

FAIRNESS OPINION ON THE AYNAK MINING CONTRACT

*PREPARED BY:
INTERNATIONAL ADVISORY COUNCIL ON SUSTAINABLE RESOURCE
DEVELOPMENT FOR AFGHANISTAN*

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EXECUTIVE SUMMARY

In 2006, the Islamic Government of Afghanistan made known that it would offer the Aynak copper deposit concessions by tender. Data were made available to interested parties in September 2006 and expressions of interest were called in October 2006. Prequalified bidders were selected in November 2006. Bids were called for May 2007 and a Preferred Bidder was selected in September 2007. Negotiations were entered into in January 2008 and an agreement was initialled on 08 April 2008 with a joint venture between China Metallurgical Group Corporation and Jangxi Copper Corporation hereinafter referred to as "MCC".

MCC has proposed to construct an open pit mine, concentrator, smelter, refinery, coal-fired power station, water supply and distribution, and related infrastructure at a cost of US\$2.8 billion with a projected capacity of 220,000 tonnes of refined copper annual production.

At the end of June 2009, H.E. Minister Mohammed Ibrahim Adel, Minister of Mines of Afghanistan, requested that the International Advisory Council (IAC) review the Contract as per the IAC terms of reference, in this case as concerns the fairness of the contract. The review was limited to the main contract and did not include eleven ancillary agreements integral to the Contract nor was the IAC provided with any documents related to technical analysis.

The IAC did not find any serious problems concerning fairness of the Contract. The IAC considers the document to be reasonably well constructed and clearly written. However, the IAC does have concerns about lack of guidance in the Contract for the application and management of the Contract and those concerns make up most of the body of the report.

The Contract requires a Bankable Feasibility Study and a Mine Development Plan as the working blueprint for the Aynak Project. However, the Contract does not specify the content of the Bankable Feasibility Study (BFS) and the Mine Development Plan (MDP) that will be derived from it. Nor does it specify the content of the Environmental Assessment (EIA) and the Environmental Management Plan (EMP), both of which are considered by the IAC to form integral parts of the BFS.

The IAC recommends that the Parties to the Contract meet as soon as reasonably possible and that they agree terms for the BFS, MDP, EIA, and EMP. The IAC recommends that the Ministry of Mines be supported by good and experienced advisors and consultants during that set of deliberations. The IAC further recommends that once these reports have been accepted by the Ministry of Mines that they should be entered into Appendix 6 of the Contract so as to be binding on the Parties. These documents would effectively replace the Technical and Financial proposals of MCC.

In establishing the Terms of Reference for especially the EIA and EMP, the Parties must incorporate the Equator Principles and guidelines and standards defined by the International Finance Corporation (IFC) for environment, social matters, health, and safety. The IAC also recommends the incorporation of Best Available Techniques (BAT) as a standard for project design.

The IAC emphasises that the Contract must be administered and managed by practical, experienced people who understand that flexibility is required under the difficult circumstances of Afghanistan. The IAC further recommends that donors and the multilateral agencies recognise that the Contract is an early step in the direction of copper production in Afghanistan and that it will require their proactive support.

While recognizing the need for practicality and the urgency of implementation of an agenda for the Aynak Project, the IAC emphasises that it is in the best interest of the Parties to the Contract to adhere to international standards of good practice as developed by the world mining industry. In the interests of practicality and good practice and recognising that data and technical information are not uniformly available for the various components of the Project, the IAC recommends that the BFS, MMP, EIA, EMP and associated processes be split into three stages, namely:

- Stage I: Central deposit open pit mine, sulphide ore processing, oxide ore stockpiling, concentrator, water supply and distribution system, site infrastructure, power generation, and coal mine(s);
- Stage II: Smelter and refinery, oxide ore leach, phosphate mine, fertiliser plant;
- Stage III: Underground mine in Central and West deposits

This recommendation is based in part on recognition that insufficient information is available to support a BFS and associated studies because of the need to control sulphur dioxide and produce sulphuric acid. The acid must be used or disposed of and since the phosphate fertiliser project as the proposed option for use of the acid cannot at this point be supported by available phosphate ore, no integrated BFS is possible. The production of leached copper from oxide ores is also dependent on the availability of acid from the smelter so this portion of the Project is also recommended for the Stage II BFS.

Since a BFS must be supported by defined ore reserves and since it is unlikely that sufficient data on deeper resources can be available in a timely fashion, the BFS for the underground mine should be delayed until such data are available, hence the recommendation that it be placed in Stage III.

The IAC considers the power plant to be an urgent Project requirement. However, the power plant must also conform to international environmental standards preferably through the use of clean coal technology. If it is to meet the terms of the Kyoto Protocol, then other options must also be considered. The IAC recommends that the power plant and coal mine(s) have their own separate BFS and associated documents.

