

Report No. 24708- KA

# Kazakhstan Strategic Review of the Mining and Metallurgy Sector

September 2002

Europe and Central Asia Region  
Country Unit VIII

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### **Currency Equivalents**

(Average 1999 rate, National Statistical Agency)

Currency Unit = tenge  
US\$ 1.00 = 139.64 tenge

### **Weights and Measures**

Metric System

**Fiscal Year**

January 1 – December 31

### **ABBREVIATIONS AND ACRONYMS**

BATNEEK	- Best Available Technology Not Exceeding Excessive Cost
CGMP	- Committee on Geology and Mineral Protection
EAP	- Environmental Action Plan
EBRD	- European Bank for Reconstruction and Development
EIS	- Environmental Impact Statement
EMS	- Environmental Management System
FSU	- Former Soviet Union
GDP	- Gross Domestic Product
IBRD	- International Bank for Reconstruction and Development
IMF	- International Monetary Fund
MEMR	- Ministry of Energy and Mineral Resources
MAC	- Maximum Allowable Concentration
MAD	- Maximum Allowable Discharge
TA	- Technical Assistance
UNRRC	- United Nations Reserves/Resources Classification

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## **1. Executive Summary**

1.1 The present Study of the mining and metallurgical sector has been requested by the government of Kazakhstan and conducted by a Study team composed of staff and consultants of the World Bank. An inter-ministerial working group was established to provide guidance and information to the Study team. The team members wish to express their thanks to the government and various colleagues in Kazakhstan for their assistance in the preparation of this Study. The views expressed in this Study are those of the staff of the Bank, even though they have been thoroughly discussed with the government authorities.

1.2 Kazakhstan is fortunate to be exceptionally well endowed with petroleum and mineral resources. But, since independence, the vast majority of new investment in the sector has been devoted to petroleum. New investment in the mining and metallurgical sector has not been commensurate with the country's geological potential or the importance of a sector which accounts for over 30% of total export earnings, 10% of GDP, and 19% of total industrial employment. Kazakhstan has a long tradition as a mining country. Some oblasts are dominated by the sector and certain municipalities depend on the kombinats for vital social and infrastructure services. The government has adopted the policy of fostering private sector development for mining and metallurgy and has privatized the existing kombinats. However, new exploration investment in the sector is far below the levels required to replace reserves, up-grade technologies, or that registered in other countries with similar geological potential. Thus, the government has requested the present review of the mining and metallurgical to answer three fundamental questions which are at the heart of a strategic vision for the sector. Why is Kazakhstan not attracting new private sector investment in the mining and metallurgical industries? What can the government do to better stimulate new investment in the sector? And, if it does succeed in stimulating new investment, what economic contribution can be anticipated from the sector?

1.3 All governments share similar objectives for the mining and metallurgy sector: enhancing contribution to economic development, providing an equitable distribution of benefits, creating jobs and spin-off industries, stimulating new investment, and creating a competitive investment climate. Kazakhstan has partially achieved some of these objectives, but has made little progress towards achieving others, notably improving the investment climate to stimulate new investments. To develop even part of Kazakhstan's estimated mineral reserves will be expensive. For example, based on the capital costs of recent "greenfields" mining projects in other countries, an average of US\$ 5,700 must be invested for every tonne of copper produced; an average of US\$ 640 must be invested for every ounce of gold produced. To develop its mineral resources Kazakhstan will have to mobilize international capital resources.

1.4 Other countries have faced similar challenges and have successfully mobilized investment by carrying out a comprehensive "mining reform program". The reform program requires a fundamental re-definition in the role that the State plays in the mining sector. Instead of acting as "owner/operator" of mines the new State role is that of "regulator and referee" for the sector. Investing and operating mines should be the

responsibility of the private sector which is better suited to mobilize the funds and take the risks associated with such activities. The reform program generally includes updating overall sector policies, adopting internationally competitive laws, regulations and taxes, strengthening government oversight institutions, improving capacity of the civil servants within the institutions, and modernizing the earth science database. A key element of such a program is an open, efficient and transparent mineral title licensing system. Since the late-1980s, several countries which have undertaken such programs have achieved remarkable success in terms of exploration expenditures, new investment, increased production, exports and tax revenues. The present Study argues that if Kazakhstan were to vigorously implement a mining reform program it, too, could achieve similar positive results. Kazakhstan has a world class minerals resource base; carrying out a comprehensive mining reform program would help to develop those world class resources.

1.5 Kazakhstan is the ultimate mining and metallurgical country, defined in this study to include coal, ferrous and non-ferrous minerals. Some 233 mining enterprises produce a wide variety of commodities: coal, iron ore, chromite ores and ferro-alloys, alumina, copper, lead, zinc, manganese, steel, titanium sponge, uranium, barites, and others. The total value of mineral commodities produced in 1999 is evaluated by the National Statistical Agency as the equivalent of approximately US\$2.7 billion. The majority of this production is exported to the countries of the former Soviet Union and to international markets, over US\$ 2.1 billion in 1999. Mining and metallurgy account for 3-4 percent of government tax revenues and employ directly nearly 200,000 persons nationwide. The economies of certain oblasts – Karaganda, East Kazakhstan, Pavlodar, and Kostanai – are dominated by mining and metallurgy. Moreover, the structure of the existing kombinats is such that they provide essential infrastructure and social services to the communities in which they operate.

1.6 During the years following independence, the dislocation of traditional markets in the former Soviet Union and the increases in relative factor costs caused Kazakhstan's mineral production to decline by over one-third. Much of this production decline has now been redressed, though adjustments to the conditions of the market economy have not been easy. During the mid-1990s the government embarked on an ambitious program to privatize or put under trust management many of the mining and metallurgical kombinats. This has been reasonably successful in terms of maintaining social tranquility and providing employment and services to the workers at some of the largest and most important of the kombinats. It has been somewhat less successful in terms of increasing productivity and efficiency due to lack of transparency and poor governance of the enterprises. In some cases the government has rescinded the trust management contracts or declared the privatization invalid. Following independence, with the plentiful availability of risk capital for mining ventures in the international equity markets, numerous foreign companies in conjunction with local interests began exploration or development programs in Kazakhstan. With one or two exceptions, these companies have withdrawn or reduced their operations. On the one hand, foreign companies have complained that government policies, laws, and taxes discourage new investment in exploration. On the other hand, the government has been disappointed in the performance of some foreign companies which seem to promise much but deliver little. In certain instances disagreements between the government and the companies have caused

international litigation. Indeed, due in part to the damage to the country's reputation caused by these previous bad experiences, Kazakhstan is viewed by the international mining investment community as something of a "no-go" country. The country attracted only US\$ 9 - 10 million in new exploration in 1999, an amount vastly insufficient to replace reserves currently being exploited.<sup>1</sup> Part of the reason for this failure to attract sustained investment in exploration is the reduced availability of funding in the international capital markets and low commodity prices. But other countries, with less geological potential than Kazakhstan, continue to attract new investment. This Study concludes that the principal reasons are: a) the lack of a clear government strategy and policy for the sector; b) deficiencies in the legal, taxation, and institutional arrangements; c) a tendering system for mineral properties which is not in accordance with international practice; d) a reserve classification system which is incompatible with international standards; and e) the stigma, rightly or wrongly deserved, of unfair and arbitrary dealings between the government and the private sector, mostly due to questionable governance practices.

**1.7 Minerals Legislation.** The corner stone of development of the mining and metallurgy sector is the body of laws and regulations that govern access by the private sector to mineral rights. The Kazakhstan constitution, in fact, provides a basis for such private access, and other legislative acts governing mining and subsurface usage further define the role of the State to facilitate access to mineral rights. A fundamental problem in Kazakhstan is the confusion of the mining and metallurgy sector with the oil and gas sector. The economics of the two sectors are entirely different and what works for one does not necessarily work for the other. The case in point is the tendering system for blocks of geologically prospective ground that is contemplated in the legislation. This practice, while extensively used in the oil and gas industry, is very uncommon in mining and metallurgy and, in the countries where it has been tried, relatively unsuccessful. Because of the cumbersome tendering system and long delays in negotiation of contracts, gaining exploration rights in Kazakhstan is more complicated and time consuming than in other countries. The legislation also does not strictly adhere to the doctrine of the "same rules for all investors" by giving preferential treatment to obtain mining rights to "National Companies". This appears to leave open the possibility of direct State intervention to own and operate mines which would seem to be inconsistent with the policies of private sector led development in mining and metallurgy. Security of tenure – that is the right to exploit a deposit in the event of a discovery – is a key concern for an investor. This actually is a concept which encompasses a number of issues such as the nature of the mining right (property or contract), exclusivity, continuity from exploration to exploitation, term lengths, maintenance requirements and work obligations, among others. On each of these issues (with the possible exception of term lengths), the legislation not only could be clearer and more precise but also more in line with international practice. It is important that investors have liquidity of their investments – that is the ability to transfer the mining right. In fact, the amendments to the sub-surface law introduced in 1999 added provisions in this respect, though these could be strengthened by conforming more closely to the provisions governing pledges. Investors also will be concerned about the centralized and bureaucratic environmental permitting

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<sup>1</sup> Argentina, for example, annually attracts in excess of US\$ 100 million in exploration. Ghana, Tanzania, Mali, and Burkina Faso annually attract each on the order of US\$ 20 – 50 million.

and monitoring procedures outlined in the legislation. In fact, comments such as “...arbitrary and little flexibility...” and “...command and control mentality...” were used by investors when asked about this particular issue. Finally, in a number of domains such as the certification of reserves, obligation to produce at volumes designated by the State, and the requirements to use local goods and services, the legislation provides for government interference in what, in most other countries, are matters for the private operator to decide.

*1.8 Mining Taxation.* The taxation regime applied to mining and metallurgical enterprises in Kazakhstan is fundamentally unattractive to new investment and not competitive internationally. This is due, in part, to several taxes which confuse the mining and metallurgy sector with the oil and gas sector. In particular, “discovery” and “signature” bonuses as well as reimbursement of “historical costs” are highly unusual in the international mining industry and increase the costs and risks to new investors. Royalties on minerals produced – if any (and the international tendency is to eliminate minerals royalties) – should not exceed 2% net smelter return. The royalty should be determined in the law or regulations and not negotiated on a case-by-case basis. Concession fees and surface rents should be based on a set amount per hectare of the surface area of the land held under exploration or exploitation permit; for the exploration permit, these amounts may be increased each year during the life of the permit to discourage holding the land for purely speculative purposes. In order to encourage exploration, import and customs duties should be eliminated during the exploration phase of the investment; import duties of around 5% are generally acceptable during exploitation operations. The value added tax should be “zero-rated” for mining projects which export their products. Since value added taxes are reimbursed for exports anyway “zero-rating” will eliminate accumulation of reimbursements which the government must subsequently make to exporting companies.

*1.9* The basic rate of taxation of corporate profits (30%) and dividend withholding taxes (15%) are competitive internationally. The Kazakhstan mining taxation legislation, correctly, does not provide for exemptions from profits taxes or “tax holidays”. However, the government may wish to consider removing the “excess profits tax.” In other countries, this taxation instrument has proven ineffective in terms of increasing government revenue and is sometimes perceived negatively by investors in the mining sector. Also, for the calculation of taxable profits internationally competitive dispositions relative to depletion allowances and accelerated depreciation could be put into place. Government guarantees that the tax rates and methods of calculation will not change for a certain period – “tax stabilization” – have been effective in other countries to reduce the risks perceived by investors. Though not directly in the control of the central government, many oblasts have local taxes and levies which investors find confusing and often complain about. Finally, regulations should be prepared to determine the tax treatment for funds and other allowances which companies make for mine closure.

*1.10 Public institutions* to fairly and adequately administer the legislation are essential for the development of mining and metallurgy. At independence, Kazakhstan inherited the old Soviet institutional structure. This structure has been substantially modified since independence, most recently in December, 2000, in an attempt to make it more responsive to the needs of a market economy. Specifically, the vesting in the new

Ministry of Energy and Mineral Resources of primary responsibility for oil and gas as well as mining and metallurgy creates a single focal point for the sector which has proven to be successful in other countries. However, while the new institutional set-up could do much to remove the present overlapping responsibilities and cumbersome jurisdictions of several national and oblast agencies and ministries, the government will have to guard against allowing mining to be confused with oil and gas and to pay due attention to the specifics of the mining and metallurgical sector. Government policy is clearly to promote private sector development of mining and metallurgy. However, there remains in several agencies and ministries a “command and control” mentality, specifically with reference to reserve certification and usage, that is inconsistent with this policy or international practice. Finally, there is, as is common in all countries, the question of sustainability of public institutions. The present level of funding, logistical support, recruitment and training of professionals for the public institutions responsible for mining and metallurgy is insufficient for long term sustainability and requires close government attention.

*1.11 Governance.* Many investors have cited lack of good governance and transparency in public and private sector decision making as significant obstacles to investment in mining and metallurgy in Kazakhstan. As noted previously, the privatization program has stabilized production and maintained employment and social tranquility. But, if the existing kombinats are to be able to attract investment on an international level, directly or as a listing on a major stock exchange outside of Kazakhstan, internationally accepted standards for transparency, disclosure, accountability, and auditing must be adopted as well as other basic measures to protect shareholder rights. These reforms are also necessary to attract new investment. No domestic or foreign investor will risk substantial new investment in the “ad hoc” atmosphere that prevails currently on many of these critical governance issues. Finally, there are significant shortcomings with the remaining trust management arrangements and with the residual shares still held by the government in many of the privatized enterprises. These shareholdings have not produced any significant dividend streams for the government, do not give rise to any substantial government influence on corporate decision making, and consume scarce government management resources. It is recommended that the government proceed with a responsible program of divestiture as, for example, the re-activation of the “blue chips” program.

*1.12 Environmental Considerations.* Kazakhstan has inherited a legacy of significant environmental problems at many of its mining and metallurgical kombinats. The standards and practices used previously are not in conformance with international standards. The government has, however, made progress to develop internationally competitive environmental legislation and regulations. Nonetheless, greater emphasis needs to be placed on the concept of “sustainable development” and the three key principles thereof: partnerships, revenue sharing, and transparency. A number of specific issues need to be addressed including implementing Environmental Impact Statements, providing for mine closure, improving health and safety, disclosure by companies of environmental performance, and adopting international norms for monitoring, in particular of the ambient environment and not just effluent discharges.

*1.13 Infrastructure Considerations.* Efficient and adequate supply of infrastructure – especially rail transportation – is vital to Kazakhstan’s mining and metallurgical industry.

Indeed, mining and metallurgical products account for over 85% of the total freight traffic on Kazakhstan railways. Following independence, the rail system implicitly subsidized the industry by supplying commercial and social services in spite of a dramatic fall in rail traffic and revenues. Freight rates in Kazakhstan as calculated on a per kilometer/tonne basis, are very low by international standards which implies a continued subsidy to the mining and metallurgical industry. This has been made possible by drawing down on reserves of materiel, tracks, locomotives, wagons and other infrastructure. However, little new investment has been made and it is anticipated that the next fourteen years will require an investment of US\$ 4 billion in new infrastructure and rolling stock. Mobilizing this funding will require a reduction in operating costs, an increase in tariffs, and access to private investment. To facilitate this the government has just passed a new railways law which will re-structure the State railway company, Kazakhstan Temir Zholy (KZT). Many KZT services will be divested and/or privatized and the creation of "own account" operations will be authorized. The restructuring is a promising step towards improving efficiency and exploiting new market opportunities for Kazakhstan mining enterprises. In the meantime, measures are being taken, including building of new track, to remove bottlenecks in the rail transport system and to cut costs.

**Conclusions and Recommendations**  
**Comparison of Kazakhstan and International Standards**

<b>Topic</b>	<b>Present Status in Kazakhstan</b>	<b>International Standards</b>	<b>Observations/ Recommendation</b>
Economic contribution	Mining and metallurgy are significant to the economy: 10% of GDP; 30% of exports; 19% of industrial employment	Mining contribution in Kazakhstan is comparable to Peru, Australia, Canada, Chile, and other countries	To maintain this level of economic contribution requires new investment; international countries are more successful at attracting investment than Kazakhstan.
Privatization	Reasonably successful: has maintained employment, social tranquility, and stabilized production.	Privately operated mines in accordance with internationally accepted standards of accounting, reporting and transparency	Improve standards for protection of shareholders rights, including reporting, disclosure, accounting of financial and operational data and overall transparency.
New exploration investment	Not successful. Kazakhstan only attracts US\$ 9 million. This is insufficient to replace reserves or up-grade technologies.	Kazakhstan should attract US\$100+ million annually in new exploration investment.	Carry out program of reforms to policy, legal, fiscal, and institutions to attract new domestic and foreign investment
Competitive enabling environment	Not successful. Legal and fiscal conditions are still not internationally competitive; institutional set-up maybe getting better	Several countries which have adopted competitive conditions have been remarkably successful in attracting new investment	Modify legal and taxation conditions pertaining to investment; solidify recent institutional changes.
Country reputation	Kazakhstan has "No Go" reputation among international investors	Other countries are "investor friendly", deal fairly and equitably with foreign and domestic investors.	Improve enabling environment; resolve contractual differences in a transparent and fair manner.

**Conclusions and Recommendations (continued)**  
**Comparison of Kazakhstan and International Standards**

Topic	Present Status in Kazakhstan	International Standards	Recommendations
Tendering of mineral properties	Not successful. Current practice of tendering mineral properties and negotiating separate investment agreements has not stimulated new investment.	Tendering of mineral properties has <u>not</u> been successful in other countries; reflects confusion with oil and gas sector.	Abandon tendering practice; adopt mineral title licensing system
Mining title issuance and cadastre registry	Unclear regulations on mining title issuance because of emphasis on tendering.	Exploration rights granted on "first come - first served" principle; cadastre and registry open for public inspection; objective procedures for title issuance clearly stated in law.	Abandon tendering practices; adopt international standards for issuance of mining titles and rights.
Security of tenure	Right to proceed from exploration to exploitation operations is not clear; negotiated on case-by-case basis	Clear automatic right to proceed from exploration to exploitation; no case-by-case negotiations.	Clarify property versus contract rights; guarantee progression from exploration to exploitation; set up appeals procedure for dispute resolution.
Mining Taxation	Some taxes confuse mining industry with oil/gas industry: - bonus payments - historical costs - royalties Additional difficulties: - reimbursement of VAT - depletion allowances - mine closure Local taxes can also be troublesome	International practice is to emphasize reasonable taxation of profits and eliminate "up-front" payments or those based on gross sales revenues; zero rate VAT;	Eliminate bonus payments and reimbursement of historical; adopt competitive royalties (if any); zero-rate VAT; allow accelerated depreciation and depletion allowance; conform to international standards on tax treatment of mine closure allowances; coordinate with oblasts regarding local taxes.

**Conclusions and Recommendations (continued)**  
**Comparison of Kazakhstan and International Standards**

<b>Topic</b>	<b>Present Status in Kazakhstan</b>	<b>International Standards</b>	<b>Recommendations</b>
Role of the State	Stated policy promotes private sector investment in mining; in practice, still excessive residual state controls of geology, tendering, and residual government shares	State is regulator and referee for the sector, not owner/operator of mines; State role is to provide information to potential investors; administer mining title system; collect taxes due from the sector	Role of geological survey and policies on supplying geology information need to be reviewed; tendering system for mining properties should be abandoned and a proper licensing system put into place; review state shares in privatized companies.
Reserve evaluation	Present system of reserve evaluation is not compatible with international standards and causes disputes with investors.	United Nations Reserve Classification System is used by many countries and is compatible with conditions of market economy	Adopt UNRRC system; re-calibrate existing reserves data to fit the UNRRC system.
Lead sector agency	Reforms of December, 2000 are a step in the right direction; centralizes authority for sector in Ministry of Energy and Natural Resources (MENR)	A single ministry responsible for the sector with sub-units for function of policy, mining title issuance, environmental protection, and geological survey.	Reinforce control of MENR over sector; guard against too much emphasis on oil/gas; create sub-units for functional responsibilities
Geological survey	Basic exploration on regional scale by the government is stalled due to budget constraints.	National geological surveys conduct exploration on a regional scale and make the information available to the public at nominal cost	Resume funding, logistical, and personnel support for geological survey in order to collect and present scientific data to potential investors
Rail infrastructure	Mining industry dependent on rail transport; new investment will be facilitated by new railways law.	Rail services in most countries a cooperative effort of industry and government on competitive basis.	Implement reforms, especially divestiture and privatization of rail services and creation of "own account" transport companies.

**Conclusions and Recommendations (continued)**  
**Comparison of Kazakhstan and International Standards**

<b>Topic</b>	<b>Present Status in Kazakhstan</b>	<b>International Standards</b>	<b>Recommendations</b>
<b>Environmental Protection</b>	Approval of environmental impact statements (EIS) is condition for mine title issuance.	Approval of environmental impact statements (EIS) is not a condition for issuance of mining title but rather of operating license.	Distinguish between approval of EIS as prerequisite for mining title issuance and approval of EIS for an operating license.
<b>Sustainable Development</b>	Present system is static: does not measure long term impact of mining on the environment; lack of public disclosure and use of inappropriate standards	Environmental management is an on-going process; EIS and Environmental Action Plans (EAP) need to be constantly reviewed, up-dated and performance disclosed and monitored.	Adopt precise guidelines for assessment of EIS and EAPs based on those used by international organizations; adopt standards to measure ambient environment, not just discharges; encourage disclosure of environmental performance
<b>Residual Shares</b>	Residual shares held by the government in privatized enterprises do not produce dividends and consume scarce management resources	Governments generally do not hold residual shares in privatized enterprises.	Divest of government shares in an orderly fashion; re-active the "blue chip" program.
<b>Disclosure</b>	Requirements for disclosure of key corporate details is lacking: board of directors, company charter, shareholder list	Full and complete disclosure is required by law of these and other corporate details	Regulations should be changed to close loopholes that allow companies to avoid full disclosure.
<b>Accounting and Auditing</b>	Progress has been made to bring Kazakhstan Accounting Standards (KAS) into line with international standards, but deficiencies	International Accounting Standards (IAS) allow shareholders to know on a consistent basis how company management is handling their investment.	Rectify the remaining deficiencies in KAS to conform to IAS.

## **2. Background on the Mining Sector Study**

2.1 Pursuant to discussions between the Bank and the Government in May, 2000 it was decided to undertake the present Study of the Mining Sector in Kazakhstan. The principal objectives of the Study are to:

- diagnose the current state of the Kazakhstan mining sector and to identify problems and bottlenecks to new investment and increased contribution of mining to the national and regional economy;
- provide international comparisons, case studies, examples and best practices on how other countries have addressed the issues, problems and bottlenecks identified in the Study (see list below);
- recommend possible options and alternatives which may be considered by the government;
- facilitate the transfer of know-how and build capacity within various government departments.

2.2 The Study was carried out by a team of specialists from the Mining Department of the World Bank together with external consultants (see list below). A Working Group of Kazakhstan officials was established to assist the Bank team, composed of representatives from the:

**Ministry of Energy, Heavy Industry and Natural Resources**

**Ministry of Finance, Department of State Borrowings**

**Ministry of Labor & Social Protection, Department of State Labor Supervision**

**Ministry of Energy, Industry & Trade, Division of Non-Ferrous Metallurgy**

**Ministry of State Revenues, Metallurgy Division of Electronic Monitoring**

**Ministry of Environmental Protection, Committee on Geology**

**Agency on Investments, Division on Making Contracts**

**Ministry of Justice, Department on Examination of Sub-Law Enactments**

**World Bank, Operations Officer and Task Team Leader**

In addition to the Working Group, the Mining Association of Kazakhstan and several private mining companies participated in discussions and rendered valuable contribution to the Study.

2.3 Following initial visits to Kazakhstan by the task team in June and September, 2000, a two day kick-off round-table was held in Astana on October 23-24, 2000. During the round-table three thematic groups were formed to discuss: 1) enterprise reform, social and environmental issues; 2) the roles and responsibilities of public mining institutions, and 3) the legal/regulatory framework. An interactive and participatory approach was adopted during the roundtable and process of preparing the Study in order to ensure maximum discussion and learning/sharing of experiences between the various participants.

An initial draft Study was submitted to the government for comment and observations in March, 2001. This initial study, the "core report", was subsequently completed in June

2001 with additional chapters that required further research. The Study was submitted to the government for review and comments in August, 2001. A final wrap-up seminar was conducted in Astana 13-14 September 2001 to present and discuss the final findings of the Study. The government has decided that the Ministry of Energy, Heavy Industry and Natural Resources will distribute the Study to relevant government departments, solicit proposals from them to be summarized into an action plan.

**2.4 Bank staff and consultants engaged in preparation of this report include:**

Mr. Craig Andrews, Principal Mining Specialist, World Bank, Washington  
Mr. Koh Naito, Mining Specialist, World Bank, Washington  
Mr. Igor Artemiev, Senior Privatization Specialist, World Bank, Washington  
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The Bank staff and consultants involved in this project wish to thank the Kazakhstan government and, in particular, the members of the Working Group, for their valuable contribution.

### **3. Enhancing the Economic Contribution of Mining Sector**

#### **3.1 Development Objectives of the Kazakhstan Mining and Metallurgy Sector**

3.1.1 Mining can, and does, contribute to the wealth of nations and to economic development. In many countries – Peru, Chile, Zambia, South Africa, Australia, Canada, Papua New Guinea, for example – the mining and metallurgy sector is an important contributor to the national and regional economies. In Kazakhstan, too, coal, ferrous, and non-ferrous mining and metallurgy are very significant to the economy.

3.1.2 Like other countries, the Kazakhstan government has many policy objectives for the mining and metallurgical sector. The present Study addresses three fundamental questions concerning these objectives. Is Kazakhstan achieving them? If not, or if progress is only partial, what changes are necessary to achieve them? Finally, what lessons may be learned from the experience of other countries to achieve the objectives?

3.1.3 The mining and metallurgical sector development objectives include (among others):

- Ensure continued production, employment and social tranquility at existing kombinats and mining/metallurgical facilities.
- Emphasize the role of government as regulator instead of direct investor/operator of mines and metallurgical plants;
- Attract new private sector investment to the sector to increase the mineral reserve base necessary to maintain and expand production;
- Develop an internationally competitive investment climate including government policies, mining law and regulations, mining taxation, and public oversight institutions;
- Use the taxes and export earnings generated by the sector for overall economic development purposes;
- Ensure that the sector is sustainable in terms of its economic, social and environmental performance;
- Provide for the environmentally and socially acceptable closure of mining and metallurgical operations which are no longer justified on an economic basis;
- Maintain an equitable balance of benefits deriving from the sector among various regions and population groups in the country;
- Help to reinforce the competitive position of Kazakhstan's mining and metallurgical industry in international markets by providing reasonably priced and efficient infrastructure support as well as facilitating technological up-grading of the industry;

- Create a professional and efficient organization of public institutions for oversight of the sector and ensure that decisions are made in a transparent and efficacious manner.
- Enhance the scientific knowledge of the basic geology and environment of sub-soil resources so as to support continued detailed exploration by the private sector.

3.1.4 Kazakhstan has been generally successful in maintaining production, employment, and social tranquility at the existing mining and metallurgical facilities. Even though both production and employment in the sector is below that of Soviet times the most important kombinats have continued to function and provide vital social services in their communities. There are, however, some problems of transparency and governance with the privatization program and management contract system which are examined in later chapters. Provision of basic infrastructure services – rail, energy, water – to the mining and metallurgical sector has also been adequate, though some important bottlenecks are noted in later chapters of this Study.

3.1.5 Kazakhstan has been less successful in implementing policies relative to the role of the government institutions and their relationship to the private sector. The stated policy of emphasizing the government institutional role as regulator instead of owner/operator in the sector is in line with international best practice. However, certain dispositions relative to National Companies in the mining legislation, continued government share ownership in some privatized enterprises, a confused organizational structure, the recalcitrance of some officials in government ministries and agencies to accept the new “open economy” philosophy, and problems of efficiency and transparency have hindered implementation of the policy. The creation of efficient, transparent, and “user-friendly” public oversight institutions has also been difficult. Investors complain of arbitrary behavior of certain public institutions. Finally, even though basic scientific investigation and geological survey services have been maintained, these have been less successful in re-orienting their activities in line with the requirements of the private sector, particularly in respect of international reserve classifications and evaluation. Also, it is important that the government address issues of adequate logistical and financial support for these services.

3.1.6 Kazakhstan has not been successful in attracting and retaining new investment, especially in exploration. This is fundamentally due to deficiencies in the “investment climate” and a reputation in the international investment community as a “no-go” country. Without new investment the mining and metallurgical sector will become less competitive over time. Kazakhstan also has not been successful in providing for the orderly close-down of defunct mining operations as well as addressing the legacy of past environmental damage caused by the sector.

### 3.2 How Mining Reform Has Worked in Other Countries

3.2.1 As noted earlier, other governments have similar objectives as Kazakhstan for the development of their mining and metallurgical sectors. Many of them have been more successful than Kazakhstan to achieve these objectives. They have done so by vigorously carrying out mining sector reforms (the “reform agenda”) which typically include: updating the mineral policy and strategy, re-writing the mining legislation (particularly in respect of mining rights), reforming the mining taxation regime, reinforcing government supervisory institutions, building greater capacity (including good governance) within the institutions to effectively carry out their tasks, and developing a reliable and comprehensive scientific database of the earth system. Countries such as Chile, Peru, Argentina, Ghana, Mali, and Tanzania – to name just a few – have all undertaken within the past 15 years substantial mining reform programs. The results in terms of increased investments, production and export earnings, as well as other economic indicators, have been remarkable.

**Table 3.2**  
**Mining Reform Works**

MINING REFORM “BEFORE AND AFTER” RESULTS IN SELECTED COUNTRIES						
Country	Exploration Value US\$ Million		Production Value US\$ Million		Exports Value US\$ Million	
	Before	After	Before	After	Before	After
Argentina	<3	150	340	1,310	70	700
Chile	15	250	2,400	7,500	2,300	6,900
Peru	10	200	2,000	3,900	1,900	3,600 <sup>2</sup>
Tanzania	<1	35	53	350	53	350
Ghana	<1	N.A.	125	700	125	650
Mali	<1	30	<1	242	<1	230

Source: World Bank staff estimates

3.2.2 This study argues that foreign direct investment together with local private sector capital should be encouraged to develop mineral resources. The risks associated with minerals development are too great and locally available capital too scarce to permit otherwise. In order to mobilize this capital the government will have to reinforce the successes in the sector since independence and remedy some of the deficiencies which hinder new investment. Kazakhstan has a world class mineral resources base; it should implement a mining reform agenda to develop its world class resources.

<sup>2</sup> Peru figure includes value of Antamina which will begin production in 2001 at about US\$ 650 million value.

### 3.3 The Changing Role of the State

3.3.1 In the 1960s and 1970s, many developing countries adopted a nationalistic approach to mineral resource development: macroeconomic policies were restrictive and hostile to foreign private investment; foreign-owned operations were expropriated; access to land for mineral exploration by the private sector was restricted; mineral resources were generally exploited only by state-owned enterprises; and barriers to imports and exports were often high. As a result of this nationalistic approach investment in mineral resource development was largely concentrated in the well-known mineral-rich industrialized countries – the United States, Canada, and Australia.

3.3.2 Beginning in the late 1970's and 1980s, a small number of countries in the developing world, such as Chile in South America, Indonesia and Papua New Guinea in southeast Asia, and Botswana and Ghana in Africa, began to reform their mining sectors and were very successful in attracting new private investment. In the 1990s, with the global change towards open economic policies, a growing number of developing countries have followed this example.

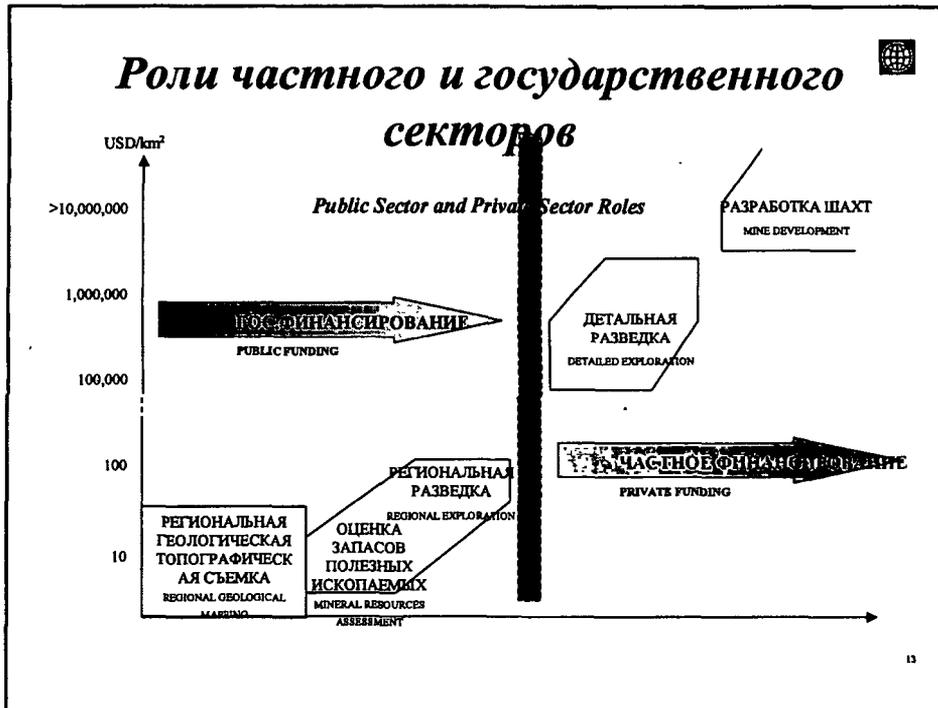
3.3.3 Mining Reform involves a fundamental shift in the role of the State: instead of being both owner and operator (player) the role of the State is now that of lessor and regulator (referee). Private mining companies are expected to take the lead - and the risks – of investing in exploration, development, mining, beneficiation, smelting, refining, and marketing mineral resources. Governments focus on the definition and enactment of clear, consistent, non-discretionary, and explicit rules and policies for the sector, on the administration of mineral rights, on the compilation and provision of basic geological information, and on the enforcement of internationally and locally acceptable social and environmental standards to foster the sustainable development of the surrounding local communities.

3.3.4 This new role of the State is the reverse of previous practices in the former Soviet Union. Successfully applying market economy principles to the new role of the State is not easy. Although many elements of change are required, three essential State functions under the new State role model are examined below. An additional function of the State, management of residual State shares in mining enterprises, is examined in Chapter 8 of this Study.

3.3.5 *Providing geological information.* Under previous practice, the State scientific institutions responsible for geology performed detailed exploration for ore bodies and delineated reserves. These reserves became part of the State balance and in due course could be turned over to an existing or new mining kombinat for development. Under the new model, the State scientific institutions responsible for geology concentrate on preparing regional geological cartography, mapping and data gathering. This information is then made available at nominal cost to any potentially interested party. In addition, the information is integrated into other scientific databases and an overall geographic information system. This information then allows the State agencies responsible for the sector to adequately administer the sector. Detailed exploration is too expensive and risky

for the State. The risks and expense are better left to private sector companies. The basic approach is shown schematically in the following diagram.

### Public and Private Sector Roles



3.3.6 *Providing Access to Sub-Surface Rights and Regulating Operations.* In order to be successful, policies, laws and regulations for the development of a country's mining sector should take into account the following fundamental principles that apply in the mining industry:

- Minerals exploration is a very high risk activity. The success rate of solid minerals exploration is only a small fraction of the success rate of petroleum exploration.<sup>3</sup>
- A fundamental tenet of investment theory is that the higher the risk involved, the higher the return must be to justify the investment. According to this theory, the return on minerals exploration should substantially exceed the return on petroleum exploration.

<sup>3</sup> "Roughly one out of every 1,000 properties passes the preliminary exploration phase and results in the discovery of economic-grade mineralization. Once discovered, the mineralized zone has a 1-2% chance of developing into an economic deposit. In other words, it takes 1,000 grassroots prospects to make a discovery and at least 100 discoveries to make a mine." Virginia Heffernan, *Worldwide Mineral Exploration* (1998) at p. 3. By contrast, the success rate on exploration drilling for petroleum is approximately 15%. Alexander, "Production Sharing Contracts and Other Host Government Contracts," presentation at the 46<sup>th</sup> Annual Rocky Mountain Mineral Law Institute, July 21, 2000, Vancouver, British Columbia, Canada.

- However, the world market prices of base metals have been declining over the past twenty years, with no indication that this is a temporary trend that will reverse itself in the foreseeable future.
- Given the high risk nature of hard rock minerals exploration, the declining prices of mineral commodities, the general worldwide economic downturn, and the negative effects of the 1997 Bre-X scandal on the capital markets, capital available for minerals exploration is relatively scarce.<sup>4</sup>
- In light of the opening of many economies to foreign private investment since the early 1990s, there are now a large number of countries competing for a relatively small pool of investment capital available for minerals exploration.

3.3.7 Exploration for ferrous and non-ferrous metallic minerals, as well as for precious metals and stones, involves greater risk and longer investment periods prior to production than does exploration for petroleum. Accordingly, there is much less capital available for exploration of solid minerals than for petroleum exploration.<sup>5</sup> Because very few solid mineral exploration efforts results in a discovery; and very few discoveries become mines, investors can only justify investing in solid minerals exploration if they can expect to earn a very substantial return when they do make a commercial discovery that is developed into a mine.

3.3.8 It is good policy to tender blocks for petroleum exploration because there is a relatively large amount of capital competing for those blocks. Kazakhstan has obviously been internationally competitive and successful in attracting exploration investment in its petroleum sector through a tender process.

3.3.9 However, under the Subsurface Law of 1996, as amended in 1999, Kazakhstan also relies exclusively on a tender procedure to grant solid minerals exploration rights to prospective private investors. Kazakhstan has not been internationally competitive or successful in attracting new investment in solid minerals exploration through this procedure. The tender procedure for granting exploration rights has not been successful because it is more expensive and time consuming for investors than the procedures followed by other non-FSU countries with attractive geology, and because Kazakhstan requires payments and imposes taxes and royalties that are greater and more numerous than those imposed by other countries that are aggressively seeking investment in solid minerals exploration. Because investors are motivated by profit, they naturally choose to invest in countries that offer not only attractive geology, but also rapid, easy and transparent access to exploration rights, relatively unrestricted transferability of exploration rights, and competitive fiscal terms for mining. In effect, other countries have

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<sup>4</sup> Worldwide private exploration investment increased substantially between 1993, when it totaled US\$2.4 billion, and 1997, when it peaked at about US\$ 5.1 billion. It subsequently declined to \$2.7 billion in 1999. Metals Economic Group, Corporate Exploration Strategies: A Worldwide Analysis (1999).

<sup>5</sup> The market capitalization of the entire global mining industry is estimated to be less than the market capitalization of one of the major oil companies.

been out-bidding Kazakhstan for investment in their solid minerals sectors. Thus, no significant mining country outside of the FSU relies primarily on a tender procedure for granting solid mineral exploration rights.

