based on either publicly available data or observable characteristics of market structure and institutions. The information used in this assessment includes an analysis not only of laws and regulations on the books, but also of how well they are being implemented.

Once the size of the remaining transition challenges or gaps have been evaluated, an assessment can be made about what remains to be done to bring the standards of the mining sector in EBRD's COOs up to those of a hypothetical well-functioning market economy.

Sections A2.1 and A2.2 below present an overview of progress in transition and summarise the key challenges in each of the dimensions or criteria that have been used to define market structure and market-supporting institutions.

**Table A2.1** Assessment of Transition Challenges

Components	Criteria	Indicators
Market structure (50%)	Private sector participation	Degree of private sector participation in direct mining and processing activities (per cent of activity in sector due to private sector companies, domestic/foreign) Diversification of supply chain
	Price liberalisation, market access and competition	Extent of commodities prices liberalisation Extent of free market access and free trade Degree of effective competition in the sector
	Development of related infrastructure	Availability and quality of rail / road / port infrastructure Development of processing facilities
	Knowledge & Technology	Distance from the technology frontier Availability of skilled labour Extent of foreign participation (technology transfer) Level of EHS&S technology in use in the sector relative to Best Available Technologies Relative carbon-intensity of the sector
Market-supporting institutions and policies (50%)	Institutional framework	Independent mining regulation agency Independence of judicial bodies Clarity and stability of licensing and tax regimes including royalties Independent environmental/social regulatory agency
	Development of an adequate legal and regulatory framework	Mining law/code: Adequacy/quality of legislation/regulations Adequacy/quality of licensing and tax regimes Adequacy of corporate governance and reporting requirements and implementation Status of disclosure/reporting transparency and of accountability on revenues (e.g. EITI/PWYP compliance) Corruption index
	EHS&S legislative and regulatory framework	Extent and quality of specific EHS&S legislation for mining sector Adequacy of environmental legislation/regulations (including tailings/rock management, water management, emissions controls) and effectiveness of enforcement Adequacy of public information and public participation requirements and effectiveness of enforcement Adequacy of public health and safety standards and effectiveness of enforcement Voluntary market incentives: Presence and adoption of international standards, and market based mechanisms for EHS&S, cyanide, etc.
Source: Assessment of Transition Challenges 2012, EBRD.		

## A.2.1 Market Structure

### A.2.1.1 Private Sector Participation

*Key challenges: (i) reducing direct and indirect state intervention in the mining sector, which remains particularly pronounced for 'strategic' minerals or in economies heavily reliant on natural resources extraction; (ii) privatising or closing down old, inefficient and poorly run state-owned mines; (iii) supporting greater involvement of private sector mine operators; and (iv) promoting greater foreign direct investment in the mining sector.*

The share of mining and quarrying sector in the gross domestic product (GDP) and the degree of private ownership in the sector varies substantially across EBRD's COOs. With a few exceptions, there tends to be a positive correlation between resource abundance and the prevalence of state ownership, at least for so called strategic minerals or deposits.

In CEB, where the mining sector is relatively small, it has been mostly privatised. However, the state may retain control over some mineral groups, often designated as 'strategic minerals', such as coal. Coal is by far the largest mineral group in state ownership primarily for three reasons: firstly, centralised economic planning placed control of the combined energy-minerals complex in the hands of state-owned enterprises, and the unbundling of the power production from the associated mines is an on-going process. Secondly, there are significant environmental legacy issues associated with coal mining operations for which many companies are unwilling to accept responsibility. Thirdly, energy security concerns have prompted a preference for governments to retain strategic control of coal. In Poland for example, Jastrzebska Spolka Weglowa, the largest coking coal producer in the EU, is majority state-owned and the energy sector is dominated by four large vertically integrated energy groups that have consolidated some of the state-owned coal mines. Similarly, in Slovenia, the entire coal production is under control of the state-owned electricity producer Holding Slovenske Elektrarne.

In SEE, progress in transition to private ownership has been more mixed. The mining sector is fully private in Albania. In Bulgaria, mining has been largely privatised although it remains dominated by a few market players. Coal production is however an exception. Although Bulgaria has a number of small private coal producers, the majority of coal production remains under state control. Similarly, in FYROM, the sector is fully private except for lignite extraction, performed by the state-owned utility AD ELEM. In Romania and Serbia, state control extends beyond the coal sector, while in Montenegro the sector is highly concentrated and has recently undergone a partial re-nationalisation.<sup>29</sup>

In EEC, state involvement remains relatively limited except in Ukraine and in Belarus. In the former, the privatisation of coal production is incomplete, with the state still controlling more than half of production. Belarus is a world leading producer and exporter of potash (producing 17 per cent of world output), and the state owns the majority of mining operations and associated sectors.

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<sup>29</sup> Montenegro's industrial sector is dominated by two producers, KAP (aluminium processing) and Niksic Steel. Both were partially renationalised in July 2009 as a result of the financial crisis.

In Turkey and Russia, the mining sector is characterised by a significant involvement of private companies but also by a high degree of concentration and vertical integration along the value chain.

In Central Asia, where the mining sector's contribution to output is large, the state maintains a strong direct and indirect influence in the extractive sector. In the Kyrgyz Republic, where mining and quarrying accounts for 10 per cent of GDP, 50 per cent of industrial output and mining sector taxes account for more than 10 per cent of the government annual budget, a single commodity - gold - dominates production (91 per cent) and one company - Kumtor Gold - dominates the mining sector. Although Kumtor Gold is majority privately owned, the government recently increased its equity stake to 33 per cent, while it had been constantly decreasing it since Kumtor's establishment in the mid-1990s.<sup>30</sup> Moreover, the government's direct participation in the mining sector extends beyond Kumtor, through the state-owned holding company Kyrgyzaltyn. The latter not only holds pre-emptive rights to purchase any gold produced in the country, but also owns and operates Makmal Gold, one of the four main mining companies in the country alongside Kumtor, Kadamzhay (antimony, private) and Khaydarkan (mercury, 100 per cent state-owned). The situation is comparable in Kazakhstan where, despite the fact that a very large proportion of ore and metal mining companies are private, the level of strategic state holding remains high. The State shareholding in the uranium producer KazAtomProm (100 per cent), in Bogatyr Komir (coal; 50 per cent), Maikainzoloto (copper, gold; 25 per cent), Kazakhmys (copper, zinc, silver, gold; 15 per cent) and in the Eurasian National Resources Company (11.65 per cent) is currently being transferred to Samruk-Kazyna.

In Mongolia, where mining accounts for about a fourth of economic activity, a number of large private companies are operating in the sector such as Centerra (listed), Mongolghazar Co. (private), Ivanhoe Mines (listed in Canada and majority owned by Rio Tinto) and Altan Dornod (listed in Russia). Yet, the state maintains a strong influence in the extractive sector with the control of large mining groups such as Erdenet Mining Corporation (copper, 51 per cent) and Erdenes Tavan Tolgoi (coal). Via the latter, the government controls over 60 per cent of total coal production. Moreover, Mongolian legislation entitles the state to control 34 per cent (or 50 per cent if it has funded exploration) of any 'strategic' mining operation.<sup>31</sup> Finally, Turkmenistan and Uzbekistan stand out in Central Asia because the state fully owns and develops mining assets.