Water supply and distribution is also a critical element of the first stage of the Project and should receive early emphasis and consideration in the BFS

The royalty of 19.5 per cent to be imposed when the copper price reaches US\$2.00 per pound is far beyond a normal royalty in the world mining industry. The Government of Afghanistan is currently offering other resource projects for tender, particularly in iron ore. Royalties of this size are unknown in the iron ore industry and the IAC considers it unlikely that any bidder will agree such terms. Since the

Aynak Contract requires that such taxes be adjusted to any more favourable terms as might be agreed on other projects, the IAC observes that it is likely the 19.5 per cent royalty will be adjusted at some future date.

The IAC supports the Contract provisions for local purchasing and recommends that consideration be given by donors and the Government of Afghanistan to support the development of local suppliers.

The IAC also supports the Contract provisions for local employment and further suggests that the Ministry of Mines supported by multilateral agencies and donors, develop a technical training programme in cooperation with Afghanistan educational institutions and institutions abroad so as to secure a good mix of technical standards and expectations.

The IAC agrees that security is a vital component in the development of the Aynak project. The IAC recommends that the Government of Afghanistan with international support carry out an analysis of security requirements during the time that the BFS is under way. This should be done in consultation with MCC and it should particularly focus on the project design as concerns security.

ACKNOWLEDGEMENTS

The members of the International Advisory Council (IAC) wish to thank His Excellency Minister Dip. Eng. Mohammed Ibrahim Adel for the opportunity to review the Aynak Mining Contract and to provide this Fairness Opinion.

This is the first such natural resources contract to be reviewed for the Ministry of Mines of Afghanistan and it is a privilege for the IAC to carry it out.

The IAC also wishes to acknowledge the support of Mr. Darryl Thorburn of the Programme Management Unit in the Afghanistan Ministry of Mines and Messrs. Craig Andrews and Sanjoy Rajan of The World Bank.

GLOSSARY OF ACRONYMS

BAT	Best Available Techniques, a set of guidelines for application of technology and industrial practice in environmental protection management
BFS	Bankable Feasibility Study
BGS	British Geological Survey
EIA	Environmental Impact Assessment as per the Minerals Law of the Islamic Republic of Afghanistan which includes by definition a Social Impact Assessment (SIA)
EMP	Environmental Management Plan as per the Minerals Law of the Islamic Republic of Afghanistan which includes by definition a social mitigation plan, plans for rehabilitation of sites to be exploited and a mine closure plan
MCC	the joint venture between China Metallurgical Group Corporation and Jangxi Copper Corporation
MDP	Mine Development Plan
PFP	Project Finance Plan
SDNRP	Sustainable Development of Mineral Resources Project
SIA	Social Impact Assessment

1.0 INTRODUCTION and BACKGROUND

1. In 2006, the Islamic Government of Afghanistan made known its intention to offer by public tender, concessionary rights to the Aynak copper deposit, which lies some 35 kilometres southeast of Kabul.
2. Data on the project were made available to interested parties on 25 September 2006. Submissions of indication of interest were required by 28 October 2006 and pre-qualified bidders were announced on 14 November 2006. Thirteen major companies registered expressions of interest. These companies were screened by the Ministry of Mines and nine companies were invited to submit bids in the form of a Financial Proposal and a separate Technical Proposal. The bid submission date was 28 May 2007 and all bids were opened on 02 June 2007.
3. The proposals were evaluated by the Afghanistan Inter-Ministerial Committee supported by Ministry of Mines staff, Gustavson Associates LLC of Denver, Colorado, William J. Crowl as Transaction Advisor, and others. The two strongest proposals were selected based on their Financial and Technical Proposals. The strongest bid was designated as the Preferred Bidder and the second strongest bidder designated as the Reserve Bidder in the event that negotiations failed with the Preferred Bidder.
4. The Preferred Bidder Proposal was accepted by the Inter-Ministerial Committee on 19 September 2007.
5. Extensive negotiations were entered into in January 2008 with China Metallurgical Group Corporation, and Jiangxi Copper Corporation operating as a joint venture consortium hereafter referred to as MCC. China Metallurgical Group owns 75 per cent of the joint venture. The main contract on Aynak was initialled in April 2008. Eleven ancillary Agreements form part of the contract including such important contacts as that for the coal-fired power generating station signed in February 2009. As at June 2009, all but two of those agreements had been signed.
6. Jiangxi Copper Company Limited is China's largest copper producer. The company manufactures 340,000 tons of copper annually from its mines, which include the Dexing and Yongping pits and the Wushan underground mine. It owns a copper smelter and refinery, and its majority-owned Jiangxi Copper Products subsidiary manufactures copper rods and wires. Other operations include gold and silver production. JCCL was formed in 1997 by parent Jiangxi Copper Corporation, which is owned by the Chinese government. Jiangxi Copper Corporation owns 48% of JCCL's shares. Other shareholders include USB AG of Switzerland at 5.2%. JCCL won the 2008 Chinese Mining Environmental Protection Award for the Dexing Copper Mine Acidic Waste

Water Treatment Project. MCC, a Chinese state-owned enterprise, is China's leading engineering contractor. It also operates mines in Papua New Guinea, Pakistan and Argentina. In July, Russian steelmaker Evraz Group joined forces with MCC to develop the Cape Lambert iron ore project in Western Australia. It is currently ranked at #486 on Fortune's Global 500 List.