3.3.10 There are very few exceptions to this negative view of tendering of undeveloped mineral properties. These are, however, exceptional cases and not the general practice. Peru, for instance, has successfully tendered a few partially developed or undeveloped mineral properties. The Peruvian government in the early 1970s nationalized the operating mines and mineral reserve holdings of the private companies then operating in Peru. These holdings were given to specific state owned mining enterprises or holding companies such as MineroPeru and Centromin. The Alberto Fujimori government reversed the previous policies of nationalism in the early 1990s. Under the new government an ambitious program of privatization of state owned enterprises was undertaken. MineroPeru and Centromin, with the advice of international advisors, sold off many mining assets, including a few highly prospective undeveloped or partially developed mineral properties. An example of a successful tender of an undeveloped mineral property is the case of Antamina.

3.3.11 The Antamina copper-zinc deposit was first identified by the Cerro de Pasco Corporation in the 1960s. The assets of the company were nationalized in 1974. In 1995/96 the Peruvian government, in accordance with the national program of privatization, decided to put out for international tender the Antamina deposit. At that time, a total of about 150 million tonnes of ore reserves had been identified; but, the government technicians believed that the deposit had considerable potential for greater reserves. Accordingly, an international tender procedure was devised which required a US\$ 20 million cash payment and an exploration program of US\$ 13.5 million. The winning bidder would have a two year option during which time the exploration program would take place and the reserves confirmed. At the end of the two year period the winning bidder could either confirm its bid, at which time the US\$ 20 million would be paid to the government, or walk away from the project. The US\$ 13.5 million commitment for new exploration was guaranteed by the company against a letter of credit. In the event that this amount was not spent in new exploration the remainder would be payable to the government. The property was awarded to the highest bid calculated according to a formula which took into account 100% of the up-front payment plus 30% of the investment commitment. The winning company was Rio Algom of Canada, later acquired by Billiton, which subsequently formed a joint venture with Noranda, Teck Corporation, and Mitsubishi. Development of this mine is currently underway for a total investment of US\$ 2.2 billion. Antamina will be one of the largest polymetallic mines in the world, producing concentrates with an equivalent metallic content of 270,000 tonnes of copper and 220,000 tonnes of zinc per year. The principal lesson to be drawn from the Antamina experience is to provide for a phased approach which will allow the investing company sufficient time to confirm existing reserve estimates and prove up new reserves. It should also be noted that significant reforms to the Peruvian mining law and regulations had been taken shortly before the privatization program. This provided the investor companies with sufficient security of tenure to mobilize international financing for the venture.

3.3.12 Tenders have also been successful in Finland on a limited basis. In Finland, the Government promotes exploration and development of a small number of carefully

selected mineral properties by having the Geological Survey of Finland conduct extensive exploration and then putting them up for tender. However, investors can obtain licenses to explore for minerals in most parts of the country through an application process, without going through a tender. The key to the success of the tenders in both Finland and Peru is that they have been done on a highly selective basis as part of either a privatization program or a promotional program. Neither country has attempted to rely on tenders as the main procedure for granting mineral rights.

3.3.13 Several countries have had great success in attracting investment in solid minerals exploration through a licensing system which establishes clear procedures, terms and conditions for exploration rights. Examples are: Chile, Peru, Mexico, Argentina, Indonesia, Tanzania (See Annex J).

3.3.14 The following are general characteristics of the licensing system implemented in the most successful mining countries:

- They make geological information available to prospective investors at low cost. The investors identify their own targets, rather than the Government selecting areas for tender.
- The most successful countries have an open mining cadaster and title registry. Investors select sites that are available based on the information provided by the mining cadaster.
- General conditions are specified in the law and/or model contract as to: eligibility; grant criteria (first come, first served – no negotiations); distinct title maintenance obligations (e.g., payment of annual fees per hectare) and operating obligations (e.g., environmental assessment and planning, health and safety measures, reporting, fiscal obligations, etc.); relations with surface users; violations and penalties; and recourse rights. These terms are standard and not negotiable.

3.3.15 In the most successful mining countries, investors first determine the areas that they are interested in and that are available by consulting the open, public registry of exploration and mining titles. They then file an application for an available area. The time when each application is filed is strictly recorded. No other application for the same area is accepted unless and until the earlier application for exploration rights in the area is rejected. The requested title is granted to the first eligible applicant to apply for it correctly. The primary criteria are that:

- (a) The area is available.
- (b) There is no overlap with existing rights.
- (c) The applicant is eligible. (Eligibility requirements are not very restrictive; and in many countries, no demonstration of financial and technical capability is required.)
- (d) The applicant provides the necessary identification documentation and pays the applicable fees.

3.3.16 This procedure not only avoids discrimination between competing applicants, but it also reduces the time necessary for processing applications from months or years to

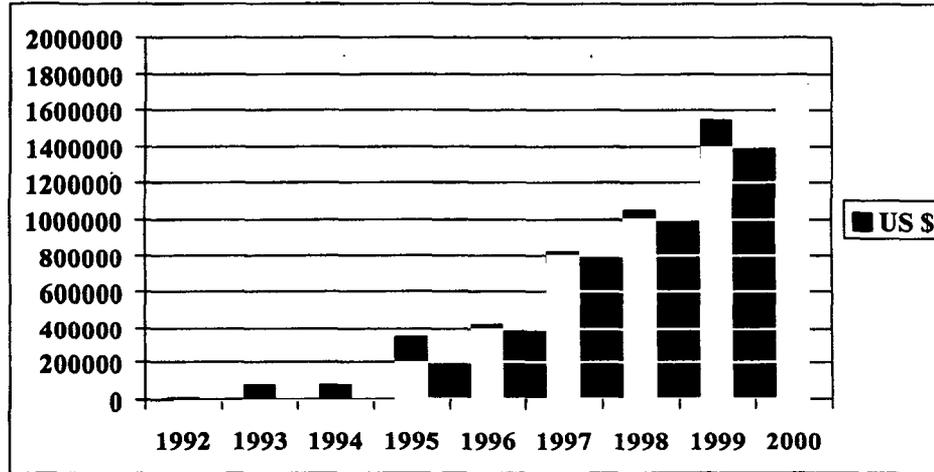
days. Moreover, the system of granting mineral rights on a strict “first come, first served” basis through a licensing office that maintains an open, public registry of exploration and mining titles can be – and in several countries is – self-supporting. The initial and annual fees paid by the titleholders in order to obtain their rights and maintain them in effect pay the system’s costs. An east Asian regional example of a country that has reformed its mining sector based on the foregoing principles is Mongolia (see Annex J(i)).

**3.3.17 Recommendation:** Kazakhstan should amend the Subsurface Law to provide a distinct regime for the grant of subsurface rights to solid minerals different than and apart from the regime for subsurface rights to petroleum. It should consider changing its procedures for granting exploration rights from a tender process to an administrative application procedure (license system) based on the “first come, first served” principle in order to successfully compete for private investment in exploration for solid minerals.

## Contribution of Local Mining Taxes: Santa Cruz Province, Argentina

### Рост налогов в горнорудном секторе. Провинция Санта - Круз, Аргентина

Growth of Mining Taxes Santa Cruz Province, Argentina



### 3.4 Background on the Mining and Metallurgical Sector

3.4.1 During Soviet Union times mineral producing kombinats in Kazakhstan were a principal supplier of mineral resources, processed and unprocessed, to industrial plants elsewhere in the Soviet Union. Some 233 mining and metallurgical kombinats produce a wide variety of mineral products, the volumes and values of which are summarized in Table 3.2. Kazakhstan is a world class producer of chromite ores, ferroalloys and ferrochrome, alumina, and uranium. It is a major producer of refined copper, lead and zinc, iron ores and pellets, steel, coal, manganese, alumina, titanium, barites, and rhenium. Over 90% of the mineral production is exported since local consumption of metals is relatively low. In terms of diversity of minerals produced and prominence in many export markets, Kazakhstan is the ultimate mining and metallurgical country.

**Table 3.2**  
**Kazakhstan Selected Minerals Production: 1999**

<b>Commodity</b>	<b>Volume</b>	<b>Value (million Tenge)</b>	<b>Value (million US\$)</b>
Coal and Lignite	58.4 million tonnes	20,549	171.8
Iron Ores	9.6 million tonnes	17,632	147.4
Bauxite	3.6 million tonnes	2,349	19.6
Chromite Ores	2.4 million tonnes	6,066	50.7
Steel	7.7 million tonnes	89,558	748.6
Ferroalloys	999,603 tonnes	27,414	229.1
Ferrocchrome (60%)	731,563 tonnes	19,988	167.1
Refined Gold	9,655 kilograms	7,740	64.7
Alumina	1,157,692 tonnes	13,074	109.3
Lead Metal	158,890 tonnes	6,714	56.1
Zinc Metal	248,754 tonnes	23,833	199.1
Refined Copper	361,890 tonnes	62,931	526.0

Source: National Statistical Agency

3.4.2 Immediately following the breakup of the Soviet Union the traditional markets for Kazakhstan mining and metallurgical kombinats disappeared or became insolvent with the result that mineral output fell and the kombinats came under severe financial pressures. The Asian and Russian financial crises further depressed the markets for Kazakhstan mineral products. In 1994-96, in an attempt to redress the situation and maintain production, employment, and social services, the government either privatized or awarded "management contracts" for many of the kombinats to consortia of local and foreign investors. It should be noted that many of the foreign firms obtaining management contracts were not well-known mineral producing companies but rather "trading" or other companies whose core businesses were not minerals production. The results of the privatization program and management contracts system have been mixed. On the one hand, production has stabilized and the kombinats have continued to provide employment and social services to the communities where they operate. This has been the case, for instance, of the Ispat International (United Kingdom-India) take over of the Karmet iron and steel works, the Samsung arrangements with Dzhezkazgan and Balkash copper kombinats, and Glencore Trading (Switzerland) commercial arrangements through Kazzinc. On the other hand, some investors allegedly did not honor their commitments and their management contracts were later cancelled by the government. Disputes related to these cancellations have led to litigation and/or arbitration in local and foreign courts.<sup>6</sup>

<sup>6</sup> The most celebrated case involves Trans World Group (TWG) which, through various subsidiaries and affiliates, acquired control of bauxite and alumina kombinats (Whiteswan Ltd.), the Sokolovsko-Sarbay iron ore complex (Ivedon International), and the Donskoy chromite and ferro-alloys operations (Japan Chrome Corporation). Following a dispute with its joint venture partner, Kazakhstan Mineral Resources Corporation (KMRC), the commercial arrangements of TWG were annulled by the Kazakhstan Supreme Court. This decision was the subject of international litigation but has now been settled. Other management contracts which have been cancelled include those pertaining to phosphate and certain lead/zinc operations.

3.4.3 In addition to the privatization and/or management contracts of existing kombinats during the mid 1990s, many investors, foreign and domestic, were interested in exploration and new project development in Kazakhstan. The results of these new investments have not been entirely satisfactory, both from the perspective of the investors and the government. Many foreign companies were more interested in short-term speculation rather than long term development. Several mis-understandings between the investors and the government, some of which have resulted in litigation in local and international courts<sup>7</sup>, have clouded the atmosphere for investment in Kazakhstan. During this early period, the government, as well, was ill-prepared in terms of legal and institutional arrangements to deal with the requirements of foreign investors. A “licensing system” was at first attempted with mixed success. Subsequent revisions to the mining legislation put the emphasis on a “contract/tendering system” and the institutional arrangements were adapted to this type of system accordingly. Most recently, the impact of the changes to the institutional set-up introduced in December, 2000 have yet (as at the writing of this report) to be fully implemented. A principal finding of the report is that this confusion between a “licensing” and “contract/tendering” system continues to be a principal hindrance to new mining investment, particularly in exploration. Except for oil and gas, Kazakhstan is not attracting sufficient new exploration in minerals resources. New exploration should thus be a priority for the government as existing reserves will become increasingly exhausted and uneconomic unless new reserves are found and put into operation.

3.4.4 According to the Ministry of Natural Resources and Ecology, Kazakhstan has an excellent reserve balance in many ferrous and non-ferrous metals. It ranks first or second in terms of balance reserves for lead, zinc, tungsten, chromite, and uranium. Kazakhstan ranks third to fifth in balance reserves of copper, molybdenum, silver, and manganese. Kazakhstan also has world class reserves of tin, titanium, gold, and iron ore:

3.4.5 It should be noted, however, there are significant differences between the reserve classification standards used in Kazakhstan and those accepted internationally. The Bank is of the opinion that if international reserve classification standards are applied it could lead to a reduction in the amount and value of the mineral reserves.<sup>8</sup> The United Nations in 1998 proposed a new International Classification System for Reserves/Resources (UNRRC) that is rapidly being adopted and accepted as international best practice by most countries. The differences between the UNRRC and the existing Kazakhstan classification system are: a) UNRRC is based on “recoverable” reserves instead of “in situ” minerals; b) UNRRC uses current prices and costs and “best available technology” rather than “fixed in time” costs and technology as determined by the central planning agency; and c) UNRRC uses “full cost” accounting including mining and environmental/social costs, which are not generally included in the costs used in the present system in Kazakhstan. If the UNRRC were used in Kazakhstan it would have the effect of reducing “on balance” reserves, increasing the amount of “un-economic” reserves, and increasing the amount of “off-balance” resources. This should not be viewed as a loss of wealth to the country but rather as a re-calibration of existing data to

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<sup>7</sup> Central Asia Goldfields, a Canadian company which had invested in a gold mining project, is still involved in judicial proceedings or arbitration. Placer Dome, a well known Canadian gold company, threatened legal action over alleged breach of contract in dealings with the government.

<sup>8</sup> For an explanation of the major differences between reserve classification systems please see annex G.

more accurately reflect the open market economy conditions that Kazakhstan has chosen to operate under. Use of the UNRRC or other internationally recognized reserve classification system would help remove potential conflicts concerning “high grading” and “rational use of deposit” which have been contentious issues between investors and the Committee on State Material Reserves. Thus, the present Study recommends that the government move quickly to adopt the UNRCC system.

### 3.5 Macro Economic Contribution

3.5.1 Countries traditionally have measured the economic contribution of mining at the macro or national level in terms of contribution to export earnings, national tax revenues, percent of gross domestic product, and percent of industrial employment. In Kazakhstan in 1999, according to the National Statistics Agency, the gross value of coal, metals, iron ore, non-ferrous metal ores and other mineral products was 323 million tenge, about US\$2.7 billion. On a gross value basis this is approximately 10-15 percent of total GDP. Exports of mineral commodities, principally to the countries of the former Soviet Union but also in substantial quantities to overseas export markets, were US\$ 2.1 billion, 30 percent of total commodity exports in 1999. The mining and metallurgical sector directly employs 200,000 persons or 20 percent of the industrial workforce. The sector directly contributes 3-4 percent of total tax revenues.

3.5.2 The mining and metallurgy sector also induces the development of ancillary industries. Among the most important of these are vendors/suppliers of equipment and supplies to the industry, financial and marketing services, and professional services such as brokers, consulting engineers/geologists and various experts. Though the value added of these ancillary industries to the economy depends in large measure on the overall level of economic development in the country, some studies (Peru, Chile, South Africa) estimate that the ratio of direct to induced value is one to two - that is for every dollar spent directly by the industry at least two dollars is generated in the ancillary industries. In the case of Kazakhstan, development of an indigenous cadre of vendors and service companies to the mining and metallurgical industry could have important economic benefits since many of the current vendors and suppliers are still located in Russia or Ukraine. Indirect job creation is another important impact of mining development. In Peru, for example, 56,485 persons are employed directly by the mining and metallurgical sector; indirect jobs created by the sector are 226,000, a ratio of four to one. This ratio for the entire mining and metallurgical sector of Peru is confirmed by the direct to indirect job creation multiple of individual mines (see below and annex H). Finally, certain mineral rich countries have developed a wide range of financial services and equity exchanges that service the industry, as for example the Toronto, Vancouver or Johannesburg Stock Exchanges. This is an interesting possibility for Kazakhstan, though one that would depend on the strength and integrity of the overall banking and financial sector.

3.5.3 The direct macro economic contribution of the mining and metallurgical sector for various countries is illustrated in Table 3.3. Kazakhstan is comparable to other mineral rich countries such as Peru, Chile, Australia, Canada, South Africa and others.

**Table 3.3**  
**Economic Contribution of Mining**  
**Macro Indicators for Selected Countries - 1999**

Country	Value of Exports US\$ bln	Percent of exports	Percent of tax revenues	Percent of GDP	Persons directly employed	Percent of industrial employment
Kazakhstan	2.1	30	3-4	10	200,000	20
Canada	31.0	13	N.A.	3.7	386,000	10.2
Australia	11.6	23	N.A.	3.0		
Peru	3.0	48	22	6.0	56,485 <sup>9</sup>	
Chile	6.9	45	N.A.	10.0		
South Africa	16.0	45	2-3	6.3	436,500	9.2
India	5.9	16	N.A.	1.0		

Source: World Bank Staff Estimates

3.5.4 These statistics testify to the importance of mining and metallurgy to the macro economics. However, over the past several years some academic (Harvard University) and international (UNCTAD) studies have noted that mineral dependent economies tend to grow more slowly than economies which are not mineral dependent. Among other drawbacks, foreign exchange windfall earnings from mineral exports can contribute to an appreciation of the local currency thus eroding the competitive advantage for other manufactures, services and agricultural exports (the so called "Dutch disease"). This is a serious problem. However, it is a problem that proper government policies can solve. For instance, windfall revenues can be held in special stabilization funds which can be used to cushion the national economy from the effects of fluctuations in commodity prices. This is what Kazakhstan intends to do for petroleum revenues, for example. Such funds are also sometimes used in mining and metals exporting countries, for example Chile (copper) and Botswana (diamonds). In the case of these countries the State has a large ownership position in the producing mines. This is not entirely the case in Kazakhstan which has privatized most mining and metallurgical kombinats. Also, with present low commodity prices the revenues generated solely by mining and metals exports may not be sufficiently large to warrant a special stabilization fund. However, this is a question which the Kazakhstan authorities should perhaps examine in due course in light of developments in international commodity prices.

### 3.6 Economic Contribution at the Regional or Oblast Level

3.6.1 Within Kazakhstan, the economic contribution of mining and metallurgy varies considerably by oblast (Table 3.3). Certain oblasts, such as Karaganda, East Kazakhstan, and Kostanai are heavily dependent on mining and metallurgy while others, such as West Kazakhstan, Kyzylorda, and Mangistau have little or no mining and metallurgical industry. The different dependencies of the oblasts on existing mining and metallurgy plants, as well as the impact of potential new developments, is important in the regional

<sup>9</sup> The Peruvian government estimates that an additional 200,000 persons derive "indirect" employment from the sector.

context especially in terms of infrastructure and training and allocation of human resources.

**Table 3.6**  
**Economic Contribution of Mining by Oblast - 1999**

Oblast	Commodities Produced	Direct Employment	Percent of Industrial Production	Value of Assets (tenge mln)	Average Monthly Wages
Karaganda	Steel, coal, copper	106,998	85	192,696	16,362
East Kazakhstan	Copper, lead, zinc, titanium	36,514	63	55,676	22,525
Pavlodar	Alumina, coal	16,309	60	58,148	18,976
Kostanai	Iron ore, manganese	18,330	35	NA	17,044
Aktobe	Chromite, ferroalloys	5,805	28	8,213	22,525
Zhambyl	Lead, phosphates	1,399	28	1,180	17,720

Source: National Statistical Agency

3.6.2 Physical infrastructure requirements such as rail, road, waterways, and electricity tend to service the mining and metallurgical industries on a priority basis and thus tend to be concentrated in the oblasts where the industry is concentrated. The operators of the infrastructure services, be they private or public, must take into account the requirements of the industry in terms of existing operating bottlenecks as well as future plans. Oblast government authorities also need to assess the land use needs for the infrastructure, the potential impacts on oblast revenues, and potential problems obtaining and granting of right-of-way. Those oblasts with the highest level of mining and metallurgical activities requires specialized manpower and skills. This may, in turn, require additional investment in special training facilities in the oblast as well as on the national level. The wage differential in the mining and metallurgical industry when compared to the national averages, to other economic sectors, and within the same sector but in different oblasts, may also pose a challenge. For instance, a coal miner in Karaganda earns 12,790 tenge per month (first quarter, 2000) while a coal miner in East Kazakhstan earns 22,166 tenge per month. Under conditions of a free labor market, this differential in wages could be expected to induce migration of skilled manpower from low wage oblasts to higher wage oblasts.

3.6.3 There is also an issue from a national policy standpoint regarding the equitable distribution of economic wealth and benefits between oblasts. Those oblasts blessed with oil or mineral resources will tend to be better off economically than those which do not have the resources. Not only do these oblasts receive the benefits of job creation and spin-off effects from the investments but also locally levied taxes and, to the extent provided in national legislation, a portion of centrally collected taxes as well. The equitable distribution of benefits is fundamentally not a problem for the mining and

metallurgy sector to solve but rather a problem of overall national policies and political direction. Many other countries have grappled with this issue of regional distribution of wealth and there are no easy solutions.

3.6.4 Recent decrees of the government give greater powers to the administrations of the oblasts which could have significant impacts on the mining and metallurgical sector. However, in Kazakhstan it remains to be seen exactly what powers and authorities will be decentralized. In certain countries organized on a “federal” basis (such as, Australia, Canada, Argentina, USA) the governments of the states or provinces have substantial powers in respect of issuance of mining titles and cadastre, supervision of work obligations and environmental compliance, and assessment and collection of certain taxes. In other jurisdictions organized on the “unitary” basis (such as, France, Chile, Indonesia, and Kazakhstan) these functions are in principle firmly controlled by the central government. Execution in the provinces is through units or local delegations of the central ministry, rather than units of the local provincial government. In spite of central control, in Kazakhstan investors have complained that the oblast governments sometimes add taxes which are not specified in the contract. Also, there have been some complaints about overly zealous labor and safety inspectors, though it is not clear if this is from the oblast government or the local unit of the central ministry.

### 3.7 Economic Contribution at the Local Community Level

3.7.1 At the international level, over the past five years much attention has been focused on the economic impacts and contribution of mining at the level of the local community. Based on some recent studies<sup>10</sup> the impacts of one mine in the local community can include:

- *indirect employment* - for every job created directly in the mine between 2 and 25 jobs are created with suppliers, vendors and contractors to the mine;
- *induced economic activity* – every dollar spent by the mine on operations generates an average of 2.8 dollars in the local economy in terms of induced economic activities in and around the mine site;
- *local employment* – between 65 and 90 percent of the labor force at the mine is drawn from the local community;
- *social services* – mines contribute directly to social services such as schools, hospitals and clinics, training centers, food security programs, water wells, small scale business development, vendor and supplier partnerships.

3.7.2 Local communities, which bear the brunt of environmental damage and social destabilization of mining activities, often complain that they do not receive their fair share of tax revenues and other benefits. Many governments are now pursuing policies and enacting laws to share a portion of mining taxes and other revenues directly with the local community. However, this practice raises the issue of the capacity of local communities to properly administer and use the funds. Experience in several jurisdictions demonstrates that local communities (or individual political leaders of them) could

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<sup>10</sup> The World Bank has conducted studies (1999) of the economic contribution of mines in Latin America, Africa and Asia. The summary of the findings of these studies is in annex H.

simply squander the resources on projects which do not benefit the community as a whole. This, in turn, can cause significant problems for the mining company and the central government which are sometimes wrongly held to blame for the mis-use of funds at the local level.

3.7.3 Mining and metallurgical kombinats in Kazakhstan, located mainly in isolated rural areas, have traditionally assumed direct responsibility for provision of infrastructure, social and support services to the local community. Much of this responsibility has been transferred to oblast or municipal governments. Nonetheless, the mining and metallurgical kombinats still provide critical services to the local community. There is also a difference of mind-set between local companies and international companies. Typically, a mine operated under market economy conditions by an international company expects to undertake a much smaller role in terms of support for the local community. Some foreign companies operating in Kazakhstan, such as those that have bought existing kombinats, have learned to adapt to local practice and appear more responsive to the needs of the local community than foreign companies in search of new deposits.

### 3.8 Mine Closure

3.8.1 A vexing issue in Kazakhstan, as in many other countries, is the extent of government responsibility to provide social support to the local community when a mining operation is no longer economically viable and must close, where a mine owned by the government has been abandoned, or where an existing operation cannot be privatized. International experience has shown that there are no easy solutions to these issues. The politically expedient choice, as long as funds for the purpose are available, is to continue subsidizing the mining operation to support the community. This, however, is not a viable long term strategy. Most governments, through a variety of mechanisms, prefer an orderly shut-down of operations, rehabilitation of the environmental damage at the mine site, and some form of aid to the workers and community. In most countries, this is an expensive process but ultimately cheaper than continued subsidies, provided that the political will exists to carry through with the restructuring exercise. Where mining operations have been privatized, as is the case for many operations in Kazakhstan, the new owners should have the responsibility of rationalizing the operations. In fact, restructuring and downsizing of personnel has successfully been undertaken at KARMET coal operations and by Kazzinc. However, for non-viable operations which cannot be privatized, or operations which must close due to exhaustion of reserves (e.g., the cases of Tekeli, Kentau, and others), the government must step in to ensure the orderly closure and shutdown of operations and provide transitional support for the workforce and township.

#### Mine Closure: the Case of British Coal

Coal was instrumental in providing power for the British industrial revolution and, as late as 1947, accounted for more than 90% of all primary energy consumption. However, by the late 1970s abundant supplies of natural gas began to replace coal as the fuel of choice for the electricity generators. The government of Margaret Thatcher, which came to power in 1979, was determined to let market forces work and refused to subsidize the losses at the nationalized company British Coal. Against the vigorous objection of the coal miners union, British Coal was privatized and loss making collieries were shut down. From 1980 to 1992 over 170,000 employees were made redundant and 170 coal mines were closed. British Coal created a separate company to provide counseling, job and entrepreneurship training, and partnerships with local communities in order to ease the transition. Generous redundancy payments were given to the retrenched workers and various municipal and national programs were accessed to ease the transition. The total cost to the British exchequer between 1980 and 1992 was 18 billion sterling, of which 5 billion was earmarked for social and restructuring grants.

### 3.9 Some Important Additional Issues

**3.9.1 *High grading.*** A problem which has occurred in Kazakhstan (concerning operations at Dzhezhkagan among other sites) as well as in other countries is the problem of “rational” or “best” use of the mineral deposit. This is normally related to the perception of the government and/or local community that the mining company (foreign or local) is exploiting the best portions of the deposit (the practice known as “high grading”) and will abandon exploitation once the highest grades have been exhausted. Part of this problem is caused by the reserve classification system used in Kazakhstan. As explained earlier, because this system is different that the one used internationally, mining companies and the government could have a different valuations of the in situ reserves. Also, the plans, methods and rhythm of extraction used by the mining company to mine the ores could be different than those proposed by the government. But, even if the reserve classification system were the same, mining companies generally exploit the best and easiest mineral reserves first in order to: a) generate substantial positive cash-flows in the early years of the project; b) quickly pay off the debts incurred for the project’s development; and c) meet the expected rates of return on investment. This practice is not inherently bad or incorrect. However, governments sometimes complicate matters by assessing heavy “ad valorem” royalties which in effect increase the cut-off grade forcing the investor to mine the best ores. Another common error is to grant tax holidays during the first few years of the project in the mistaken belief that this is necessary for the investor to improve the rate of return. In reality, the tax holiday only increases the temptation to accelerate the process of high grading since the investor, quite logically, will seek to maximize returns during the tax holiday period.

**3.9.2 *Employment of expatriate personnel.*** Few issues in developed or developing countries are as emotive as the issue of employment of expatriate personnel. This particularly the case in Kazakhstan and neighboring countries where foreign mining and oil/gas operators routinely request permission to bring in large numbers of expatriates when qualified local specialists may be available. It is understandable during the project development phase and early years of operations that the foreign company will rely on personnel which it has employed for many years or who have specialized skills not available locally. However, this practice should diminish over the first three to five years of operations as training programs within the company train local specialists and managers. Indeed, the company should have every financial incentive to minimize the high costs employing expatriate personnel. Experience in other countries demonstrates that by the tenth year of commercial operations only the very senior managers of the company should be expatriates. In some countries, Indonesia, for example, in contract of work between the government and the company specifies the phase-out of expatriate employees over a number of years. Use of direct quotas on the number of expatriate employees a company may engage or the vetting by government agencies of individual expatriate personnel qualifications has proved in other countries to be cumbersome and time consuming, both for the company and the government.

#### **4. The International Mining Industry and Foreign Investment**

##### **4.1 Attracting the Investor: What Do They Want?**

4.1.1 Countries have become acutely aware over the past fifteen years of the necessity of attracting international capital since the amounts of investment required to develop mineral deposits and the risks of failure are too large to be possible or justifiable from a public expenditure point of view. A survey of major international mining companies was conducted in 1991 under the auspices of the United Nations and the World Bank to determine the relative importance of certain criteria used by the companies to evaluate potential investment projects in emerging economies. In order of importance, these criteria are:

1. Good geological prospectivity and mining tradition and potential
2. Clear mining rights and title (mining legislation)
3. Attractive and competitive fiscal conditions (tax legislation)
4. Ownership and control of operations (mining legislation)
5. Political stability and transparency of governance (government institutions)
6. Availability of infrastructure

4.1.2 Experience internationally has demonstrated that if governments address these issues they can and do attract significant amounts of investment. Kazakhstan has highly favorable geology and a mining tradition. The country also has reasonably good infrastructure to support mining activities, except in certain areas. However, concerning criteria 3 – 6 above, a significant reform program will be required to remedy the perceived deficiencies and to comply the expectations of potential investors. As explained in section 3.1 of this Study, the countries which have undertaken such a reform program have been successful in attracting new investment. For instance, Table 4.1 shows the shift in exploration expenditures which occurred between 1985 and 1999. It is noted that Latin America, a leader in the mining reform agenda, doubled its share of world exploration expenditures at the expense of traditional countries such as Canada, the USA and Australia.

**Table 4.1**  
**Percentage Distribution of Exploration Expenditures**  
**1985 - 1999**

<b>Country</b>	<b>1985</b>	<b>1999</b>
Canada	26	11
Australia	24	19
USA	16	10
Latin America	13	29
Africa	12	15

4.1.3 Even though the total amount of exploration expenditures have fallen recently due to overall market conditions, those countries that have undertaken effective reforms have still managed to retain significant investment while those countries in which the reforms were not as effective or undertaken seriously have lost investment. For instance,

Argentina, Tanzania, and Mali – countries which are seriously undertaking reforms – continue to attract US\$ 25-100 million in new exploration annually. Prior to the 1990s, these countries had little or no international mining activity.

## 4.2 Conditions of the International Mining Industry

4.2.1 The international mining and metallurgical industry is one of the most complex industrial sectors in the world.<sup>11</sup> Depending on the commodity, the production chain usually consists of extraction of the raw mineral commodity, beneficiation and concentration of ores, smelting and refining of product, marketing and brokerage of commodities, and fabrication into end-use products. The industry, at all stages of the production chain, but especially at the exploration, extraction and processing stage, is highly competitive and growing more so every year. Many international factors affect the decisions that companies make to invest in mining and metallurgy in emerging economies. The focus of this chapter is to explain these main international trends in general and Kazakhstan in particular. For Kazakhstan the over-riding issue is to attract new investment in exploration and project development, thus awareness of the international context in which private capital operates is essential.

4.2.2 First, there *is significant diversity among international companies<sup>12</sup> in terms of size, financial capacity, and strategic focus* which affects the way they view investment opportunities in emerging economies. As a general proposition, these companies include:

- very large international conglomerates which mine a diversified portfolio of commodities in many different countries (examples: Anglo American, Rio Tinto, Broken Hill Proprietary, Billiton);
- very large international companies which focus on single commodities (examples: Newmont, Placer Dome and Barrick (gold), Alcan (aluminium), Inco (nickel), Cogema (uranium));
- state owned enterprises (such as Codelco Chile);
- formerly state owned enterprises which have been totally or partially privatized in recent years (e.g. CVRD (Brazil), ZCCM (Zambia));
- medium sized international companies which focus on one or more commodities (Avmin (South Africa), Industrias Penoles (Mexico), Boliden (Sweden));
- local privately owned medium sized mining companies (US\$ 50+ million revenues/year) which focus on domestic operations, such as Buenaventura, Volcan, Minsur, Milpo (Peru) or Grupo Gordo, Lasinesa, Antofagasta (Chile); significantly, some of these groups are of sufficient size to have access to the international equity markets
- junior companies which focus generally on adding value to exploration prospects which can later be sold to and developed by larger companies;

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<sup>11</sup> A major study of the international mining industry is under preparation by the Mining and Metals and Sustainable Development project funded by major mining companies due to be published in May, 2002.

<sup>12</sup> UBS/Warburg Bank tracks over 60 ferrous, non-ferrous, and precious metals companies whose shares are quoted on international securities exchanges. This figure does not include companies active in the coal sector, numerous small “junior” companies, and privately held mining companies.

- international companies for which mining exploration and production is not the core business but which nevertheless seek and invest in profitable opportunities in mining (examples: trading companies such as Glencore and East Point Holdings, which are active in Kazakhstan);
- smaller locally owned companies exploiting industrial and construction materials or, in some instances, deposits of non-ferrous or precious metals.

4.2.3 The second trend, and perhaps the most important, is the *fierce competition among companies to raise equity risk finance for projects in emerging economies*. All companies, with the possible exception of the smaller locally owned companies, depend on access to a greater or lesser extent on the international equity, finance and risk capital markets centered principally in Canada, the United Kingdom, Australia, South Africa, and the United States. In the case of the medium and junior international companies, the equity funds raised on these markets are used principally for highly risky exploration and pre-development projects. Project finance is also raised in these financial markets for specific investment projects in emerging countries since even the largest of the mining companies will seek to off-set some of the financial and political risks involved. The financial markets as well as the performance of the companies having access to them, are highly sensitive to international commodity prices as well as competition from industrial, consumer goods, financial, and other sectors which compete for funds. For instance, the stock of global mining companies has been considerably less attractive to investors than other high technology stocks (Graph 4.1).<sup>13</sup> This difficulty in raising equity on the financial markets has meant that companies have reduced expenditures on development projects. In 1996, international non-precious metals companies had around US\$ 30 billion capital expenditure on new project development; by 1999 this had fallen by 33 percent to around US\$20 billion. This has meant that companies have become much more selective in the types of projects they will undertake and the countries in which they will undertake them.

4.2.4 A third major trend, and directly related to the availability of risk capital, is *the dramatic decrease in the funds companies spend on exploration*. In the peak year of 1997, the companies surveyed by the Metals Economics Group (Canada) spent US\$5.1 billion on precious and non-precious metals exploration worldwide. In 1999, these expenditures on exploration had fallen by 33 percent to about US\$3 billion. The “junior” mining companies and the emerging economies have been particularly hard hit by this decline in exploration expenditures. During the mid-1990s, due to the liquidity in the equity markets, there was an explosion of activity among the juniors for exploration in the emerging economies, principally in Latin America but also Africa and Asia. Now, because of the decrease in risk capital, these companies have withdrawn from the emerging economies and are focusing their exploration efforts closer to existing mines or in their home countries. Also, some companies are concentrating on expansion of the enterprise via acquisition of other mining enterprises rather than investing in exploration. It has already been noted that investment in new exploration should be a priority for

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<sup>13</sup> Graph 4.1 shows the performance of the Hong Kong Shanghai Banking Corporation (HSBC) global mining index relative to the performance over the same period of the NASDAQ index which is dominated by technology companies.

Kazakhstan in order to develop new deposits. The scarcity of risk capital for exploration will make it even harder for Kazakhstan to attract the exploration investment it needs.

**Graph 4.1**  
**Performance Mining Equity Markets**



4.2.5 A fourth major trend is *consolidation, merger and acquisition taking place among the large and medium sized companies*, such as the mergers of Grupo Mexico/Asarco (copper), Alcoa/Reynolds (aluminum), and Barrick/Sutton Resources (gold). The trend towards large companies means that these companies must find and develop very large deposits in order to meet the financial growth expectations of their shareholders and financial backers. The application of advanced technologies in exploration, extraction and processing of minerals<sup>14</sup> has led to the relentless trend of the past 30 years to lower production costs and achieve economies of scale. These technologies are commonly available and known so it is unlikely that a single company could “corner” a mineral commodity through technology alone. It reinforces the industry’s over-riding concern to find and develop “quality” or “world class” ore bodies – in terms of grade, tonnage, ease of extraction. The implication for Kazakhstan is that some of the known deposits which the government may considered attractive for investment do not, in fact, meet the “quality” criteria that international companies require. An honest re-evaluation of these ore bodies according to internationally accepted reserve classification system would be a step in the right direction to determine whether particular ore bodies are attractive. Furthermore, opening up the territory to further exploration using models and techniques which have led to world class discoveries in other countries could produce beneficial results.

<sup>14</sup> For instance, advances in geology and the geo-sciences have made possible exploration of much larger areas of ground at reduced cost; advances in extraction technologies (larger haul trucks and mills, for instance) emphasize very large exploitation operations in order to achieve greater economies of scale and lower production cost; and instantaneous communications and computer technologies.

4.2.6 Fourth, *increasing pressures for greater social and environmental consciousness*. Companies are under increasing pressure from non governmental organizations and civil society in the countries where they operate to be more socially conscious and aware of the impacts their operations have on the national, regional and local economies. The industry in general has been heavily criticized, rightly or wrongly, for its past neglect of these issues. The industry is also more aware now than ever of the effects operations have on the physical environment and pollution of water, soils and air. Much progress has been made from a technical standpoint to apply cleaner production technologies. Yet, environmental considerations have an important effect on the decision making process companies go through to invest in mining projects. More recently, pressures on companies have increased regarding the negative social impacts of mining, particularly on local communities. Companies are also attempting to do better in this respect, though there is often a wide divergence between the expectations of the local community in terms of support for social infrastructure and the economic realities of what the company can afford to spend. This is particularly relevant to Kazakhstan where under the previous system mining and metallurgical kombinats accepted a wide range of social sphere responsibilities. In many cases, the kombinats have continued with these responsibilities even though they have been privatized. However, it will be difficult, though not impossible, to reconcile the expectations in terms social support of the local community or government with the expectations of private international companies. In other countries, the issue of providing social support for communities has been a point of serious disagreement between governments and private companies.

4.2.7 Finally, an interesting development in countries which have managed to attract new exploration is *the emergence of private, locally owned mining companies*. These types of companies were referenced in section 4.2.2 above. The growth of these small to medium sized local mining companies has been particularly evident in countries where the mining tradition is strong and which have reformed their mining laws and institutions, such as Peru and Chile. The key to success in these countries is rapid turn-over of data and the ease with which companies can obtain mining rights. International mining companies typically explore for very large mineral deposits. During the process of exploring for these large deposits numerous smaller or medium sized deposits are discovered which do not meet the investment targets of the large company. The exploration rights to these smaller deposits are relinquished by the large company and, according to legal requirements, the exploration data is given to the national geological survey. The data is then made available at no cost to any interested party (among which could be private locally owned companies) who can then easily obtain exploration rights to the area. Given Kazakhstan's strong mining tradition and technical expertise, there is good potential for the development of similar private local companies, subject to putting into place an enabling environment conducive to private sector investment in general, and significant reforms to the mining legal, institutional and taxation regimes in particular.