In the SEMED region, the state dominates the mining sector in all countries except Jordan.<sup>32</sup> In Morocco,<sup>33</sup> the most endowed of the four countries, the mineral extraction sector is controlled by two state-owned companies: the Office Chérifien des Phosphates, which controls the extraction of phosphates, and the Bureau de Recherche et des Participations Minières, which is responsible for the development of other mineral

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<sup>30</sup> The state original 66 per cent equity stake in the Kumtor gold mine was reduced to 33.3 per cent in 2005 and subsequently to 15.7 per cent before rising again to 33 per cent in 2009.

<sup>31</sup> 'Strategic' operations are defined as having the potential to exceed 5 per cent of GDP at full development.

<sup>32</sup> As of February 2012 Jordan had made an official request to become a COO.

<sup>33</sup> As of February 2012 Morocco had made an official request to become a COO.

resources. They act both as companies in their respective sector and as regulators with rights to issue licences in accordance with government's decisions.

In Egypt,<sup>34</sup> the state dominates through the holding company for metallurgical industries, which controls the production of aluminium, copper, coke, iron and steel. Tunisia<sup>35</sup> has relatively modest metallic and non-metallic mineral resources but is nevertheless the world's 5<sup>th</sup> largest producer of phosphate. The Tunisian government controls the Compagnie des Phosphates de Gafsa which is responsible for all phosphate mining activity. By contrast, in Jordan the state involvement is limited to minority stakes in the two companies covering most of the production of phosphates and potash (25.6 per cent stake in Jordan Phosphates Mines Co. and 26 per cent stake in Arab Potash Company). These minority stakes are what remains of a large privatisation program launched by the government across all sectors.

### **A2.1.2 Price liberalisation, market access, and competition**

*Key challenges: (i) removing existing tariff and non-tariff trade barriers; (ii) improving market access and trade by, among other measures, streamlining customs procedures; (iii) removing subsidisation of inputs of mining companies, such as electricity; and (iv) lowering the degree of ownership concentration in the sector by encouraging the entry of junior players.*

The transition process is characterised by the creation of markets and associated price signals; and a well-functioning market would be characterised by full price liberalisation, with companies able to freely access markets without facing price or trade barriers. Moreover, the sector would be characterised by an adequate level of competition and limited market distortions. The accessibility of markets, the degree of price liberalisation and of competition in the sector are therefore important criteria to assess the remaining transition gaps related to the structure of markets. While prices have been liberalised and mineral commodities are traded internationally, explicit export tariffs and other distortions limit competition and free entry into the mining sector of some of EBRD's COOs.

Minerals, as other raw materials, are traded globally. Base metals such as aluminium, copper, lead, nickel, tin and zinc are traded on stock exchanges such as the London Metal Exchange. However, other minerals such as cobalt, gallium, indium and rare earths, which can be of critical importance for some industries, are not traded on stock exchanges. Their traded volumes are small and their market is less transparent.

Mineral prices have been liberalised across all of the Bank's COOs. There are no centralised commodity boards and no examples of mandated pricing for exported minerals. The situation is however more complex in domestic markets for minerals that are not traded on a stock exchange, not traded at all, or which are coming from captive mines such as for instance thermal coal in Ukraine, Serbia or Bulgaria. In the latter case, the price of coal is regulated through power price regulation.

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<sup>34</sup> As of February 2012 Egypt had made an official request to become a COO.

<sup>35</sup> As of February 2012 Tunisia had made an official request to become a COO.

Mineral exports from the Bank’s COOs do not face significant tariff or non-tariff import barriers set by their trading partner countries. Most products in the Bank’s COOs can be traded freely across borders (except in specific circumstances such as between Turkey, Azerbaijan and Armenia). However, significant export restrictions persist for selected commodities in some of the resource-rich countries of EBRD’s region of operations. These restrictions are mainly intended to ensure adequate domestic supply of essential products, promote the downstream beneficiation industry or give a privileged access to certain minerals for domestic industries. However, they create distortions in the market.

Export restrictions can take several forms such as quantitative restrictions (quotas), duties and charges, mandatory minimum export prices or stringent export licensing requirements. They are particularly severe when they are imposed by countries that have a supply monopoly or quasi-monopoly, such as for instance Russia with platinum group metals which have been classified by the European Commission as ‘critical’ minerals.<sup>36</sup> Apart from Russia, export restrictions on ‘strategic’ metals and minerals are significant in Ukraine, Kazakhstan and the Kyrgyz Republic. They are listed in Table A2.2.

**Table A2.2** Mineral exports restrictions

Country	Mineral	Product	Export restriction (tax)
Kazakhstan	Copper	Refine copper and alloys	30% (but not less than €330 per ton)
	Gold		Presidential decree requiring refining to be performed within the Custom Union with Russian and Belarus. National Bank of Kazakhstan has pre-emption rights to acquire all gold.
Kyrgyz Republic	Gold		National Bank has pre-emptive rights to buy all gold produced domestically.
Ukraine	Cobalt	Waste and scrap; semi-processed products; articles of cobalt	27%
	Copper	Unrefined copper, copper waste and scrap	30% (but not less than €1 per kg)
	Chromium		30% (but not less than €0.4 per kg)
	Nickel		30% (but not less than €5.5 per kg)
	Tungsten	Waste and scrap	30% (but not less than €10 per kg)
Russia	Copper	Copper cathode	10%
		Refined copper and copper alloys	10%
		Unrefined copper	10%
		Waste and scrap	50%
	Galium		6.5%
	Indium		6.5%
	Manganese	Waste and scrap	6.5%
	Molybdenum	Molybdenum ores and concentrates; waste and scrap	6.5%
	Nickel	Waste and scrap	30%
		Nickel matters and non-alloyed nickel	5%
	Palladium		6.5%
	Platinum		6.5%
	Rhenium		6.5%
	Tantalum	Waste and scrap	6.5%
	Titanium	Titanium scrap	30% but not less than USD 1091/ton
Unwrought titanium; powders, ingots, slabs and other products		6.5%	
Vanadium		6.5%	

Source: OECD (except for gold)

<sup>36</sup> Critical minerals are defined as minerals which display a particularly high risk of supply shortage in the next 10 years and which are particularly important for the value chain.

Tackling this type of trade distortions is particularly challenging given that their use is not fully ruled out by the current WTO disciplines. Article XI of the GATT rules out quantitative restrictions only (such as export quotas and export licences), but export taxes are not covered by WTO rules. There are exceptions, when such provisions were negotiated in WTO accession protocols. For instance, Ukraine joined the WTO in 2008 and agreed to eliminate export bans on nonferrous metals and to remove export restrictions on precious metals and stones other than gold, silver and diamonds as of the date of WTO accession. However, Ukraine still has very large export taxes for metals and minerals (30 per cent for chromium, nickel, tungsten, cobalt and copper for instance). In the case of tungsten, Ukraine did remove its export ban, which was not in compliance with GATT Article XI, but kept a 30 per cent tariff.

Alongside tariff barriers, some non-tariff trade barriers persist in EBRD's region of operations. Many countries are lagging in terms of the effectiveness of customs administration. This is a result of high bureaucracy and lack of adequate legislation. Therefore, many of the COOs could benefit from streamlined customs processes.

As mentioned in Section 1, the Bank has witnessed over the past few decades an increasing concentration in the mining industry. This can be partly explained by the fact that mining operations often exhibit economies of scale which may limit the number of extraction companies in each country of operations. New market entry and competition in the mining sector in some countries of operations is limited and may have been discouraged by the presence of large, state-owned companies which may hold the licences and dominate the production of some strategic minerals (for example coal production in Bulgaria and Poland or phosphate in Morocco).<sup>37</sup> This restricts the ability of existing small independent players to compete, especially if they do not have the resources to acquire existing licences from incumbents or apply for exploration licences.

Another market distortion in the mining sector in some of EBRD's COOs is the presence of implicit or explicit subsidies for production inputs, such as electricity. This can directly affect competition. Moreover, by lowering the cost of production, it lowers incentives for investment in more energy efficient technology. Similarly, the existence of local processing requirements (such as within the customs union of Belarus, Kazakhstan and Russia) may distort competition and affect the type of products that mining and processing companies are able to produce and sell on global markets.

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<sup>37</sup> As of February 2012 Morocco had made an official request to become a COO.

### **A2.1.3 Supporting infrastructure**

*Key challenges: (i) developing further the network and improving service quality of supporting railways and roads infrastructure, especially in Central Asian countries; (ii) promoting the development of the mineral value chain, from extraction to processing and refining; and (iii) enhancing the integration of mining activities in the economy by strengthening backward and forward linkages.*

A well functioning market implies the development of adequate associated infrastructure enabling mining companies to produce and deliver output with sufficient value added. This notably includes appropriate transport infrastructure and basic processing facilities.

While explicit barriers to trade exist in few COOs, the under-development and under-capacity of the transport infrastructure and networks, which limits access to current or potential domestic or foreign markets, is a more recurrent issue across the EBRD region. Structural problems in the supply and distribution chains arising from the limited availability of transport infrastructure and services can also exacerbate the price volatility of some minerals. The physical transport of mined and processed output is all the more challenging in landlocked countries, especially those with vast mountainous areas such as the Kyrgyz Republic or Tajikistan.<sup>38</sup> Not only do landlocked countries face the challenge of distance – and hence higher transportation costs – to get their minerals to international markets, but they also have to rely on the availability of infrastructure in transit countries. This is for example the case for Tajikistan, which relies on Uzbek transit routes.

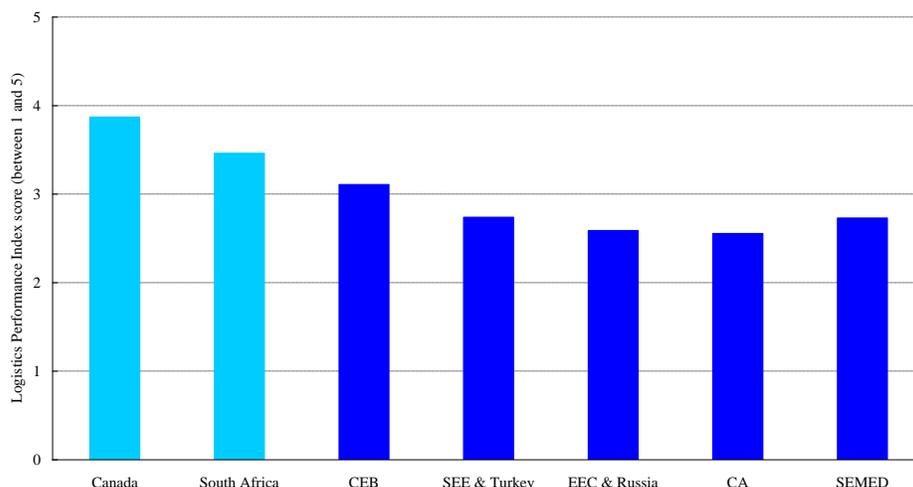
Normally, rail infrastructure is the preferred mean of transportation for mineral commodities throughout the COOs, although there are cases where road infrastructure dominates (e.g. in the Kyrgyz Republic, where the mountainous terrain precludes efficient rail routes). The legacy of disinvestment in the former Soviet Union, together with an old rolling stock, has led to comparatively low quality logistic networks across many of the COOs which emerged from the FSU. Overall, rail infrastructure remains a constraint for many countries. There are two key challenges: the first relates to the overall extent of the network, as in the case of Mongolia, while the second relates to the quality of this infrastructure. With the exception of the Central Asian countries, the majority of COOs have extensive rail networks. Central Asian states face significant challenges arising from long-term underinvestment in logistics, along with geographic challenges. Additionally, the lack of compatible standards between countries (e.g. railway gauge for Mongolia and China) may cause significant delays and costs at border crossings.

Port infrastructure, on the other hand, does not seem to be a major constraint on the development of mineral activities in the COOs. This is partly due to the fact that many of their markets (in particular regional processing facilities that tend to be concentrated in certain areas) are more easily accessed by existing rail networks. For those COOs that export significant mineral commodities around the world from their ports (for example, Moroccan phosphates), port infrastructure is generally of sufficient capacity and standard to avoid being a serious bottleneck in the logistics chain.

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<sup>38</sup> For instance, in the Kyrgyz Republic, some mines are located more than 4,000 meters above sea level.

**Figure A2.1** Logistics Performance Index 2010 (Aggregate index, World Bank)<sup>39</sup>



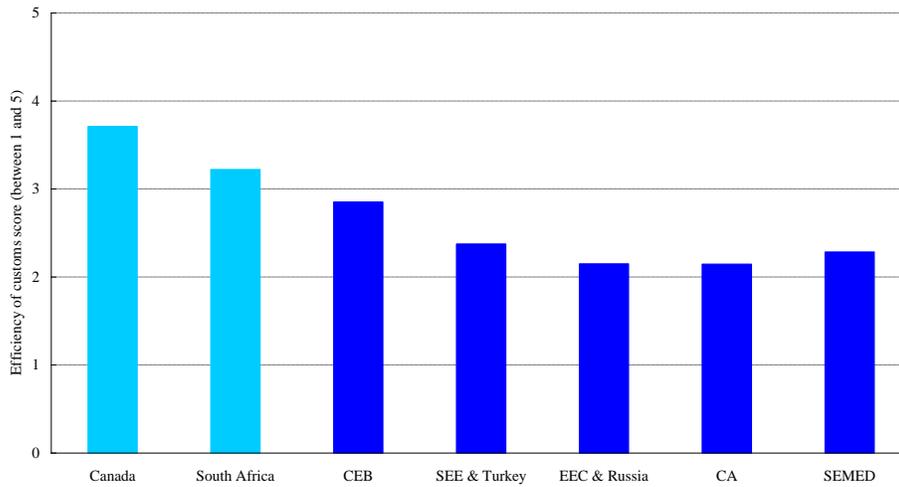
The quality of trade and transport-related infrastructure, the efficiency of customs, and more generally the logistic performance<sup>40</sup> are particularly high impediments to doing business in EEC and Central Asia. This is shown by the World Bank's Logistics Performance Index (LPI) and in particular its sub-components measuring the efficiency of customs and the quality of infrastructure (see Figures A2.1, A2.2 and A2.3). These indexes are lower in EEC and in Central Asia than in other regions of operations of the EBRD and much lower than in more advanced mineral-rich countries such as Canada and South Africa.