## **5. Legal and Regulatory Regime**

### **5.1. Introduction**

This chapter of the study compares the legal and regulatory environment to attract and retain private investments in the mining sector in Kazakhstan with that of other successful emerging economies.<sup>15</sup> Key elements discussed separately below are:

- 1) Constitutional foundation for private access to mineral rights;
- 2) An open sector with the same rules for all;
- 3) Easy access to exploration rights;
- 4) Security of mining tenure;
- 5) Liquidity of mining investments;
- 6) Appropriately adapted environmental requirements; and
- 7) Competitive and stable economic conditions.

### **5.2. A Strong Constitutional Foundation For Private Access To Mineral Rights**

**5.2.1 Sovereignty and ownership of mineral resources.** Because the mining and metallurgical sector generally requires the investment of large amounts of capital for long periods of time under conditions of substantial geological, technological and market risk, a solid legal foundation for the rules under which such investments are made is considered crucial. That legal foundation should be rooted in the national Constitution.

**5.2.2** The Constitution of the Republic of Kazakhstan vests the ownership of “the land and underground resources, waters, flora and fauna, and other natural resources” in the state. It provides that land may be privately owned, but it does not provide for private ownership of underground resources. Therefore, ownership of minerals in the ground in Kazakhstan may not be transferred by the state.<sup>16</sup>

**5.2.3** The Constitution does not specifically address the granting of mining rights to private parties. The legal authority to grant mining rights to private parties appears to be based on Article 6 of the Constitution, which enables the legislature (or the President, in certain circumstances) to establish by law the “subjects and objects of ownership, the scope and limits of the rights of proprietors, and guarantees of their protection.”

**5.2.4** Article 26 of the Constitution contains provisions for the protection of private property rights. It requires a court decision before a person can be deprived of his property; and it permits condemnation of private property “for the public use” only in extraordinary cases authorized by law and conditioned on “equivalent compensation.”

**5.2.5** Thus, it appears that the Constitutional basis for the Subsurface Law is the authority under Article 6 to adopt legislation establishing property rights; and the Constitution

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<sup>15</sup> The basic legal texts governing investment in mining in the Republic of Kazakhstan are listed in Annex F to this report.

<sup>16</sup> That restriction is typical of civil law countries, including the Latin American civil law countries that are the most successful in attracting private investment in exploration and mining.

requires due process and compensation as conditions for any taking of private property by the state. This should provide a sound Constitutional basis for mining rights that are property rights protected by the Constitution. However, as discussed below, the Subsurface Law does not clearly establish mining rights that enjoy the full scope of protection afforded by the Constitution.

### 5.3. An Open Sector With The Same Rules For All

**5.3.1 The Sector Is Only Selectively Open.** As discussed in Section 3.3 above, a successful transition from a centrally planned economy to a market economy requires a change in the primary role of the state in the mining sector from that of investor in exploration, extraction and processing activities, and commercial operator of those activities, to that of promoter of private investment in the sector and regulator of private development activities as necessary to protect the public interest. The institutional functions and structures inherent in the state's new role are discussed in a subsequent chapter of this study.

5.3.2 Although Kazakhstan has opened its mining sector to private investment, it has done so on a selective basis that is not well suited to the fundamental realities of investment in the market-oriented mining industry. In addition, mineral policy in Kazakhstan contemplates an ongoing role of the state as a commercial operator on a preferential basis, which in turn discourages private investment.

5.3.3 There is a fundamental problem with the orientation of the mining legislation in Kazakhstan. The role of the state under the Subsurface Law and the Subsurface Granting Rules is, in large part, that of a holding company evaluating and disposing of valuable assets on the best possible terms. Its primary functions include putting subsurface areas up for tender, negotiating contracts with the winning bidders, selling geological information, evaluating reserves, and collecting required bonus payments at various intervals.

5.3.4 These functions are based on a petroleum sector model. That model, in turn, is based on certain hypotheses that are true in the oil and gas industry but not in the mining and metallurgy industries. The petroleum sector is characterized by scarce but fungible resources and strong demand, resulting in prices that are high in relation to the production cost of the commodity, as well as relatively short exploration and development time frames. Those conditions do not apply in the mining industry, which has experienced flat demand and generally declining prices for its products, which are highly differentiated, over the last 20 years or so, while the exploration and development periods for major projects have lengthened. As a general rule, international mining companies are not interested in bidding for the rights to acquire and/or develop mineralized areas, except in those rare cases when there is an opportunity to acquire a known, particularly high grade deposit with low production costs.

5.3.5 According to officials of the Ministry of Justice, Kazakhstan has attempted to establish the Subsurface Law as an "umbrella law" covering the common elements of all types of mineral resource extraction activities, with separate subsector legislation on petroleum and hard rock mining, respectively, under the general Subsurface Law. To

date, that objective has not been achieved. The separate Edict Concerning Petroleum provides a relatively appropriate legal framework for oil and gas exploration and development consistent with international practice; and Kazakhstan has achieved considerable success in attracting major international investment in its oil fields. However, the Subsurface Law is very similar to the Edict Concerning Petroleum, and does not provide a legal framework that is sufficiently sensitive to the differences between hard rock mining and petroleum exploration and exploitation, some of which are mentioned above. Continued efforts to reformulate the Subsurface Law as a general umbrella law covering the common aspects of different types of subsoil utilization - with separate subsector laws under that umbrella law for mining, petroleum and possibly special, strategic minerals, respectively, based on best international practice – would improve the legal framework for investment in mining and should be encouraged.

**5.3.6 Role of the State and Preferential Rules for National Companies.** The Subsurface Law contemplates an inherently preferential role for the 100% state-owned National Companies. Unlike private companies, the National Companies are to receive Subsurface Allotments in the first instance through direct negotiation. The law also encourages private companies to joint venture with the state companies. These provisions of the Subsurface Law suggest, contrary to current policy, that Kazakhstan government entities still intend to play a role as investor and commercial operator in the sector, whereas in fact, the Government has aggressively pursued a policy of privatization of the mining sector. The provisions on National Companies in the Subsurface Law should be eliminated, or revised to specifically limit the role of any National Companies, so as not to create the impression that Kazakhstan has not yet decided to confine its role to that of promoter and regulator.

**5.3.7** In order to be competitive with other investment opportunities available to investors in the current and forecasted international economic climate, Kazakhstan should consider a fundamental change in the way in which it manages its non-petroleum mineral resource base. International experience demonstrates that the countries which have had the greatest success in attracting private investment into their mining sectors have done so through a process of:

- rapid relinquishment of their uneconomical state holdings,
- promotion of investment opportunities by making geological information generally available,
- publicizing which geographical areas are available, by means of a mining cadastre open to public consultation,
- reducing the time and cost of acquiring mineral rights,
- providing greater security for those rights, and
- regulating those aspects of mining company activities that concern the public interest (health, safety, protection of the environment, planning for sustainable community development, reporting of operations and results, and compliance with fiscal obligations).

This process is fundamentally based on consistent application of objective, published standards, while allowing companies to conduct their operations as they see fit in order to compete in open markets.

5.3.8 With respect to the role of the state as regulator, there is a fundamental difference between the approach inherent in Kazakhstan's Subsurface Law and best international practice. Under the Subsurface Law, the State evaluates the mineral reserves associated with a deposit and uses that information to regulate both the mining contractor's extraction program and the royalty rate that the contractor must pay the state. This practice, common in former centrally-planned economy countries, is not a part of state regulation of the mining sector in the successful mining countries. The practice of reserve evaluation by the State is in contradiction with the basic principles underlying a market economy: that demand and supply determine the price of mineral commodities, which in turn drive decisions on whether and how to produce and market the commodities. Mining companies must respond to market forces according to the best of their abilities in order to survive and thrive. By requiring a state-controlled evaluation of reserves that is based on a one-time measurement of ore volume and grade, without regard to changes in the cost of production or the market value of the commodity over time, Kazakhstan severely constrains the ability of private mining companies to adapt their operations to market forces. This lack of fundamental operating freedom makes Kazakhstan a relatively unattractive investment environment for many of the most qualified international mining companies. Until Kazakhstan re-evaluates and redefines the role of the state as a regulator that leaves mining companies free to plan and conduct their operations in response to market forces and corporate strategies, subject to complying with locally adapted, internationally recognized health, safety, environmental protection and other standards, the country is likely to find that the major international mining companies will not make large investments in Kazakhstan regardless of how attractive its natural resource endowment may be.

#### 5.4. Easy Access to Exploration Rights

5.4.1 The countries with the most success in attracting private investment into their mining sectors enable investors to obtain exploration rights quickly and easily, at low cost, through a transparent process. Under the Subsurface Law of Kazakhstan, however, the process whereby exploration rights for metallic minerals are made available is more time consuming, cumbersome, expensive and uncertain than in those countries. The difference between the process of providing access under Kazakhstan's mining legislation and under international best practice is discussed in section 3.3 above and summarized in the following table.

**Table 5.4**  
**Access to Exploration Rights**  
**Kazakhstan Compared to International Practice**

ISSUE	KAZAKHSTAN PRACTICE	INTERNATIONAL BEST PRACTICE
1. Availability of areas	The Government selects areas annually by an unspecified procedure.	All areas that are not designated by law as off limits and are not already taken, are available. The information is shown on maps of the mining cadastre, open for public consultation.
2. Application procedure	Open tender or closed tender, as decided by the Government.	Generally, by standard form application to the registrar of mining titles.  Tenders only in rare cases of disposition of known valuable properties extensively explored by the state.
3. Grant criteria	Competitive, subject to criteria specified in tender.  Extensive evaluation.	First eligible applicant for the area, provided that there is no overlap of existing licensed areas.  No evaluation of financial or technical background.
4. Form of mining rights	Negotiated contract, based on Model Contract.	License, permit, lease or concession, containing standard terms fixed by statute.
5. Time required	Several months at the least.	Hours, days or weeks.

5.4.2 As indicated in the table, the most successful countries make exploration areas available on a non-competitive, first come first served basis, founded on the principle that all areas are available unless they are taken or designated by law as off limits. An open title registry and mining cadastre enable all prospective investors to easily find out what areas are available. The title registry and mining cadastre are central features of the mining law in the most successful countries. Examples of successful mining sector reforms in various countries based on a transparent and efficient title registry and mining cadastre are provided in Annex J. The purpose of the mining cadastre in those countries is to show who owns what rights to any given area. It is not to show the location and amount of the state's ore reserves, as is the practice in Kazakhstan.

5.4.3 In order to attract a significantly greater amount of private investment capital into minerals exploration in Kazakhstan, it would be necessary for the state to make its procedures for granting access to subsurface exploration rights as easy, or easier, than those that apply in other similarly endowed countries. That would require changing from the current system of granting subsurface utilization rights only through a tender procedure to a system of granting exploration and/or exploitation rights for most areas by licensing or

contracting in response to applications from investors who would be free to select available areas based on an open and meticulously updated mining cadastre. Such a change would not guarantee success, but it would increase the likelihood that investors in mining would undertake more exploration in Kazakhstan.

5.4.4 Furthermore, as discussed below in Section 6.5, Kazakhstan's requirement that exploration and/or production contractors reimburse the State for historic geological exploration costs is contrary to international practice and is not competitive. Other well-endowed mining countries provide extensive geological information to potential investors for free or at nominal cost in order to promote investment in the development of their resources. Kazakhstan's historic cost reimbursement requirement constitutes an obstacle to investment in its mining sector because it raises the initial cost of minerals exploration or mine development in Kazakhstan. By contrast, in the most competitive countries, such costs constitute an investment by the State in the promotion of the mining sector. Although the Government of Kazakhstan may feel an obligation to recover such costs for its people, it cannot force investors to pay them in a competitive environment. The Government's goal should be to maximize overall fiscal revenues on a net present value basis, consistent with other important public values such as creating employment opportunities, expanding infrastructure and protecting the environment. Fiscal revenues can best be maximized by attracting investment in minerals exploration and, eventually, mine development and sustainable operation. The historic cost reimbursement requirement, unfortunately, impedes progress towards this goal rather than contributing to it.

## 5.5 Security of Mining Tenure

5.5.1 Given the high risk nature of investment in mineral exploration,<sup>17</sup> security of tenure is a fundamental requirement of private investors in that activity. The concept of security of tenure includes the following elements:

- clarity as to the nature and strength of available exploration and mining rights (i.e., whether they constitute property rights protected by the fundamental law of the jurisdiction, and whether those rights can be pledged or mortgaged);
- exclusivity of the exploration or mining rights with respect to minerals and territory;
- assurance of the right to exploit an ore body discovered by a license holder within the area covered by its exploration license;
- clear, objective requirements for the maintenance of exploration and mining rights;
- appropriate term lengths (flexible for exploration and relatively long for mining); and
- clear, objective criteria and procedures for the cancellation of established rights, subject to appeals to an independent adjudicator.

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<sup>17</sup> "Roughly one out of every 1,000 properties passes the preliminary exploration phase and results in the discovery of economic-grade mineralization. Once discovered, the mineralized zone has a 1-2% chance of developing into an economic deposit. In other words, it takes 1,000 grassroots prospects to make a discovery and at least 100 discoveries to make a mine." Virginia Heffernan, Worldwide Mineral Exploration (1998) 3.

5.5.2 Rights that satisfy the concerns of investors in these respects are considered to provide the security of tenure necessary to induce them to make the high risk investments in exploration that may lead to the eventual discovery of ore bodies that can be profitably developed and brought into production.

**5.5.3 Nature of the rights.**

There is lack of clarity as to the nature of Subsurface Utilization Rights (for metallic and precious minerals) in the Subsurface Law.

5.5.4 As noted in section 5.2 above, the Constitutional basis for the Subsurface Law appears to be the legislative authority to define property rights. Yet, Subsurface utilization rights are not clearly defined as property rights in the Subsurface Law. Article 5 of the Subsurface Law provides that minerals extracted by the Subsurface User are the User's property. However, the Subsurface Utilization Rights themselves are not defined as property rights in the Subsurface law. According

<b>Legal and Regulatory Framework What the Investors Say About:</b>	
Clarity of Laws	<i>"lack transparency and consistency" "complex" "could be clearer" "no appeal process" "weak judiciary"</i>
Mining Regulations	<i>"arbitrary and little flexibility" "too many" "command and control mentality"</i>
Sanctity of Contract	<i>"not as much as we would like"</i>
Security of Tenure	<i>"unclear if big discovery is made"</i>
Internationally competitive	<i>"yes, but unnecessary paperwork"</i>
Terms and conditions	

to Article 13 of the Subsurface Law, they arise from the contract granting the rights. The Ministry of Justice advises that Subsurface Utilization Rights are real property rights under Articles 1, 195 and 379 of the Civil Code of the Republic of Kazakhstan.

5.5.5 Clarification of the nature of Subsurface utilization rights in the Subsurface law itself is important. If Subsurface Utilization Rights are property rights then, according to the Constitution, they can only be taken away from a User in good standing pursuant to a decision of a court. As contract rights, however, they would not be subject to the Constitutional protections for property rights, but would only be subject to the terms of the contracts, and therefore would have lesser legal status.<sup>18</sup>

<sup>18</sup> We note that the Model Contract in effect through June 2001 is inconsistent with the 1999 amendments to the Subsurface Law. As of June, 2001 the new Model Contract implementing the 1999 changes in the Subsurface utilization Law had been prepared but had not yet been officially adopted by the Government.

5.5.6 Whereas security of tenure requires clarity as to the nature of exploration and mining rights, there is ambiguity in the Subsurface Law as to the legal nature of Subsurface Utilization Rights because those rights are no longer the subject of a license separate from the contract that grants the rights. At a minimum, a clear definition of Subsurface Rights as property rights in accordance with the Civil Code - distinct from the state's ownership of mineral resources in the ground and from ownership of the surface land - is needed. Strengthening the legal nature of Subsurface Utilization Rights in the Subsurface law would enhance security of tenure for exploration and mining in Kazakhstan. In this regard, consideration should be given to replacing the contracts with standard licenses, leases or concessions, defined as property rights that are protected by the Constitution and that are subject to pledge or mortgage, as is the case in most successful mining countries.

5.5.7 **Exclusivity.** The Subsurface Law does not clearly state that different Subsurface Utilization Rights cannot be superimposed simultaneously on the same parcel. The best international practice allows only one exploration or exploitation right for metallic or precious minerals at a time over any given geographical area. Exclusivity is important because (a) it avoids conflicts between holders of overlapping titles; (b) it facilitates the maintenance of an accurate and up to date mining cadastre;<sup>19</sup> (c) it reduces risk for the investor;<sup>20</sup> and (d) if the subsurface utilization rights are also transferable, as they should be, it motivates the investor to explore thoroughly for all valuable mineral deposits within his exploration area.<sup>21</sup>

5.5.8 Exclusivity of exploration rights in an investor's contract area does not mean that the contractor can prevent or obstruct the holders of exploration rights in adjacent areas from obtaining access to their respective contract areas. The Subsurface Law could be improved by adding provisions on easements governing the respective rights and obligations of subsurface utilization right holders among one another and with respect to surface use owners or legal occupants. The 1997 Minerals Law of Mongolia contains extensive provisions on this subject and should be considered as a relevant regional precedent that has worked well.

5.5.9 To conform to international best practice and improve its attractiveness to investors, Kazakhstan should consider:

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<sup>19</sup> When rights to explore for different metallic or precious minerals in the same area can be granted to different contractors, it restricts the Mining Administration's ability to efficiently computerize the mining cadastre and increases the complexity and time involved in determining what rights can be granted in any particular area.

<sup>20</sup> An investor in exploration is exposed to a significant, and often unacceptable, risk that he may not be able to develop a deposit he finds within the area covered by his contract because another right holder makes an earlier discovery of a commercial deposit of other minerals and obtains the right to proceed to production on a site which precludes the development of the first investor's deposit.

<sup>21</sup> An investor with the exclusive right to explore for all metallic and precious minerals within his contract area, who has the right to transfer his contract in whole or in part, will seek to maximize his profits by proving up whatever commercial deposit of minerals can be found in his contract area. If the deposit is of minerals that the investor does not wish to exploit himself, he will sell and transfer his rights to the deposit. The investor in exploration is highly motivated, and probably better able than the Mining Administration, to find the most appropriate new investor to take over the project in that case.

- providing in the law that no other exploration or exploitation right may be granted in the same area where an exploration or exploitation right already exists, with the possible exception of granting rights to explore for and/or exploit common construction materials in an area already subject to an exploration license for metallic or precious minerals;
- providing in the law and the regulation that a Subsurface Utilization Right covers either all Useful Minerals or all Commonly Occurring Useful Minerals (as defined in the Subsurface Law).

**5.5.10 Continuity of the right to proceed from exploration to exploitation.** Most mineral development activities in Kazakhstan must commence under a Contract for Exploration, and then proceed to a Contract for Exploitation. Although the Subsurface Law contemplates contracts for exploration and exploitation (E&E Contracts), as well as contracts for exploration only and contracts for exploitation only, it is our understanding that, in practice, the E&E Contracts have been offered only in connection with tenders of areas that include known deposits already identified and quantified by the competent authority of the State.<sup>22</sup>

5.5.11 Under the Subsurface Law and the Model Contract for Exploration, the contractor who makes a discovery has to negotiate the terms and conditions of his Contract for Exploitation after making the discovery. This injects a substantial degree of uncertainty into the exploration process. A similar 2-stage negotiation procedure was previously in effect in several African countries that have since abandoned it because it is not sufficiently attractive to investors.

5.5.12 In the most successful mining jurisdictions, the holder of an exploration right has a virtually automatic right to proceed from exploration to exploitation on terms set forth in the mining law (*e.g.*, the provincial mining laws of Canada and Australia, and the national mining laws of Chile, Peru, and Mexico), or in a comprehensive contract entered into prior to the commencement of exploration (*e.g.*, Indonesia).

5.5.13 In order to provide the degree of security of tenure necessary to attract significant amounts of private investment into its mining sector, Kazakhstan should consider adopting one or the other of the known best practices: either (a) generally enter into contracts that cover the progression from exploration to exploitation on standardized terms fixed in advance, or (b) set out in the subsurface law the standard terms and conditions for exploitation licenses that are available virtually automatically to holders of exploration licenses whose exploration programs result in discoveries.

**5.5.14 Maintenance requirements: and cancellation criteria and procedures.** Kazakhstan's law of mining correctly distinguishes between the respective grounds for suspension of subsurface contract rights, on the one hand, and rescission or termination of contract rights, on the other hand. However, the subsurface contractor is subject to

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<sup>22</sup> Moreover, it is our understanding that E&E Contracts are currently disfavored because of bad experiences with early contractors who exploited the known deposits and then abandoned their sites without carrying out their promised exploration commitments.

termination of his contract based on discretionary enforcement of the provision in Articles 45-2 1.2 and 70 of the Subsurface Law requiring the contractor to comply with Government instructions on production levels. This provision<sup>23</sup> injects political risk into the security of tenure and makes debt financing of an exploitation project difficult and/or more expensive to arrange.

5.5.15 The best practice approach would be to limit the ground for termination of mining rights to violations of a clear obligation to make specified annual payments to maintain the validity of the holder's rights. Such payments are typically a function of the size of the area held, and are generally set high enough to make it uneconomical to hold onto a large area for a long time without producing minerals from it. In addition, a financial penalty might be levied for failure to meet a pre-determined production volume by a certain date.

5.5.16 Both of these approaches enable a mining right holder to make an economic decision to maintain rights in effect or not when the holder fails to meet anticipated production or work plan targets. They remove the risk of disputes arising out of discretionary enforcement of subjective standards, thereby enhancing security of title and, in turn, facilitating financing of major mining projects. If a contractor's Subsurface Utilization Rights are wrongfully impaired or terminated by the state, the contractor can bring an action before a court in Kazakhstan or, in the case of a foreign contractor, before the arbitration body stipulated in the contract.<sup>24</sup>

5.5.17 **Term lengths.** The term lengths of subsurface rights are generally consistent with international practice. However, it appears that a showing of a new discovery must be made to justify an extension of an exploitation contract for the period of time necessary for the evaluation of such new discovery. Extension of an exploitation term should be available automatically, as long as the Subsurface User is in compliance with his obligations and is working a deposit that is economically exploitable.

5.5.18 The trend in best international practice has been to lengthen terms for exploration rights or facilitate the transition from exploration to exploitation. This is done to ensure that exploration right holders who are exploring difficult deposits that take a long time to evaluate will not lose their rights to the deposit because of the lapse of an arbitrary date.

## 5.6. Liquidity of Mining Investments

5.6.1 The law's provisions on the pledge of Subsurface Utilization Rights are the kind of provisions that are consistent with international best practice: prior approval of the pledge by the competent authority is not required, and the pledge takes effect upon its registration

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<sup>23</sup> The provision appears to be implemented in the Model Contract as a prohibition against any interruption of the contractor's production under his work program for more than a specified number of days, except when due to *force majeure*.

<sup>24</sup> It should be noted, however, that the Republic of Kazakhstan has not waived its sovereign immunity from enforcement of an arbitration award, so the enforceability of such an award against the State is subject to considerable uncertainty.

with the competent authority. However, as noted in the preceding section, the Subsurface Utilization Right is not defined as a pledge able property right separate from the subsurface use contract under the Subsurface Law.

5.6.2 Furthermore, Article 15 of the Subsurface Law appears to contain the following anomaly. On the one hand, a Subsurface Use Right can only be pledged to secure financing of operations to be carried out under the subsurface use contract. Presumably, such financing would come from one or more banks. However, Article 15, clause 2-6, appears to exclude banks from exercising the Subsurface Utilization Rights upon foreclosure. The latter provision undercuts the benefits of the pledge provisions. Under international best practice, banks would be authorized to substitute a new, better qualified, operator for a non-performing operator. This benefits both the lender and the state, while facilitating project financing.

5.6.3 In contrast to the provisions on pledges, prior approval of the competent authority is required for other transfers of Subsurface Utilization Rights. The international trend has been in the direction of facilitating transfers of mining rights. Such transfers are particularly important during exploration. Most properties change hands several times before a discovery is made or developed. Extensive prior governmental review of the capabilities of transferees is usually a time-consuming process that adds nothing in the way of assurance that the transferee will be a more successful developer than the initial right-holder. Kazakhstan's Subsurface Law could be improved significantly by adjusting the provisions on transferability to conform to the provisions governing pledges – *i.e.*, eliminate the requirement of prior review and impose a limited check on the eligibility of the transferee at the time of registration of the transfer.

## 5.7. Appropriately Adapted Environmental Requirements

5.7.1 There is a significant amount of overlap between the Environmental Law and the Subsurface Law, which creates the risk of conflict between the two laws. There is also a fundamental problem created by the sequencing of the procedures for granting Subsurface Utilization Rights and approving the environmental plan for operations under those rights.

5.7.2 The Environmental Law requires a thorough environmental review and approval as a condition of the grant of Subsurface Utilization Rights. Accordingly, the Subsurface Law requires bidders for subsurface rights to state in their tender proposals their “intention ... in relation to the environmental protection including re-cultivation and land restoration at the Contract area.” As a practical matter, a bidder for an exploration contract cannot afford to prepare a thorough environmental analysis and mitigation plan until he is assured that he will receive the Subsurface Utilization Right. In accordance with international best practice, the procedures should be separated so that a successful bidder can prepare his environmental assessment and mitigation plan after being awarded the Subsurface Utilization Right. Approval of the environmental plan should be a condition for operations under the right – not for the right itself.

## 5.8. Competitive and Stable Economic Conditions

5.8.1 Apart from a competitive tax package, which is discussed in a separate chapter of this report, the key components of the competitive and stable economic conditions needed to attract and maintain direct foreign investment in mining are:

- operating freedom,
- marketing freedom,
- unrestricted use of foreign exchange earnings, and
- stability of the governing terms and conditions.

5.8.2 The Subsurface Law contains certain restrictions on a contractor's operating freedom that are at odds with international best practice. For example:

- State expert evaluation of reserves and the feasibility of development of a deposit is a condition for the commencement of extraction operations under Article 57 of the Subsurface Law. None of the industrialized or emerging countries in Asia, Africa or Latin America that attract most of the new investment in minerals exploration has such a requirement.
- The State retains the power to instruct the contractor to produce at volumes that the authorized body finds to be appropriate to the geological potential of the deposit. Failure to comply can lead ultimately to cancellation of the contract. Preventing high grading of deposits is a legitimate regulatory concern as explained in section 4.6.1. But this provision of the Law grants the competent authority substantial discretionary power to interfere with a mining company's operating decisions. Mining companies may have different views than Government officials as to how to economically mine a deposit. The subsurface user's mining plans should be subject to review and approval, but a dispute over cut-off grades should never constitute grounds for termination of a mining right. Lenders would find this to be unacceptable and will not finance projects subject to such a risk.
- In addition, the strict new requirements to use local goods and services in carrying out subsurface operations impose a burden on foreign investors that is generally being lifted elsewhere in the world. Foreign investors generally prefer local goods, services and labor because they are cheaper and more readily available than imports, provided that they are of the necessary quality. Most countries currently promote the use of local goods, services and labor through incentives and assistance to local suppliers rather than imposing an additional restriction on foreign investors that diminishes the country's competitiveness. The issue of employment of expatriate labor and the quotas applied by the government thereto, is discussed earlier in this report.

5.8.3 With respect to marketing freedom, the State's pre-emptive right to purchase output at prices not exceeding international market prices, under Article 67 of the

Subsurface Law, suggests a threat of governmental taking that would be contrary to the Constitution. Rather than setting international market prices as a ceiling for such purchases, the law should state that any such purchases would be at prices comparable to (or approximating) international market prices.

5.8.4 Concerning the freedom to use foreign exchange earnings, Section 15.3 of the Model Contract authorizes the contractor to “have accounts in the national and foreign currencies at Banks of the State, and beyond its boundaries for the purposes of implementation of the contract”. This suggests a considerable amount of freedom to manage export revenues in offshore accounts, consistent with the practice in the countries that attract the greatest share of private investment into their mining sectors. The Contract also states that all types of settlements and currency transactions shall be carried out in accordance with the governing legislation of the State. The Currency Regulation authorizes the National Bank of the Republic of Kazakhstan to require the sale of export currency receipts, but does not generally require the repatriation or sale of foreign currency revenues from export sales.

5.8.5 Based on the experience of other countries, it is clear that major foreign investment in minerals exploration in Kazakhstan will only materialize if investors perceive that they will be able to manage their eventual export revenues in foreign currency accounts in major international financial centers. The Currency Regulation of Kazakhstan, on its face, does not appear to impose any restrictions that would discourage such investment. However, in practice, local companies find it extremely difficult or impossible to obtain authorization to maintain foreign bank accounts. Maintaining reasonable freedom of mining companies to manage the bulk of their export revenues in offshore accounts is a necessary prerequisite for attracting major foreign investment in Kazakhstan’s mining sector. This is due to the requirements of lenders and equity investors for acceptable security interests in those funds, among other things.

5.8.6 Stability of the contract terms, and stability of the tax burden on the contractor, are guaranteed by Sections 16.11 and 28 of the Model Contract. Section 16.11 provides a re-opener for adjustment of the tax provisions applicable to the contractor so as to protect him from any increased tax burden as a result of subsequent changes in tax legislation, rules or interpretations thereof. Sections 16.11 and 28 appear to leave open the possibility of renegotiating tax provisions of the Model Contract so that the contractor does not obtain the full benefit of a subsequent decrease in applicable taxes. This appears to be consistent with Article 6 of the Foreign Investment Law, which contemplates renegotiation of certain contract provisions in such cases. The Minister of Finance has recently announced the Government’s intention to review existing petroleum and mining contracts with a view toward strengthening the interests of Kazakhstan. The announcement has raised concerns in the international investment community that the sanctity of contract provisions between the State and foreign investors may not be respected by the Government of Kazakhstan. If the review and renegotiation of existing contracts goes beyond the scope of the adjustments contemplated by the original contracts, it will send a strong negative signal to prospective investors and increase the

perception of the political risk associated with investing in Kazakhstan, thereby making it more expensive to raise capital for projects there.

*5.8.7 Recent Legislative Development.* As of July, 2001, a proposed new Investment Law that would replace the existing Foreign Investment Law is pending before the legislature of Kazakhstan. The proposed new Investment Law would generally eliminate the distinction between foreign and domestic investment, eliminate certain existing preferences for foreign investment, terminate the stabilization provisions of the Foreign Investment Law except for investments made pursuant to investment agreements prior to the enactment of the proposed law, modify the scope and manner of protection of investments against political risks, and restrict access to international arbitration for the resolution of investment disputes. If the proposed new Investment Law is enacted, as appears likely, then the Model Contract for Conducting Subsurface Operations will necessarily be revised to eliminate the tax stability provisions contained in articles 16.11 and 28.2. On the other hand, the proposed new Investment Law, in its current form, retains the provision in Article 6 of the existing Foreign Investment Law that contemplate renegotiation of certain contract terms, in the event of improvements in tax legislation, to maintain the balance of economic interests of the parties. The lack of tax stabilization guarantees in future Subsurface Utilization Contracts, coupled with the reduction in guarantees against creeping expropriation and reduced access to international arbitration of investment disputes, will unfortunately increase the political risk of investors and diminish the attractiveness of the legal environment for investment in Kazakhstan in comparison to that prevailing in other geologically endowed countries competing for investment capital.

## 5.9 Conclusion and Recommendations

The conclusions and recommendations based on the foregoing review can be summarized as follows:

**5.9.1 The state has not adopted an appropriate role or model for opening the mining sector to private investment.** To successfully compete for private investment, it would need to:

- put up for tender only a small number of well documented, identified deposits;
- generally, make sub-surface areas available for private investors through an application process;
- grant exploration rights generally on a “first come, first served” basis, supported by an open mining cadastre and title registry; and
- eliminate preferential treatment of National Companies, and specifically limit their role.

**5.9.2 The Subsurface Law and the Model Contract do not provide adequate security of tenure.** In particular:

- Ambiguity in the Subsurface Law as to whether Subsurface Utilization Rights are property rights or contract rights should be clarified, by defining and treating such rights as property rights;
- The Subsurface Law should make it clear that Subsurface Utilization Rights for different minerals cannot be superimposed on one another.
- The right to proceed from exploration to exploitation of a discovered deposit should be made virtually automatic, subject to compliance with environmental impact assessment requirements. If Kazakhstan continues to rely on sub-surface use contracts, it should use a single comprehensive contract covering exploration and exploitation.
- Grounds for termination of Subsurface Utilization Rights should be limited to failures to comply with one or two clear, annual financial obligations to the state, to enhance security of tenure and facilitate financing.
- Term extensions of exploitation rights should be virtually automatic as long as a User is economically exploiting a deposit in compliance with environmental protection requirements.

**5.9.3 Transfers of Subsurface Utilization Rights should be permitted generally according to the procedure specified for pledges, except that lending banks should be authorized to substitute a qualified operator for an operator in default.**

**5.9.4 Environmental permitting should be treated as a separate condition for operating after an exploration right has been granted.**

**5.9.5 Certain restrictions on operating and marketing freedom – particularly requirements on reserve evaluation, production levels and use of local providers – are not competitive and should be eliminated or dramatically modified.**

**5.9.6 Stability of terms and conditions should be maintained as currently in effect under the Foreign Investment Law and the Model Contract.**

## 6. The Mining Taxation Regime

Mining Taxation What Investors Say About:	
Competitiveness of tax rates:	Yes - 5; No - 4
Conformity with international standards:	Yes - 4; No - 6
Deductibility of taxes in home country:	Only some
Mining tax practices:	Subject for improvement. No ethics
Arbitrariness in amending laws:	Yes - 6; No - 2
Excessiveness of audits:	Yes, for foreign companies
Troublesome taxes:	VAT Royalties, bonus payments Excess profits tax Double taxation

### 6.1 Taxes and other levies

**6.1.1 Application and registration fees.** It is standard practice for most governments to charge fees when a physical or juridical person makes application for mining license. The application and renewal fees are minor in relation to the overall investments in exploration or mineral development, hence they do not constitute hindrances to new investment. However, these application fees should not be confused with other payments, such as signature or bonuses which, if excessive, could be significant obstacles to new investment. The study team does not have any data on application and registration fees required from mining companies operating in Kazakhstan.

**6.1.2 Bonus payments.** Bonus payments are required from mining companies operating in Kazakhstan. A signature bonus is required in the tendering process. The amount of this bonus is set in the bidding documentation and can be increased during negotiations.

**6.1.3 A discovery bonus will be due at the time of the discovery of a commercial deposit.** It is set according to regulation at 0.05% of the market value of the deposit found. The valuation of the deposit in the feasibility study will be submitted to the State Committee for reserves. This Committee will either approve the valuation or reject it. In the latter case, it will designate the value to take into consideration for the calculation of the discovery bonus. The study team does not have any information concerning the methodology by which this valuation process is carried out by the Committee and the possible availability of appeals for the mining company.

6.1.4 The recommendation in line with international practice would be to allow for competitive fees to be levied at the time of the granting and renewal of a title but to remove any bonus payments. Although very common in the oil and gas industry, such bonuses are not practiced in the mining industry where there is greater geological uncertainty.

6.1.5 *Historic Costs.* In Kazakhstan, mining companies must reimburse all historical geological exploration costs borne by the State prior to the granting of the mining title. For the most part, these costs were mostly incurred under the Soviet period. They are related to geological exploration in the project area: The Committee for geology calculates the amount that has been spent on a particular field. The method of calculation is set out in a Government regulation, yet the regulations include considerable flexibility in the determination of these costs. The mining company is required to reimburse these costs to the State and will be allowed to depreciate them at the rate of 25% on a declining balance basis (same depreciation treatment as exploration costs and feasibility study costs actually incurred by the mining company). Most contracts provide for a gradual reimbursement of these costs to mitigate their impact on the economics of the project.

6.1.6 Reimbursement of historical geological costs is uncommon in the mining industry. From the investor's perspective there is no economic rationale for any payment other than the value of the geological data provided by the State. The value of this data may be far less than the total historical geological cost since most mining companies will want to carry out their own exploration program or at least verify any geological data received from the State. Such verification will generate additional costs for the mining company. In most countries geological data is made available by the State on a free or nominal cost basis as part of a country's general effort to promote its geological potential and attract mining investment.

6.1.7 The reimbursement of historical geological costs will be viewed by the potential investor as an additional cost of doing business in Kazakhstan. In economic projections of the potential income that a mining operation could generate, historical geological costs will be treated as an additional cost and for tax purposes as additional exploration costs. Their tax treatment will reduce the State's potential revenue from corporate income tax since the basis of this tax will be reduced by the deductions made by virtue of the depreciation of the historical geological costs.

6.1.8 Historical geological costs will also be viewed by the potential investor as a factor negatively impacting on the transparency of doing business in the country. The amount of the costs that the Government will claim as reimbursable historical geological costs is not set in an objective, systematically transparent manner. The immediate consequence of this lack of transparency is that the potential investor will not be able to evaluate such historical costs in advance. Pre-determination of economic and fiscal measures is essential in the assessment of a business environment. Lack of predictability is a negative factor from the investor's perspective.

6.1.9 The recommendation of this Study is to abandon the reimbursement of historical geological costs all together. This would improve the economics of any potential project in Kazakhstan and would send the international mining community a clear signal that the country is willing to create a competitive investment environment.

*6.1.10 Land and property fees, surface rents.* Internationally, in addition to negligible application fees for the mining license, an annual fee is levied as a “rental” of the surface area. This fee is generally a charge per square kilometer or hectare of the area held under license. In many countries, the fee is escalated annually for the duration of the license to discourage idle holding of land for speculative purposes. In Kazakhstan, a fee for usage of the land is levied. This fee is based on the area of the mining license and is established annually by the government. It is understood that these fees and surface rents are not excessive and hence they should not be obstacles to new investment. They are set out in regulations.

*6.1.11 Property Tax.* A property tax of 1% of the residual value of any construction must be paid by its owner. The study team could not get detailed information on this tax but is under the impression that the tax base could include heavy machinery and equipment that would be bolted to the ground or installed in such a way that it would become part of the construction (cement base, structural support, etc.). Special attention must be paid to the economic impact of this form of taxation in the mining sector where capital investment can be considerable.

*6.1.12 Mining Royalty.* Mineral royalty is due on the sales value of minerals. Its rate is set on a case-by-case basis and will dependent on the perceived rate of return of the project (as calculated on basis of the feasibility study). The Government’s Regulatory Act n° 503 sets out the procedure by which the rate of return of a project is evaluated. The calculations take into consideration all taxes including the royalty (basically gross revenue – all costs<sup>25</sup> – all taxes = net after tax profit, which is discounted to establish the rate of return). It is our understanding that the general rule in the determination of the royalty rate is that a project’s rate of return should never be below 8% or above 20%. It is the rate of return that is negotiated. Once agreement has been reached on the rate of return that a given project should have, it is applied to the projections found in the feasibility study and the royalty rate is set accordingly. This is a very peculiar way of setting royalty rates. Most countries opt for a flat rate (which will usually differ depending on the mineral) that is set in the mining code. This offers the advantages of predictability and transparency. The potential investor can easily find out what the applicable rate is and evaluate how it will affect the economics of the project. The importance of predictability and transparency has been discussed in the paragraph on the reimbursement of historical geological costs. It is recommended that the Government should focus on enhancing these two characteristics. The royalty should be set at a flat rate (the government may choose to set different rates for different minerals). As a general proposition in international practice, all mining related taxes, including royalties, should be specified in legislation and not negotiated on a case by case basis. Putting into

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<sup>25</sup> Costs up to first marketable product

place such clear and unambiguous tax regime for mining should be a priority of the government in order to attract and retain investment in the sector.

6.1.13 In Kazakhstan, royalties are due on the sales value of production. This is a gross value that does not take into consideration the costs associated with extracting, processing and transporting the minerals. Internationally there is a trend away from charging the gross sales proceeds of the venture, which in effect is a royalty on minerals production. On the one hand, such royalties are payable whether or not the enterprise is profitable and thus can be a significant disincentive to investment. They increase direct operating costs thus raising extraction cut-off grades and reducing resource utilization. On the other hand, royalties are easy for a government to collect and payable regardless of the profitability of the enterprise. This has the distinct political advantage of generating some tax receipts in the early years of the project's operation even though it may not pay other profits based taxes because of depreciation and loan reimbursements. Those governments which still have royalties generally assess them on a "net smelter return" basis - that is, gross export value less intermediary costs to render the product into saleable form, such as charges for assaying, transport, insurance, brokerage, smelting, refining, and sales commissions. In the case of gold, these various charges are not substantial, generally less than 1% of the market price of gold. However, in the case of other minerals such as copper, zinc, lead, nickel and others, the smelting and refining charges can be quite substantial. Therefore, it is our recommendation to adopt the concept of "net smelter return" royalty as a more appropriate basis upon which to assess the percentage royalty.

6.1.14 *Import and export duties.* In Kazakhstan the average import duty rate applied to mining and processing equipment (5%) is reasonable when compared with international standards. A difficulty emerges for the import of ancillary equipment or spare parts which do not fall under the description of the category to which the preferred rate applies and are therefore subject to higher import duties. Furthermore, practice indicates that the duty is calculated on the imported value increased with VAT. With a VAT rate set at 20% on imports, this has a significant impact on the cost of equipment.

6.1.15 During exploration and development, many governments grant exemptions from import duties, or levy them at an extremely low rate (1%) in order to attract mining investment. Generally, mining equipment and supplies are not manufactured locally and virtually all of these items must be transported long distances at great cost. Adding substantial import duties would further increase the cost of the investment and constitute a significant disincentive to investors since it increases the cost of necessary equipment and supplies which cannot be found in the country. However, once a mine has begun production, it generally can support reasonable levels of customs duties: 5 – 10% of the declared customs value on consumables, spare parts, equipment, reagents, and other supplies.

6.1.16 *Value added tax.* A significant issue for the mining sector in Kazakhstan is the application of the Value Added Tax (VAT) to imports and exports of the sector. Value added taxes which are paid by the enterprise on goods and services used in production,

whether imported or acquired locally are “reimbursed” by the government to the enterprise. A basic principle of value added taxes internationally is that the final consumer bears the burden of the tax. However, in the case of products which are exported the company cannot charge or collect value added taxes from the final consumer. This leads to a significant problem since, in the case of mining, the enterprise makes large payments of value added taxes on imports and locally purchased equipment and supplies which cannot be off-set because value added taxes are not collected on exported products. The government then finds itself in the unenviable position of having to reimburse the company very large sums annually. To avoid this problem, many countries “zero-rate” imports required for mine exploration, construction and operations for value added tax purposes, thus avoiding reimbursements to the company. For the VAT paid on local purchases a refund mechanism should be built into the system.

6.1.17 According to the tax code of Kazakhstan, VAT is charged at the rate of 20% on imports and local purchases for companies. The tax code provides that if production is exported ( which means that there will be no value added tax credits against which to offset the value added taxes already paid on imports and local purchases) the value added taxes will be refunded within 60 days. If payment of the refund by the government is not carried out within that time-frame, the company may offset the amount of the refund against other taxes owed by the company. This Study is of the opinion that is not a sustainable solution in the long term for the government since it will impact negatively on total tax receipts and impact the national budget in an unpredictable manner. Furthermore, it is difficult for the tax inspectors to monitor effectively. We therefore recommend that all imports by sub-soil users would be zero-rated during all phases of the mining operation, and at a minimum during the exploration and construction phases when the company is not creating a sufficient tax liability from which to off-set the VAT credit generated by imports and other inputs. Furthermore, the off-set mechanism does not seem to work in practice and mining companies are left with considerable VAT credits.

6.1.18 *Withholding tax on interest payments.* There is a withholding tax of 15%<sup>26</sup> on the interest remitted on foreign loans. This rate is competitive compared to international practice. However, the tax law implies that this is not an allowable deduction for the calculation of the income tax. This is contrary to international practice where this withholding is considered as an additional financing cost and is therefore qualified as an allowable deduction. The cost of the withholding tax is increased by the fact that the investor will not be able to claim a tax credit for it in his home country because most countries limit credits to those local taxes which are based on realized profits.

6.1.19 Special transfer pricing rules should be written into the mining taxation legislation to require loan conditions set at “arm’s length” to ensure that interest charges are internationally competitive. Also, it may be useful to consider requiring a debt-equity ratio limitation rule in addition to the rule on the arm’s length interest rate.

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<sup>26</sup> This is the standard rate; Bilateral investment treaties or other international tax treaties may provide lower rates

**6.1.20 Withholding tax on consultant fees.** A withholding tax on salaries or professional fees paid to foreign entities or individuals is set at 20%. From our information, this tax does not appear to be deductible for the purposes of calculating the company's taxable profit. This is contrary to international practice and does not make economic sense for the following reason: a consultant's fees are always quoted excluding local taxes and these taxes are effectively added on to the quoted price and borne by the mining company. This increases the cost of using the consultant and should therefore be treated as a cost and deducted from the taxable base.

**6.1.21 Taxation of sub-contractors.** Another issue that needs to be addressed is taxation of sub-contractors. Any investor must manage its operations in an efficient manner. This may require the use of independent contractors, on a one-time basis or on a regular basis, to deliver specific services. From a mining taxation point of view this raises the question of the taxation regime applicable to the activities of the contractor and more specifically whether the contractor will be allowed to benefit from the same preferential mining taxation regime as applied to the investor. If, for example, the mining company subcontracts the building of a processing plant, should this subcontractor be entitled to enter the equipment necessary for the work under the same customs exemption that may be available to the mining company? In practice governments deal with this by clearly defining the tax-payers and the activities that can benefit of the preferred regime.

**6.1.22** The extent to which the government is willing to grant the benefit of the preferential regime to the sub-contractors will be reflected in the definition of subcontractors. The following are two examples of such definitions:

- **Example of a broad definition:**  
A sub-contractor is any legal entity or physical person, who carried out an activity that forms part of the operations of the title holder (mining company). Such activity can be any of the following:
  - geophysical or geochemical works, or drilling for prospection and/or exploration purposes;
  - construction and exploitation of industrial, socio-cultural and administrative infrastructures: roads, railways and runways, factories, offices, housing, supermarkets, hospitals and dispensaries, schools, leisure facilities and water and electricity supply plants;
  - extraction works, transport, stocking and processing of minerals.
  
- **Example of a restrictive definition:**  
To qualify as sub-contractor, any legal entity or physical person must receive at least 95% of its Gross Revenues from work done exclusively for the title holder (mining company) in the country where the mine is located.

**6.1.23 Dividend withholding tax .** A 15% withholding tax is levied on dividends paid to legal entities not resident in Kazakhstan. Different rates may be available in bilateral investment treaties or other tax treaties. International investors examine the total impact – in the host country and their home country – of the tax burden on a particular project.

Thus, the full impact of the dividend withholding tax on the investor's returns from a mining project must be considered together with the profits tax rate since both affect the amount of income that can be distributed to shareholders.

**6.1.24 Profits tax.** The rate of profits tax applicable in Kazakhstan is 30% which is in line with the international standards. However, the effect on overall investor profits can only be fully assessed by taking into account the various deductions, allowances, credits and incentives used in the calculation of the taxable income. There are common standards and practices used internationally for the calculation of the taxable corporate income. It is important that the legislation of Kazakhstan take into account these international standards and practices. For instance, if a tax paid in Kazakhstan is not recognized as a tax in the investor's home country it could lead to the possibility of double taxation of the investor's profits. Additionally, certain deductions and/or credits are used by the international industry which are tailored to the specifics of mining. The next section summarize some of the more common international practices.

**6.1.25 Excess profits tax.** An excess profits tax applies if the internal rate of return on net income (after tax profits) is greater than 20%. The excess profits tax is not added on top of the regular profits tax but applied to net income. Its rate is as follows:

- if the internal rate of return is less or equal to 20%:	0%
- if the internal rate of return is more than 20% but less or equal to 22%:	4%
- if the internal rate of return is more than 22% but less or equal to 24%:	8%
- if the internal rate of return is more than 24% but less or equal to 26%:	12%
- if the internal rate of return is more than 26% but less or equal to 28%:	18%
- if the internal rate of return is more than 28% but less or equal to 30%:	24%
- if the internal rate of return is more than 30%:	30%

**6.1.26** From the information received by the study team, this excess profits tax has never kicked in. Mining projects in Kazakhstan have not earned the trigger rate of return yet. The general profits tax rate, set at 30%, is in line with international standards and should secure reasonable tax receipts for the government once a significant portion of the initial investment (including exploration and other pre-production costs) has been recovered by the investor. Our recommendation would be to remove the excess profits tax. It is not probable that this form of taxation would generate any additional tax revenue and it makes the mining taxation system available in Kazakhstan look more burdensome than it is.

## **6.2. Accounting Rules and Incentives**

**6.2.1 Depreciation of exploration, feasibility and pre-production expenditures.** Mining is by nature a capital intensive activity. The investor must make a large up-front investment in the hopes of generating profits at a later stage. However, the changing nature of technical, management, financial and market factors means that there is considerable risk that the profits could be much less than anticipated and, most importantly, it will take longer for the investor to pay-back the amounts invested. In order to reduce this risk, many governments authorize accelerated depreciation and/or other deductions which reduce the payback period for the investment. Under the system

of accelerated depreciation, the investor is allowed to increase the normal depreciation rates applicable to plant, equipment, pre and post production expenditures. This has the effect of increasing deductions, lowering taxable income and taxes due, and shortening the time required for the investor to recover the investment. It is important to note that accelerated depreciation simply shifts payment of the tax to a later date.

6.2.2 Kazakhstan does not apply accelerated depreciation in the mining industry. The depreciation mechanism is on the basis of a declining balance and at rates set in article 20 of the Tax code. For instance, expenses prior to the development of a mine - such as exploration, feasibility study, pre-stripping, exploration shafts and tunnels, building access and haul roads, and other pre-development works - are depreciated at a rate of 25% of the declining balance. Buildings are depreciated at 10%. Fixed and mobile capital equipment such as plant, mills, equipment and vehicles are depreciable at the rate of 25 – 30%. While these rates are in line with those practiced internationally, as a means of reducing the payback period for the investor and thus encouraging investment, the government may wish to consider allowing larger depreciation percentages (accelerated depreciation) or expensing them altogether. For instance, rather than depreciating exploration and feasibility study costs at a rate of 25% on the basis of a declining balance, the government could allow these costs to be deducted for the purposes of calculating income tax in their entirety in the first year of production.

6.2.3 *Depletion allowance.* Most governments recognize that the mineral deposit is progressively used up [depleted] during operations. In the financial statements, the cost of using up plant and equipment is generally accounted for through depreciation allowances or deductions linked to the life of the asset. Similarly, in the case of a mineral deposit, a depletion allowance is sometimes used. The depletion allowance recognizes the using-up of the mineral reserves and allows the mining company to set aside a certain amount of its annual revenue, before tax, to continue exploration during the exploitation phase. The amount set aside annually is to be spent for further exploration over a certain amount of years – typically around three years – an in proximity to the mining operations. Should the amount set aside not be used for new exploration within this time-frame it will be added back to the taxable income beginning in the fourth year. This type of depletion allowance does not exist in Kazakhstan. The government is considering the introduction of a special royalty that would be due on the extraction of non-renewable resources. The receipts of this royalty would be used by the government to carry out exploration programs aimed at keeping the national reserves at a constant level. It is recommended that the government avoid levying this additional royalty.

6.2.4 *Mine Closure allowance.* Most governments have adopted provisions in the mining legislation and regulations which require restoration and rehabilitation of the mining site after exploitation operations have ceased. Furthermore, to ensure that adequate funds are available for the purpose, they allow mining companies to set aside on an annual basis an amount as allowance for the rehabilitation. The total amount set aside must be related to the rehabilitation costs as evaluated in the environmental and social impact assessment study. Further, to prevent taking the full amount of closure costs as an allowance in the early years of the project life – thereby deferring taxes for many years -

the allowable amount each year may be capped as a percentage of net taxable revenue. Also, there should be no time limit within which to use this allowance except the last financial period of the mine. The Kazakhstan mining law contains some rather general statements about rehabilitation, but the tax treatment of funds necessary to do so is not clear.

**6.2.5** *Loss carry forward, carry back.* In Kazakhstan losses can be carried forward for seven years - which is in line with international practice. The loss carry forward is a common and essential tax incentive that lets the investor carry forward any loss incurred to offset against income in future years. This is important to give effect to the deductibility of exploration and pre-production costs as well as to depreciation deductions. Most countries allow a loss carry forward but some limit future years against which the loss can be recorded. However, in general, there is no good rationale for limiting loss carry forward. Tax loss carry back is a similar incentive where current losses are deducted from previous income. As a general rule tax loss carry back should be avoided. Very few countries make this incentive available to investors because it generates accounting complications.

**6.2.6** *Tax holidays.* The Kazakhstan general tax code does not provide for an exemption from corporate profits taxes [tax holiday]. This Study is of the opinion that there is no good rationale for exempting a mining enterprise from the payment of corporate profits tax. This opinion is qualified by, 1) accounting measures that allow for a reasonably short pay-back period, as is the case with accelerated depreciation; 2) an overall burden of taxation that is competitive with international standards; and 3) the government does not have a "carried" equity shareholding in the venture. Many of the jurisdictions that have been the most successful in attracting mining investment (Canada, Chile, Indonesia, South Africa or Western Australia) do not provide exemptions from profits taxes. The fundamental economic rationale for a modern mine is the quality and quantity of mineral reserves. A tax holiday is unlikely to entice an investor to exploit marginal mineral reserves. During exploration and project development the enterprise does not generally generate profits and therefore a specific exemption from profits taxes during this period is not applicable (though other exemptions such as relief from customs and import duties are sometimes offered as incentives). However, once production begins and the enterprise shows profits there is no reason why such profits should not be taxed. Perversely, taxes on profits not paid in the host country are sometimes paid in the investor's home country since the worldwide profits are consolidated.

**6.2.7** *Tax credits.* Many governments utilize tax credits to encourage companies to invest in specific programs such as improvements in technology, social infrastructure, transport infrastructure, or other goals of public utility. Such a tax credit scheme does not seem to be available in Kazakhstan. Some difficulties with tax credit schemes should be noted. First, while such schemes may stimulate the desired results, they are very hard to administer. The tax inspectorate may lack the capacity and logistical support to determine whether the designated investments were actually made according to the regulations. Second, some mining investors argue, correctly, that investments in social sphere and physical infrastructure are the responsibility of the government which should

use normal tax payments for these purposes. To the extent that mining investors must invest in these infrastructures because of remote location or inability of the government to do so, they should receive a credit against taxes for the investments made. In fact, some governments, such as Papua New Guinea, have such credit schemes in place for this purpose. This practice, however, raises the question of the enterprise actually becoming the "surrogate" for government, responsible for services which normally would be provided for by the government. The situation is complicated in Kazakhstan, as in other states of the former Soviet Union, since kombinats traditionally have assumed large social sphere responsibilities in the localities where they operate. There are no easy answers to the question of tax credits. However, in the conditions now prevailing in Kazakhstan the option of a tax credit scheme would not be the most appropriate course of action.

6.2.8 *Tax stabilization.* Many governments have established tax stabilization schemes. These schemes recognize that the risks associated with mining investments can be reduced if the government gives the company a guarantee that the taxation regime applicable to its investment at the time the investment is made will remain unchanged long enough to realize the rate of return required for the project to go ahead.

### 6.3. Compliance

6.3.1 Any economic agent in Kazakhstan, generating an income above a given threshold set in government regulation, must file and pay taxes on a monthly basis. This obligation is very uncommon. Filing on a monthly basis represents an important administrative burden on the economic operator and will be perceived as an additional cost of doing business in Kazakhstan. If the idea is to guarantee tax receipts throughout the year in order for the Government to dispose of the necessary budget, this can be achieved by quarterly advance payments of the year's profits tax. The reference basis for these payments would be the profits tax paid during the previous year where  $\frac{1}{4}$  of this amount would be paid on June 30, September 30, December 31<sup>st</sup> and March 31<sup>st</sup><sup>27</sup>. The total amount paid during the year would be offset against the amount eventually due once the taxes for the given year have been filed. If the balance is negative, i.e. the taxpayer owes less taxes than what has been paid during the year, the balance will be offset against the interim payments due the following fiscal period. If the balance is positive, the taxpayer will pay it in accordance with the law.

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<sup>27</sup> Assuming the fiscal year runs from April 1<sup>st</sup> to March 31<sup>st</sup>.

**Table 6  
Kazakhstan Mining Taxes Compared to International Practice**

<u>Mining Tax</u>	<u>Kazakhstan Republic</u>	<u>Int'l Practice</u>	<u>Recommendation</u>
Income (profits) tax	30%	15 - 40%	Basic rate is competitive
Excess profits tax	from 2 to 30% on net profits once IRR above 20%	not common	Remove Excess profits tax
Dividend Withholding Tax	15% general	0 - 35%	Basic rate is competitive
Withholding Tax on service providers	20% not deductible	0 - 20% deductible	Allow deduction from taxable profits
Withholding tax on interest payments	15% not deductible	0 - 20% deductible	Allow deduction from taxable profits
Royalty	Rate is determined in contract on subsurface use	0-3% ad valorem, net smelter return, or mine mouth	If any, rate should be set in the law and should not be negotiable. The amount should not be greater than 2% of net smelter return
Application fees	Not known	Negligible	Competitive
Concession fee		Generally same as surface rents	Convert from amount per ounce of gold to an amount based on surface area
Land fees and surface rents	Not known	Surface rents : US\$0.10 - 10.00 per square kilometer, escalating during period of exploration license	Establish competitive and escalating rates per square kilometer of exploration areas
Import duties	Capital investment preferential rate of 5% Spare parts and materials: standard rate	Exempted during exploration and construction; competitive rates during exploitation (less than 5%)	Introduce exemptions for exploration and development; import duties less than 5% are acceptable during production
Depreciation	Declining balance	Accelerated depreciation	Adopt accelerated depreciation

Table 6 (continued)

Kazakhstan Republic Mining Taxes Compared to International Practice

<u>Mining Tax</u>	<u>Kazakhstan Republic</u>	<u>Int'l Practice</u>	<u>Recommendation</u>
Depletion allowance	None	Allowance for exploration	Adopt depletion allowance based on deduction for exploration
Profits tax exemption	General law: none Priority sectors: special tax holidays may be allowed	None	Eliminate exemption from profits taxes
Export duties	None	None	Maintain no export duties
Value added tax	20%	Zero rated and reimbursed	Adopt zero rate reimbursable system
Loss carry forward	7 years	Generally 5 to 10 years	Maintain
Mine closure allowance	Not provided for	Yearly allowance as per environmental impact statement	Introduce a mine closure allowance
Tax stabilization	Currently in Foreign Investment Law and Model Contract; to be eliminated	Up to 30 years	Retain existing stabilization clauses
Bonus payments	Signature bonus Discovery bonus	None	Abandon
Reimbursement of historical costs	Set on a case-by-case basis	None	Abandon

**Table 6.1**  
**Comparative Mining Taxation: Australia and Kazakhstan**

<b>Taxation of the Mining and Metallurgy Sector</b>													
<b>The Cases of Kazakhstan and Australia: 1999 - 2000</b>													
<b>Year</b>	<b>2000</b>				<b>1999</b>				<b>1998</b>				
<b>Tax</b>	<b>Australia</b>		<b>Kazakhstan</b>		<b>Australia</b>		<b>Kazakhstan</b>		<b>Australia</b>		<b>Kazakhstan</b>		
	<b>US\$ mln</b>	<b>%</b>	<b>US\$ mln</b>	<b>%</b>	<b>US\$ mln</b>	<b>%</b>	<b>US\$ mln</b>	<b>%</b>	<b>US\$ mln</b>	<b>%</b>	<b>US\$ mln</b>	<b>%</b>	
<b>Direct taxes</b>													
Royalties and license fees	616.9	20.0%	9.3	3.1%	733.5	20.5%	5.7	3.7%	679.5	20.1%	3.9	5.6%	
Income taxes	620.1	20.1%	181.8	60.6%	426.8	11.9%	77.3	49.5%	264.0	7.8%	36.2	52.1%	
<b>Total direct taxes</b>	<b>1,237.0</b>	<b>40.1%</b>	<b>191.1</b>	<b>63.7%</b>	<b>1,160.3</b>	<b>32.5%</b>	<b>83.0</b>	<b>53.1%</b>	<b>943.5</b>	<b>27.9%</b>	<b>40.1</b>	<b>57.7%</b>	
<b>Indirect taxes</b>													
Land taxes and rates	36.4	1.2%	11.4	3.8%	36.8	1.0%	10.2	6.5%	36.8	1.1%	10.1	14.5%	
Payroll, fringe benefits and social taxes	187.2	6.1%	63.8	21.3%	258.0	7.2%	42.2	27.0%	267.0	7.9%	0.0	0.0%	
Employee income taxes	756.0	24.5%	24.6	8.2%	993.0	27.8%	16.7	10.7%	987.8	29.2%	12.9		
Fuel, utilities, excise taxes and customs	70.2	2.3%	9.2	3.1%	90.0	2.5%	4.1	2.6%	86.3	2.6%	6.4	9.3%	
Charges for government rail infrastructure	796.3	25.8%	0.0	0.0%	1,035.8	29.0%	0.0		1,058.3	31.3%	0.0	0.0%	
<b>Total indirect taxes</b>	<b>1,846.0</b>	<b>59.9%</b>	<b>109.0</b>	<b>36.3%</b>	<b>2,413.5</b>	<b>67.5%</b>	<b>73.2</b>	<b>46.9%</b>	<b>2,436.0</b>	<b>72.1%</b>	<b>29.4</b>	<b>42.3%</b>	
<b>Total government revenues</b>	<b>3,083.0</b>	<b>100.0%</b>	<b>300.1</b>	<b>100.0%</b>	<b>3,573.8</b>	<b>100.0%</b>	<b>156.2</b>	<b>100.0%</b>	<b>3,379.5</b>	<b>100.0%</b>	<b>69.5</b>	<b>100.0%</b>	
VAT (net of reimbursements)	0.0		-129.0		0.0		-56.3				-64.4		
<b>Net government revenues</b>	<b>3,083.0</b>		<b>171.1</b>		<b>3,573.8</b>		<b>99.9</b>				<b>5.1</b>		

Source: Bank staff estimates from Minerals Council of Australia and Ministry of State Revenues data and information.

## 7. Public Sector Institutional Issues

What Investors Say About:	
Government attitudes:	<i>"Despotic"</i>
Length of time to get approvals:	<i>"Excessive"</i>
Requirements for documentation:	<i>"Excessive"</i>
Clearness of institutional mandates:	<i>"Confused"</i>
Institutional competence:	<i>"Old fashioned thinking"</i>
Level of training:	<i>"Medium to low"</i>
Budget and logistical support:	<i>"Insufficient"</i>
Understanding of market economy	<i>"Medium to low"</i>

### 7.1 Introduction and Background

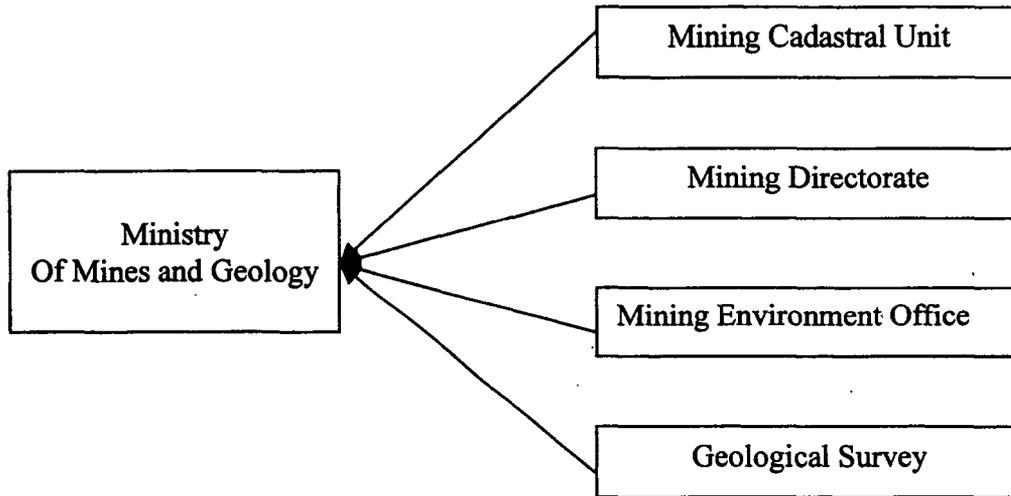
7.1.1 Experience in other countries demonstrates that effective and efficient public sector institutions are essential to ensure that mining and metallurgy make a positive contribution to overall economic development. At independence Kazakhstan inherited reasonably well developed, but old Soviet style, public institutions responsible for mining and metallurgy. Under this system, the role of State institutions was essentially to oversee public sector investment and operations of various state owned kombinats. With the move to a market economy the functions, organization, and policies of these old institutions have undergone significant transformation. Under conditions of the market economy the operations and investments previously managed by State institutions have been privatized, with the government holding minority shares. Official government policy now places emphasis on private sector investment in mining and metallurgy. Thus, the new role of public sector institutions is to administer and regulate the sector, rather than own and operate mining kombinats. Additionally, public sector institutions must manage and eventually dispose of residual State shareholdings in the kombinats which have been privatized or are under management contract. This section of the Study will examine some of the key elements of international best practices for public institutional management of the mining and metallurgical sector.

### 7.2 International Practice Compared to Kazakhstan Institutions

7.2.1 While each country organizes the institutions responsible for the mining sector differently, there are some important commonalities. Every country generally has a *Senior Ministry or Agency* responsible for the sector. This agency is designated by legislation to serve as the Government's principal contact for all mineral sector related activities and coordinates all other mineral sector institutions. Within the agency or ministry is located the *Mining Cadastre Unit*. This unit has the responsibility for the registration, granting and cancellation of mining rights exploration, development and exploitation activities. The agency or ministry also generally contains an *Environmental Permitting Unit* which is responsible for the evaluation of environmental impact statements, issuance of operating permits and coordination of sector activities with other environmental protection agencies. The *Mining Inspectorate Unit* is

responsible for monitoring and control of mining sector activities as well as for the transparent and uniform enforcement of laws and regulations. Finally, the *Geological Survey Unit* is responsible for developing, maintaining, and providing access to all geological and associated mineral sector related (water and environment data, for example). This standard international structure is shown in Figure 7.1 below. Additional examples of sector institutional set-up for Queensland, Australia and Chile are given in Annex.

**Figure 7.1**  
**Basic Framework of a National Mineral Sector Lead Ministry**



7.2.2 The fundamental institutional structure for mining and metallurgy in Kazakhstan is determined by the Law on Subsoil Utilization (January 27, 1996) as revised (September 1, 1999) and most recently by the Presidential Decree of 13 December 2000 which reorganized the institutions responsible for the sector. Among other changes, this reorganization transfers to a newly created Ministry of Energy and Mineral Resources (MEMR): 1) the geological survey and state material reserve functions previously domiciled in the Ministry of Environmental Protection and Natural Resources and, 2) the licensing and contracting for investors previously domiciled in the Agency on Investments. While the exact rationale for the reorganization is unclear at the time this report is being written it would appear that the government is moving in the direction of creation a single focal point for the mining sector, as is common practice in most countries.

7.2.3 The newly created Ministry of Energy and Mineral Resources should continue the role of promoter and regulator of the mineral sector rather than investor-owner-operator. This role is fully consistent with international practice and has proven effective in other countries to stimulate private sector investment in mining. This role emphasizes five key functions: (1) policy advice and formulation, (2) administration of mineral rights and concessions, (3) environmental permitting, (4) control and regulation enforcement and, (5) geological infrastructure development.

- *Policy advice and formulation* – the newly created Ministry of Energy and Mineral Resources should be clearly designated as the lead government agency for mining and metallurgy and a “one-stop” shop for mineral sector issues. However, the MEMR should listen to multiple “voices”, from the highest to the lowest levels of government, when formulating sector policy and strategy; towards this end it may be advisable to create an inter-ministerial advisory group.
- *Administration of mineral rights and concessions* – clear administrative guidelines need to be developed within the MEMR to access information and obtain approvals from other ministries and agencies when tendering of mineralized areas and negotiating contracts.
- *Environmental permitting* - this is a key and critical function that requires careful attention. There appears to be a lack of clear-cut policy guidelines between ministries with respect to (a) evaluating and approving environmental impact statements and (b) granting of environmental permits and licenses. This is a concern in the new organization since mineral development issues (geology and subsurface use) and environmental protection are now in different ministries.
- *Control and enforcement* – there is a lack of implementing rules and regulations for various social, environmental and ecological monitoring and oversight of mineral developments. Also, there appears to be a lack of formalized inter-ministerial agreements and an “ad-hoc” administration by local level government agencies.
- *Geological information development* – there is a deficiency in the funding and recruitment of personnel for the collection of geological information. Also, there are potential conflicts of interest with the private sector and concerns about confidentiality of State geological data.

7.2.4 As noted, the new institutional set-up in Kazakhstan is a step in the direction of international standards. It could, for instance, remedy the duplication of effort and delays in dealings with investors, particularly contract negotiations, permitting and license approvals. These delays as well as the conflicting responsibilities of agencies and lack of harmonization of regulations have been cited by investors as constraints to efficient operations. There are, however, some very real dangers in the new institutional organization. First, the set-up is still cumbersome and much work remains to be done to clarify the exact nature, scope and functional responsibilities of the new institutions. For instance, no less than six Ministries and/or Agencies are directly involved at the national and oblast levels in various aspects of the development, administration, regulation and monitoring of the mineral sector. Second, the new Ministry of Energy and Mineral Resources also has enhanced responsibilities for the oil and gas sector. There is a real concern that mining and metallurgy could be neglected within the new ministry because of the overwhelming importance of the oil and gas sector. Additionally, the evident confusion in the legal regime between the oil and gas sector and the mining and metallurgical sector could spill-over into the institutional realm as well, particularly within the context of tendering procedures and processes.

7.2.5 Cooperation between (inter) and within (intra) ministries and agencies is essential for effective management of the mineral sector. Effective cooperation results from a clear definition of the respective authorities, functions and responsibilities of the various government agencies and departments. The Ministry of Energy and Mineral Resources as the single focal agency for the sector could eliminate the previous situation of over-lapping jurisdictions of several agencies. The over-lapping responsibilities resulted in inefficient and duplicative activities, delays in

decision-making, uneven implementation and administration of rules and regulations, confusion on the part of the private sector, and breakdown in communication between all parties at all levels.

7.2.6 As the government moves forward to implement the new organization structure, specific attention needs to be devoted to organizational aspects related to: 1) environmental assessment and approvals; 2) responsibility for mining taxation (especially at the oblast level); 3) the capacity of the government to monitor, and the private sector to adhere, to contract obligations on performance and investment requirements; and 4) coordination issues between the national, oblast and municipal levels of government and the private sector.

### 7.3 Institutional and Private Sector Relations

7.3.1 Under the international best practices, government agencies do not, except in unusual circumstances:

- a. Interfere with the normal operations of the private sector based on political considerations.
- b. Unduly interfere in technical and investment decisions by the private sector.
- c. Provide services that are (i) in conflict with its functions or (ii) in competition with the private sector.
- d. Interfere technically with private sector operations, although they do ensure control of labor, health and safety issues as well as impacts which effect the community or Government.
- e. Explore or undertake evaluations normally within the purview of the private sector

7.3.2 It is also important that the government avoid creating, and certainly not within the same ministry, a potential conflict of interest between the government as shareholder in ventures and as regulator of the sector. However, there remains within some government departments both the desire and the structure to continue many of the activities that now properly belong to the private sector. This is particularly the case with respect to mineral exploration and ore reserve estimations. These activities should be generally undertaken by the private sector. In practice, the Committee on Geology does not conduct detailed mineral exploration for lack of budgetary support. However, its role in detailed exploration and reserve estimation activities has not been specifically excluded under the new organizational set-up.

### 7.4 Institutional Sustainability

7.4.1 One of the most serious tasks facing the government is to sustain mineral sector institutions. Experience in other countries demonstrates that sustainability can be achieved if the institutions: (a) adopt transparent and non-discriminatory policies and procedures to carry out their functions; (b) create a "level playing field" for both foreign and domestic investors; (c) reduce or eliminate duplication of functions with other State and private entities; (d) adjust services and products to meet the demand by government and industry, and (e) eliminate competition with the private sector. In Kazakhstan serious concerns have been raised by investors concerning the transparency and non-discriminatory policies and procedures in

government institutions. Some government institutions have had difficulty to adjust to the new emphasis on private sector mineral development in accordance with the new economic model. These entities, for instance the State Committee on Geology, should not compete with the private sector but provide services to the private sector, perhaps on a fee paying basis. This would help in ensuring the sustainability of the geological survey function.

## 7.5 Institutional and Structural Problems in the Tendering of Mineral Rights

7.5.1 As explained in the legal chapter, the tendering of mineral exploration areas, as is currently practiced in Kazakhstan, is not international best practice. Instead of tendering properties, governments generally indicate which areas are available for exploration and/or development on publicly available registries and maps of the mining cadastre. Exploration rights, which are standardized in the law and thus non-negotiable, are granted on a “first come, first served” basis. Generally, the technical and financial capabilities of applicants for exploration rights are not considered in the licensing procedure.

7.5.2 The tendering process as used in Kazakhstan raises several institutional problems, primarily because of the complex and non-transparent nature of the tendering and contracting procedure. The process still involves many steps, is non-uniform in application, subjective in selection of “winner”, and highly negotiable. International experience has shown the tendering process is ineffective for mining and metallurgy sector because:

- it unduly confines the private sector to working in areas, pre-selected by government, which often do not coincide with the geological environments or deposit types of interest to specific companies;
- the areas and/or deposits that are tendered are often not internationally competitive because they are sub-economic or technologically difficult to develop;
- private sector companies each have their own corporate “competitive advantage” with respect to exploration and/or deposit evaluation that requires freedom of access;
- the tendering process requires up-front investment of time and expense that is unacceptable for the private sector;
- the tendering process has in the past been conducted in a non-transparent manner and lacks credibility in the international investment community (e.g., the Vasilkovskoye gold deposit).

## 7.6 Conclusions and Recommendations:

7.6.1 Changing the role of the Government and its institutions from that of an “investor-owner-operator” to that of “promoter and referee” for private sector investment is a process that is both time-consuming and difficult under the best of circumstances. However, experience in other countries demonstrates that efficient and transparent public institutions are an essential part of this process and help to stimulate new investment. In light of this international experience, the following recommendations are made for Kazakhstan institutions:

- Consolidate and maintain all mining and metallurgy activities under the Ministry of Energy and Mineral Resources; this Ministry should be the “focal point” for all mining sector investors, domestic and foreign;
- Define in regulations the areas of authority and cooperation between this Ministry and other ministries and agencies; develop inter-ministerial consultative group;
- Clearly define the roles and responsibilities of national and oblast level government institutions, especially with reference to on-going efforts for decentralization;
- Establish within the Ministry of Energy and Mineral Resources a mining cadastre office, responsible for the processing of applications for exploration and mining rights, as well as the registration and administration of such rights, including the maintenance of public registries and maps indicating who has, or has applied for, what rights and where.
- Strengthen capacity of Committee on Geology and Mineral Protection (CGMP) to provide necessary geological information to facilitate private investment and to effectively monitor and enforce regulations; improve access by private sector to geology data at nominal cost;
- Develop internally generated funding mechanisms (perhaps through the sale of services to the private sector); however, remove CGMP activities which compete directly with the private sector (e.g., detailed exploration);
- Increase training and compensation for institution staff so as to begin to attract new and younger people to the industry.

**Table 7.2**  
**Agencies and Functions**  
**Kazakhstan Compared to International Standards**

<b>Kazakhstan Agency or Ministry</b>	<b>Kazakhstan Function</b>	<b>International Agency or Ministry</b>	<b>International Functions</b>
Ministry of Energy and Mineral Resources	<ul style="list-style-type: none"> <li>- Policy Formulation</li> <li>- Geological Survey</li> <li>- Tendering procedures</li> <li>- Contract negotiations</li> <li>- Permit and license issuance</li> <li>- Monitoring and Enforcement</li> </ul>	Ministry or senior government agency responsible for mines	<ul style="list-style-type: none"> <li>- Policy Formulation</li> <li>- Geological Survey</li> <li>- Contract negotiations</li> <li>- Permit and license issuance</li> <li>- Monitoring and Enforcement</li> <li>- Mine health and safety</li> <li>- Environmental control</li> </ul>
Agency for State Material Reserves	Certification of reserves	Not used	Not applicable
Ministry of Labor and Social Security	<ul style="list-style-type: none"> <li>- Employment and compensation</li> <li>- Mine Health and Safety</li> </ul>	Ministry of labor	<ul style="list-style-type: none"> <li>- General labor issues only</li> </ul>
Ministry of Natural Resources and Environmental Protection	<ul style="list-style-type: none"> <li>- Environmental compliance and monitoring</li> <li>- Evaluation of environmental impact statements</li> </ul>	Ministry of Environment	<ul style="list-style-type: none"> <li>- Setting environmental policy, laws, and standards</li> <li>- Coordination on environmental matters with sector ministries</li> </ul>
Ministry of Finance	<ul style="list-style-type: none"> <li>- Taxation and audits</li> <li>- State property management</li> </ul>	Ministry of Finance	<ul style="list-style-type: none"> <li>- Taxation and audits</li> <li>- Tax collection and administration</li> </ul>
Ministry of State Revenues	<ul style="list-style-type: none"> <li>- Tax collection and administration</li> </ul>	Generally, not applicable	Not applicable
Ministry of Foreign Affairs, Committee on Investments	<ul style="list-style-type: none"> <li>- General non-sector specific investment functions</li> </ul>	Generally, not applicable	Not applicable
Ministry of Transport, Communications, and Tourism	<ul style="list-style-type: none"> <li>- Infrastructure</li> </ul>	Ministry of Transportation	<ul style="list-style-type: none"> <li>- General infrastructure policy</li> <li>- Increasing private provision of basic infrastructure</li> </ul>

## 8. Management and Governance Issues

### What Investors Say About:

Shareholders rights	<i>"problematic"</i>
Management practices	<i>"Insider trading and self-dealing"</i>
Reporting requirements	<i>"Full non-disclosure"</i>
Accounting standards	<i>"Need to move to IAS"</i>
Business environment	<i>"Working in Kazakhstan is like being pecked to death by ducks, no particular bite is very painful, but cumulatively the bites become overwhelming"</i>

### 8.1 Why is Corporate Governance Important?

8.1.1 As noted previously in this report, the privatization of Kazakhstan's existing mining and metallurgical kombinats has been reasonably successful in terms of stabilizing production, maintaining employment, and ensuring continued supply of vital social and infrastructure services to isolated communities. However, the process has not been transparent and significant governance issues are present in the current management of the kombinats. This report does not directly refer to a specific mining or metallurgical kombinat but rather to the general conditions which apply to corporate governance in Kazakhstan. It is important that corporate governance be improved. The kombinats can, of course, continue to operate under the current opaque management in the atmosphere of *ad hoc* governance rules. However, if they are to grow and prosper they will require access to international capital. Requirements for listing on international stock exchanges in turn requires that international standards be adhered to and respected, particularly concerning accounting and financial disclosure.