<sup>39</sup> LPI data available at <http://info.worldbank.org/etools/tradesurvey/Mode1a.asp>.

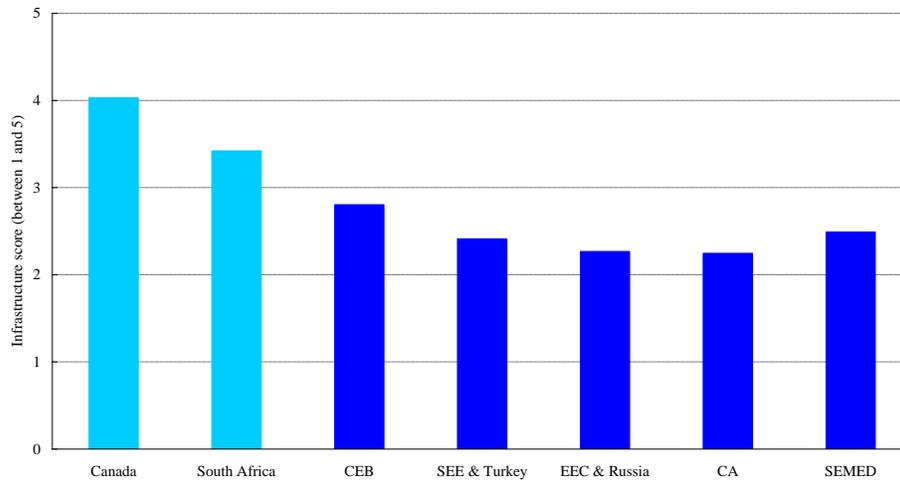
Note: Belarus and Morocco are not included in EEC and SEMED respectively since no data are provided for these countries.

<sup>40</sup> The World Bank's LPI summarises the performance of countries in six areas that capture the most important aspects of the current logistics environment: efficiency of the customs; clearance process; quality of trade and transport-related infrastructure; ease of arranging competitively priced shipments; competence and quality of logistics services; ability to track and trace consignments; frequency with which shipments reach the consignee within the scheduled or expected time. Each component, as well as the aggregate index, is assigned a numerical value between 1 (worse score) to 5 (best score). It is available at: Source: LPI data available at <http://info.worldbank.org/etools/tradesurvey/Mode1a.asp>.

**Figure A2.2** Efficiency of customs (Logistics Performance Index 2010, World Bank)

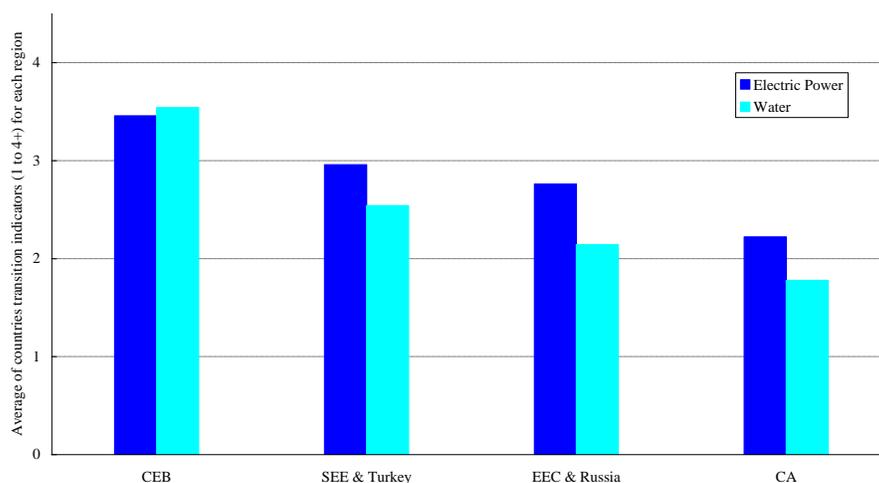


**Figure A2.3** Quality of trade and transport-related infrastructure (Logistics Performance Index 2010, World Bank)

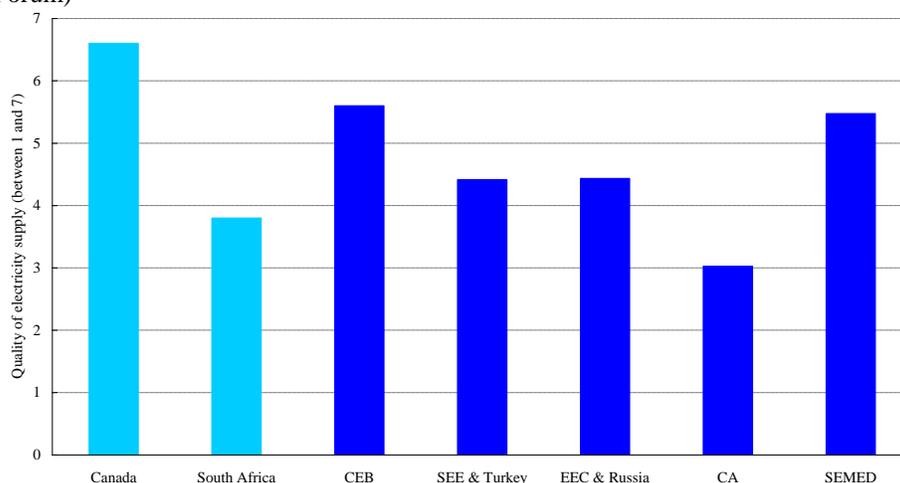


Beyond infrastructure such as roads, railways and ports, mining supporting infrastructure also includes reliable access to power and municipal services such as water supply and waste water services. Significant reform challenges remain across the Bank's region of operations with respect to these services, as reflected in EBRD's transition indicators for electric power and water (see Figure A2.4). In particular, the quality and reliability of power supply is an important issue in resource-rich Central Asian countries, as shown by the quality of electricity supply indicator of the World Economic Forum (see Figure A2.5). Insufficient or poor access to electricity in these countries is a constraint on the development of the mining sector and of the associated value chain. Not only electric power is an essential input in mining operations, but also transmission lines allow mining complexes to be integrated in the national grid and play a balancing and complementary role in covering the electricity demand.

**Figure A2.4** Sector transition indicators 2011 for electric power and for water and waste water, average by region (Transition Report 2011, EBRD)<sup>41</sup>



**Figure A2.5** Quality of electricity supply (Global Competitiveness Indicators 2011, World Economic Forum)<sup>42</sup>



### *Development of the value chain*

The mineral value chain can schematically be divided into four stages: mining (physical extraction), processing, refining and fabrication. The existence, availability and accessibility of appropriate processing and refining facilities, either domestically or abroad, is supporting and facilitating the development of mineral extraction and can in a way be considered as supporting infrastructure for the latter. Moreover, the close localisation of the different segments of the value chain reduces the need for transport capacity.

<sup>41</sup> Data available at: <http://www.ebrd.com/downloads/research/transition/tr11.pdf>.

<sup>42</sup> Data available at: [http://www3.weforum.org/docs/WEF\\_GCR\\_Report\\_2011-12.pdf](http://www3.weforum.org/docs/WEF_GCR_Report_2011-12.pdf).

Note: Tajikistan and Uzbekistan are excluded from the Central Asia region average as the Global Competitiveness survey does not cover these two countries.