### 8.2 Legacy of Trust Management Agreements and the Privatization Process

8.2.1 Privatization of many of Kazakhstan's mining and metallurgical kombinats was carried out on case-by-case basis, sometimes with a preceding trust management agreement, though not necessarily with the future strategic owner. This approach was designed to preserve the exclusive property rights of the Republic for subsoil natural resources by allowing the "non-state sector" to explore the deposits on the basis of concessions for production or trust management contracts.<sup>28</sup> On the one hand, this approach avoided many of the problems associated with mass privatization scheme (e.g., voucher investment funds none of which survived). On the other hand, the way the trust management agreements were awarded and the firms privatized was lacking in transparency and resulted in a significant loss of value for the government. Under the trust management

<sup>28</sup> Privatization in Kazakhstan: achievements and prospects. Presentation by Andar Shukputov, First Deputy Chairman of the State Committee for Management of State Property, at the World Bank's conference "Kazakhstan: Managing the Transition", Almaty, 24-25 May, 1996, p. 113.

agreement, a strategic investor (sometimes, but not always, a company registered overseas) would get significant rights vis à vis the enterprise. The investor assumed all assets and liabilities of the enterprise and was allowed total control over the cash flows of the enterprise for “fee” to the government. Trust management agreements used in Kazakhstan and other neighboring countries differed from standard management contracts in many ways, including in the direction of compensation. The international practice of such contracts provides for payment of a fee by the Government to the operator for managing a state owned enterprise<sup>29</sup>, and not vice versa as in the case of trust management agreements. Trust management deals were lacking in transparency, were particularly vague regarding property rights, and often inappropriate contractual forms were used. For instance, Access Industries, Inc. (USA) has been assigned to “trust manage” one of the largest surface coal mines in the world (Bogatyr Comyr) on the basis of a simple power of attorney letter<sup>30</sup>. The terms and conditions of the trust management arrangements differed dramatically: the duration of validity of some agreements was relatively short (2-3 years) others were longer (15 years) and are still in force.

### 8.3 Management of Residual Government Shares

8.3.1 There are at least a dozen of large privatized mining companies in which the State has significant residual holdings (Table 8.1). The actual number of joint stock companies in the sector with State shares is larger (some 25 – 30 companies) however, the strategic investor generally consolidates its shareholdings in the parent company, leaving the government with larger residual shares in the subsidiaries<sup>31</sup>. Various considerations may prompt a government to keep residual shares in privatized enterprises: earning dividends on government shares, equity appreciation with time to earn more proceeds when the capitalization increases (during a public offering, for instance), or “golden shares” held in companies of strategic significance. Some of the lessons learned about State holdings of residual shares in other transition economies (Czech Republic, Poland) are: 1) privatization proceeds would have been higher if the whole block of shares had been offered initially; 2) effective government influence in the decision making of the enterprise is non-existent; 3) the residual shareholdings rarely produce significant dividend streams; and 4) scarce government management resources are engaged in supervising the residual shareholdings. These lessons apply equally to the case of Kazakhstan.

8.3.2 *Government influence in decision making.* In all cases, except one, the government owns a minority position which in most cases is less than a blocking

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<sup>29</sup> “Management Contracts: A Review of International Experience”, H. Shaikh and M. Minovi, CFS Discussion Paper No. 108, World Bank, May 1995.

<sup>30</sup> General power of attorney letter # 2818/02, dated November 6, 1996, issued by the State Property Committee.

<sup>31</sup> For instance, 90% of shares in Kazakhmys parent company is owned by the strategic investor (Samsung Deutschland GmbH) and only 10% by the government, while in the Kazakhmys subsidiaries smaller strategic shareholdings are sufficient to exercise control.

**Table 8.1**  
**Residual State shareholdings in Mining and Metallurgical Kombinats**  
**(as of October 2000)**

<b>Enterprise name, mineral(s)</b>	<b>State shareholding, in percent</b>	<b>Agency/firm managing state shares</b>	<b>Private strategic shareholders</b>
Aluminum of Kazakhstan (alumina)	31.68	State Property Committee, Ministry of Finance	Eurasian Bank*
Kazakhmys (copper)	35	Trust management Samsung Deutschland	Samsung Deutschland
Kazchrome (chromite, ferroalloys)	32.37	State Property Committee, Ministry of Finance	Eurasian Bank*
Sokolovsko-Sarbayevskiy (iron ore)	39.5	State Property Committee, Ministry of Finance	Eurasian Bank*
Kazzink (lead/zinc)	27.64	Ministry of Energy, Industry and Trade	Glencore
Usk-Kamenogorsk TMK (titanium and magnesium)	15	State Property Committee, Ministry of Finance	Specialty Metals Co
Akbaiskiy GOK (gold)	33.3	Trust management Altynalmas	Altynalmas
Vasilkovskiy GOK (gold)	90	Trust management Gold & Silver	Gold & Silver Altynalmas
Maikainzoloto (gold)	25	Trust management East Point Holdings	DP Handel GmbH
Bakyrchik Joint Venture (gold)	30	State Property Committee, Ministry of Finance	Central Asian Mining Ltd.
Bogatyr Access Komyr (coal)	N/A	Trust management Access Group	Access Group

\* Property rights are not yet final after repossession of TransWorld Group holdings in early 2000. Eurasian Bank was appointed the exclusive agency for any financial transactions of the seized companies.

Source: State Property and Privatization Committee, Ministry of Finance

minority of one-third (1/3) of votes. Since two-thirds (2/3) voting majority is required for strategic decisions (e.g., changes to the company charter, approval of large transactions, decisions on liquidation and other critical issues) the government's shareholdings are insufficient to allow it to influence strategic decision making of the enterprise. In five of eleven cases the State shares are transferred to the strategic investor under "trust" management arrangements. Instead of selling the whole block of shares on an open international tender, these arrangements

allow for a phased transfer of shares to the buyer selected on a non-competitive basis on undisclosed terms, presumably with a loss of corporate value, and with a loss in privatization proceeds for the State treasury.

**8.3.3 Revenue streams from dividends.** The expectation of receiving revenues on residual State shareholdings is unfounded. First, most SOEs, including in geology and mining, are loss making, like 66% of all other state owned enterprises in the country. Second, most of the SOEs showing profits reinvest them. Of the total of 167 million tenge of profits earned by the SOEs only 65,000 tenge (or less than 0.04%) was transferred to the state budget. The privatized companies also tend to reinvest their profits, and payments of dividends on government shares are decreasing: 1,195 million tenge in 1998; 1,039 million tenge in 1999<sup>32</sup>. In the year 2000 dividends from government shares dropped to 342 million tenge (USD 2.4 million), or 0.12% of the total revenues of the companies with government shares<sup>33</sup>.

**8.3.4 Government management of residual holdings.** The government also has difficulty in effectively managing the State residual shares. Generally, the shares are represented on the company board by one staff of the Committee on State Property and Privatization (Ministry of Finance) and by another staff member from the corresponding line ministry (Ministry of Energy and Natural Resources). These are in most cases middle ranking ministry employees appointed after approvals by many agencies, and do not have enough rank to effectively defend the government's interests. These staff are over-stretched, having their normal responsibilities at the ministry in addition to their duties representing the government on the board. Also, they have conflicting targets (dividend maximization vs. re-investment) and often operate without sufficient information because the company refuses to disclose it.

## **8.4 Disclosure Requirements**

**8.4.1 Full and complete disclosure by companies of critical information is seldom accomplished with Kazakhstan mining and metallurgical enterprises. Two pertinent disclosure deficiencies concern the list of shareholders and the company charter.**

**8.4.2 Shareholder list.** Even though the 1998 Joint Stock Company Act includes a number of provisions for disclosure, in practice, procedural details negate the intent of the law. For example, even though the law provides that any shareholder owning 5% or more of the company shares has the right to receive a copy of the shareholders list, the procedure to obtain the list is established by the general meeting of the shareholders. In one example, the Government found that even with a 40 percent share of a company, it was unable to obtain a copy of the list of shareholders. Outside investors, lacking the influence of the business groups or the authority of a government agency, would no doubt find it even more difficult to obtain the shareholder list.<sup>34</sup>

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<sup>32</sup> In the year 2000 the government owned 100% of shares in 94 companies; from 67 up to 100% in 83 companies, from 51 up to 67% in 7; from 34 up to 51% in 32, from 5 up to 34% in 25, and less than 5% of shares in 1 company. (Concept of Management of State Property and privatization in Republic of Kazakhstan, Astana, approved by the Decision of the Government, dated July 21, 2000, #1095, p. 14).

<sup>33</sup> Concept of Management of State Property and privatization in Republic of Kazakhstan, Astana, approved by the Decision of the Government, dated July 21, 2000, #1095, p. 17.

<sup>34</sup> Kazakhstan: Corporate Governance Review, draft document prepared by Susan Rutledge, ECSPF, World Bank, p. 12.

8.4.3 *Company charter.* The Company Act allows the shareholders meeting to make substantial changes to a company charter. While the company charters are filed with the National Securities Commission, no provision in the Company Act requires that the charter be made available publicly. This loophole has significant implications for corporate governance practices. The Company Act stipulates that transfers of assets in excess of 25 percent of the company assets must be approved by a vote of two-thirds in favor at the general shareholders meeting, unless the company charter has been amended.<sup>35</sup> Since company charters are not publicly available, investors cannot know in advance if the company charter has been amended to allow company managers to make large asset transfers without shareholder approval.

## 8.5 Accounting and Auditing Standards<sup>36</sup>

8.5.1 Accounting and auditing standards and practices hit at the heart of governance issues, since it is through the accurate disclosure of financial and operating information that shareholders are able to track their investments and, where necessary, take action to change company management. The Kazakhstan Accounting Standards (KAS) are close to International Accounting Standards (IAS). However, the differences are sufficiently material that Kazakhstan companies intending to access the global markets are obliged to obtain an audit from one of the "Big Five" international audit firms, using international accounting standards.

8.5.2 The differences between KAS and IAS affect the transparency of financial transactions in several material ways.

- KAS do not require separate disclosure of minority shareholdings of equity in affiliated companies. Neither KAS nor the regulations of the National Securities Commission require that names of companies, owned in whole or in part, be disclosed as part of the public information available to shareholders. Thus it is virtually impossible to find out from public sources who owns which companies, and the nature of the ownership ties even among the largest and most-heavily traded companies in Kazakhstan.
- KAS do not require the disclosure of contingent liabilities, which in some cases in the mining sector, particularly involving environmental liabilities, can exceed the net worth of a company. KAS also fail to conform to IAS in terms of write-offs of obsolete inventory and bad debts.
- KAS do not require disclosure of transactions among state enterprises, thus allowing companies with state equity holdings to avoid disclosure of inter-network transactions. For tracking of transfer price abuses, such information of transactions among companies within the same business group or holding company could be important.
- Audits are not mandatory under the Joint Stock Company Law. Should a shareholder request an audit -- and is prepared to pay the expense of the audit -- the company must have its financial statements audited. The Law on Companies with Limited Liability has no specific provisions requiring preparation of financial information or of distribution of

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<sup>35</sup> This provision is better than other CIS countries, notably Russia, which requires only that two-thirds of the shareholders *present* at the shareholders meeting vote in favor. (Kazakhstan: Corporate Governance Review, draft document prepared by Susan Rutledge, ECSPF, World Bank, p. 12.)

<sup>36</sup> The section is written on the basis of the following document: Kazakhstan: Corporate Governance Review, draft document prepared by Susan Rutledge, ECSPF, World Bank.

audited financial statements to shareholders. Finally, the auditing profession in Kazakhstan has a number of deficiencies. For instance, the professional liability of Kazakh auditors is limited to the capital of the auditing company which, in the case of most audit companies, is very low.

#### 8.6 Concentration and antitrust practices:

The antitrust enforcement and practices are notoriously weak in most transition economies. A peculiarity of Kazakhstan is conspicuous absence of economic concentration provisions in its Antimonopoly Law. Aluminum, chromium, iron ore, copper and lead are highly concentrated industries. The market share of the leading producer (often close to 90- 100%) makes the companies operating in these industries unrestrained private monopolies which may be abusing their power by all sorts of restrictive business practices. The Antimonopoly agency is looking forward to cooperation with CIS countries to tackle the problem.<sup>37</sup>

#### 8.7 Stock markets

Most of the trading in shares of the mining companies is over-the-counter. The “blue chips” program to list shares of major mining companies on the Kazakhstan Stock Exchange (KASE) was launched by the Government in 1998 using the sizable residual holdings retained by the Government for this purpose. Initially there were plans to list the following mining companies on KASE: Kazakhmys, Ust-Kamenogorsk TMK, Aluminum of Kazakhstan, Kazchrome, Sokolovsko-Sarbayskoye GOO, Kazzink, but these plans have not been fulfilled. But, as of 2000, only common and preferred shares of Kazakhmys were traded with modest volumes of 500 million tenge during 1998, and only 236 million tenge during 1999. The rest of the “blue-chips” have not yet been listed and no immediate plans seem to be in place to do so. Lack of reporting and transparency prevents more active trading of shares at KASE.

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<sup>37</sup> An Agreement on conduct of coordinated antimonopoly policies was signed among the Antimonopoly agencies of 12 CIS countries in Moscow, on January 25, 2000.

**Table 8.2**

**Corporate Governance: Kazakhstan Practice Compared to International Practice**

<b>Issue</b>	<b>Kazakhstan Practice</b>	<b>International Practice</b>	<b>Recommendation</b>
Trust Management Contracts	Management contracts have a number of serious deficiencies	Not used	Wind up these arrangement as quickly as practical, sell assets at transparent competitive tender
Residual Shares	Government still holds significant residual shares in privatized enterprises and receives no significant benefit from the holdings	Governments generally do not hold residual shares, except in very special cases	Divest government residual shares as quickly and expeditiously as possible.
Disclosure Standards	Disclosure standards are deficient in terms of shareholder list, company charter, board of directors	Full and complete disclosure requirements to protect shareholder rights	Improve disclosure requirements to remedy deficiencies and protect shareholder rights
Accounting Standards	KAS still do not conform to IAS regarding inter company transactions, contingent liabilities, and minority shareholdings	International Accounting Standards require full and consistent reporting of all financial aspects of the company	Remedy KAS to conform to international standards
Auditing and reporting	Laws are weak in terms of auditing requirements	Audits are mandatory, carried out by established firms operating under strict code of ethics.	Establish auditing requirements in the law.
Anti-trust	Current anti-trust legislation neglects heavy "economic concentration" in some commodities	International practice generally includes definitions in respect of "economic concentration"	Correct the anti trust legislation to introduce "economic concentration" prohibitions.
Stock market	Blue chip program is stalled	Mining companies are generally listed on exchanges	Re-activate blue chip program, but with adequate legal protections.

## **9. Environmental and Social Considerations**

### **9.1 Introduction and Background**

9.1.1 Sustainability of natural resources and protection of the environment are important for governments and civil society. The traditional government role has been to set environmental standards and ensure that individuals and organizations abide by them. However, increasingly government, industry and civil society are working as partners to ensure the optimal utilization of natural resources, maximize development impact and protect the environment for present and future generations. This involves advancing from the concept of “do no harm” to a more proactive stance of “adding economic and social value”. This is particularly important for the mining industry where the challenge is to facilitate local economic development during the life of a mine which can be self-sustained after the mine has closed. In many parts of the world mining activity is under threat from environmentalists and other pressure groups. Survival and development of the industry will be dependent upon demonstrable “sustainable development” and this will be the focus of this chapter.

9.1.2 At independence Kazakhstan inherited a mining industry that was typical of the former Soviet Union. Historically, attention was paid to the provision of social services but little to environmental management. Attitudes to mine health and safety were largely reactive. This has resulted in both a legacy of environmental pollution and the lack of a “culture of proactive safety” at most mining operations. Since independence, as economic pressures have mounted on some kombinats, less resources have been available for pollution prevention. Thus, the potential site contamination could be substantial and ambient environmental baseline data for mining sites is mostly not publicly available. There is a backlog of mitigation necessary to bring the industry up to international standards and to rehabilitate abandoned mining areas for which the Kazakhstan Government has limited resources. In addition, even though the calibre and technical training of Kazakhstan environmental and health & safety specialists is excellent, they have not been sufficiently exposed to or are not experienced with current internationally accepted concepts of sustainability, proactive safety practices or responsible environmental management.

### **9.2 Sustainability and the Mining Industry**

9.2.1 Internationally, governments and the mining industry have embraced the concept of sustainable development as defined in the Brundtland Report (World Commission on Environment and Development, 1987). The main principles of sustainability are summarized as follows:

- to enhance individual and community well-being and welfare by following a path of economic development that safeguards the welfare of future generations;
- to provide for equity within and between generations; and,
- to protect biological diversity and maintain essential ecological processes and life support systems.

9.2.2 Building upon these basic principles , the concept has acquired a broader meaning, requiring the integration of environmental and social concerns to those of economic development. The linkages between these three dimensions calls for close coordination between various policy makers and the implementing agencies. A participatory approach involving all relevant stakeholders becomes central to the realization of this concept. In recent years notions such as equity, transparency, justice, accountability and consultation have been added to these basic principles.

9.2.3 The challenge for Kazakhstan is to develop further its mining industry and efficiently manage the renewable and non-renewable resources on which it depends in accordance with these principles. Specifically, sustainability related to the mining industry involves two key concepts.

- *Partnerships* between the central government, the mining company and the surrounding community to share resources (water, environment etc.), share work (integration of local firms), and share decisions (continued stakeholder engagement). This facilitates the idea of local economic development which can outlast the life of the mine.
- *Sustainability and revenue sharing*, is a topic of current international debate. It has been noted in many countries that in order to achieve a "sustainable impact" the central government and the mining company need to negotiate a satisfactory and transparent arrangement for sharing and distributing revenue to the local community and/or region. Both governments and companies have a common interest in negotiating an equitable revenue sharing mechanism. There are numerous good examples of successful policies for decentralization and revenue sharing. These include but are not limited to: tax credits for local community expenditures (Placer Dome - Papua New Guinea), full financial transparency (BP in Angola), stabilization funds (Debswana, Botswana and Codelco, Chile), and inter-generational transfers of wealth (trust funds in Alaska, USA). Whichever of these (or other) instruments are used is a function of the economic viability of the project in question as well as the circumstances prevailing in the country.

9.2.4 There are a number of statements of principles concerning sustainability in the mining industry which have been developed by various industry associations and non governmental organizations. One such statement has been developed by the International Council for Metals and the Environment. The main principles in this statement are summarized in Annex \_\_\_\_\_. While adherence to these principles is the responsibility of the mining companies, acknowledgment of them as a priority by the government could encourage companies to ensure high quality in their economic, environmental and social performance.

### 9.3 Development Impact from Mining

9.3.1 Historically in Kazakhstan fees for the use of environmental resources and fines payable if set limits were exceeded have been payable by kombinats. It appears to have been common practice throughout the former Soviet Union for these funds to have been retained at the regional level. However, in recent years there has been a growing pressure to remit more of these funds to

central government. The advantage of retaining the funds at Regional level is that it affords the opportunity to re-invest them in regionally beneficial development projects. However, the amounts of such revenues and their use is not publicly available and therefore local and regional communities often perceive that there are no demonstrable benefits from projects.

9.3.2 Current international attitudes to revenue management are towards greater transparency of such revenues and their use. As noted above, to achieve a “sustainable development impact”, the central government and mining companies need to be able to demonstrate to local and regional stakeholders that projects are benefiting the regions in which they are located. Furthermore, the needs of these stakeholders should be included in consultations as to the most beneficial and sustainable use of these revenues.

#### 9.4 Kazakhstan Regulatory Framework

9.4.1 A legislative framework for environmental matters has been developed under the umbrella of the Environmental Protection Law (No. 160) passed in July 1997. The legislation requires an Environmental Assessment of mining projects although this is primarily a “one step” process leading to the issuance of an environmental permit. This highlights a further legacy of the former system: poor understanding of the necessity for or “buy-in” to current internationally accepted concepts of sustainability and responsible environmental management throughout the life of a mine.

9.4.2 Until the end of 2000 environmental responsibility rested with the Ministry of Natural Resources and Environmental Protection. However from the beginning of 2001 the responsible authority is the Ministry of Energy and Natural Resources – Environment Committee. This committee is one of four under the Ministry, the others dealing with geology, water resources and fisheries & forests. This is a positive move with a single committee dealing with environmental permitting.

9.4.3 A shortcoming of the present system is that the process of preparing the Environmental Impact Statement (EIS) is viewed by the responsible ministries as a single stage process leading to the issuance of the mining license. Thus, the EIS becomes a “snapshot” of the project and rapidly becomes out of date. International best practice views environmental management as an on-going process that continues through the life of the mine from construction to final decommissioning.

9.4.4 It is clear that for new investors, the government will allow considerable flexibility in negotiating environmental requirements. For example, the agreement between the Kazakhstan Government and Ispat Karmet allowed the new company a period of ten years during which time any new environmental law cannot be applied or be enforced against the Purchasers. There is also a cap on the cost of compliance with existing legislation (per year) which Ispat-Karmet is liable for. Ispat is also not responsible for any historic contamination that may have occurred prior to take over.

## 9.5 Environmental Monitoring

9.5.1 *Environmental monitoring capacity:* As noted earlier in this report, it is not clear whether in practice the local authorities have the capacity, amongst other issues, to adequately administer the environmental monitoring.

9.5.2 *Applicable Quality Standards:* According to Kazakhstan environmental legislation, companies must submit data on the Maximum Allowable Emission (MAE) for airborne pollutants and Maximum Allowable Discharge (MAD) of effluents into water. The MAE/MAD levels for a project are approved by the Regional (Oblast) authorities and a licence is issued which is valid for one year. An interesting exception was made for the Ispat Karmet project where the investors negotiated to have the applicable environmental standards set at national level rather than local level. This caused significant annoyance at local level as it deprived the local authorities of the ability to raise funds (environmental taxes) through the project. These MAE/MAD levels are incorporated into the projects Ecological Passport. Taxes are payable for "use of environmental resources" for discharges within the MAE/MAD standards and fines are levied if emissions or discharges exceed the standard limit. These limits are set on the basis of the original Environmental Impact Statement but are modified annually, usually on the basis of the past years performance. At many kombinats the MAE and MAD levels are calculated rather than physically measured.

9.5.3 *Ambient Environmental Conditions* The problem with the MAE/MAD approach is that it does not necessarily address the impacts of discharges and emissions on ambient conditions. To address these impacts requires project specific ambient environmental monitoring which is typically not undertaken in Kazakhstan (as in other parts of the former Soviet Union). From a practical standpoint, kombinats cannot assess the ambient impacts unless they also undertake ambient baseline monitoring. The Soviet period approach very rarely actually measured discharges and emissions on a regular basis. The old approach was to calculate (on a mass balance basis) the amounts of pollutants being emitted or discharged. This old approach is not consistent with the international approach to minimizing pollutants as far as possible (eg: by using BATNEEC - Best Available Technology Not Exceeding Excessive Cost). Because MAE/MAD methods focus on the discharge rather than the effect in the receiving environment, comparison of the mine's environmental impact with international norms is usually difficult if not impossible.

9.5.4 *Environmental Liabilities* There is currently no clear cut definition of responsibility for historic and current environmental liabilities - pollution "stocks" and pollution "flows". Pollution "stocks" refer to the accumulation of historical environmental contamination existing at the time of an ownership change of the State owned kombinat. Pollution "flows" refer to the pollution produced by the operation after the change of ownership. Adequately identifying the parties responsible for these environmental liabilities is important for the previous owner (the State) and the new private owner. Internationally, governments which have owned the state mining enterprise usually take responsibility for "pollution stocks", mainly because they have derived most of the benefits during the operational period prior to take over. The new owners assume responsibility for "pollution flows" and on-going environmental liabilities. Most private companies will require that the "stocks" and "flows" be defined by an audit (and agreed by the government) as part of their due diligence of the undertaking. For the Ispat Karmet operation, the

acceptance by the government of such liabilities was negotiated.

## 9.6 Environmental Management

9.6.1 Under Kazakhstan government legislation, the environmental impacts of a project are primarily considered during preparation of the initial Environmental Impact Statement (EIS). Although the subsequent Environmental (Ecological) Passport is re-issued every five years, this would typically consider only changes to emissions and discharges reflected in agreed MAE/MAD levels. This approach, by which the EIS becomes a “snapshot” of the project with updates only after five years can result in environmental problems going un-noticed for long periods of time. This is in contrast to the current international best practice which views environmental management as an on-going process throughout the life of the mine from construction to final decommissioning. The key element in this “on-going” approach is the establishment of an Environmental Management System (EMS), generally prepared pursuant to the EIS. The EMS ensures the systematic management of environmental actions identified by the EIS and that these are constantly reviewed, updated and monitored. Some investors have managed to negotiate special terms with regard to ecological passports, Ispat Karmet for example have been given 8 years to complete their program of environmental improvements before their passport expires.

9.6.2 *Environmental Management Systems.* The international standard for Environmental Management Systems (EMS), is defined within the ISO 14000 series. An EMS usually comprises the following elements: i) an environmental policy statement of the company; ii) an organizational structure and responsibilities of each unit; iii) an environmental management plan; iv) a set of environmental objectives and targets; v) a monitoring and record keeping system; and vi) mechanisms for public reporting of environmental performance. The advantage of such a system is that it takes into account all of the relevant aspects (environmental, social, health and safety issues) and emphasizes continuous improvements in areas such as pollution control, efficient use of resources and rehabilitation. An important aspect of the EMS is regular independent auditing to establish whether targets are being met and, if not, what remedial measures could be undertaken.

9.6.3 *Mine closure.* The Kazakhstan authorities require a closure plan for mining operations which is dependent on the remaining life of the operation although the exact period before closure when such a plan is required does not appear to be defined. From experience of working with mining operations in Kazakhstan it appears that closure plans are submitted about 1-2 years before closure is anticipated. There is a requirement to set aside the funding required into a government held closure fund. It would appear that these provisions need to be complimented by more detailed regulations, since it is not clear how a mine which is having financial difficulties ahead of closure would be able to fund the necessary rehabilitation. Rehabilitation completed under these requirements at Ispat Karmet has been observed to have been done to a high standard which would meet current international practice. Also, issues related to performance bonds or insurance to cover complete costs of closure need to be addressed, even from the start of operations (in the event of a sudden unforeseen closure).

9.6.4 *Health and Safety.* Accident statistics for the mining industry in Kazakhstan are not publicly disclosed. It may be anticipated that due to the lack of a culture of proactive safety in

some mining operations, health and safety standards may fall short of current international practice. This situation is aggravated by the current economic difficulties of some kombinats which are unable to continue to fund at adequate levels existing health and safety measures. This shortcoming may be related to lack of safety equipment issued to workers (dust masks, ear plugs, safety glasses, safety boots etc) as well as a “culture of safety” at the mine level. Such a “culture of safety” would address issues such as poor ventilation and gas and fume control standards, roof support, unguarded machinery, risk of dust explosion, transport hazards, stumbling and falling hazards, poor working conditions (wet, muddy, uneven), lack of safety posters, lack of signposts (e.g.: hazard areas, emergency escape routes) and poor lighting.

*9.6.5 Public disclosure.* Mines and metallurgical plants in Kazakhstan produce and/or process a wide variety of minerals (gold, copper, coal, lead-zinc), many of which typically could have serious environmental impacts. However, no operations publicly report on their environmental performance. Public disclosure by mining companies of their environmental performance is becoming more frequent internationally. Such disclosure can take many forms including separate annual environmental reports, period publications and statements, required statutory filings with government authorities, and other forms of disclosure. As a matter of best practice, disclosure regulations (covering frequency, standards, thoroughness of reporting, and other aspects) should apply to all mining operations in a uniform manner. It is clear from stakeholder discussions in Kazakhstan that public disclosure of relevant information (revenues, environmental conditions) is one of the key demands by many people affected by mining projects

## 9.7 Environmental Status of Existing Operations

9.7.1 Although the responsible authorities were requested to provide information on current environmental issues and problems at mining kombinats, they did not provide this data. Generic problems cited by the authorities were waste materials (particularly related to Uranium mining operations, disturbed topography (from open pit mining), damage to eco-systems and contaminated mine water recharge). It is known that severe environmental problems exist at several sites, for example, groundwater contamination related to the large metallurgical complexes in Ust Kamenogorsk which are subject to an investigation by a French team at the present time. In general, such information is not publicly available and where it is known (through audits or assessments) it is mostly confidential to the kombinats or new investors. One exception is Ispat Karmet, which when privatized was subjected to a full Environmental Audit which was publicly disclosed. However, there was no requirement for subsequent public disclosure of environmental monitoring at the project.

## 9.8 Recommendations

*9.8.1 Sustainability Strategy for the Mining Industry.* The government needs to develop a sustainability strategy for the mining industry. The strategy would follow the principles outlined in the National Environmental Action Plan (NEAP) as well as principles outlined in this report.

*9.8.2 Specific Guidelines for Environmental Assessment.* Guidelines should be developed for a mining specific Environmental Assessment (EA). Several countries have developed such

guidelines which are useful in ensuring consistency between different operations. The outline could be based on the requirements of an international organization in this respect (see, for example, World Bank Operational Policy (OP 4.01)) concerning Environmental Assessments. Some links to industry best practice or guidelines may be found at the following websites;

<http://www.ifc.org/enviro/EnvSoc/Safeguard/EA/ea.htm> (IFC)  
<http://www.ea.gov.au/industry/sustainable/mining/index.html> (AUSTRALIA)

*9.8.3 Proactive Environmental Management.* New mining operations should be encouraged to adopt an Environmental Management System (EMS), compatible with ISO 14001 standards.

## **10. Infrastructure Considerations**

### **10.1 Introduction**

10.1.1 To a greater degree than many industries, mining and metallurgy are critically dependent on adequate and efficient supply of infrastructure, principally rail and maritime transport. Power, water supply, telecommunications, air transportation are also important cost factors. But, with the possible exception of the power for some projects, the ability of a mining operation to compete in domestic and international markets is not as sensitive to these infrastructure elements as it is to rail/maritime transportation.

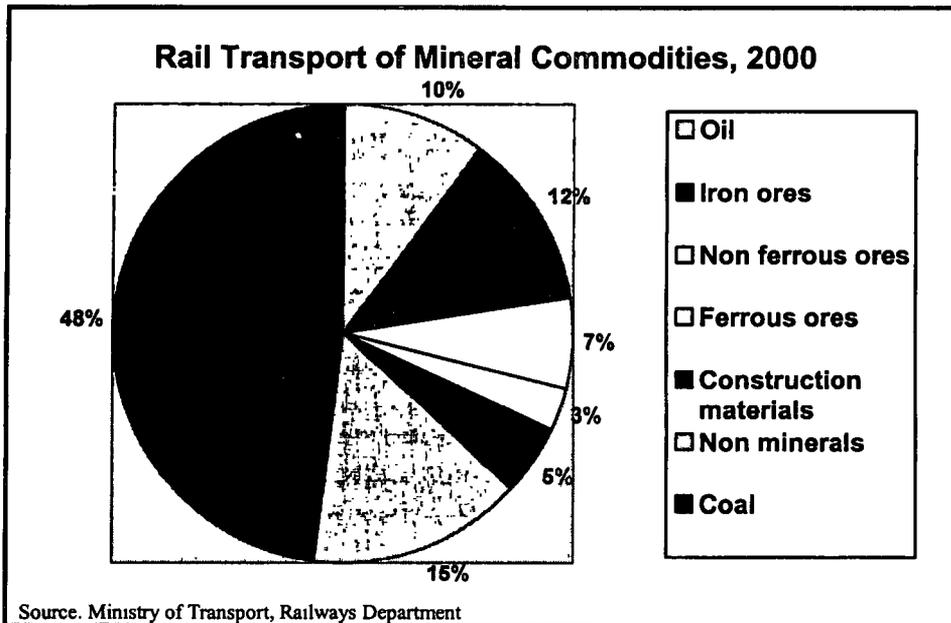
10.1.2 In many countries where mining is important – Australia, USA, Brazil and Canada, for example – mines are located at some distance from markets or deep water seaports. Nonetheless, these countries are top competitors in bulk mineral commodities such as coal, iron ore, copper, potash, and other commodities. They depend on efficient railways, which have been built up over the years using a combination of public and private capital, to transport the bulk mineral commodities to the coast. Mines in Kazakhstan, like those in other countries, are critically dependent on railways to transport their bulk mineral commodities to markets in other FSU countries or to deep water seaports. This chapter will examine some of the railway transportation issues as they may effect the way Kazakhstan's mining industry can compete in the future.

### **10.2 Importance of Railways to the Mining and Metallurgical Sectors**

10.2.1 At independence, Kazakhstan inherited a well developed rail transportation system comprising over 13,000 kilometers of single and double track, 28% of which is electrified. Operational control of the railways is vested with Kazakhstan Temir Zholy (KZT), a State owned enterprise, created in 1997. The Ministry of Transportation and the Ministry of Finance have supervisory responsibilities for KZT. More recently, the government has adopted a new railway transportation law which will re-organize again the railways, principally through privatization and segmentation of certain services. Kazakhstan railways are critical to the national economy, transporting over 96 percent of all freight. Indeed, some recent studies would suggest that Kazakhstan is more dependent on railways than any other country in the world. This is certainly true of the mining and metallurgical industries which have virtually no alternative to rail transportation, except in the case of very high value added commodities such as gold or specialty metals.

10.2.2 Rail traffic in Kazakhstan is currently over 100 billion tonne-kilometers. Transport of bulk mineral commodities such as coal, iron ores, ferrous and non ferrous metallic ores, and construction materials make up 75% the total traffic. For most of these commodities, there is no other feasible mode of transportation. The largest current customers for KTZ are Access Bogatyr (coal), Eurasian Bank Companies (aluminium, chrome, ferro-chrome, iron ore, coal), Ispat-Karmet (steel, iron ore, coal), and TengizChevronOil (petroleum). Much of this traffic is intra-company, that is moved between origins and destinations belonging to the same company, as for instance Ispat-Karmet which transports coal between its mines and steel plant. The

remainder of the freight traffic is destined for external and transit markets, principally the industrial centers of Russia and Ukraine, transit to Europe and Asia through Russia, and (increasingly) to China.



10.2.3 The railway system is vulnerable to certain structural drawbacks of its freight and minerals traffic.

- The development of the railways during the Soviet Union period was basically to export Kazakhstan raw commodities to service industrial plants in other parts of the Soviet Union. As a result, the rail infrastructure is unevenly developed among various regions in Kazakhstan and the track layout does not necessarily reflect the best routing between producers and customers. For instance, the shortest rail distance between the mining areas of Aktyubinsk/Kostanai oblasts and the processing facilities in Pavlodar/Karaganda oblasts passes through Russia which charges very high tariffs for this transit traffic. Thus, the government has begun a priority program of new track construction to shorten certain distances between these suppliers and customers and to lessen transit through third countries.
- Second, the railways are reliant on a few very large customers and have little opportunity for diversification. These customers (principally mining and metallurgical enterprises) operate in cyclical industries. Decreases in prices or market prospects for mineral commodities can reduce shipments and thereby revenues to the railways.
- Third, previously mining and metallurgical enterprises had accrued large payment arrears to the railways. These have been largely cleared up though some of the largest customers still have difficulty in paying for rail transportation, especially if they themselves are not paid for their products.
- Finally, the largest mining and metallurgical kombinats are powerful and have in the past (and could in future) exert pressure on the government to limit freight rates.

### 10.3 Railway Restructuring

10.3.1 Independence has opened up new opportunities for Kazakhstan railways, including significant link ups with other national railways (China, Russia, Kyrgyz Republic, Uzbekistan) and the possibility of attracting transit traffic on the Europe-Asia route. But, it has also brought significant challenges. For instance, following independence, rail traffic in Kazakhstan declined by 70% in terms of freight ton kilometers, as a result of the rupture of traditional trade and transport patterns. The railways maintained low tariffs and provided dependable transportation for essential mining and metallurgical industries during this difficult period. During this difficult period, the railways continued to maintain employment levels, pay taxes to the government, provide essential services to local communities and tolerate payment arrearages by industrial enterprises. Government policy makers condoned this effective subsidy as means to stabilize the economy.

10.3.2 The ability of the railways to operate in this manner was made possible by drawing down on a huge reservoir of surplus assets in terms of track, locomotives, wagons and coaches. The availability of these assets allowed the railways to defer fleet renewals and new investment. Indeed, over the past ten years there has been no new investment to replace equipment. This situation is now coming to an end. Over the next few years Kazakhstan railways must embark on an ambitious investment program to replace capital assets. In addition, certain inconveniences with respect to routing of tracks will need to be rectified through new track construction.

10.3.3 Funding these capital investments will be a difficult, but not insurmountable, challenge. It is estimated that over US\$4 billion in new investment will be required over the next 14 years. The investment will be made primarily for track construction and modernization; locomotive and rolling stock rehabilitation; signals, communications and informatics development; and electrification and power supply. The investment funds could be mobilized internally by either increasing in freight traffic, increasing tariffs, government subsidies, decreasing operating costs, new private investment, or some combination of these five. The first three options are not promising. In future years, though there is some possibility that freight traffic will increase as the economies of the region improve, it is unlikely that freight traffic will regain the volume registered prior to independence. Even though freight tariffs as calculated on a tonne/kilometer basis are low by international standards, these have already been increased and further increases in tariffs could have negative effects on the ability of Kazakhstan enterprises to compete effectively in the domestic marketplace. Direct government subsidies to the railways would not be consistent with the market economy philosophy embraced by the government<sup>38</sup>. Thus, the government is putting emphasis on a combination of reducing operating costs and encouraging new private sector investment into the railway sector. These two objectives are at the heart of the recently approved plans to restructure the railways.

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<sup>38</sup> Though, in effect as explained earlier, there has been a hidden subsidy of the railways to industrial enterprises. It should also be noted that other market economy oriented governments (such as the United States or European governments) implicitly subsidize railways through a variety of mechanisms.

10.3.4 In June, 2001 the government adopted a railways restructuring program and a new railways law. The fundamental thrust of the program and new law are to privatize and/or divest certain services and non-core assets from the railways. The divestiture program will be implemented in stages and with due caution in order to avoid the problems encountered in some of these countries (such as the United Kingdom). Under the program tracks, signals, dispatch stations and locomotives would remain property of and be operated by State organs. Other assets would be privatized or divested, including:

- Remaining social and municipal assets (these have largely already been divested from KTZ)
- Certain rail service enterprises and other non-rail assets (some of these services, such as track maintenance, construction and locomotive/wagon repair have or already are in the process of being divested)
- Passenger services (a new company will be formed to provide passenger services with some form of government subsidy to maintain low tariffs and acceptable levels of passenger services).