In several COOs, the mining sector may not be adequately linked to other economic growth-promoting activities along the value chain (as for instance steel and aluminium production) or across associated industries and services. Except for the local employment of semi skilled labour, most mining sector inputs are imported, while outputs are exported without substantial transformation into higher value added domestic products. To ensure that the mining sector has a multiplier effect in terms of wealth generation and economic growth, it is necessary to ensure its integration in the economy by developing the whole value-chain as well as to strengthen backward and forward linkages.

While in general there is always some level of primary processing situated close to mining operations, many of the COOs lack further processing facilities, such as smelting and refining, and are unable to beneficiate the mineral ores into higher value final products. Often ore concentrates are sold to ore processing complexes (which may not be in the same country) where they are processed further. For example, Bulgaria receives copper concentrates from Serbia and exports concentrate to Namibia; Russia processes iron ore concentrates from Ukraine; Latvia has the only steel mill in the Baltic States, while the presence of aluminium smelters in Tajikistan has affected regional supply networks.

Although the concentration of metal smelting and refining facilities in only a few locations on a regional scale may be the result of efficient localisation decisions to benefit from economies of scale, it may also be the result of institutional, regulatory or market inefficiencies. In this case, countries would benefit from the support to establish domestic processing and refining facilities, notably through regulatory reforms removing potential hurdles or inefficiencies. This would enable them to develop the domestic value chain and fully benefit from higher value added products.

#### **A2.1.4 Knowledge & Technology**

*Key challenges: (i) supporting the adoption of best available techniques for the extraction and processing of minerals so as to reduce the knowledge and technological gap between the COOs and advanced resource-rich countries; (ii) supporting skills and technology transfer through FDI and investment by strategic mine operators; and (iii) developing human capital through investment in technical education.*

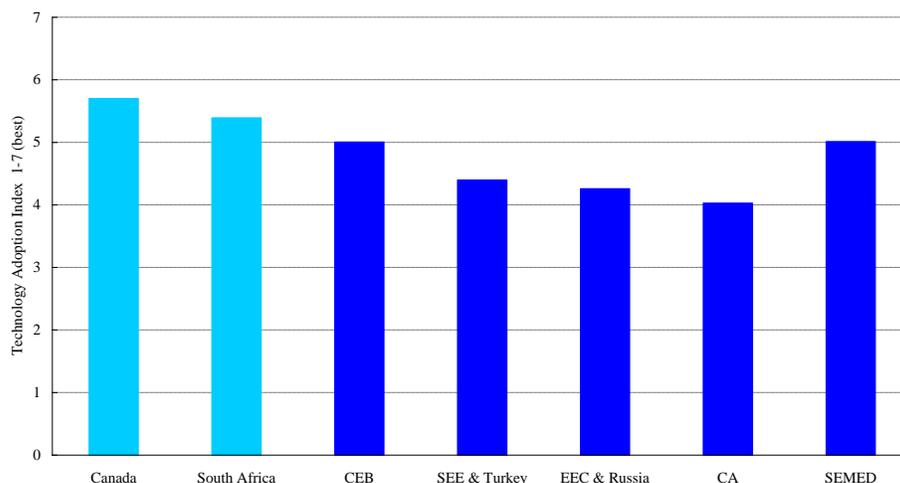
Almost without exception, the EBRD's COOs are relatively far from the technology frontier in the mining sector, using older technologies and systems to manage their mining operations. Multi-national firms tend to deploy and operate more advanced mining technologies at the mine sites they own and operate. However, where this involves the acquisition of existing mining assets, it may take a number of years before this technological transfer occurs, due to the significant levels of investment that are often required. Similarly, international engineering firms play an important role for the transfer of technologies across borders.

So far, resource-rich countries in the EBRD region of operations that have received investment from large global mining companies (e.g. Rio Tinto, Newmont, Centerra, Kinross, Cameco) have often benefited from technology transfer, whereby the latest equipment, best practices and technologies introduced by these companies have eventually been adopted by major local mining companies. However, small local firms still lag behind as they have more limited access to capital or less engineering experience and knowledge to adopt industry-leading mining technologies. The inability of these local firms to reach the same level of technological development is reinforced by the fact that in a number of countries these are still state-owned operations for which the necessary investment levels have not been maintained and the use of decades-old technology and equipment has persisted. This is more prevalent in the coal industry, where firms are subject to lower competitive pressure due to the captive set up with local power utility companies.

Even for those commodities which are traded internationally, buoyant commodity prices have cushioned local companies from the pressure to invest in newer, more efficient and productive technologies. The dramatic commodity price increases of the early 2000s created a buffer which shielded many locally-owned mining companies from one of their principal outcomes of competitive pressure, namely the necessity to continuously upgrade and invest in technologically and environmentally advanced equipment and processes. This was particularly the case in those countries (notably ex-FSU states) where the cost of negative environmental impact could be externalised without incurring high penalties or fines.

The disparity in the adoption of latest technologies across EBRD's COOs is not confined to the mining industry. Across the economy, technology adoption is particularly low in EEC and in Central Asian countries. This is reflected by the technological adoption indicator of the Global Competitiveness Survey of the World Economic Forum (see Figure A2.6).

**Figure A2.6** Technology Adoption Index (Global Competitiveness Indicators 2011, World Economic Forum)<sup>43</sup>



In contrast to the poor level of technological adoption and readiness, there is a relatively large pool of skilled labour in many (although not all) COOs. One of the positive legacies of the FSU is a very high tertiary enrolment rate. In addition, there are a number of highly rated mining institutes in many of the major mineral producers amongst the COOs (e.g. Poland, Russia and Ukraine). In general, countries with a strong mining tradition have dedicated institutions and facilities that support research and development into mining technologies and processes, often connected with local mining universities and faculties. There are however major mineral rich countries which face significant shortages of skilled workers, engineers, and mine operations managers (e.g. Kazakhstan, the Kyrgyz Republic) as they lack both local education institutions and the incentives for local skilled labour to remain in the country and for foreign skilled migrants to settle in permanently. According to the results of the 2009 EBRD-World Bank Business Environment and Enterprise Performance Survey (BEEPS), the shortage of skills is one of top three business environment obstacles in the majority of the Bank’s COOs (see Transition Report 2010, p. 84).

To summarise, several COOs still face large transition gaps with respect to technology adoption and acquisition of skills. The main transition challenges are to support the adoption of best available technologies in the mining sector; support the transfer of skills and technology through FDI and further develop human capital through technical education.

<sup>43</sup> Data available at: [http://www3.weforum.org/docs/WEF\\_GCR\\_Report\\_2011-12.pdf](http://www3.weforum.org/docs/WEF_GCR_Report_2011-12.pdf).

Notes: Tajikistan and Uzbekistan are excluded from the Central Asia region average as the Global Competitiveness survey does not cover these two countries. The Technology Adoption Index averages the scores for three components, namely the availability of latest technologies, firm-level technology absorption, and FDI and technology transfer. For each component, surveyed firms are asked to respectively assess on a scale from 1 to 7 to what extent are the latest technologies available in their country, to what extent do businesses absorb new technology, and to what extent does foreign direct investment (FDI) bring new technology.

## A2.2 MARKET SUPPORTING INSTITUTIONS

### A2.2.1 Institutional framework

*Key challenges: (i) establishing an independent regulatory authority for the award of concessions and licences; (ii) promoting institutional and regulatory capacity building; (iii) increasing transparency over payments and contractual terms; (iv) ensuring a more effective and transparent management of resource revenue from mining activities; and (v) strengthening the mechanisms through which authorities are held accountable for their decisions regarding the mining sector.*

Because of the large size of potential rents to be appropriated in the natural resources extractive sector, the development of market supporting institutions is probably more important and at the same time more challenging than in any other industry. Countries dependent on natural resources extraction tend to have weaker institutions that are more prone to endemic corruption thereby private interests are favoured at the expense of society's welfare.

Corruption is a hidden phenomenon that is difficult to assess. Yet, there are a number of identified weaknesses at the institutional and political levels which favour the perpetuation of corruption, and which can be tackled directly. These include poor institutional recordkeeping and access to information, including on royalty and tax payments, limited monitoring of production versus revenues, and the absence of collaboration and coordination between institutions and agencies that oversee the sector. These incentive problems at the political level remain a significant challenge in several EBRD's COOs. They call for the establishment of strong institutions and checks and balances to prevent conflicts of interest and state capture.

The persistence of corruption and its negative impact on the business environment in the Bank's COOs is reflected in the results of the EBRD-World Bank BEEPS, according to which corruption is one of the top three business environment obstacles in the resource-rich COOs.<sup>44</sup> Reducing corruption in the extractive sector and across other industries remains a major transition challenge in these countries in order to improve the business environment. Necessary market-supporting institutions include not only an independent authority coordinating mineral extraction policy, regulating the access and use of mineral resources, but also agencies responsible for the administration of taxes; the monitoring of procurement and fraud; the audit of revenues and an authority responsible for the investigation of rent-seeking activities.

The degree of complexity of the institutional framework in the Bank's COOs varies by region. Countries in CEB generally have far more developed institutions. On the other hand, countries in EEC and in Central Asia have larger gaps. Countries in SEE and the SEMED regions fall between these two groups. The existence of independent regulatory authorities that oversee the activities of the mining sector is closely linked with the degree

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<sup>44</sup> See EBRD's Transition Report 2010, p. 84 available at: [www.ebrd.com/downloads/research/transition/tr10.pdf](http://www.ebrd.com/downloads/research/transition/tr10.pdf).

of institutional maturity of the COOs. In many countries (particularly the FSU countries which have not engaged with the EU over accession), the regulatory authorities are not independent from the legislative and executive branches of government; these are the same countries which see high levels of state ownership. This type of conflict of interest can create significant competitive disadvantages and barriers to entry for private sector investors trying to access promising mineral deposits or acquire existing mining assets, as state-owned entities are often able to bypass or favourably influence legislative processes and regulatory decisions related to the sector, in particular those related to the award of prospecting and exploration rights and licences. The strong political influence over institutions reinforces the risk of discriminatory treatment among firms.

Beyond the mere establishment of these institutions, the real challenge is to ensure that they are given the appropriate independence, power and resources. Numerous COOs are still facing weak regulatory/bureaucratic capacity, which prevents regulatory institutions and governmental agencies to perform their functions effectively and overcome asymmetric information issues. Moreover, they may not be given stable and predictable financing to perform their regulation and monitoring functions, may lack incentives for institutional performance, or may not have the independence or authority to go far enough in the monitoring of democratic mechanisms, political influence and corruption, and in the enforcement of regulation.

Good governance over the sector also implies full transparency and accountability. A number of resource-rich countries across the EBRD's region of operations remain characterised by weak political accountability related to the extractive industries and a clear lack of transparency. This challenge persists despite the fact that transparency over licences attribution and revenue payments and receipts, together with transparent and enforceable contracts, are indispensable for a country's civil society to hold a government accountable for the way national mineral assets are being developed and the revenues generated are being spent. A greater effort should be made to strengthen systems of checks and balances, to establish trust in the granting of mineral rights and concessions, and to enhance transparency of contracts and concessions awards

Government and international firms are under increasing pressure to notably account for and declare terms and payments made for contract awards, taxes and levies associated with oil & gas and mining operations. Legislative changes in the US, the UK and around the world (e.g. the Dodd-Frank Act in the US) require more transparent reporting and accounting systems to be in place. Efforts such as EITI, PWYP and PWYE, although functioning through different mechanisms, attempt to improve the standards of transparency and governance in resource-rich countries.

The EITI seeks to improve the transparency with which mining companies do business with host governments, through an independent audit, full disclosure, and reconciliation of company payments to governments for mining activities on the one hand, and government revenues for the same activities on the other hand. The PWYP initiative encourages transparency across the entire supply chain, not just at the level of the mining companies themselves.

As of January 2012, among the resource-rich countries where the Bank is operating, Azerbaijan, the Kyrgyz Republic and Mongolia were EITI compliant countries, while Albania and Kazakhstan were EITI candidate countries. The latter have 2.5 years to be validated and become compliant countries. As of the same date, four countries of operations were PWYP affiliated countries (Azerbaijan, Kazakhstan, the Kyrgyz Republic, and Mongolia). Among the remaining COOs, those that are either members of the EU or candidate countries for accession have sufficient transparency mechanisms in place through standard corporate reporting requirements, while those seeking accession to the EU are rapidly improving relevant legislation.

### **A2.2.2 Legal and regulatory framework**

*Key challenges: (i) developing mining legislation in line with international best standards; (ii) establishing fair and transparent open tendering and bidding processes for the award of mining rights, licences and contracts; and (iii) establishing appropriate, fair and stable tax and royalty regimes.*

As stressed above, several COOs still suffer from weak regulatory and institutional capacity. This has a direct consequence on the depth and quality of the legal and regulatory framework. Most COOs have explicit laws regulating mining activities. However, their scope and clarity varies, largely in line with the distinction made earlier with respect to the general institutional framework (see Section 2.3.1). Moreover, these laws may not be targeted as specific ‘mining’ laws, and important pieces of legislation are in some cases spread across multiple legal statutes covering the mining sector. According to the OECD, the evolution of ‘mining codes’ can be described in three phases. The first phase is characterised by a major withdrawal of state intervention, the second by an increase in the responsibilities given to companies for socio-economic development, while the last stage implies a greater emphasis put on the participation of affected communities and on enhanced government responsibility for environmental and social safeguards. Across resource-rich countries of EBRD’s region of operations, moving from the first to the second phase is still a key challenge.

In some COOs, the process of awarding mining rights, licenses and contracts is weak, hampering an effective regulation of the mining industry. The use of open tendering or bidding processes to acquire prospecting or exploration rights is not generalised. Individuals or companies are in some cases awarded licenses through an administrative process whereby deals are kept confidential, providing a potential avenue for hidden benefits, corruption, as well as tax evasion. The design and award of concessions on a first come, first-served basis resulting from negotiations between the government and the mining companies is still common practice in, for instance, Poland, Belarus, the Kyrgyz Republic, Tajikistan, Turkmenistan, and Uzbekistan.