10.3.5 In terms of reducing costs, many of the railway assets are “surplus” given the reduced level of freight traffic on the railways. For instance, track in all categories (but, especially light density lines and tracks in stations and yards) could be reduced by approximately 24% over the next fifteen years. Surplus locomotives, wagons, and fixed facilities could also be reduced in line with the anticipated demand for services. Direct employment by KZT should also decrease, though many of the redundant personnel will be retained in the separate companies to be privatized. The introduction of new accounting and information systems will give the railways a better control over costs. This, in conjunction with the planned divestiture of services and surplus assets, could result in substantial savings.

10.3.6 The restructuring program also provides for the creation of competitive freight carriers. This innovation opens the possibility for mining and metallurgical enterprises to engage in rail transport for their “own account”. For instance, a company such as Ispat/Karmet could purchase wagons and lease track and locomotives from the government (KTZ). It would then provide transportation services for its intra-company operations and perhaps also to external clients. It has been estimated that by 2005 “own account” operations by mining enterprises could divert as much as 15% of the current KTZ traffic on domestic routes in coal, ores and metals and between 5% and 10% on export routes. However, by putting the railways on a commercial and competitive basis with respect to customers it will lead to better service and pricing. It will also result in a normal regulatory relationship with the anti-monopoly committee which will no longer have justification to dictate maximum prices for KTZ services (except a may be negated by political interference).

#### 10.4 Costs of Rail Transport

10.4.1 Introduction of competition in the market for railway services in theory could lead to more advantageous pricing options for companies. In practice, these pricing advantages will probably take some time to work through the system; in the meantime, prices for rail transport services could actually increase, especially if the government seeks to recover the full marginal costs of track, signaling and other elements which will remain in its control. Developing a traffic

costing information system is a priority for the railways and depends, in turn, on a reliable and timely source of operational and financial/accounting information. This new costing system is particularly important in respect of the tariff structure.

10.4.2 Charges for rail transportation of bulk mineral commodities in Kazskhstan would appear to be very low by international standards. However, this can be confusing. When considered on a cost per tonne/kilometer the rates are very low. For instance, for a distance of 500 kilometres the rate per tonne/kilomter in Kazakshtan for coal is

US\$ 0.003; a comparable rate for the same distance in the USA for east coast coal is US\$ 0.048. On longer hauls of 1,500 kilometers, the rate per tonne/kilometer for coal in Kazakhstan is 0.0024; a comparable rail transportation charge for Powder River Basin coal in USA is 0.013 per tonne/kilometer.

**Table 10.4.2**  
**Rail Transport Cost per tonne/kilometer (US\$)**

	500 kms (300 miles)	2000 kms (1,200 miles)
Kazakhstan	0.003	0.0024
USA	0.048	0.0132
Canada	NA	0.0156
Australia		

10.4.3 When rail transport charges are considered as a percent of total sales price of the commodity Kazakhstan tariffs would appear more in line with international standards. For example, the percentage that rail transport represents of the total sales price of east coast USA coal is about 26%<sup>39</sup>; in Kazakhstan it is 29%; in Australia it is about 27%.

10.4.4 Comparing tariff rates can be difficult since it is not known what elements are included in the calculation of Kazakhstan costs - whether they include, for instance, charges for loading and unloading, insurance, overhead and administrative costs.

**Table 10.4.4**  
**Costs of Rail Transport as Percent of Product Price**

Commodity	Transport % of Product Price
Ferrous ores	47.3%
Coal	29.4%
Gas	9.5%
Oil	9.3%
Steel	2.2%
Zinc	1.2%
Copper	0.5%

Source: Ministry of Transportation, Railways Department

<sup>39</sup> The cost of rail transport of Powder River Basin coals in the USA is about 80% of total sales price. This is an anomaly which is explained by the low mine mouth costs of coal, long haul distances, lack of adequate competition on the rail routes, and desirability of the low sulfur coal with electricity power plants.

Also, freight rates may be kept deliberately low which would imply a subsidy to the mining industry. Finally, as calculated as a percent of total sales price, the transportation competitive percentage may simply reflect a lower sales price for domestic consumers than that used internationally. A new cost information system would provide a better basis on which to calculate tariff rates. It would also supply justification for the Kazakhstan railways to raise the rates it is currently charging the mining and metallurgical enterprises – assuming, of course, that by doing so it did not negatively influence the fair market price of the commodity.

**ANNEX A:  
KAZAKHSTAN MINING AND METALLURGY STATISTICS**

Kazakhstan Selected Minerals Exports: 1996 - 1999									
Commodity	Unit Measure	1996		1997		1998		1999	
		Volume	Value	Volume	Value	Volume	Value	Volume	Value
		US\$ '000		US\$ '000		US\$ '000		US\$ '000	
Coal	Thou tonnes	20,839	381,775	24,857	364,941	23,578	323,173	16,175	152,047
Iron ores and concentrates	Thou tonnes	6,081	164,907	9,271	193,688	7,355	177,737	3,496	38,156
Copper Ores and concentrates	Thou tonnes	20	3,938	11	2,386	0	1	10	1,922
Zinc Ores and concentrates	Thou tonnes	23,075	5,748	57,964	14,340	74,538	16,754	78,300	15,201
Manganese Ores and concentrates	Thou tonnes	345,647	14,449	119,329	7,064	421,832	23,543	547,877	37,766
Chromite Ores and concentrates	Thou tonnes	262,709	16,240	579,647	15,654	388,448	13,529	528,272	19,232
Pig Iron	tonnes	21,895	3,181	20,136	2,383	866	153	409	48
Iron, non alloyed and alloyed steel	tonnes	1,907,893	540,406	2,798,505	705,663	2,374,888	515,909	2,919,383	600,317
Ferro alloys	tonnes	471,936	194,646	609,732	205,022	575,514	224,043	722,813	212,946
Crude silver	kilograms	132	21,219	254	37,545	449	77,926	636	104,447
Crude Gold	kilograms			8,489	89,801	16,121	147,430	24	177,487
Crude alumina	tonnes	946	1,735	1,755	4,011	1,702	3,520	12,015	9,648
Crude lead	tonnes	60,978	47,298	77,823	49,464	85,170	40,831	109,968	48,376
Crude Zinc	tonnes	149,549	143,142	191,126	219,172	218,024	181,635	207,044	162,988
Refined copper	tonnes	261,920	568,986	287,934	604,658	322,982	507,859	355,291	525,595
<b>Totals</b>			<b>2,107,670</b>		<b>2,515,792</b>		<b>2,254,043</b>		<b>2,106,176</b>



**Kazakhstan Minerals Production: 1996 - 1999**

Commodity	Unit Measure	1996		1997		1998		1999	
		Volume	Value	Volume	Value	Volume	Value	Volume	Value
			Tenge million		Tenge million		Tenge million		Tenge million
Coal and Lignite	Thou tonnes	76,832	34,783	72,630	22,464	69,774	24,805	58,377	20,549
Iron ores	Thou tonnes	12,975	7,324	13,133	20,496	9,336	13,011	9,617	12,510
Iron Pellets	Thou tonnes	5,465	93,675	6,520	11,682	2,864	5,711	2,814	5,131
Copper Ores	Thou tonnes	22,026		31,382		31,044		28,773	
Copper-Zinc Ores	Thou tonnes					3,491		4,146	
Bauxites	Thou tonnes	3,346		3,416		3,437	2,234	3,606	2,349
Lead Zinc Ores	Thou tonnes	4,768		5,519		4,890		4,852	
Manganese Ores	Thou tonnes	473	340	402	186	634	110	944	
Barite Ores	Thou tonnes					13	20	115	34
Chromite Ores	Thou tonnes	1,103	2,908	1,796	3,554	1,603	3,517	2,406	6,066
Pig Iron	Thou tonnes	2,536	395	3,089	324	2,594	127	3,438	56
Steel and allied products	tonnes	3,215,925	38,661	3,880,213	51,125	3,116,475	45,832	7,693,075	89,558
Ferro alloys	tonnes	606,616	11,583	843,445	13,925	726,346	17,776	999,603	27,414
Ferro Manganese	tonnes	620	27	1,425	65	1,242	47	237	9
Ferrosilicon (60%)	tonnes	345,857	5,835	605,125	9,804	542,050	13,229	731,563	19,988
Ferrosilicon (60%)	tonnes	118,149	2,344	133,380	1,831	92,125	2,107	140,263	3,343
Ferrosilicamanganese	tonnes	60,175	1,537	55,053	1,368	57,376	1,583	78,495	2,657
Gold refined	kilograms	10,300	2,311	9,659	3,542	8,929	4,445	9,655	7,740
Silver refined	kilograms	414,310	940	398,576	2,227	535,987	7,226	645,609	13,074
Alumina	tonnes	1,083,740	10,910	1,094,210	10,149	1,084,526	11,855	1,157,692	15,766
Lead	tonnes	67,259	2,878	81,975	3,326	118,634	3,154	158,890	6,715
Zinc	tonnes	170,081	9,552	188,996	5,714	240,728	13,751	248,754	23,833
Refined copper	tonnes	267,144	28,271	301,056	43,671	324,763	36,167	361,890	62,931
Cupric oxide	tonnes	275,097	409	327,397	2,140	351,336	1,727	383,457	926
Molybdenum	tonnes								
Other products									2,381
<b>Totals</b>			<b>254,683</b>		<b>207,593</b>		<b>208,434</b>		<b>323,030</b>

**Kazakhstan Mining and Metallurgy Sector  
Selected Economic Indicators by Oblast – 1999**

Oblast	Percent of industrial production <sup>40</sup>	Exploration Expenditures Tenge mln <sup>41</sup>	Assets Tenge million	Capital Investment Tenge mln	Exploration Licenses number <sup>42</sup>	Personnel Employed number	Commodities Produced
Republic total	29.0	11,010	320,633.3	20,062	142	193,239	
Akmola	10.1	–	2,508.6	71	10	3,955	
Aktobe	28.2	8,648	8,212.7	670	9	5,805	
Almaty	7.4	–	8.3	16	4	1,321	
Atyrau	0.3	878	0.0	0	18	0	
East Kazakhstan	63.3	34	55,675.8	8,484	13	36,514	
Zhambyl	27.9	–	1,180.2	200	10	1,399	
West Kazakhstan	0.9	0	0.0	0	3	0	
Karaganda	85.4	840	192,696.4	4,045	22	10,6998	
Kzylorda	0.0	529	0.0	5	6	0	
Kostanay	35.1	12	61.8	3,315	6	18,330	
Mangistau	0.4	34	0.7	0	23	0	
Pavlodar	59.6	–	58,147.7	3,153	8	16,309	
North Kazakhstan	4.1	–	0.0	5	1	0	
South Kazakhstan	2.3	1	2,006.6	96	8	2,293	
Astana	14.3	0.2	0.0	0		0	
Almaty City	6.1	34	134.5	2	1	310	

<sup>40</sup> National industrial production scheme. Includes: coal and lignite extraction, ferrous and non-ferrous metals extraction, other non-metal mineral production, metallurgical industry and processing, and finished metal goods processing.

<sup>41</sup> Exploration expenditures include oil and gas sector.

<sup>42</sup> Exploration expenditures include oil and gas sector.

**ANNEX B:  
Mining And Metallurgy Enterprises And Affiliates**

Name of a company	Address	Products manufactured	Comments
"Saryadar" Ltd.	128, Kunanbaev str., Ereiment-tau, Akmola region	Coal	
"Saikan" Ltd.	106, Shaimardan str., Zaisan, Eastern-Kazakhstan region	Coal	
"Eastern Kazakhstan Fuel Energy Complex" Ltd.	106, Krasin str., Ust- Kamenogorsk, Eastern- Kazakhstan region	Coal	
JSC FIG "Semei"	5a, Lenin str., Semipalatinsk, Eastern-Kazakhstan region	Coal	
PJSC "Western Ore Department"	Akbakaiskaya str., WS (workers' settlement) Mirny, Zhambyl region	Coal	
PJSC "Abaisky Foundry- Mechanical Plant"	3, Sovetskaya str., Abai, Karaganda region	Coal, miscellaneous wooden goods; cast iron casting; spares of miscellaneous goods of mechanical engineering, metal structures and their parts; central heating boilers; miscellaneous goods from non- precious metals; machinery parts for mining extracting in	
PJSC "Shubarkolsky Open Pit"	18, Asphalt'naya str., Karaganda	Coal	
PJSC "Ecolog"	Mine by Kuzembaev, Oktyabrsk district, Karaganda region	Coal	
"Baty" LTD	Severnaya mine, Karaganda	Coal	
TOO "ТРАНСМЕТ"О	1, Uskra str., Karaganda	Coal, electric power, heating	

Name of a company	Address	Products manufactured	Comments
"Arka-coal" Ltd.	Dolinskaya mine, Karaganda region	power Coal	
"Komir Invest" Ltd	42, Bakunina str., Oktyabrsk district, Karaganda region	Coal, thermal power	
"Komir-Invest" Ltd. Karaganda Branch	42, Bakunina str., Oktyabrsk district, Karaganda region	Coal, thermal power	
"Karagands Eenergy Resource" LTD	Mine by 50 years of October Revolution, Karaganda region	Coal, intermediate products and slime	
TOO "Koktem Komip"	85a, room 410, Dostyk str., Almaty	Coal, intermediate products and slime	
"Kortem-Komir" Ltd. Karaganda Branch	Mine by Apaka, Oktyabrsky district, Karaganda region	Coal, thermal power	
"Bastama" Ltd.	Bukhar Zhyrau ave., Karaganda	Coal	
"Borly" SPJSC	13, 40 years of Kazakhstan str., Sovetsky district, Karaganda region	Coal, thermal power	
"Karagandakomyr" PJSC	33/1, Mir ave., Karaganda	Coal, thermal power	
"Zhyly Tam" LTD	apt. 19, 14, Gogol str., Sovetsky district, Karaganda region	Coal	
PJSC "Saburkhanskaya" Central Concentrating Factory"	Saran, Karaganda region	Coal, intermediate products and slime, non-ferrous metals ores and concentrates	
"Esep" Ltd.	room 4, 2, Rabochaya str., Karaganda region	Coal	
"Abai Komir" Ltd.	Dolinskaya mine, Karaganda region	Coal	

Name of a company	Address	Products manufactured	Comments
PJSC "Eurasian Energy Corporation"	25, Stroitel'naya str., Ekibastuz, Pavlodar region	Coal, electric and thermal power	
"Bogaty'r Access Komir" Ltd.	23a, Stroitel'naya str., Ekibastuz	Coal, thermal power	
"Severny Open Pit" Ltd.	25, Stroitel'naya str., Ekibastuz, Pavlodar region	Coal	
"Taskomyrsai" Ltd.	29, Satpaev str., v. Zhartobe, South-Kazakhstan region	Coal	
"Kyzyl Kaen Mamyi" Ltd.	20, Lenin str., WS Batamshinsky, Aktobe region	Non-agglomerated coal, electric and thermal power	
"Medeo" Joint Industrial Venture" Ltd.	85, Zheltoksan str., Almaty	Non-agglomerated lignite	
"Priozerny Open Pit Kazakhstan-Russian Company" Ltd.	WS Kushmurun, Kostanai region	Lignite, thermal power	
"Beshoky" Ltd.	room 83, 31, microdistrict 28, Aktau	Lignite	
CJSC "Maikuben-West"	v. Shopt'ykol, Pavlodar region	Lignite	
<i>Iron Ores</i>			
"Atansor Ore Department" Ltd.	v. Atansor, Akmola region	Iron ore	
"Togai" Ltd.	WS Karagaily, Karaganda region	Iron ore, thermal power	
CJSC JV Elros "Zhezkazgan"	1, 10th floor, Lenin str., Zhezkazgan, Karaganda region	Iron ore, non-ferrous metal ores and concentrates, manganese ore, manganese concentrate	
"Atasuruda" Ltd.	4, block 24, Karazhol, Karaganda region	Iron ore, non-ferrous metal ores and concentrates, male and other overalls, guments, clothes, cloth accessories and other fur goods	State - 5.00% Elrova firm - 15.00% Employees - 80.00%

Name of a company	Address	Products manufactured	Comments
PJSC "Zhairemsky Mining-Concentrate Combine"	WS Zhairem, Karaganda region	iron ore, pure sodium chloride and salt, thermal energy	??? Nakosta firm ???
PJSC "Lisakovsk Mine-Concentrate Combine"	18, 1 microdistrict, Lisakovsk	iron ore, meat and food substuffs kpc	Ispat International - 100%
PJSC "Sokolovsko-Sarbaisky Mine-Concentrate Industrial Association"	26, Lenin str., Rudny, Kostanai region	Iron ore, gravel and sand, precast concrete construction structures, cast iron casting, steel and non-ferrous casting, thermal power, natural water	State - 39.50% Eurasiabank - 50.50% Employees - 10.00%
<i>Bauxite and Alumina</i>			
PJSC "Kazakhstan Aluminum"	Eastern industrial zone, Pavlodar	Alumina, cast iron and steel casting, lime stone and gypsum, timber, hydrogen, argon, oxigen, steel, metal structures and their parts, electric and thermal energy	State - 31.68% Eurasia Bank - 56.48% Employees - 9.28% IPF - 2.56%
JSC "Turgai Bauxite Ore Department"	86, Lenin str., Arkalyk, Kostanai region	Bauxites, aluminum ores and concentrates, clays and porcelain clay	State - 31.68% Eurasia Bank - 56.48% Employees - 9.28% IPF - 2.56%
PJSC "Krasnooktyabrsky Bauxite Ore Department"	WS Oktyabrskoe, Lisakovsk, Kostanae region	Bauxites, aluminum ores and concentrates, lime-stone and gypsum	State - 31.68% Eurasia Bank - 56.48% Employees - 9.28% IPF - 2.56%
<i>Chromite Ores</i>			
JSC "Donskoy Gok"	25, Mira str., Chromtau, Aktube region	Chromite ore, meat and food substuffs krs, plucked wool, explosives, construction metal structures, thermal energy, natural water	State - 31.37% Eurasian Bank - 57.14% Investment Funds - 1.93% Employees - 9.56%
<b>Steel</b>			

Name of a company	Address	Products manufactured	Comments
PJSC "Ispat-Karmet"	1, Lenin ave., Temirtau, Karaganda region	Coal; iron ore; coke and semi-coke; hydrogen, argon, inert gases; coal-tar benzene; mineral and chemical fertilizers; lime; steel; iron and steel sheet rolling; tin plate (thick and thin iron tinplate); zinc-plated rolling; sheet materials	Ispat International* - 100%  * India/United Kingdom
<b>Ferroalloys</b>			
PJSC "Kazchrom Transnational Company"	56, Kunaev str., Medeu district, Almaty	Ferroalloys, hydrogen, nitrogen and oxygen, rare inert gases, cast iron, steel, non-ferrous metal casting, metal structures and their parts, thermal power, lambers.	State - 31.37% Eurasian Bank - 57.14% Investment Funds - 1.93% Employees - 9.56%
Branch "Aksu Ferroalloys Plant", PJSC "Kazchrome Transnational Company"	5, Aksu, Pavlodar region	Ferroalloys, hydrogen, nitrogen and oxygen, rare inert gases, cast iron, steel, non-ferrous metal casting, metal structures and their parts, thermal power, lambers.	State - 31.37% Eurasian Bank - 57.14% Investment Funds - 1.93% Employees - 9.56%
JSC A54 "Ferrochrome"	industrial zone, 312 Rifle Division str., Aktobe, Aktobe region	Ferroalloys, cast iron, steel and non-ferrous metal casting, gravel and sand, dairy products, hydrogen, argon, rare gases, nitrogen and oxygen, bullions and other primary forms and semifinished products from iron or non-alloyed steel, natural water	State - 31.37% Eurasian Bank - 57.14% Investment Funds - 1.93% Employees - 9.56%
<b>Gold Ores and Refined Gold</b>			
Akbakai	Moinkusky	Gold ores	(Trust management) State - 90.00% Employees - 10.00%

Name of a company	Address	Products manufactured	Comments
Vasilkovsky	Almaty, Zarokova 35	Gold deposit	(Trust management – Israel co.) State - 90.00% Employees - 10.00%
Maikainzolota	Pavlodar oblast, Bayanalski rayon, Maikan	Gold deposit	(Trust management – East Point Holdings) State - 90.00% Employees - 10.00%
Altin Tobe	Almaty		Individuatls
Kazaltin	Stepnogorsk, Aksu		Ackem Snab
CJSC “Yuzhpolimetal”	2, Abai prosp., Shymkent	Dore alloy, gold, silver, lead	
“Nurdaulet Mining Ore Company” Ltd.	27, Gagarin str., WS Zholymbet, Akmola region	Precious metals ores and concentrates, refined gold	
PJSC “Quartz”	r.62, 180, Karasai batyr str., Almalinsky district, Almaty	Refined silver and gold, elctric energy, natural water	
“Ken” LTD	WS Akbakai, Zhambyl region	Dore alloy, refined gold and silver	
<i>Lead Metal</i>			
CJSC “Finconcord ЗАО “ФИНКОНКОРД”	102, Abai prosp., Ust-Kamenogorsk, East-Kazakhstan regin	Lead, copper, tin and zinc ores and concentrates, hydrogen chloride, hydrofluoric acid, tantalum and its goods	
Kazakhstan-Switzerland JV “Nova-Zinc” AS Ltd.	WS Akzhal, Karaganda region	Lead, zinc and tin ores and concnetrates, thermal energy	Nova Trading and Commerce AG
CJSC “Kaz-Tumen”	2/1, Polarnaya str., Leninogorsk, East-Kazakhstan region	Lead, paintsand varnishes	
PJSC NIE “Leader” ОАО НПП “ЛИДЕР”	4, Gromov str., Abaisky district, South-Kazakhstan	Lead	

Name of a company	Address	Products manufactured	Comments
	region		
<b>Zinc Metal</b>			
PJSC "Zhezkent Mining Concentrate Combine"	WS Zhezkent, East Kazakhstan region	Non-ferrous ores and concentrates, zinc in zinc concentrate, metal structures and their parts, thermal energy	??? Samsung Deutschland - 650% State - 2000% Employees - 10.00%
PJSC "Kazzinc"	1, Promyshlennaya str., Ust-Kamenogorsk	Copper ores and concentrates, copper in copper concentrate, copper-zinc ore, gold ore and concentrate, lead-zinc ore and concentrate, gravel and sand, timber, sulfur acid in monohydrate, paints and varnishes, lime, silver, Dore alloy, refined gold, silver,	State - 28.00% Kazsturzinc* - 62.00% Creditors - 10.00%  * Sub of Glencore (Switzerland)
BRANCH OF PJSC "Kazzinc"	Tekeli, Almaty region	Non-ferrous metal ores and concentrates, hydrogen, argon, nitrogen and oxygen, steel casting, electric power, natural water	State - 28.00% Kazsturzinc* - 62.00% Creditors - 10.00%
Zyranovsky Kombinat	Zyranovsk	Zinc and lead metals	State - 28.00% Kazsturzinc* - 62.00% Creditors - 10.00%
Leninogorsk	Leninogorsk	Zinc and lead metals	State - 28.00% Kazsturzinc* - 62.00% Creditors - 10.00%
<b>Refined Copper</b>			

Name of a company	Address	Products manufactured	Comments
PJSC "Kazakmys Corporation"	1, Metallurgists sq., Zhezkazgan, Karaganda region	Non-ferrous metal ores and concentrates, hydrogen chloride, sulfuric acid, sulfates, bricks, refined silver, refined gold, copper, cadmium, cadmium powder, insulated cables, electric and thermal energy, natural water, bread, canned and finished meat product	Samsung Deutschland - 90.00% Employees - 10.00%
Zhezkazgansvetmet	1, Metallurgists sq., Zhezkazgan, Karaganda region Zhezkazgan	Copper ores, concentrates, and cathode copper	Samsung Deutschland - 40.00% State - 45.00% Employees - 10.00% Private investors - 5.00%
+B22	Ust Talovka		Samsung Deutschland - 90.00% Employees - 10.00%
Zhezkent GOK	Zhezkent		Samsung Deutschland - 65.00% State - 2000% Employees - 10.00%
"Vostokkazmed" Branch of "Kazakmys Corporation"	1, Metallurgists str., WS Belousovka, East Kazakhstan region	Copper ores and concentrates, copper in copper concentrate, copper-zinc ore, lead-zinc ore and concentrate, other non-ferrous metals, thermal energy, natural water	

Name of a company	Address	Products manufactured	Comments
"Irtysk Copper Smelting Plant" Ltd.	v. Glubokoe, East Kazakhstan region	cupric oxide, chemical elements, hydrogen chloride, sulfuric acid, thermal energy and natural water	
JSC EK "Copper-Chemical Combine"	WS Talovka, East-Kazakhstan region Восточно-Казахстанская обл. РП. Усть-Таловка	Non-ferrous ores and concentrates, zinc in zinc concentrate, metal structures and their parts, thermal energy, natural water	
CJSC "Zhezkazgan-Ore"	56, Kosmodemyanskay str., Karaganda	Manganese ore and concentrate	
<b>Others</b>			
JSC "Eastern Ore Department"	Central str., WS Aksuhek, Zhambyl region	Barite ore and concentrate	
"Tzelinny Brandenton Chemicals" Ltd.	4 microregion, Stepnogorsk, Amola region	Molibdenum and its goods	
PJSC "Ust-Kamenogorsk Titanium-Magnesium Combine"	v. Novaya Sogra, Ust-Kamenogorsk	magnesium and magnesium alloys, sponge titanium, metal structures and natural water, timber, lime Магний и магниевые сплавы,	State - 15.50% Specialty Metals Corp* - 64.00% Private investors - 5.00% Employees - 15.50%

**ANNEX C:**  
**Kazakhstan Mineral Reserves and Production: 1999**  
 (compiled from Mining Journal Annual Review and Ushkenov presentation)

**Balance Reserves of Major Commodities**

Commodity	Kazakhstan % of total world reserves	Other countries having significant reserves
Lead	16%	Australia, Russia
Zinc	18.9%	Canada, China
Copper	7%	Chile, Russia, USA, Zambia
Iron Ore	3.8%	Russia, Ukraine, USA, China
Manganese	8%	South Africa, Ukraine, Gabon
Titanium	2.5%	South Africa, Australia
Chromium	22.4%	South Africa, Zimbabwe
Bauxite	1.2%	Australia, Guinea, Jamaica
Gold	20.8%	South Africa, Canada, Australia

Source: Ministry of Natural Resources and Ecology

Aluminium/Bauxite

**Reserves Location:**

Bauxite reserves of the sedimentary karst type deposits located in Belinskoye, Koktalskoye, Krasnooktyabrskoye, Tuansorskoye, and Vostochno-Ayatskoye. Economic reserves of 355 million tonnes at 44% alumina, sufficient for 60 years at projected levels of output.

**Operating plants:**

Pavlodar Alumina Plant produces approximately 1 million tonnes alumina in 1999. Also, producer of by-product gallium. Exports alumina to aluminium smelters in Russia.

**Management:**

Previously owned/managed by Trans World Group and Kazakhstan Mineral Resources Corporation and Whiteswan Ltd. These commercial arrangement were declare null in January, 1999 and ownership management is currently with Eurasian Bank. International litigation is still being pursued.

Barite

**Reserves:**

Reserves estimated at 162 million tonnes of BaSO<sub>4</sub>, almost 30% of world reserves. Deposits are located at Ansay, Bestube and Zhayrem.

**Operating Mines:**

Eleven deposits are worked with the Karagayly and Zhayrem mines (southern Kazakhstan) accounting for 70% of barite output. In spite of the demand for barite for the Kazakhstan oil industry, petroleum companies are critical of the quality of Kazakhstan barites.

## Chromite and Ferroalloys

### Reserves:

Kazakhstan ranks 2<sup>nd</sup> in the world (21% in total world reserves) in terms of balance reserves of chromite. The main deposits are located in Donskoy, Aktobe oblast, with reserves estimated at 317 million tonnes at 50% Cr<sub>2</sub>O<sub>3</sub>.

### Operating mines/plants:

Kazchrom operates the Donskoy GOK mines which produce chromite ores from four open pit and underground mines. Of the 2.4 million tonnes produced in 1999, 0.75 million were exported to Russia or Ukraine, the remained processed at the Aksu and JSC ferroalloys plants in Kazakhstan.

### Management:

Ownership/management of Kazchrom previously was Trans World GTroup and Kazakhstan Mineral Resources Corporation and Japan Chrome Corporation. Ownership/management is now vested in Eurasia Bank Group.

## Coal

### Reserves:

Over 400 coal deposits contain and estimated 30,000 million tonnes of coal. Major deposits are at Ekibastuz, Karaganda, Maykuben and Turgay basins with additional resources in Borly, Karazhir (Yubileyny), Kuu-Cheku, Priozernoye and Shubarkol deposits. One third of the coal is brown coal; the Karaganda basin supplies coking coals while the Ekibastuz deposit is a major supplier of coal for power generation.

### Mines and Enterprises:

In 1999 about 58.4 million tonnes of coal was produced, down substantially from 1996 when 77 million tonnes were produced. Fifteen coal mines in the Karaganda basin were sold to Karmet some of which were later rationalized or shut down. Other mines have been sold or are operated by consortia of local and foreign interests such as Access Industries.

## Copper

### Reserves:

Kazakhstan ranks fifth in the world in terms of "balance reserves" of copper, 7% of total world reserves. Major deposits (porphyry, cupriferous sandstone, and copper pyrite) are located in Zhezkazgan, Aktogoia, Boshekul-Maikan, East Kazakhstan, Taldy Kurgan, and Zhambyl. Reserves are estimated at 37 million tonnes at an average grade of 0.68% copper.

### Producing Mines/Plants:

Kazakhstan ranks 11<sup>th</sup> in terms of world copper production, the majority coming from the operations in Zhezkazgan region. Major producing mine enterprises include Zhezkazgantsvetmet, Kazakhmys, and JSC Zherzkentsy GOK. Kazakhmys operates concentrators and smelters at Zhezkazgan and Balkash.

Most of the production is exported. In 1999 362,000 tonnes of refined copper were produced, an increase over levels in 1996.

#### **Ownership/Management:**

Samsung (Deutschland) GmbH, a subsidiary of Samsung (Korea) owns the majority shares of KazakhMys since 1997.

### **Gold**

#### **Reserves:**

Kazakhstan has gold reserves of an estimated 800 tonnes of gold in ore grading 6.3 grams per tonne. About 134 lode deposits are known with an additional 60 polymetallic deposits. About 40% of the gold can be processed with simple gravitation techniques, the remainder, however, are complex ores difficult to beneficiate which require sophisticated technology.

#### **Producing Mines/Plants:**

A state owned firm, "Altynalmass" was created in 1993 which seeks to contract with foreign firms. Other gold enterprises (which produce primary or by-product gold) include: Maikanzoloto, ABC-Balkash, Altai JSC, Balkash AGRK, GMP Pustynoe, GRK Altyntobe, FIC Alel, and Nugrim Ltd. The Bakyrchik deposit is also being developed by Ivanhoe Resources. The Balkash smelter processes much of the nationally produced gold.

#### **Ownership/Management:**

So far, however, foreign investment in the gold sector has been disappointing, both as a result of inappropriate government policies as well as speculative foreign ventures. Currently, Newmont mining is active in exploration. A major gold deposit, Vasilkovskoye, has been previously tendered without successful result. This is probably Kazakhstan's most attractive undeveloped gold deposit and potential candidate to attract serious private sector development interest.

### **Iron Ore**

#### **Reserves:**

Kazakhstan reportedly has 9,000 million tonnes of iron ore in 27 major deposits, of which over half are in the proven category grading 39% Fe. Magnetite deposits supply the Sokolovsko-Sarbay beneficiation enterprise, hematite deposits the Lisakovsky enterprise, and sedimentary deposits the West Karazhal mining enterprise.

#### **Mines/Plants:**

Iron ore is both consumed locally and exported. In 1999, a total of 9.6 million tonnes of iron ore was produced, a reduction from the 13 million tonnes produced in 1996. The largest iron ore and pelletizing plant is the Sokolovsko-Sarbay kombinat. Other mines are Lisakovskoye Kacharskoe, and Aya.

#### **Ownership/Management:**

Sokolovsko-Sarbay is owned/managed by Eurasia Bank, having passed through the hands of the Trans World Group. This group accounts for 92% of iron ore production. Orken Ltd., Togai Ltd., and JSC Elrovo Concern are also active enterprises in iron ore.

## Lead/Zinc

### Reserves:

Reserves of lead are 15 million tons and of zinc 35 million tonnes. However, the ore is very low grade: 1.3% Pb and 3% Zn. Most operating deposits are located in East Kazakhstan with some in Zhambyl. New deposits are under development at Artemovskoye.

### Mines/Plants:

The Kazzinc enterprise includes mines, beneficiation plants, and smelters at Leninogorsk, Ust-Kamenogorsk, Zyryanovsk, East Kazakhstan copper-chemical plant, and the Tekeli complex. A lead processing plant in Chimkent also exists. In 1999, 158,890 of lead and 248,754 tonnes of zinc were produced, much of which was exported.

### Ownership/Management:

Kazzinc was formed in 1997 and is majority owned by an affiliate of Glencore International AG (Switzerland).

## Manganese

### Reserves

A total of 426 million tonnes of manganese ore is classified as economic; reserves grade of 20% Mn. This is relatively low grade by world standards.

### Mines/Plants:

75% of the manganese is extracted from the Atasu-Zhaimem open pit mine. Other producers include Zhezkazganruda JSC, TNC Kazchrom, Abaiken Ltd., and Tulpar. The Zhaimem complex are under the management of the Swiss firm Nakosta.

## Phosphate Rock

### Reserves:

Kazakhstan reports economic reserves of 785 million of P<sub>2</sub>O<sub>5</sub> ores, the majority of which are located in the Karatau basin and the remainder in Aktobe.

### Mines and Plants:

Phosphate rock was produced and processed at plants in Zhambyl and Chimkent. However, the collapse of markets in Russia and elsewhere, combined with the low grade and difficult mining conditions of the phosphate rock, have caused most production to cease. The future of this industry is uncertain.

## Steel

### Mines and Plants:

In 1999 Kazakhstan produced 4.1 million tonnes of steel, an increase from 3.2 million tonnes produced in 1996, though still down from peak production of over 6.7 million tonnes of crude steel produced in 1990. The main (coal) mines and steel plant are located in Karaganda (Timertau).

### Ownership/Management:

In 1995 Ispat International (UK and India) acquired the management contract and later an equity ownership in Karmet, the Karaganda Iron and Steel works. The firm has injected new funds into the enterprise and has begun developing export markets in Asia and elsewhere.

### Titanium

#### Plants:

Kazakhstan produces titanium sponge at the Ust-Kamenogorsk Titanium-Magnesium (UKTM) plant. Capacity is rated as over 40,000 tonnes but has fallen to just 4,000 tonnes in 1998, still making Kazakhstan the world's 3<sup>rd</sup> largest producer of titanium sponge. The titanium is produced from slags imported from Russia and Ukraine, though plans are afoot to develop local ilmenite deposits.

#### Ownership/Management:

UKTM is owned by Specialty Metals Corporation (Belgium).

### Uranium

#### Reserves:

Kazakhstan was the largest producer of uranium in the Soviet Union, however production has fallen since the break-up of the Soviet Union. About 87% of the U<sub>3</sub>O<sub>8</sub> produced came from the Tseliny complex.

#### Ownership/Management:

Kazatomprom is the government entity responsible for uranium production. It is in joint-venture negotiations with Cameco (Canada) for Inkai deposit and Cogema (France) for the Zhambyl deposit based on in-situ leaching technology.

**ANNEX D:  
Results of Investor Survey**

**Questionnaire of company's experience in minerals' exploration and mining  
in Kazakhstan**

Total responses -- 11  
Total questionnaire sent -- 15

*The questionnaire was sent to 15 companies operational in the country now or known to be active up to three years ago. Among the 11 respondents there were 5 major mining companies with global operations and 6 juniors. The companies had headquarters in USA, Canada, UK, and Australia.*

*The answers are grouped by the subjects of the questionnaire, and some illustrative comments are quoted below:*

**CORPORATE GOVERNANCE**

"Government officials do not understand what privatization means"

"The inadequacies of Kazakh corporate law were going to be addressed in a shareholders agreement which would have ensured that our rights were protected, at least on paper."

"We control the joint ventures: no problem"

Shareholders' right

"Any inadequacies were to be addressed in aforementioned shareholders agreement"

"Conduct of shareholding meetings, election of the board, payments of dividends and confirmation of fixed asset sales are problematic"

"Insider trading and self-dealing are problems"

A comment on "other problems in governance" was given "'secretly operating own bank" (apparently operated by other shareholders – *to check*)

Accounting standards

"Inadequate" -- 5

"Can be substantially improved"

"There are no accounting standards"

"Accounting standards were to be specifically addressed in the shareholders agreement which would have required preparation of accounts in accordance with [our country's] GAP"

"No such problems"

"Kazakhstan needs to move to IAS, as has Kyrgyz"

Reporting requirements

"Full non-disclosure"

"Misfit reporting among local companies"

"What ever the Tax Police and Tax auditors decide, NO RULES"

"Government agencies resist to work under the law or to follow legal procedures during audits"

"Internal reporting practices were to be governed by shareholders agreement or by agreement on appointment of corporate officer in charge of this area."

"No such problems"

#### Conflict of interest

"Yes" 2- *to ask*, likely ministry officials on the board (Kaz parties have 20% in 2 JVs)

"Money for salaries from project funds" - *to ask*

"No" -- 2

"Conflict of interest, independence of directors, executive remuneration -- are problematic" -- 2

Comment (of a foreign investor in a JSC majority owned by Kazakh partner): "Managing director appear to have interest in every supply contract"

#### LEGAL REGIME

"Conflict of legal and regulatory laws"

"Weak judiciary"

"No appeal process"

"Very complex and confusing. Is Decree driven system"

"There are an extraordinary number of rules making it difficult and time consuming to even find out what are all the applicable rules, any one of which could make your project uneconomic. For example, after investigating for several months, we discovered there was a Regional Govt. rule, probably originally designed to catch chemical plants, requiring the payment of approximately \$1 per ton of mined material. Since, we were looking at moving ore at about 60 cents per ton in our economic model, this would have rendered the Project uneconomic as it would have more than doubled our costs. Again, one is put in the position of having to try and negotiate around this. In these type of circumstances the Regional Govt., in our experience is liable to say yes we can help you as long as you build this piece of infrastructure for us. The infrastructure may have nothing to do with the mine or its impact on the community or region."

"Main problem is implementation"

"Reasonable mining law exists, but not applied equally"

#### Clarity of laws

"Laws are clear, but regulations lack transparency and consistency"

"Poor, contradictory regulations"

"Frequent exchange of duties among agencies"

"Complex"

"Could have been clearer"

"Satisfactory"

"Poor"

"Laws are generally OK" -- 4

#### .... of regulations

"Where they were clear they were often arbitrary with no flexibility to suit the circumstances. For example, the rule that an open-pit must have slope walls of a maximum of 45 degrees. In most countries, the degree of slope is determined by the nature of the surrounding ground i.e. if it is granite or sand can make a big difference to how steep the pit-walls can be safely maintained. These countries require a professional geophysical study to independently determine what is an appropriate safe slope is in the circumstances. The arbitrary rule of a maximum of 45 degrees can make a large pit uneconomic by requiring the removal of thousands or millions of tons of waste rock around the ore in order to attain a maximum 45 degree slope. The alternative is to try and obtain an exemption which is very time consuming and exposes oneself arbitrary decision-making and potential corruption."