In some countries, setting up an appropriate tax regime is still a challenge. A well designed tax regime is sufficiently generous to attract FDI – particularly challenging at times of depressed commodity prices – but not overly generous, in order to limit governments’ incentives to renegotiate tax and royalty regimes as soon as mineral prices rise. An appropriate tax regime should also be relatively stable, since revisiting the mineral fiscal regime too often would negatively affect the attractiveness of a country and may discourage future foreign investment in the mining sector. Yet, contract renegotiation has been observed across the region in recent years, questioning the quality of the tax regime established in the first place. For instance, the government of Mongolia introduced in 2006 a controversial windfall tax on mining profits that was later repealed in 2009.

Moreover, as underlined previously, beyond a proper tax regime, it is critical to have an efficient and transparent tax administration, as well as processes for the collection and management of revenues from extractive activities. This is also an area that needs strengthening across the Bank’s COOs. Countries should also enhance the efficiency of tax compliance and enforcement. Across the economy, according to the EBRD-World Bank BEEPS, tax administration is the most important obstacle to firms in five COOs (Bosnia and Herzegovina, Croatia, Hungary, Montenegro and Romania), which interestingly are all in the same geographic area. In another third of the countries it is among the top three obstacles to doing business.<sup>45</sup>

### **A2.2.3 EHS&S Legislation**

*Key challenges: (i) improving the coverage and depth of EHS&S legislation and practices in line with best international standards; (ii) addressing the legacy of investments associated with the use of outdated technology; (iii) mainstreaming occupational, health and safety and mine closure legislation; and (iv) strengthening capacity building of regulatory authorities as well as promoting grass-roots participation by community members in local-level monitoring.*

As with other pieces of legislation, there are significant disparities between the countries in CEB and SEE, and the remainder of the COOs with respect to EHS&S legislation. One major distinction between these country groups is the complexity and depth of the EHS&S legislation. In general, in the most advanced countries of CEB, legislation addresses issues such as occupational health and safety, use of hazardous chemicals, emergency response protocols, water rights and usage (including resulting pollution such as acid mine drainage), and mine closure planning. This depth of legislation does not always exist in other countries further east, where the regulatory framework may not be sufficiently comprehensive to monitor the industry’s performance on health and safety standards and environmental protection.

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<sup>45</sup> See EBRD’s Transition Report 2010, p. 84 available at: [www.ebrd.com/downloads/research/transition/tr10.pdf](http://www.ebrd.com/downloads/research/transition/tr10.pdf).

In addition, even where these laws exist, there are challenges around their implementation and enforcement. The reason for this differs across countries but includes a lack of human capital, limited ability to enforce fines, and a high level of corruption. The proper enforcement of environmental legislation is not only constrained by the lack of capacity at local levels but also potentially by an unclear division of responsibilities for enforcement between national, regional and local authorities. Moreover, monitoring is especially a challenge for small-scale mining activities. In that respect, efforts should be made to strengthen capacity building of regulatory authorities but also to favour bottom-up monitoring through the involvement and empowerment of affected communities.

Although there has been progress in environmental protection due to the introduction of more advanced production techniques by mining companies and advancement in international best practices, some countries, especially in Central Asia, are still lagging behind with major environmental and safety issues associated with the use of outdated technologies. The combination of low incentives to invest in more efficient mining technologies, along with a lack of skills to implement them effectively, may hamper the ability of the mining sector to modernise and adopt more environmentally friendly technologies.

Multi-national firms tend to adopt the standards of the most stringent country in which they operate (as it is easier to have a single corporate approach) even where this goes beyond the minimum standard required by a particular country. As such, these firms act as demonstrators of best (or at least better) practices in those EBRD countries of operations where EHS&S legislation is lacking. The presence of international firms therefore impacts directly on the extent of best practices, particularly where these firms require their supply chain to also implement similar standards. Voluntary standards and guidelines by these firms act as path breakers for the development of formal sector-wide EHS&S standards in the less advanced countries. This however still remains limited in some of the Bank's COOs.

It is also worth noting that investments by major international mining operators in local mining sites in the EBRD's COOs have often led to rapid and significant improvements in the safety of workers, due to safety standards that generally exceed the most stringent local health and safety requirements.

Finally, another aspect of mine operations that has received significant attention from governments and authorities in the Western world over the last two decades is mine closure planning. Typically, mining companies are required to plan, and set aside sufficient funds for the eventual decommissioning, closure and long-term maintenance of the mine site. In many developing countries, including many of the EBRD's COOs, mine closure regulations are either lacking or are poorly implemented and enforced. As mining activity increases in developing and transition countries, this presents both a major environmental and financial legacy issue that gives rise to uncertainty and liabilities.

## **ANNEX 3: International Financial Institutions Approach to Mining**

### **A3.1 The World Bank Group**

Engagement in the mining sector at the World Bank Group (including both the World Bank and the IFC) is guided largely by the World Bank Group in the Extractive Industries Review (EIR) document,<sup>46</sup> a comprehensive review of the Group's activities in the extractive industries including in mining. This document, along with the World Bank Group EIR Management Response of 2004,<sup>47</sup> forms the basis for World Bank Group approaches towards mining.

The World Bank Group develops strategies for each country in which it invests, but not for each sector. These country strategies do in some instances refer to extractive industries (e.g. World Bank Mongolia Strategy of 2009) but this is on a country-by-country basis. The World Bank, in addition, produces a wide number of advisory documents and support related to major themes within the mining sector. These themes include AIDS and mining; coal sector restructuring; local economic development; mine closure; mining and community; mining and environment; poverty reduction; sector reform; small-scale mining; gender issues; and transparency and good governance. In respect of good governance, the World Bank has spearheaded the development of the EITI++ Initiative, which is unconnected with the EITI Initiative, though the two share similar objectives of improving the transparency of government transactions with the mining industry.

There is currently a focus on capitalising on potential synergies in the mining sector, and deepening the value chain particularly around non-labour inputs to operational expenditure. Connected to this are opportunities to improve capacity of local human capital, and the mechanisms which allow for benefits from mining to flow back to the local community, for example through the creation of local service industries and other clustering effects. The World Bank sees a significant opportunity to improve the quality of local goods and services by embedding high quality service requirements.

#### ***The World Bank***

The World Bank has raised a number of key areas of concern regarding the mining sector in which approaches are yet to be formalised, including:

- the release and allocation of geological information held by governments when liberalising the sector;
- dedicated and non-dedicated forms of infrastructure with relation to mining (e.g. specialised rail networks as opposed to public);
- the need for countries to move beyond EITI. There are sub-national dimensions relevant to EITI, particularly in ensuring that local communities see the flow of taxes back to them; and

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<sup>46</sup> [http://siteresources.worldbank.org/INTOGMC/Resources/WBG\\_EI\\_Annual\\_Report\\_FY11\\_Final.pdf](http://siteresources.worldbank.org/INTOGMC/Resources/WBG_EI_Annual_Report_FY11_Final.pdf).

<sup>47</sup> <http://siteresources.worldbank.org/INTOGMC/Resources/finaleirmanagementresponse.pdf>.

- the World Bank is pushing governments to adopt more progressive tax regimes that could account for sub-national divisions.

The World Bank is active in linking mining and infrastructure projects and emphasises the importance of understanding bottlenecks and blockages in individual countries, and ensuring that country sector strategies reflect this. Regional projects and activities such as infrastructure corridors are also recognised as strategic projects.

### ***The IFC***

Current trends in IFC's mining investments include:

- avoiding short-lived mines;
- engaging with junior mining companies on exploration projects;
- ensuring that there are provisions made for post-mine closure;
- ensuring that cumulative impacts (e.g. those associated with infrastructure and transport systems) are dealt with at an early stage;
- prioritising post-conflict countries;
- ensuring local community issues are dealt with on a case by case basis; and
- avoiding coal investments.

The IFC specifies exclusions including the commercial production of radioactive products and Production or trade in unbonded asbestos fibres. However there are no explicit statements on conflict zones, rare earths, or on specific mining industry processes. Where governance and corruption is identified as a concern, the IFC undertakes an early stage compliance review. Key concerns to trigger such a review include political ties either in relation to company shareholding or securing of concessions and mining license.

### **A3.2 The EIB**

The EIB, owned by all member states of the European Union, is a policy driven public bank, with the specific objective of furthering the goals of the EU. Lending within Europe is mainly focused towards infrastructure development (e.g. TENs); security of energy supply; environmental sustainability; and climate action, but also towards private sector investments, in particular SME and Research & Development, all to improve convergence and cohesion of the EU member states. Outside the member states, the EIB acts on specific mandates given by the EU. These may comprise investment in mining.

Extractive industry or mining does not play a prominent role in EIB lending and the EIB does not have a specific extractive industry or mining strategy or policy, with projects in these industries evaluated on a case-by-case basis. The majority of extractive industry lending of the EIB, within the EU and its near neighbours, is driven by the EU's energy security policies, and hence are focused on the development of crude oil and natural gas production infrastructure, such as pipelines. Lending to the mining industry has in the last years exclusively been directed towards projects in Africa, mainly under the Cotonou Agreement within the African Caribbean Pacific mandate.

This lending in Africa, although having diminished over the years, is centred on mineral commodities fostering economic development of the host countries.

There is only occasional, and then indirect involvement in coal projects in the form of efficiency improvements in coal based electricity generation. The EIB references the World Bank Group's Extractive Industries Review document as a valuable framework for engagement in the extractive sector. The EIB's positions are provided in the EIB document: *The Extractive Industries Review: The Position of the European Investment Bank*.<sup>48</sup>

### **A3.3 Regional Multilateral Banks**

The Asian Development Bank and the African Development Bank do not have specific publicly available policies or strategies in regards to the mining or extractive industries and invest in mining projects on a case-by-case basis. The African Development Bank has recently increased its visibility in the mining sector, and intends to intensify its efforts in the mining sector, acting as a broker between private sector investors and governments. Both regional banks have endorsed the EITI principles and criteria.

The Inter-American Development Bank has an explicit policy relating the mining industry, and is aimed at supporting projects and programs associated with the identification and economic exploitation of mineral resources. This also includes the extension of support to sectoral institutions and, where appropriate, economic development plans. The mining policy covers all stages of mining lifecycle, along with downstream support sectors including transportation and support infrastructure. The IDB endorsed the EITI Initiative in late 2009.

### **A3.4 National Institutions**

None of the following governmental agencies have specific publicly available mining policy or strategy document, and invest in mining projects on a case-by-case basis:

- DFID, which directs funding for poverty alleviation either directly to countries, or via other third party organisations such as the World Bank, IFC and other regional development banks;
- FMO, which recognises that mining investments represent an important opportunity for many developing and emerging markets, with certain exclusions (such as the mining of unbonded asbestos); and
- Agence Française de Développement, which invests in mining related projects along the line of acting according to France's Overseas Development Assistance Policies.

DFID is an active supporter of the EITI Initiative. While the FMO itself has not publicly stated support for the EITI initiative, its major shareholder (the Netherlands, through the Dutch Central Bank) is a country level supporter of EITI.

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<sup>48</sup> [www.eib.org/attachments/thematic/extractive\\_industries\\_en.pdf](http://www.eib.org/attachments/thematic/extractive_industries_en.pdf).

## **ANNEX 4: EITI Principles and Criteria**

EITI was established as an international organisation, sponsored through a multi-donor trust fund of the World Bank. A number of administration agreements exist with Australia, Belgium, Canada, France, Germany, Netherlands, Norway and the United Kingdom's Department for International Development. Each implementing country creates its own EITI process which is overseen by participants from the government, companies and national civil society. At present, there are 11 EITI Compliant countries (including 3 EBRD countries of operation, and 22 EITI Candidate countries (including 2 EBRD countries of operation).

### ***EITI Principles***

EITI Principles, agreed at the Lancaster House Conference in June 2003, provide the cornerstone of the initiative. They are:

- The prudent use of natural resource wealth should be an important engine for sustainable economic growth that contributes to sustainable development and poverty reduction, but if not managed properly, can create negative economic and social impacts.
- Management of natural resource wealth for the benefit of a country's citizens is in the domain of sovereign governments to be exercised in the interests of their national development.
- The benefits of resource extraction occur as revenue streams over many years and can be highly price dependent.
- A public understanding of government revenues and expenditure over time could help public debate and inform choice of appropriate and realistic options for sustainable development.
- Transparency by governments and companies in the extractive industries is important as well as the need to enhance public financial management and accountability.
- Achievement of greater transparency must be set in the context of respect for contracts and laws.
- Enhanced environment for domestic and foreign direct investment that financial transparency may bring should be recognised.
- We believe in the principle and practice of accountability by government to all citizens for the stewardship of revenue streams and public expenditure.
- High standards of transparency and accountability in public life, government operations and in business should be encouraged.
- A broadly consistent and workable approach to the disclosure of payments and revenues is required, which is simple to undertake and to use.
- Payments' disclosure in a given country should involve all extractive industry companies operating in that country.

In seeking solutions, all stakeholders have important and relevant contributions to make – including governments and their agencies, extractive industry companies, service companies, multilateral organisations, financial organisations, investors, and non-governmental organisations.

### *EITI Criteria*

To become an EITI Candidate, a country must meet a number of sign-up requirements. Those requirements include a public commitment to implement the EITI and work with a multi-stakeholder group including civil society and companies on its implementation. The country then has 1.5 years to publish an EITI report that reconciles what companies say that they pay in taxes, royalties and signature bonuses, with what governments say they have received. To achieve EITI Compliant status, a country must complete an EITI Validation, which provides an independent assessment of the progress achieved and what measures are needed to strengthen the EITI process. The international EITI Board considers a country to have met all EITI requirements, the country will be recognised as EITI Compliant. If a country has made good progress, but does not meet all of the EITI requirements, it may apply to retain its Candidate status.

The criteria to be met as an EITI country and the actions that must be followed by companies are as follows:

- Regular publication of all material oil, gas and mining payments by companies to governments and all material revenues received by governments from companies to a wide audience in a publicly accessible, comprehensive and comprehensible manner.
- Where such audits do not already exist, payments and revenues are the subject of a credible, independent audit, applying international auditing standards.
- Payments and revenues are reconciled by a credible, independent administrator, applying international auditing standards and with publication of the administrator's opinion regarding that reconciliation including discrepancies, should any be identified.
- This approach is extended to all companies including state-owned enterprises.
- Civil society is actively engaged as a participant in the design, monitoring and evaluation of this process and contributes towards public debate.
- A public, financially sustainable work plan for all the above is developed by the host government, with assistance from the international financial institutions where required, including measurable targets, a timetable for implementation, and an assessment of potential capacity constraints.