"Too many"

"Poor"

"Regulations are still the old Soviet Centralized Command and Control type, Reform is needed to refocus regs onto compliance with policy issues ( i.e. budget commitments and environmental safety) rather than the regulators trying to second guess daily operating decisions."

"Vague plus lots of internal directives"

"OK" -- 2 Comment: "Uncertainty of payments required per state contract"

#### Sanctity of contracts

"Not as much as we would like".

"Yes with partner"

"Yes" -- 2

"Theoretically, yes, but in practice the contract holder can be and , in our experience , was, subjected to threats of arbitrary removal of contractual rights by senior Govt. officials. To have ones rights respected one must resort to INTERNATIONAL arbitration where the Govt. is not liable to settle on a reasonable basis unless one can bring pressure to bear on them to prevent something from happening that they wish to make happen."

"No" -- 2 Comment: "Not by our partners"

"We had no particular problems with sanctity of contracts or security of tenure"

"Track record of Kazakh Government in dealing with mining contracts is not good"

"This is at least a perceived problem"

#### Security of tenure

"Yet to be demonstrated"

"Unclear if a big discovery is made"

"Yes" -- 2

"Judging by experience in the industry, if the Govt. wants to get rid of you, they will find a way. Whether or not, that is a legal way, can only be determined by legal action which is expensive and time consuming"

"No" -- 2 Comment: "Not by our partners"

"We had no particular problems with sanctity of contracts or security of tenure"

#### Terms and conditions competitive internationally?

"Yes on license size and duration, except on getting geological data"

"Slow getting of licenses, often insider trading to government officials" -- *to ask*  
"30 years"

"Yes, but they often require unnecessary and burdensome paperwork"

"Yes" -- 5

One comment: "Terms were competitive as to size and duration, there is a need in the terms to allow lower work requirements or deferral of work during periods of depressed metal prices."

"Not in our opinion"

### REGULATORY REGIME

"Every mistake is considered criminal, triggering involvement of the Procurators' office"

"Concern has been expressed at clearing approval for projects on the same terms as were agreed at exploration stage"

### Length to get approvals

"Excessive" - 8

Comments: "Generally speaking, most approvals require numerous meetings and lots of paperwork. But one of the most time consuming things is determining whether you have all the permits required from all levels of Govt. in order to proceed. There is a certain amount of tension between the central Govt. and the Regional Government which adds to the difficulty".

"The need for multi-agency approval for relatively small items is difficult to deal with."

"Normal" -- 2

### Requirements for documentation

"Normal"

"Excessive" - 8

Comments: "Generally speaking, due to lack of understanding there is a tendency to want to obtain paper. This desire for documentation was present even when there didn't seem to be a policy purpose".

"Documentation and procedure requirements are excessive."

### Confidentiality of reporting to the Government

"Don't know"

"It is an issue" - 5

Comment: " I would not expect ANY confidentiality in reporting to the government."

"Yes"

"In our experience this was not an issue."

"Probably"

"Normal" -- 2

### TAXATION RULES

"What is on the books is seldom practiced"

"Fiscal terms are not competitive"

Calculation of rates and basis competitive

"Yes" -- 5. Comments:

"The basic rate (35%) is competitive. The problem is in the myriad of "other" taxes, each of which may be insignificant, but added together become very significant. Minerals being a non-renewable resource, a depletion allowance would help tremendously."

"Tax levels themselves are competitive. The tax police have entirely too much power."

"No" -- 4. Comments:

"Not competitive and not in conformity with INTERNATIONAL standards"

"You never know"

Conformity with int'l standards

"Guess do not meet"

"No" -- 6

Comments: "The accounting system and the tax system need to be converted to IAS as was done in Kyrgyz". "No, compared to successful mining countries"

"Yes" -- 4

Kaz taxes deductible for income tax calculations

"Some are, some aren't"

"Most"

"No" -- 2

N/A

"Yes, assuming that the Kaz taxes you refer to are royalties and mining taxes and the income tax calculations are for the purposes of Kaz income tax, **not offshore income taxes on our shareholding company.**"

"Yes"

Kaz taxes deductible in home country

"Not all of them"

"Yes" -- 3

"Do not know"

"No"

"[Our country does not have a "imputation" system like the USA. Therefore, what occurs in the separate operating corporate entity in Kazakhstan has no direct effect on a corporate shareholder [in our country]"

**MINING TAX PRACTICES**

"Subject for significant improvement"

"No ethics"

"No detailed knowledge on our side"

Arbitrariness in amending laws

"Yes" - 6

"Not in our experience"

"No" -- 2

### Harassment by inspectors

"Yes" -- 3

"No" -- 6

One comment: "Since we did not get to the operating stage, we have no knowledge of this"

### Excessiveness of audits

"Sometimes"

"Yes, for foreign companies"

"Yes" -- 3

"Since we did not get to the operating stage, we have no knowledge of this"

"No" -- 3

### Understanding of INTERNATIONAL practices by officials

"Very rarely (no)"

"No" -- 6. Comments:

"Not in a million years"

"The officials do not understand INTERNATIONAL best practice."

"Yes"

### Troublesome taxes

"VAT, Double Taxation Treaties, Withholding tax, Customs duties, Bonus payments, Royalty rates, reimbursement for Historical Geological Exploration costs, Fee for purchase of geological data, ring fencing, farm out, loss carried forward, interest expense, excess profit tax"

"Royalties, VAT, double taxation"

"Interpretation by Tax Committee. Auditors is a problem"

"The excess profits tax is of concern as demonstrates a lack of understanding of the relationship between risk and investment"

"Land tax"

"VAT refund"

"I do not recall any particularly troublesome taxes."

"VAT. Withholding tax" -- 2

## MINING INSTITUTIONS

### Clearness of mandates

"Confused" - 6

One comment: "There are many institutions and one gets the impression that they are used to working separately without much coordination"

"Clear" -- 3

### Competence

"Old-fashioned" -7

Comments: "But for the most part are keen to learn and are intelligent"

"Staff works with old Soviet Style thinking. Regulations are old- fashioned, while the laws themselves are modern."

"Mixed"

"Modern" -- 2

Level of training

"medium" -- 4

"medium to low"

"Low" -- 4

One comment: "The level of technical training is good but for example at GOK they lacked management skills. They are naïve from an economic point of view."

Understanding of market economy

"medium to low"

"Low" -- 3

"Poor, or less than low"

"They often know the capitalist buzz words but don't understand fully the concepts behind them. For example, the concept of cut-off grades was foreign to them. They wanted us to mine every last ounce in the deposit. Of course in the previous regime they did not account for the cost of capital etc. which distorted their view of "profit". Similarly, it was obvious in our negotiations that the concept of "time is money" was foreign to them. This lack of economic understanding makes it difficult for them to judge the reasonableness of requests that they receive."

"Medium" -- 3

"Staff technical ability is high, understanding of market economy principals are low."

Functions performed

"Not competently with lack of integrity" - 5

"This is a difficult one to answer. Some times people performed honestly but by our standards incompetently because of a lack of understanding of the market economy. At the technical level there seemed to be a lot of technical competence and integrity but at the higher levels the integrity became more questionable."

Competently and honestly -- 2

Budget and logistical support

"Insufficient" - 7

One comment: "Certainly Govt. Departments were up against severe budget limits. This forced the Departments to seek funding from the company for matters that we are used to Govt. paying for itself. In some cases this put the company in a difficult position as to the reasonableness of the request, the effects of turning it down and as to whether some funds might be going to individuals"

Sufficient -- 2

ENVIRONMENT AND INFRASTRUCTURE

Supply of infrastructure inadequate:

"Depends on project location"

"Adequate" -- 2

"Water and electricity" -- 2

"Mixed" -- "Yes" for rail, but because of the landlocked nature of the country and the nature of its neighbors, getting large equipment through CIS countries and Kazakhstan itself involves a tremendous amount of bureaucracy and permits which opens one up to delays and corruption. So while the actual infrastructure of a rail network is adequate, the adequacy of rail service is poor. Road -- the same answer can be given as for rail, the road infrastructure is there but for moving heavy oversize equipment permits are needed and all the same conditions apply as for rail. Water -- "yes" where we were located, water was adequate but obviously for large parts of the country that is not the case. Electricity -- "No" while the transmission lines were adequate for the ... Project, there was a problem with old equipment at power plants resulting in an a high 10% brown-out rate. There was also a problem caused by wheeling power through Russia. That contract had not been settled so there was understandable reluctance to complete a contract with us until that happened. Furthermore there was a problem with lack of transparency. There were no public tariffs and rates had to be custom negotiated. This left us open to be "fleeced" on rates and open to corruption."

"Water"

"Electricity" -- 4

"Rail" -- 3

"Road" -- 3

Cost of infrastructure unreasonable:

"In water and electricity" -- 2

"Reasonable" -- 2

"Reasonable, but in electricity on the high side"

"Water"

Cost of doing business:

"Normal to transition economies" -- 5

"Very high"

"High" -- 2

"The cost of doing business is high because it takes a tremendous intense effort to negotiate the necessary contracts and when that is done, maintaining those in good standing and ensuring that they are adhered to is a very high maintenance proposition".

"Low"

Environmental regulations competitive?

"No"

"Only in theory"

"Hard to say"

"Yes" -- 6

Comments: "Yes, but monitoring is excessive"

"In many cases they are more stringent than normal  
e.g. the storage of cyanide"

## Questionnaire of company's experience in minerals' exploration and mining in Kazakhstan

<b>Company name, country of origin</b> <i>(Please use a disguised company name if you do not want the authentic name be identified)</i>	<b>Worldwide sales (US\$)</b>	<b>Number of employees</b>	<b>Exploration/mining in following countries</b>	<b>Product(s)</b>	
<b>Operation/project in Kazakhstan</b> <i>(Please use a disguised name if you do not want the authentic project's name, location/field identified)</i>	<b>Name of the operation/project</b>	<b>Legal form (LLP, closed/open JSC, Joint Venture, other)</b>	<b>Location of the field</b>	<b>Product(s)</b>	
<b>Ownership structure of the Kazakh venture in percent</b>	<b>Your stake</b>	<b>Other foreign</b>	<b>Kazakh large partners/ shareholder(s?)</b>	<b>Kazakh small investors</b>	<b>Residual state shares</b>
<b>Corporate Governance problems you faced in the operation/project</b> <i>(pls use the space here to specify)</i>	<b>Rights of shareholders and their equitable treatment:</b> (a) conduct of shareholder's meetings; (b) election of the board, (c) payment of dividends, (d) insider trading, (e) self-dealing, (f) other (specify).	<b>Disclosure and transparency:</b> (a) inadequate accounting standards; (b) misfit reporting practices, (c) other (specify)		<b>Responsibilities of the Board</b> (a) conflict of interest; (b) independence of directors; (c) executive remuneration; (d) other (specify)	
	(a) (b) (c) (d) (e) (f)	(a) (b) (c)		(a) (b) (c) (d)	

<b>Legal Regime</b> <i>(pls use the space here to specify)</i>	<b>What is the clarity of :</b> (a) the mining laws; (b) the mining regulations (c) other rules		<b>(a) Is there a sanctity of contracts?</b> <b>(b) respect for security of tenure?</b>		<b>Are the terms and conditions competitive internationally:</b> (a) license size; (b) license duration (c) other							
	(a) (b) (c)		(a) (b)		(a) (b) (c)							
<b>Regulatory regime</b> <i>(pls use the space here to specify)</i>	<b>Length of time to receive approvals:</b> (a) normal (b) excessive		<b>Requirements for documentation:</b> (a) normal (b) excessive		<b>Is there an issue of confidentiality when reporting to the government?</b>							
	(a) (b)		(a) (b)		Yes                  No							
<b>Mining taxation rules</b> <i>(pls use the space here to specify)</i>	<b>Are the basic rates and basis of calculation of taxes competitive?</b>		<b>Are the basic rates and basis of calculation of taxes in conformity with international standards?</b>		<b>Are Kaz taxes deductible for income tax calculations?</b>		<b>Are Kaz taxes deductible in the home country?</b>					
	Yes                  No		Yes                  No		Yes                  No		Yes                  No					
<b>Mining taxation practices</b> <i>(pls use the space here to specify)</i>	<b>Is the amendment of laws arbitrary?</b>		<b>(a) Are inspector's harassing?</b> <b>(b) audit requirements excessive?</b>		<b>Government officials understand international best practices?</b>		<b>Particularly troublesome taxes? (specify)</b>					
	Yes                  No		(a) (b)		Yes                  No							
<b>Mining sector institutions</b> <i>(pls use the space here to specify)</i>	<b>Mandates and roles are:</b> (a) clear; (b) confused		<b>Staff competence</b> (a) modern; (b) old-fashioned		<b>Level of training and professional development:</b> (a) high (b) medium; (c) low		<b>Understanding of market economy principles:</b> (a) high; (b) medium; (c) low		<b>Functions are performed:</b> (a) Competently and honestly (b) Not competently with lack of integrity		<b>Budget and logistical support</b> (a) sufficient (b) insufficient	
	(a)                  (b)		(a)                  (b)		(a)                  (b) (c)		(a)                  (b) (c)		(a)                  (b)		(a)                  (b)	

<b>Environment and infrastructure</b>	Pls put "Y" for yes, "N" for no, for adequacy of supply: (a) rail; (b) road; (c) water; (d) electricity	Cost is reasonable, "Y" or "N": (a) rail; (b) road; (c) water; (d) electricity	<b>Cost of doing business</b> (a) high (b) normal to transition economy practices; (c) low	<b>Environmental laws/regs compatible to international standards?</b>
	(a) (b) (c) (d)	(a) (b) (c) (d)	(a) (b) (c)	Yes No

**ANNEX E:**  
**International Standards for Institutional Organization for the Mineral Sector**

The reform of public mining institutions within the mineral sector of individual nations has been, and continues to be, an area of considerable attention by Governments and in particular within the transitional economies as they move from centrally-planned to private sector driven free-market economies. This reform of mining sector institutions, particularly in transitional economies, is largely being brought about in order to: (1) adjust the activities of the mineral sector institutions to the new role of Government as a regulator of private industry rather than its traditional role as an investor-operator in the sector; (2) provide for more efficient and transparent administration of the mineral sector in order to create a more favorable and internationally competitive investment climate and (3) to create an overall higher level of institutional efficiency, often with less funding and personnel, in order to cope with an increased level of activity by both foreign and domestic investors.

The reform of mineral sector institutions varies in detail depending on the individual nations. The model for a successful institution in one country may not work in another country.<sup>43</sup> Nevertheless, although the overall structure of mining sector institutions may differ in detail and complexity from country to country it is important to recognize that the institutional, organizational and functional components of the mining sector institutions are not country dependent and will be the same in virtually every nation. Given this commonality with respect to institutional, organizational and functional objectives it is possible to outline a common institutional structure, in which function defines organizational structure, for mining sector institutions.

Overall, the functions of a public mineral sector institution responsible for the mineral sector of a nation can be summarized in terms of; (a) policy formulation; (b) granting of mineral rights; (c) environmental and social permitting; (d) monitoring, regulation and enforcement and (e) geological infrastructure development. As a result of these functional responsibilities the essential institutional building blocks would be as shown in the following (Figure 1) that would have the following responsibilities:

1. Responsible Ministry or Agency - Legislated leader of the mineral sector that serves as the Government's principle contact for all mineral sector related activities and coordinates all other mineral sector institutions.
2. Mining Cadastral Unit - Overall responsibility for the registration, granting and cancellation of licenses, within the framework of national policy and legislation, for mineral sector exploration, development and exploitation activities.
3. Environmental Permitting Unit - Responsibility for the provision of available background information and the evaluation, in coordination with other protection agencies, of documents and studies submitted in accordance with environmental permitting regulations.

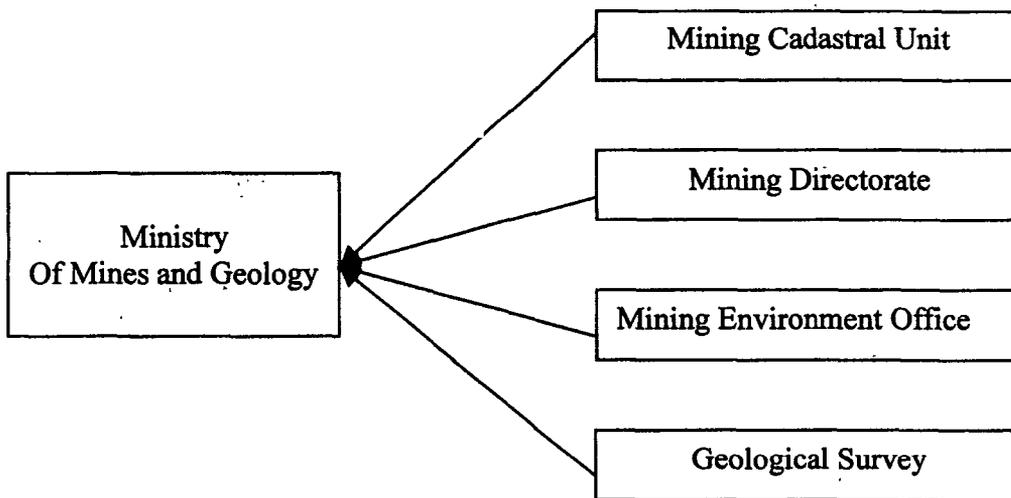
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<sup>43</sup> For instance, the models for the United States and Canada, with fully developed institutions at the national and State/Province levels, each separately funded at the responsible government level, and each with individual administrative, legislative and technical authority may not be appropriate for many transitional and or developing nations.

4. Mining Inspectorate Unit- Responsibility for monitoring and oversight of mining sector activities and for the transparent and uniform enforcement of laws and regulations. Unit normally compiles and provides all mining sector statistics.
5. Geological Survey Unit - Responsible for the development, maintenance and assurance of access to all geological (geology, geophysics, geochemistry, resource assessments, hazards etc.) and associated mineral sector related (water, environment) data.

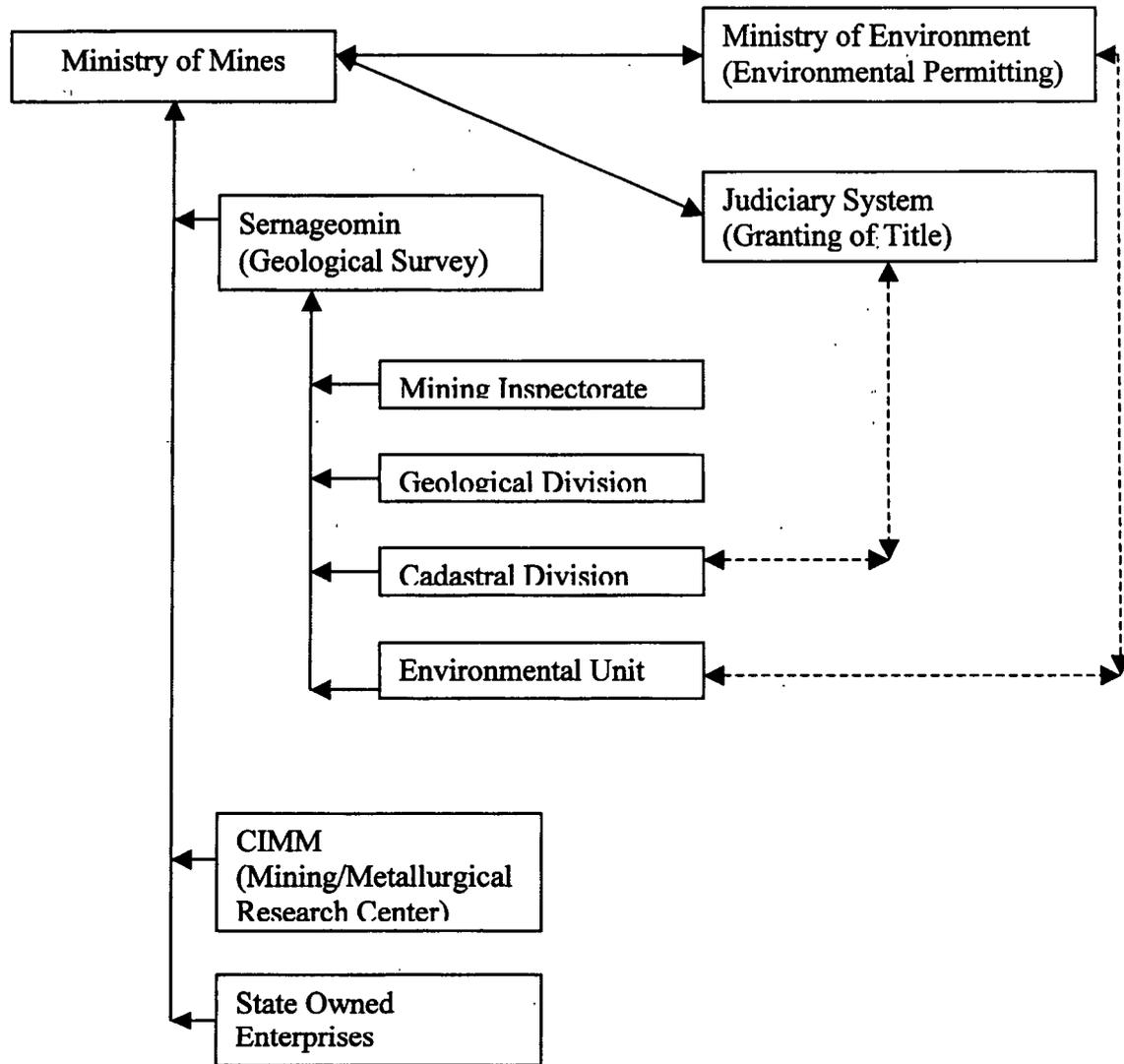
In all of the above activities of the Lead Agency there is an explicit mandate to (a) promote the mineral sector, (b) assist the private sector, and (c) continually update the geological knowledge of the Nation. It should be stressed that international best practices are that (a) the majority of geological research is conducted by Universities, albeit often in cooperation with individual units within the Lead Agency, and that (b) the Lead Agency does not undertake mineral exploration or exploitation activities in competition with the private sector.

**Figure 1. Basic Framework of a National Mineral Sector Lead Ministry**



In the following Figures 2 and 3 variations in the overall structure of National mineral sector organizations for selected countries (Chile and Queensland, Australia) are presented as typical for effective national management of the minerals sector while meeting the needs of the private sector.

**Figure 2. Mineral Sector Institutional Organization of Chile.**

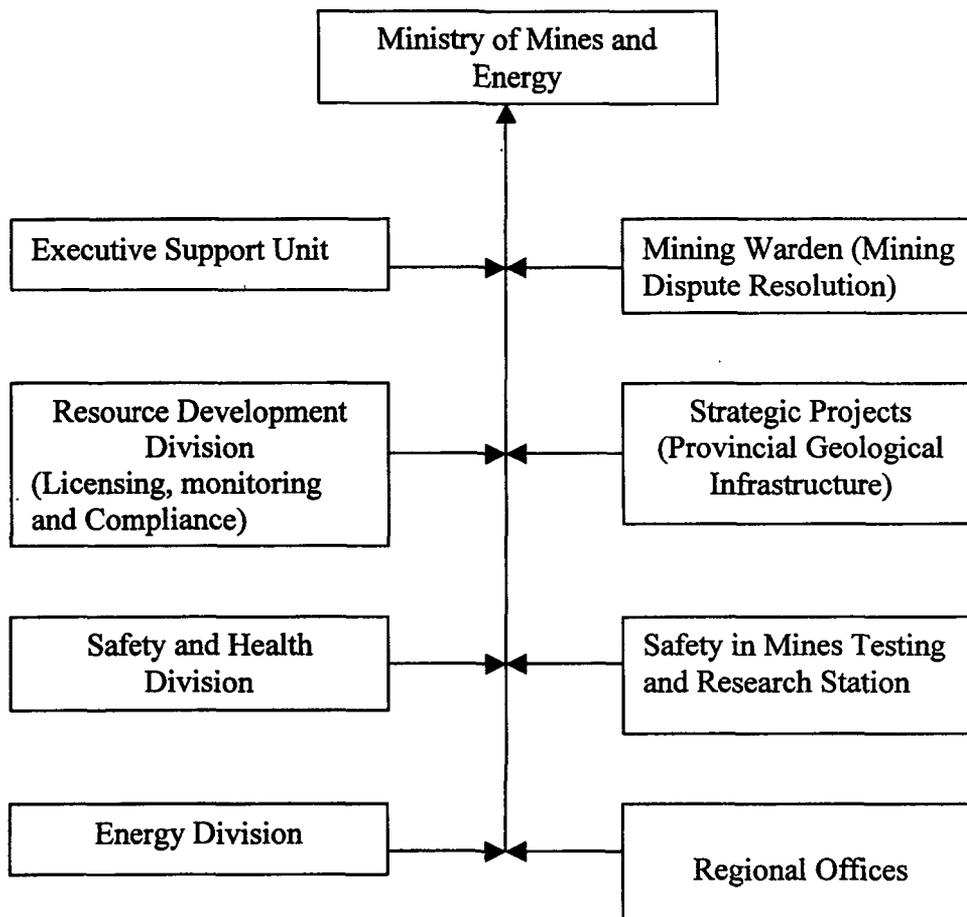


In the case of Chile the role of the Ministry of Environment plays a very large role in the permitting process for two reasons. First, environmental concerns with respect to mining in Chile have traditionally not been a major concern of the Government and as a result neither the Ministry of Mines nor Sernageomin had developed the institutional structure nor the personnel to undertake environmental monitoring of the mineral sector. As a result, only with the creation of the Ministry of Environment in 1991 and the passing of the General Environmental Law in 1994, the responsibility for environmental permitting of mining activities became the joint responsibility of the Environmental Unit of the Ministry of Mines (evaluation and recommendation) in coordination with the Ministry of Environment (evaluation and permit issuance). Conversely, the issue of granting mining title in Chile has historically been a highly contentious issue with claims and counter-claims regarding the awarding of licenses and titles. As a result of this historical problem the authority for the final

granting of a mining licenses and title has been delegated to an "independent body" i.e. the Judiciary Branch. However, in the case of both environmental permitting and the granting of mining licenses and titles these activities are only done after technical review and advice, within a well established framework, by the responsible authorities within Sernageomin. As such, the Ministry of Mines and Serogomin continue to fulfill the primary role as the lead Ministry/Agency for the mineral sector of Chile.

In Australia, the authority and responsibility for mineral sector development is delegated to the individual territories (provinces) and the mineral sector institutions are, therefore, all local government (provincial) agencies which operate independently of any national oversight Ministry or Agency. The general organizational structure of the Queensland Ministry of Mines and Energy is shown in the following Figure 3:

**Figure 3. Institutional Organization of Queensland, Australia**



Although the Queensland Ministry of Mines and Energy is an autonomous territorial institution it functions under overall national guidelines for environmental management and

mine health and safety: these issues have been incorporated into the territorial enabling legislation under which the Ministry of Mines and Energy Functions.

The above examples of Chile and Queensland, Australia rather clearly show that although the individual Agencies within a Ministry may vary in title and their respective functions may vary in detail, in order to accommodate certain unique aspects of each Nation, the overall institutional, organizational and functional components of the mining sector institutions are essentially the same within those Nations that have adopted institutional best practices.

It must be emphasized that the above institutions have in common the following ; (1) they have a clear legislated mandate; (2) they are the single focal point for all mineral sector related development activities; (3) they are fully government funded (either at the National or local government level) for all of their activities; (4) their operations are open, fair and transparent for both domestic and foreign investors, (5) they do not compete with, but rather facilitate, the activities of the private sector and (6) they have a core responsibility to provide the necessary geological infrastructure for the development of the Nation's mineral resources.

It is within this context of international best practices for mineral sector institutions that the assessment of mineral sector institutions in transitional economies was undertaken and against which the individual Nations mineral sector institutions were evaluated.

**ANNEX F:  
Basic Legal Texts**

The basic legal texts governing private (particularly foreign direct) investment in mining in the Republic of Kazakhstan are the following:

1. Constitution, enacted by Presidential Decree No. 2454 of September 6, 1995. **(Constitution)**
2. Edict No. 2828 of January 27, 1996, as amended by Law No. 467 of August 11, 1999, "Concerning Subsurface and its Utilization." **(Subsurface Law)**
3. Decree No. 108 of January 21, 2000, "Concerning the Approval of the Rules for Granting the Rights to Use Subsurface in the Republic of Kazakhstan." **(Subsurface Granting Rules)**
4. Decree No. 108 of January 27, 1997, "Concerning the Approval of the Model Contract for Conducting Subsurface Operations in the Republic of Kazakhstan." **(Model Contract)**<sup>44</sup>
5. Law No. 266 of December 27, 1994, "Concerning Foreign Investments." **(Foreign Investment Law)**
6. Edict No. 2235 of April 24, 1995, as amended through July 5, 2000, "Concerning Taxes and other Payments to the Budget." **(Tax Law)**
7. Law No. 160-1 of July 15, 1997, "Concerning the Protection of the Environment." **(Environmental Law)**
8. Resolution No. 1019 of July 21, 1999, re "Approval of Unified Rules for subsoil protection under development of solid minerals, oil, gas, ground waters in the Republic of Kazakhstan." **(Unified Subsoil Protection Rules)**
9. Law No. 54-1 of December 24, 1996, as amended on July 16, 1999, "Concerning Currency Regulation." **(Currency Regulation)**

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<sup>44</sup> A new Model Contract conforming to the August 1999 amendments to the Subsurface Law, has been prepared but is not yet approved by the Government and has not yet been released, as of the date of this report.

**ANNEX G:  
Systems of Mineral Reserve Classification.  
Comparisons Internationally and in Kazakhstan.**

Perhaps no issue is more contentious and less commonly understood internationally than that of classification of mineral reserves. Historically, international agencies, individual nations and private sector groups have all developed their own classification schemes to define mineral reserves. The result has been worldwide confusion as to the actual amount of reserves of individual minerals within individual nations or regions. In general, however, three classifications systems are in use:

- 1) the one used in countries of the former Soviet Union, as is the case of Kazakhstan;
- 2) the one used in market economies (in particular Australia, Canada and the USA), and
- 3) the one recommended by the United Nations, UNRRC, as recently enhanced.

The United Nations in 1998 has proposed a new International Classification System for Reserves/Resources (UNRRC) that is rapidly being adopted and accepted as international best practice by most countries. This acceptance is primarily because the system allows easy conversion of most pre-existing reserve and resource estimates, regardless of the classification system used, into an internationally acceptable reserve and resource estimation and classification norm. As is made clear in various sections of this Study, lack of an internationally accepted reserve classifications system in Kazakhstan can lead to an over (or under) estimate of mineral reserves and resources. It can (and has) led to significant disagreements with private companies since, based on the former Soviet system, the uses to which the government puts the data are considerably different than those of other countries. This is a significant hindrance to attracting sustained private mining investment.

**Common Attributes**

Although differing widely in detail, the various international reserve and resource classification systems have in common the following three attributes:

1. "Reserves" are designated as being materials that are presently known and economically recoverable (under some economic parameters); "resources" are those materials, both known and unknown, that are not economically recoverable at present;
2. The designation of reserves or resources depends to a great extent on the level of geological knowledge concerning the distribution, continuity and tenor of the mineralization.
3. Inherent in the designation of reserves and resources is an assessment of the feasibility (economic and technological) of recovery of the defined mineralization.

Even though it would be relatively easy to convert the current classification system in Kazakhstan to the United Nations Reserve and Resources Classification system (and, thereby, to provide internationally comparable reserve and resource figure to those of other mineral rich nations) the real difficulty is the way the data are viewed and used by Government institutions.

The reserve and resource estimations are used quite differently in the transitional and free market economies as summarized in Table G.1.

**Table G.1  
Comparative Use of Reserve and Resource Classification Data**

<b>Element</b>	<b>Kazakhstan</b>	<b>Australia/Canada</b>
Reserve/resource estimation procedure	"Soviet System"	UN/CIM/JORD
Reserve Estimation Responsibility	Government	Industry
Reserve reporting requirement	To Government	To shareholders and stock exchange
Use of Reserve data vis-à-vis industry	Evaluation/Monitoring	None
Use of Resource data vis-à-vis industry	Evaluation/Monitoring	None
Validation of reserve estimates	Government	Industry/Private Sector Institutions (Banks)
Validation of resource estimates	Government	Estimating agency/group
Use of "On Balance - Off Balance"	Yes	No
Requirements for reserve recovery	Yes	No
Requirement for selective mining	Yes	No
Nationwide assessment of reserves	Yes	Partial/Selective
Nationwide assessment of resources	Yes	Partial/Selective
Public access to reserve data	Confidential	Publicly available
Public access to resource data	Confidential	Publicly Available
Taxation of reserves (Land Tax)	Yes	No

The most striking difference between the use of the reserve and resource data in Kazakhstan and other countries is that the Government (Ministry of Energy and Mineral Resources and its Agencies) has the responsibility for: a) determining reserves and resources; b) evaluating private sector plans for mineral development on the basis of these estimates and, c) ensuring that estimated reserves are fully recovered (or penalties paid) by the private sector. These activities that do not conform to international best practices and are an unwarranted expense for the Government and a serious disincentive to investment. These problems could partially be resolved if Kazakhstan were to adopt and use the UNRRC system of reserve and resource evaluation and classification.

### **The UNRRC Reserve/Resource Classification Schemes**

The UNRRC scheme is designed to allow existing national classifications to be maintained while at the same time creating an internationally standard of comparability. The main objective of the UNRRC is to create an instrument that will classify mineral reserves and resources based on market economy criteria. Conceptually, the UNRRC system is three dimensional, using three axes to represent (1) **Geological Assessment (G)**; (2) **Feasibility Assessment (F)**; and (3) **Economic Viability (E)**. The principle behind the UN Framework Classification and methodology of classifying reserves and resources is shown in a matrix form in Figure 1.

Geological Studies are subdivided into four consecutive stages of geological assessment which are, in order of increasing detail: **Reconnaissance, Prospecting, General Exploration and Detailed Exploration**. These four categories reflect an increasing degree of geological assurance as determined by increasingly detailed geological and scientific investigations.

Feasibility Assessment is subdivided into three consecutive stages which are, in order of increasing detail: **Geological Study, Pre-feasibility Study, and Feasibility Study/Mining Report**. These categories reflect increasing degrees of assurance of economic viability. The mining report and feasibility study have the highest degree of assurance; a pre-feasibility study, provides an economic viability statement with a lower degree of assurance; in contrast, a geological study is not intended to provide a reliable statement on economic viability.

Economic Viability, corresponds to the reserve/resource figures as obtained from the Feasibility Assessment, and is reported as the third dimension, using the individual boxes in the matrix or the individual column in the table of the UNRRC. There are two categories of Economic Viability: **economic** and **potentially economic**, which are only quoted in the stages of Mining Report/Feasibility Study and Pre-feasibility Study.

Geological Studies, in contrast to Mining Report/Feasibility Study and Pre-feasibility Study, do not assess economic viability directly but provides a rough estimate adopting cut-off values and/or by comparison with mining activities carried out in similar deposits. Thus, the resource figures are quoted as being in the range of “economic to potentially economic” and therefore of intrinsic economic interest. For the same reason, generally only “in situ” resource figures are reported at the geological study stage, while at the mining report/feasibility study and pre-feasibility study stages both quantities “extractable” and “in situ” may be quoted. In all cases it should be clearly stated whether the reported reserve/resource figures refer to “in situ” or “extractable” quantities.

Numbers are used to designate the different classes of mineralization; the lowest number referring to the highest degree of Economic Viability on the E axis, and the highest degree of geology assurance on the F axis and G axis. As an example the designation of (111) for "proved mineral reserves" in Figureq G.2 indicates the highest degree of economic, feasibility and geologic information and certainty for economic development. Conversely, the designation of (331) for "measured mineral resource" indicates minimal economic and feasibility information but a high level of geologic information.

**Figure G.2  
United Nations Reserve Classification System**

**United Nations International Framework Classification for Reserves/Resources  
Solid Fuels and Mineral Commodities**

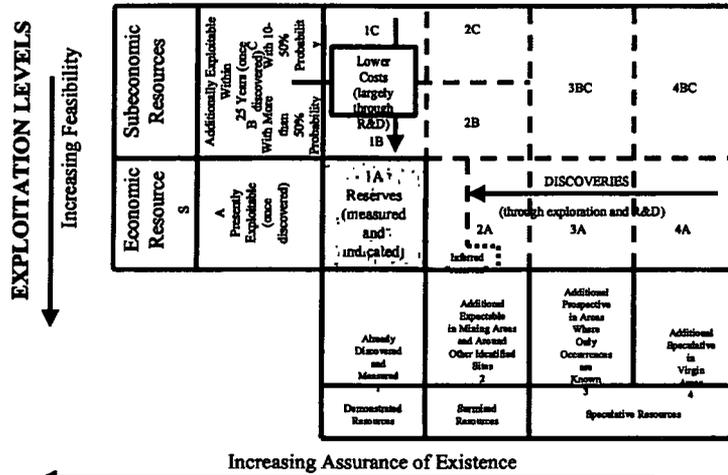
UN International Framework ↓	National System ↘	Detailed Exploration	General Exploration	Prospecting	Reconnaissance
		Feasibility Study And/or Mining Report (111) (211)			
Prefeasibility Study		1 Probable mineral resource (121) 2 Prefeasibility mineral resource (221)			
Geological Study		1-2 Measured mineral resource (331)	1-2 Indicated mineral resource (332)	1-2 Inferred mineral resource (333)	? Mineral potential (334)

Economic Viability Categories: 1 = economic      1-2 = economic to potentially economic (intrinsically economic)  
 2 = potentially economic      ? = undetermined

Increasing degree of economic flexibility ↓	Explored			Prospective	Predicted		
	Sub-economic	a	b	c <sub>1</sub>	S <sub>2</sub>	Within known deposits	In areas with known deposits
Economic	A	B	C <sub>1</sub>	C <sub>2</sub>			

← Increasing degree of geological reliability

Source: United Nations Economic and Social Council, The International Classification of Mineral Resources



**RESERVES** (measured and indicated) = 1A (i.e., demonstrated economic resources)  
**RESOURCES** = RESERVES + all other numbered areas  
**RESOURCE BASE** = RESOURCES + indefinite area beyond top of diagram

Source: United Nations Economic and Social Council, The International Classification of Mineral Resources.

**ANNEX H:  
Economic Impacts of Selected International Mines**

Mine	Exports	Taxes	Local Jobs	Jobs Multiply	Expenditure Multiply	Community Activities
Inti Raymi (Bolivia), Au	11.0%	NA	65%	3.8	2.79	Health, education, small business development, social capital development
Yanacocha (Peru), Au	6.5%	2.4%	90%	14	2.53	Health, schools, agriculture, food security, forestry
Antamina (Peru), Cu/Zn (Projected)	12.0%	12.5%	80%	6.2	1,42	Planned
Escondida (Chile), Cu	8.9%	10.5%	80%	5.7	5.7	Hospitals, cancer research, schools, technical training, supplier and vendor training, micro-enterprise
Candelaria (Chile), Cu	3.0%	0.5%	86%	1.70	1.76	Small health projects, primary and secondary schools, technical mine training, "environmental brigades"
Ok Tedi (Papua New Guinea), Cu/Au	20%	20%	91%	25.0		Physical and social infrastructure (US\$122 million), education and training (US\$8.5 million), landowner compensation (US\$36 million).
Bajo la Alumbraera (Argentina), Cu/Au	6%	2%	80%			
Cerro Vanguardia (Argentina), Au/Ag	6.4% of province total	2% of province total	90%	5.2%		Training, housing, schools, health
Sadiola Hill and Syama Mines (Mali), Au	41%	9.6%	78%	3.1	NA	Schools, water supply, medical centers, small social fund
Kelian (Indonesia), Au	4%	3%	98%	5.5		Health centers, training, physical infrastructure

**ANNEX I:  
Selected Mine Capital Development Costs**

Copper Mines					
Mine	Location	Capex	Production	Cost/Unit	Avg cost
		US\$ million	Tonnes Cu		
Antamina	Peru	2,296	250,000	9,184	
Escondida	Chile	2,300	851,000	2,703	
Candelaria	Chile	902	251,000	3,594	
Las Pelambres	Chile	1,360	246,000	5,528	
Couhassi	Chile	1,800	346,000	5,202	5675.699
Gold Mines					
Mine	Location	Capex	Production	Cost/Unit	Avg cost
		US\$ million	Ounces Au		
Kelian	Indonesia	211	438,400	481	
Pokrovskoye	Russia	88	84,000	1,048	
Kayragavah	Uzbekistan	30	58,000	517	
Shkolnoye	Russia	18	77,000	234	
Kubaka	Russia	280	310,000	903	
Guiro	Burkina Faso	4	8,500	471	
Amantaytau	Uzbekistan	250	320,000	781	
Bakyrchik	Kazakhstan	125	230,000	543	
Dzheruy	Kyrgyz Republic	128	150,000	853	
Kumtor	Kyrgyz Republic	452	700,000	646	
Leninogorsk	Kazakhstan	75	200,000	375	
Omolon	Russia	145	325,000	446	
Sukoi Log	Russia	250	350,000	714	
Zarafashan	Uzbekistan	105	310,000	339	
Bogsu	Ghana	110	100,000	1,100	
Mr. Muro	Indonesia	80	150,000	533	
Sadiola	Mali	303	386,000	785	
Ayanfuri	Ghana	36	46,000	783	641.8099

Source: World Bank staff estimates from published data.

**ANNEX J:  
Reform Experiences Of Selected Countries  
In The 1990s**

**a) Peru**

**Mining Law.** Peru has a long tradition in mining with diversified mineral production. The Peruvian government started a comprehensive economic reform program in 1990. Mining reform was initiated in 1992 with the enactment of the new Mining Investment Promotion Law (as an amendment to the General Mining Law) establishing mining rights as property that is freely mortgageable, transferable, and constitutionally protected against expropriation. Peru has a national grid system that limits all concessions to the shape of a closed polygon defined by the UTM coordinates of its corners, of a minimum of 100 hectares and a maximum of 1,000 hectares. There are no limits on the number and the term of the concessions. The concessions are granted on a first come, first served basis and the concession holders must pay annual surface rental fees that are significant for small and middle size mining companies. Security of tenure is guaranteed under Peru's Mining Law because the concessions granted thereunder are for exploration and mining. Concession holders must meet minimum production requirements after 8 years or else pay escalating surface rental fees.

**Fiscal Regime.** Peru does not impose royalties or production taxes and derives its mining revenues from the application of standard profit-based taxation. The standard corporate income tax is 30% of taxable income. Peru imposes a mandatory profit-sharing tax of 8% of pre-tax profits that constitutes a significant charge on corporate income. There are no exchange controls in Peru and mining companies benefit from VAT recovery credits for exports. Stability agreements are available under Peru's mining law.

**Institutional Arrangements.** Peru has an independent and modern cadaster and registry system administered by a financially independent agency within the Ministry of Energy and Mines, the Public Registry of Mining.

**Enterprise Reform and Privatization.** All of Peru's former state-owned enterprises (SOEs) have been privatized. The 10 million hectares that had been reserved for future exploration and exploitation by SOEs were released.

**Environmental Management.** Peru has adopted a sectoral approach to environmental management. The Ministry of Energy and Mines has exclusive jurisdiction to establish and enforce environmental standards for the mining industry. The Environmental Protection Regulation requires all new mining operations to prepare an Environmental Impact Statement (EIS) and all existing mining operations to establish a *Programa de Adecuacion y Manejo Ambiental* ("PAMA") which bring them into compliance with international environmental standards within a fixed number of years. Mining companies are also required to engage an independent environmental firm to conduct semi-annual audits of compliance with applicable environmental standards and PAMAs.

**Results.** Investor response to this mining sector reform in Peru has been overwhelmingly positive. Exploration expenditures increased about twenty fold between 1990 and 1997, when it reached US\$ 166.9 million (Metals Economic Group). Gold production increased rapidly to 127.7 tons in 1999 from 2.3 tons in 1992, when the Yanacocha gold project (Newmont Gold Corporation, USA and Buenaventura, Peru) started commercial production in 1992. The presence of national private companies, such as Buenaventura, Volcan, and Minsur, became more important to the national economy.

## **b) Mexico**

**Mining Law.** Mexico has a long tradition in mining, resulting in a wide variety of operations in size and commodities with a significant presence of domestic private enterprises. In 1992, the new Mining Law replaced the former requirement of government control and/or majority Mexican participation both in equity and management of mining companies and opened the sector to foreign investment (Torres and Doan, 1997). Exploration concessions are granted on a first come first served basis and security of tenure is guaranteed. Although mining concessions do not confer real property rights, exploration and exploitation concessions are freely transferable and pledgeable. The concession holders have two principal obligations under the Mining Law and Regulation: (1) comply with the applicable work/investment requirements which are designed to encourage voluntary relinquishment of uneconomical concession holdings, and (2) pay escalating surface rental fees depending on the size and year in the life of the concession.

**Fiscal Regime.** Mexico derives its mining revenues from a profit-based taxation system and does not impose royalties. Mining companies have to pay an internationally competitive income tax of 34% and the rules on deductibility of expenses and carrying forward losses permit rapid recovery of capital, which encourages investment in mining. Mining companies must pay 10% of their profits to their employees annually, which represents a significant financial burden. Import duties range from 10 to 20% and exports are tax-exempt. There are no exchange controls in Mexico.

**Institutional Arrangements.** The National Secretariat of Energy, Mines and Parastatal Industry ("SEMIP") administers the Mining Law and is in charge of a modernized cadaster. Concessions are granted under a centralized administrative system.

**Enterprise Reform and Privatization.** In the late 1980s, the government began privatization of the mining sector. 80% of land area previously held by the State has been released for concessions.

**Environmental Management.** There is a general approach to the environmental management of Mexico's mining sector. The Environmental Law provides for general norms that have to be complied with by all industries and requires that an Environmental Impact Assessment (EIA) be prepared and approved by the Secretaria de Desarrollo Social ("SEDESOL") before the exploitation of a mine. The Camara Minera de Mexico ("CAMIMEX"), in collaboration with SEMIP and SEDESOL, developed specific

environmental norms for the mining sector which they have separated into three categories: (1) the legally binding norms, (2) the recommended norms, and (3) the instructions.

**Results.** The interest that the new Mining Law generated among foreign investors resulted in about a six-fold increase in exploration investment between 1990 and 1997 when it reached US\$ 184.1 million (Metals Economics Group). Minerals and metals production in the country have also increased steadily since the early 1990s, and mining is currently one of the few sectors of the Mexican economy that have grown substantially during the past decade (World Bank, 1996).

### **c) Bolivia**

**Mining Law.** Bolivia made minor changes to its Mining Code in 1991, and then enacted an entirely new Mining Code in 1997, containing several innovative features. Bolivia adopted a system of standard sized quadrangles based on a national grid as the component units for establishing the territorial limits of a mining concession. Under the new Bolivian Mining Code, exploration and mining rights are bundled together in a single, unified exploration and exploitation concession. Concessions in available areas are granted on a first come, first served basis without review of the technical and financial qualifications of the applicant. They are freely transferable and mortgageable, subject to registration requirements but not to prior governmental approval. There is no term limit on concessions granted under the Bolivian Mining Code, as long as the holder pays the annual surface rental fee per hectare of the concession area (the "*patente*") on time. The level of the surface rental fees is relatively high.

**Fiscal Regime.** Bolivia charges *ad valorem* royalties on sales of extracted minerals at rates established in the Mining Code. The rate for gold varies from 0.01% to 7% of the officially established sales price (based on internationally quoted prices), depending on the value of gold. For zinc, royalty rates range from 1% to 8.43%. For tin, the rates range from 1% to 5%. Income tax paid is credited against the royalty obligation, such that taxpayers in effect pay income tax or royalties, but not both. All other taxation is pursuant to the general tax laws and regulations rather than the Mining Code. Income is taxed at a 25%, after expensing of pre-production and other costs and depreciation of capital costs over 8 years on a straight-line basis. Losses can be carried forward indefinitely. Bolivia also imposes a 25% additional profits tax on net after tax income after deduction of (1) an investment allowance of up to 33% of investments in exploration and exploitation activities; and (2) a production allowance based on 45% of annual net sales value, up to US\$50 million. The withholding tax on dividends, interest and salaries paid to foreigners is 12.5%, non-deductible. Import duties are about 5%. VAT of 13% is charged on imported and locally purchased equipment, of which 55% is refunded within about four months.

**Institutional Arrangements.** As part of its mining sector reform, Bolivia simplified and streamlined the functions of its Mining Superintendency, by modernizing and standardizing the criteria for locating concession boundaries, reducing the opportunities and incentives for private challenges to established mining rights, and limiting the adjudicative aspects of its concession granting procedure. Bolivia also established a modern, computerized mining cadaster managed by the Technical Service of Mines.

**Enterprise Reform and Privatization.** Between 1986 and 1994, Bolivia downsized the state-owned mining corporation, COMIBOL, from a bloated and inefficient operator of uneconomical, aged mines – many of which were nationalized in the 1950's – into a minimally staffed holding company. In the early nineteen-nineties, it tried to promote joint ventures with COMIBOL for the development of various identified deposits, with generally disappointing results. Some properties were transferred to private investors who undertook investment commitments under Bolivia's "capitalization" program. The attraction of private capital investment into certain other state-owned properties was hampered by Constitutional prohibitions against the transfer of those properties.

**Environmental Management.** The Mining Code contains a chapter on environmental management that clarifies how the requirements of the general Environmental Law are to be applied to the mining sector. Exploitation activities require an environmental impact assessment and an environmental permit as a condition for operations. Exploration activities do not require an EIA, but are subject to mitigation and rehabilitation norms established for the sector. Concession holders are not responsible for environmental damage caused prior to the later of (a) the effectiveness of the general Environmental Law, or (b) the grant of the concession, provided that the holder causes a complying environmental audit of the concession area as of that date to be completed at the holder's expense.

**Results.** An American company, Battle Mountain Gold (now part of Newmont Gold Corporation) developed its successful Inti Raymi Project on a known gold deposit in the early 1990's, while Bolivia was in the reform process. Unfortunately, Bolivia's current Mining Code took effect just weeks before the Bre-X scandal broke, leading to a collapse of the international market for high risk exploration capital. Bolivia's investment results have been disappointing since that time. Nevertheless, the country has a well-established mining tradition dating to at least the 16<sup>th</sup> century, and several credible private national mining companies, such as COMSUR.

#### **d) Argentina**

**Mining Law.** Since the early 1990s, Argentina has undertaken a comprehensive economic reform program supported by the World Bank. Efforts to establish an enabling environment for private sector investment in mining are a major part of the reform agenda. The Mining Investment Law, which removed barriers to private investment in the mining sector, was enacted in 1993. The Mining Code of 1886 was modified in 1995 and allowed any person, whether legal entity or individual, to explore exclusively in a licensed area (Albarracin, 1997). Because Argentina has a decentralized political system under which each province administers itself under its own laws, mines are national or provincial property depending on where they are located. Mining titles are considered property rights that are freely transferred.

**Fiscal Regime.** The Mining Investment Law No. 24.196 provides for fiscal stability for 30 years and imposes a maximum of 3 % of royalties on the "mine-head" value of the extracted minerals. Mining activities are exempted from assets tax and import taxes. There is a 5% tax credit for investment in environmental activities.

**Institutional Arrangements.** Each Province has its own modernized cadaster and registry system. The Argentina Mining Sector Technical Assistance Project (PASMA) of the World Bank has been implemented to modernize the public mining institutions at the national and provincial level to provide more efficient public services.

**Enterprise Reform and Privatization.** A privatization program was systematically conducted by the Government of Argentina in 1990-91; but there were no significant mining SOEs.

**Environmental Management.** Argentina has a sectoral approach to the environmental management of the mining sector. The Mining Code requires the holder of a mining right to file an environmental impact report to the regulatory authority.

**Results.** The result of Argentina's reform has been the building of a new sector in the Argentine economy. Investment for exploration - which was negligible in 1990 - reached US\$ 122.1 million in 1997 (Metals Economics Group). Three new major mines have been developed - Bajo de la Alumbrera (copper), Salar del Hombre Muerto (lithium), and Cerro Vanguardia (gold).

#### **e) Brazil**

**Mining Law.** The reform of the 1967 Mining Code in the mid-nineties, the federal constitutional amendment N. 6 which removed the prohibition against foreign investor controlled mineral activities, and the privatization of the CVRD have effectively simplified the conditions for private access to mineral resources and liberalized Brazil's mining regime. A 1996 law has improved, and 1999 draft law No. 151 would further improve, the legal framework for mining by removing the requirement of financial capability and availability of funds for exploration, clarifying the functions of the issuing authorities and allowing the free transfer of mining rights during the exploration stage. The mining concessions are granted on a first come, first served basis and security of tenure is guaranteed. Although mining concessions do not confer real property rights, exploration and exploitation concessions are freely transferable and pledgeable. The concession holder must pay an annual rental fee and a share of the mining revenues to the landowner, which is 50% of the Federal Royalty.

**Fiscal Regime.** The reform of the tax regime applicable to the mining sector has resulted in a more competitive environment for foreign investors through the application of the following measures: the reduction of the tax burden on repatriation of capital, profits and dividends, as well as on the remittance of royalties and interest; the elimination of the restrictions on foreign investors' participation in the Brazilian stock exchange; and the opening of financing lines in the BNDES System to foreign investors residing in Brazil. Mining companies are subject to the general tax law and must pay a federal royalty which is no more than 3% of the net revenue from the sales of the mineral product. Under the general tax law provisions, mining companies have to pay an income tax at the rate of 15% of the taxable income, the portion of the taxable income over R\$240,000 (about USD 113,744 as of March 28, 2001) being charged an extra tax at the rate of 10%. Since 1999, mining companies must pay

income tax based on the following systems which depends on the size of their total revenues: (1) Quarterly or Annual Taxable Income system for companies who have total revenues of R\$ 24 million and (2) Assumed Income system for companies who have total revenues inferior to R\$ 24 million. Mining companies must also pay a withholding tax on interest and royalties of no more than 15%, a social contribution tax on net income of 12% and several other social taxes.

**Institutional Arrangements.** The two main mining authorities are the Ministry of Mines and Energy (MME), which coordinates and formulates the Brazilian mineral policy, and the National Department of Mineral Production (DNPM), a governmental regulatory agency with decentralized offices in Brazil's regional districts which grants or recommends to the competent authorities the grant of mining rights, promotes and inspects mining activities. The Minister of MME grants concessions for mining activities and the General Director of the DNPM issues exploration permits. Brazil has a modern Cadaster and registry system.

**Enterprise Reform and Privatization.** As part of a comprehensive National Privatization Program started in the nineties, one of the world's largest mining companies, CVRD, was privatized in 1997. Another coal mining company Companhia Riograndense de Mineracao is still under state control.

**Environmental Management.** Brazil has adopted an integrated approach to environmental management, which is very advanced. In addition to strong constitutional provisions and Federal laws and regulation supporting the protection of the environment, the National Council for the Environment (CONAMA) has passed numerous resolutions concerning the instruments used to control the potential risks of a mining activity to the environment: the Environmental Impact Assessment Study (EIA), the Environmental License (LA) and the Plan for Recovery of Degraded Areas (PRAD). The EIA must be consolidated in the Environmental Impact Report (RIMA), which is submitted to the relevant state environmental agency in the National Environmental System (SISNAMA) for analysis and approval. The approval of the EIA/RIMA and PRAD is required before any mining company requests an LA, the approval of which is a condition to mining operation.

**Results.** The result of Brazil's reform efforts has been the building of a new sector in the Brazilian economy. Total private investment in minerals exploration was USD 189.6 million in 1997, but fell to USD 84.6 million in 1999. The largest mining investment planned for the coming years in Brazil is the Salobo project, a joint-venture between CVRD and Anglo-American group. The project plans an investment of nearly US\$1 billion to produce copper and gold in the north of Brazil.

## **f) Tanzania**

**Mining Law.** The Mining Act, 1998 establishes transparent requirements and procedures for the grant of prospecting and mining licenses and limits considerably the scope of discretion left to the Minister. In particular, the Tanzanian law establishes a form of "first come, first served" presumption of entitlement to the grant of mineral rights, imposes no state participation in private mining projects, and authorizes stability agreements between the State

and mineral rights holders or applicants. Tanzania requires an applicant to demonstrate the existence of a commercial deposit and an efficient and beneficial use of the mineral resources as a condition for obtaining a special mining license. However, it also enables an exploration license holder to obtain a retention license in order to hold onto an area for up to five years, renewable once for a like term, after expiration of the prospecting license and its renewals. Mineral rights are transferable under the Mining Act, 1998, provided that the prior written consent of the licensing authority (not to be unreasonably withheld) is required unless the transfer is to an affiliate and the latter's obligations are suitably guaranteed, or the transfer is to a financial institution to secure financing.

**Fiscal Regime.** Tanzania lowered royalty rates to 3% of "netback value" on all minerals other than diamonds, and 5% on diamonds. Other taxes are payable in accordance with the general tax laws, and are not set out in the mining law. The income tax rate is 30% and there is no additional profits tax. For the calculation of taxable income, equipment is depreciated on a straight line basis over 8 years. Pre-production exploration and development expenses are carried forward and expensed in the first year of production., except for feasibility study expenses which are not deductible. Losses may be carried forward indefinitely. The withholding tax on dividends and salaries paid to foreigners is 10% and 3%, respectively. No import duties or VAT are levied on mining equipment.

**Institutional Arrangements.** The mineral licensing function for mechanized mining is administered by the Ministry of Energy and Minerals. A new Office of the Commissioner of Minerals carries out geological mapping activities, develops and provides information on the geology of the country, and licenses artisanal miners through its zonal offices. The Tanzania Investment Act of 1997 created the Tanzania Investment Centre as a one-stop shop to promote, coordinate and facilitate investment in all sectors of the Tanzanian economy. Environmental compliance is regulated by the National Environmental Council created under the National Environmental Management Act of 1983.

**Enterprise Reform and Privatization.** Historically, mining has not played a major role in the economy of Tanzania. Therefore, enterprise reform and privatization were not key components of mining reform there. The Mineral Policy of Tanzania, issued by the Ministry of Energy and Minerals in October 1997, emphasizes the role of the Government as regulator, promoter, facilitator and service provider to the private sector and not as a direct participant in operations.

**Environmental Management.** Tanzania incorporated some environmental protection requirements into its 1998 mining law. An EIA for proposed mining operations, prepared by an approved independent consultant, must be submitted as part of the application for a special mining license. Acceptability of the EIA is a condition for the grant of a special mining license. The Mining Law contains provisions allowing for the amendment of EIAs and requiring the posting of a bond if and when the holder of a special mining license fails to fulfill his impact mitigation obligations.

**Results.** An exploration boom started in the greenstone belts at the southern end of Lake Victoria from the mid-1990s. Exploration expenditures in the country rapidly increased to

US\$ 59.3 million in 1997 from US\$ 3.3 million in 1994 (Metals Economic Group). Several exploration projects are in advanced stages, such as: Bulyanlulu Gold Prospect (Barrick Gold and Sutton Resources, Canada); Golden Pride Gold Mine (Resolute Ltd., Australia and Samax, UK); and Geita Gold Mine (Ashanti Goldfields, Ghana and AngloGold, UK).

#### **g) Burkina Faso**

**Mining Law.** A new Mining Code, which was enacted in October 1997, has improved and simplified the legal and tax regime for mining. The new law has extended the permit validity periods (3 years for exploration permits, 10 years for small scale exploitation permits and 20 years for industrial exploitation permits) and provides for greater land areas. The State takes a mandatory carried 10% participation in all mechanized mining ventures. Permit holders must comply with annual spending requirements in order to maintain their rights. Mining titles are transferable subject to the government's review of the eligibility of the transferee.

**Fiscal Regime.** The mining law provides special tax treatment for mining investors and a stabilization of the mining and tax regime for the holder of an exploitation permit during the validity of the permit. There is a fixed scale of fees for the grant of mining rights from CFA 200,000 for a prospecting authorization to CFA 5,000,000 for the grant of an exploitation permit. Surfaces rental fees range from CFA 5,000 per km<sup>2</sup>/year to CFA 500,000 per km<sup>2</sup>/year. *Ad Valorem* royalties are levied on the FOB value of diamonds at 7%, precious metals at 3% and other minerals at 4%. The finance and tax regime guarantees the repatriation of capital and profits, exemptions from customs duties on temporary imports of equipment, and exemptions from Value Added Tax and other taxes. The corporate income tax was reduced to 35% and the income tax on interest and dividends is 12.5%.

**Institutional Arrangements.** The organization of the mining institutions is currently being reformed. While the Ministry of Industry Commerce and Mines grants the mining permits after negotiations, the Bureau of Mines and Geology of Burkina undertakes exploration surveys and looks for partners for exploitation, and the Burkinabe Bureau of Precious Metals purchases and sells gold and other precious metals and participates in the creation of mining companies.

**Enterprise Reform and Privatization.** The privatization reform, which started in 1991, with the Structural Adjustment Plan, had a limited impact in the mining sector. The privatization of Burkina Shell is being considered by the Privatization Commission.

**Environmental Management.** The mining law requires the holder of an exploitation permit to submit with his permit application an EIS with a preservation and restoration program. The approval of the EIS is not a condition for the approval of an exploitation permit, however, but rather a condition for operating.

**Results.** Burkina Faso was able to capture a significant share of the African exploration boom of the mid-to-late 1990s, even before the enactment of its new Mining Code in October of 1997. Private investment in exploration peaked in 1996 at USD 32.4 million, then fell back to USD 10.2 million in 1999 (Metals Economics Group 1999). The number of exploration

permits issued grew from only one in 1990 to 137 in 1997. In 1998, gold was the country's second largest source of export revenue, after cotton. There are up to half a dozen gold projects in the pipeline that could become operating mines within the next five years. Among the companies active in Burkina Faso recently are Ashanti Goldfields, Billiton, Resolute, Semafo, High River Gold, Channel Resources and Placer Dome. Billiton took over the Perkoa zinc deposit in 1997 and was in advanced stages of drilling the deposit for pre-feasibility study purposes as of the end of 1999 (Mining Journal Annual Review 1999).

#### **h) Madagascar**

**Mining Law.** In 1999, Madagascar enacted a new Mining Code. The new code, and the implementing regulations promulgated early in 2000, include the following features:

1. All mineral rights are granted through a transparent procedure administered by the Office of the Mining Cadaster.
2. They are awarded to the first eligible person who requests a permit in an available area and complies with the applicable procedural requirements.
3. There is no requirement to demonstrate technical or financial capability to qualify for the grant of an exploration or exploitation permit
4. Exploration and exploitation permits are freely transferable, mortgageable and inheritable with no requirement of prior governmental approval.
5. Only the holder of an existing exploration permit can apply for an exploitation permit within the area covered by the existing permit.
6. An applicant for an exploitation permit is not required to demonstrate a discovery of commercially exploitable minerals; but is required to file an environmental impact statement.
7. There is no minimum work or investment requirement.
8. There is a grid system for the identification of exploration and exploitation permit areas.

**Fiscal Regime.** Royalties have been reduced to 2% of sale price at time of sale. VAT relief is provided for exporters through an expedited refund system. A draft major investment promotion law would lower the income tax rate to 25% on the extraction business, and 10% on processing. It would also cap numerous taxes on assets.

**Institutional Arrangements.** A new, computerized Office of the Mining Cadaster, financially autonomous but under the Ministry of Energy and Mines, was opened in 2000. An Environmental Cell for mining oversees the environmental protection requirements for exploration and small-scale mining. Other organizational changes in the mining administration are being implemented in response to an institutional audit carried out in 1999-2000.

**Enterprise Reform.** The 1999 Mining Code compelled the release of excess land areas held for future exploration by the state-owned enterprise, Office of National Mines and Strategic Industries (OMNIS). OMNIS continues to negotiate joint ventures with international investors. It is subject to the same regulations as private companies. The few remaining state-owned mines, which are small, have not been privatized.

**Environmental Management.** A new decree on harmonization of investments with the environment, requiring an Environmental Impact Study and a Project Environmental Management Program (PGE) for all mining operations except small scale mining, was adopted in 1999-2000. The evaluation of the Environmental Impact Study (EIS) for a mining project is carried out by a joint committee of representatives of the ministries involved, including the Ministry of the Environment and the semi-autonomous National Environmental Office. An Inter-ministerial Order of the Ministers of Mines and the Environment, respectively, establishes the sectoral environmental requirements for exploration and small scale mining, including guidelines and forms, while clarifying the implementation of the general EIS requirements to exploitation projects. These requirements are in turn administered by the Environmental Cell of the mining administration.

**Results.** Madagascar, known for its gem production, has never had a major mine. However, two major investment projects by two of the world's leading mining companies are at the feasibility study stage there as of the end of 2000. Although exploration investment is currently limited, there are two advanced stage exploration projects for Toalagnaro mineral sands (Rio Tinto subsidiary QIT-Fer) and Ambatovy nickel and cobalt (Phelps Dodge) deposits.

#### **i) Mongolia**

**Mining Law.** Mongolia enacted a Minerals Law in 1997 that institutes a market-based mechanism for access to and maintenance of mineral rights. Such rights are granted on a first come, first served basis administered by an Office of Geological and Mining Cadaster, with no required showing of technical and financial capability or required proof of discovery of a commercial deposit. Mineral rights in Mongolia are maintained in effect by payment of an annual fee per hectare, and are freely transferable.

**Fiscal regime.** Royalties were reduced to 2.5% of market value. Mining companies in Mongolia are subject to taxation in accordance with the general tax laws, but the Minerals Law of 1997 establishes certain tax accounting rules for the sector: pre-production exploration and development costs are amortized on a straight-line basis over five years commencing with the year when production begins; fixed assets are depreciated over five years on a straight line basis; and losses may be carried forward for up to three years. Stability agreements are available under the Minerals Law. A 10% excise tax on gold exports, however, enacted in 1999, together with the current low market price of the commodity, has significantly neutralized the positive impact of the reform.

**Institutional arrangements.** In order to implement the 1997 Minerals Law, Mongolia created the Geological and Mining Inspection Agency (OGMI) which monitors compliance with the new law, and the Mineral Resources Authority of Mongolia (MRAM). The MRAM includes the new Office of the Geological and Mining Cadaster (OGMC), which grants and administers exploration and mining rights, the Office of Geology, which functions like a geological survey; and the Mining Office, which provides relevant research and information on developments in technology, equipment, investment conditions, socio-economic impacts of mining and mineral commodity price movements.

**Enterprise reform.** In the mid-nineties, the Government of Mongolia privatized certain assets of the state-owned copper company, Erdenet. It also restructured Erdenet and other state-owned enterprises as for-profit commercial enterprises. The SOEs continue to seek out joint venture projects with various partners.

**Environmental Management.** Mongolia has a particularly well-developed body of environmental law, including some 13 or more statutes. The Minerals Law contains specific provisions on the application of environmental permitting and monitoring requirements to the mining industry. Environmental management plans must be submitted to the region where exploration will take place within 30 days of the grant of an exploration license. The exploration license holder must set aside 50% of the approved environmental budget in a blocked local bank account to guarantee performance. An EIA and an environmental protection plan must be submitted either before or after the grant of an exploitation license, and must be approved as a condition for operating. The mining license holder must likewise set aside 50% of the approved environmental budget in a blocked local bank account to guarantee performance.

**Results.** Following enactment of the 1997 Minerals Law and establishment of the new mining cadaster office, Mongolia experienced an exploration boom. Promising discoveries were announced in 1998. BHP, Rio Tinto, Phelps Dodge and numerous junior companies have all been active in exploration in Mongolia. In 1999, exploration investment rose to USD 2.5 million. The enactment of the 10% excise tax on gold exports prevented some projects from being economical, however. Nevertheless, AGR Ltd., a subsidiary of Resolute Mining of Australia, may be approaching the development stage of the Boroo gold deposit not far from Ulanbataar.

**ANNEX K:  
Selected Principles of Mining Sustainable Development**

**Environmental Stewardship Principles**

- Comply with or exceed the requirements of all applicable environmental laws and regulations and, in jurisdictions where these are absent or inadequate, apply cost-effective technologies and management practices to ensure the protection of the environment as well as worker and community health.
- Make environmental management a high corporate priority and the integration of environmental policies, programs and practices an essential element of management.
- Provide adequate resources and build requisite capabilities so that employees at all levels are able to understand and fulfil their environmental and community responsibilities.
- Review and take account of the environmental impacts of exploration, infrastructure development, mining or processing activities, and plan and conduct the design, development, operation, remediation and closure of all facilities in a manner that optimizes the economic use of resources while reducing adverse environmental impacts to acceptable levels.
- Employ risk management strategies in design, operation and decommissioning, including the handling and disposal of waste. If a preliminary risk assessment indicates unacceptable risks for human health or the environment, the lack of full scientific certainty will not be used as a reason to delay the introduction of cost-effective measures to reduce environmental and human health risks to acceptable levels.
- Develop approaches in the early stages of exploration projects that take into consideration related environmental and community impacts.
- At the initial phases of mining or processing projects, develop closure concepts and/or plans that address both environmental and community-related issues.
- Review and update closure plans in light of technological advances and operational changes
- Ensure that adequate financial resources or surety instruments are in place to meet the requirements of remediation and closure plans.
- Implement effective management systems; conduct regular environmental reviews or assessments and act on the results.

- Develop, design and operate facilities and conduct activities taking into consideration the efficient use of energy, water and other natural resources and materials, including their recycling and reuse, the minimization of waste and the responsible management of residual materials.
- Develop, maintain and test emergency procedures in conjunction with the provider of emergency services, relevant authorities and local communities.
- Work with governments and other relevant parties in developing scientifically sound, economic and equitable environmental standards and procedures, based on reliable and predictable criteria.
- Respect legally designated protected areas and acknowledge that certain areas may have particular ecological or cultural values alongside development potential and, in such instances, consider these values along with the economic, social and other benefits resulting from development.
- Contribute to the conservation of flora and fauna affected by exploration, extraction and processing activities.
- Support research to expand scientific knowledge and develop improved technologies to protect the environment, promote the international transfer of technologies that mitigate adverse environmental effects, and use optimal sustainable technologies and cost-effective practices that take due account of local cultures and customs and economic and environmental needs.

#### Product Stewardship Principles

- Develop or promote mineral products and processing technologies that are safe and that are efficient in their use of energy, natural resources and materials.
- Advance the understanding of the properties of minerals mined and their life cycle effects on human health and the environment.
- Inform employees, the community, customers and other relevant parties concerning mineral-related health or environmental hazards and recommend improved risk management measures.
- Conduct or support research and promote the application of new technologies to further the safe use of materials produced by the mining industry.
- Encourage product design, technologies and uses that promote the recyclability as well as the economic collection and recovery of materials.
- Private companies should work with government agencies, downstream users and others

in the development of sound, balanced and scientifically based legislation, regulations and product standards that protect and benefit employees, the community and the environment.

### Community Responsibility Principles

- Respect the cultures, customs and values of individuals and groups whose livelihoods may be affected by exploration, mining and processing.
- Recognize local communities and other affected stakeholders and engage with them in an effective process of consultation and communication.
- Assess the social, cultural, environmental and economic impacts of proposed activities and engage with stakeholders in the design of community development strategies.
- Contribute to and participate in the social, economic and institutional development of the communities where operations are located and encourage the establishment of sustainable local and regional business activities.
- Reduce to acceptable levels the adverse environmental and social impacts on communities of activities related to exploration, extraction and closure of mining and processing facilities.
- Respect the authority of national and regional governments; take into account their development objectives; contribute information related to mining and mineral processing activities; and support the sharing of the economic benefits generated by operations.

### General Corporate Responsibilities

- Adhere to ethical business practices and, in so doing, contribute to the elimination of corruption and bribery, to increased transparency in government-business relations, and to the promotion of respect for human rights internationally.
- Apply consistent corporate policies in all operations and encourage joint venture partners to adopt principles contained in the present Charter.
- Encourage contractors and suppliers to implement practices that are consistent with corporate policies in order to improve their environmental and social performance.
- Provide public reports on activities and progress relating to economic, environmental and social performance.

**ANNEX L:  
Railway Transportation Statistics**

**Table L.1  
Rail Transport of Selected Mineral and Other Commodities  
1999 and 2000**

<b>Commodity (thousand tonnes)</b>	<b>1999</b>	<b>% of total</b>	<b>2000</b>	<b>% of total</b>
Coal	58,259	47.0	74,120	47.0
Oil products	15,294	12.0	17,631	11.0
Iron ores	13,366	11.0	19,191	12.0
Non-Ferrous ores	9,636	8.0	10,173	6.5
Ferrous ores	4,124	3.0	4,717	3.0
Construction materials	5,572	4.5	7,556	5.0
Chemicals	1,301	1.0	787	0.5
Cement	680	0.5	966	0.6
Timber	400	0.3	709	0.4
Grain	4,801	4.0	7,329	5.0
Transit freight	4,824	4.0	5,657	3.6
Other	5,654	4.5	7,454	4.7
<b>Totals</b>	<b>123,911</b>		<b>156,290</b>	

Source: Ministry of Transportation, Railways Department

**Table L.2  
Transportation Costs According to Selected Distances  
US\$ per tonne**

<b>Commodity</b>	<b>200 km</b>	<b>500 km</b>	<b>1,000 km</b>	<b>1,500 km</b>	<b>2,000 km</b>
Coal	0.92	1.54	2.53	3.53	4.5
Ore concentrates	1.36	2.26	3.71	5.16	6.56
Oil and Gas	1.81	3.14	5.23	7.41	9.50
Steel	2.72	4.53	7.41	10.32	13.11

Source: Ministry of Transportation, Railways Department

**ANNEX M:  
Minutes and Attendance List of Seminar**

**MINUTES  
from the seminar on Mining Sector development policy and strategy  
with participation of  
the World Bank**

Astana

#1144

September 13-14, 2001

Attended: N. Kakenov, A. Tauteev, E. Ryaskov, Craig Andrews, Peter van der Veen, R. Solodchenko, M. Aitenov, E. Karibaev, E. Abdrakhmanov, B. Omarova, A. Toleubaev, S. Petrovich, M. Aleshko, Kuskov, Ph. Veryutin, A. Gainulliev, R. Marnishev, S. Kozyr, M. Plakhotnikova, Zh. Knatov, R. Hurmambetov, A. Nurmukhanova, G. Zhalyalitdenova.

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Agenda: the World Bank Report "Strategic Review of the Mining and Metallurgical Sector in Kazakhstan". Task Manager - Mr. Craig Andrews, Senior Mining Specialist.

Spoke: Mr. N Kakenov, Director, Heavy Industry Department, Ministry of Energy and Mineral Resources; Mr. E Karibaev, Deputy Chief, Geology and Sub-Soil Protection Committee, Ministry of Energy and Mineral Resources; Mr. E Abdrakhmanov, Director, Intersectoral Coordination Department, Ministry of Economy and Trade; Mr. Denis Price, President of the Kazakhstan Mining Association; Mr. Craig Andrews, Principal Mining Specialist, World Bank; Mr. Peter van der Veen, Mining Sector Specialist, World Bank; Mr. R Solodchenko, Acting Manager, World Bank; Mr. A. Tulebaev, International Cooperation and State Scientific and Technical Programs Department, Ms. S. Kozyr, Representative of the Territorial Division of Environment Protection, Ministry of Natural Resources and Environment Protection; Mr. E Ryaskov, Deputy Director, Heavy Industry Department, Ministry of Energy and Mineral Resources; Mr. A. Gainulliev, Senior Specialist, Major Tax Payers Department, Ministry of State Revenues; Ms. R. Zhazykbaeva, partner of legal company "Equitas".

1. The present Review of the Mining and Metallurgical Sector was conducted by a Study team composed of staff and consultants of the World Bank.  
Take into consideration the presented report of the World Bank.
2. To recommend to Ministry of Economy and Trade, Ministry of State Revenues, Ministry of Finance, State Property and Privatization Committee, Ministry of Transport and Communications and to the related enterprises to study the presented report of the World Bank in detail and in one month contribute their proposals to the action plan to be developed to the Ministry of Energy and Mineral Resources.
3. Ministry of Energy and Mineral Resources – to summarize and prepare the action plan and send it to Ministries for implementation.

Vice-Minister

P. Nefyodov



- Protection Committee, Ministry of Energy and Mineral Resources
12. Mr. Esirkep Abdrakhmanov  
Director, Intersectoral Coordination Department, Ministry of Economy and Trade
13. Ms. Bahytzhamal Omarova  
Chief, Basic Branches Division, Intersectoral Coordination Department, Ministry of Economy and Trade
14. Ms. Asiya Nurmukhanova  
Senior Specialist, Basic Branches Division, Intersectoral Coordination Department, Ministry of Economy and Trade
15. Mr. Almaz Tulebaev  
Director, International Cooperation Department, Ministry of Energy and Mineral Resources
16. Mr. Stanislav Petrovich  
Senior Research Officer, Republican Enterprise “National Center on Complex Mineral Processing”, Ministry of Energy and Mineral Resources
17. Mr. Michael Aleshko  
First Deputy Senior Engineer, JSC open type “Sokolovsko-Sarbayskaya Mining Manufacturing Association” (SSMMA)
18. Mr. Alexander Kuskov  
Senior Geologist, JSC open-type “SSMMA”
19. Ms. Margarita Plakhotnikova  
Chief, Analysis and Forecasting Division, JSC open-type “Kazzinc”
20. Mr. Fyodor Veryutin  
Deputy Senior Surveyor, Coal Department, JSC open-type “Ispatkarmet”
21. Mr. Amantai Gainulliev  
Senior Specialist, Large Tax Payers Department, Ministry of State Revenues
22. Mr. Zhandarbek Knatov  
Deputy Chief, Mining Division, Heavy Industry Department, Ministry of Energy and Mineral Resources
23. Ms. Elena Chekhonina  
Senior Specialist, Heavy Industry

- Department, Ministry of Energy and Mineral Resources
24. Mr. Beibut Toleuov  
Deputy Chief, Mining Management Division, Heavy Industry Department, Ministry of Energy and Mineral Resources
25. Mr. Ruslan Mamishev  
Economist, Asian Development Bank
26. Ms. Saule Kozyr  
Representative, Territorial Division on Environment Protection, Ministry of Natural Resources and Environment Protection, Astana
27. Ms. Gulsum Zhalyalitdenova  
Press Secretary, Ministry of Energy and Mineral Resources







**IMAGING**

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