7. China news services indicate that on 19 June 2009, MCC awarded China Second Metallurgical Construction Corporation the contract for the first phase of the early operation works at Aynak to include the mining area, concentrator, and administrative and social services in the concentrator area.
8. The Afghanistan Sustainable Development of Mineral Resources Project (SDNRP) funded by The World Bank provides for the formation of an International Advisory Council (IAC) composed of international experts covering the mining and hydrocarbons sectors with wide-ranging experience in technical issues, policy, investments and transactions. The aim of the IAC is to enhance sector governance by ensuring transparency, competition, and fairness in procedures and processes leading to contracts with private investors through the provision of third-party opinion on transactions. The Minerals and Hydrocarbons Laws provide for contracts to be approved by an Inter-Ministerial Committee upon proposition of the Minister for Mines and Industries. The purpose of the Council is to render an opinion in respect of: (1) the procedures and processes used to negotiate such agreements and contracts and, (2) the "fairness" of the terms and conditions of such agreements and contracts. The IAC will issue its opinions directly to the Minister of Mines for review and comment followed by a copy to the management committee of the Afghanistan Reconstruction Trust Fund accompanied by such comments as the Minister deems appropriate. This will reassure the donor community that the government is granting rights to develop the nation's natural resources in a transparent manner as well as provide comfort that this development will be "fair" and consistent with best practice.
9. At the end of June 2009, His Excellency Minister Mohammed Ibrahim Adel requested that the International Advisory Council (IAC) review the main Aynak contract and provide a report by 15 July 2009. The Ancillary Contracts were not included in the Minister's request. The IAC was provided with no documents other than the main Contract and the MCC Technical and Financial Proposal.
10. Since the IAC was not privy to the negotiation of the Aynak contract, this report concerns only Part 2 in Item 6 above related to the Council's responsibilities, i.e., the "fairness" of the Contract. The report covers the terms of the agreement and makes recommendations concerning the practicality, implementation, and application of the Contract. It also makes reference to potential applications of these developments in other resource projects as they are developed in Afghanistan.
11. The members of the IAC who prepared this fairness opinion report are Messrs. Brian Felske (Chairman), Patrick Gorman, and Paul Nelles.

2.0 GENERAL COMMENTS

12. The Aynak Project is the first of a series of resource projects to be offered by the Government of Afghanistan to the World investment community. Given the difficult circumstances in Afghanistan, this has been a courageous under-taking . The Government is to be commended for having successfully negotiated the business and political challenges to conclude this first contract on the Aynak copper deposit.
13. The Parties to the contract have envisaged a large, fully-integrated industrial complex that would be very difficult to design, organise, finance and manage under the best of circumstances. In the Afghanistan context, it is much more so with increased technical, financial, and scheduling risk.
14. It is important for the donor countries and the multilateral agencies to understand that this Contract is but the first step toward achieving production of copper in Afghanistan. Ongoing proactive support will be required in all areas, especially as involves the execution of the Government's side of the Contract.
15. It is understandable that the Government of Afghanistan wishes to maximise the value and the value-added of its resources through development of a fully integrated industrial facility. This has rarely been achieved in even the most stable and developed economies as a single project. It is therefore necessary that the Government of Afghanistan and the management committee of the Afghanistan Reconstruction Trust Fund understand that this Contract will have to be executed and implemented with care and flexibility. Inevitably it will take more time than expected.
16. As the Parties commence application of the Contract, the technical limits and economic potential of the Aynak mineral deposits will become more apparent. These will determine the level and degree to which Aynak can support vertical integration, large scale infrastructure, and ancillary operations and determine the degree to which benefits will flow from the Project.
17. The IAC found no serious problems affecting the fairness of the Aynak Contract as per the IAC's brief under the Afghan Reconstruction Trust Agreement and the SDNRP. The discussion and suggestions that follow in this fairness report are related to application and implementation of the Contract. The IAC believes that the points raised and recommendations made are for benefit of all Parties to the Contract.

3.0 GENERAL BUSINESS ARRANGEMENT OF THE CONTRACT AND RENEGOTIATION

18. MCC has committed in the Contract to develop the Aynak copper deposit, as a mine/concentrator complex with the intermediate product from the concentrator to be processed at a copper smelter and refinery. The Technical Proposal provided by MCC which forms part of the Contract envisages production of 220,000 tonnes of refined copper per year.
19. This level of production could be compared with major mines in the world copper industry such as:

Mine	Country	Production (2008) (tonnes)
Escondida	Chile	1,255,019
Chuquicamata	Chile	540,000
El Teniente	Chile	381,224
Collahuasi	Chile	452,000
Andina	Chile	219,554
Los Pelambres	Chile	339,200
Antamina*	Peru	343,700
Grasberg	Indonesia	496,000

*Plus 347,800 tonnes of zinc

World refined copper production in 2008 was 18.2 million tonnes.

20. The great mines listed in Section 18 are in a mature phase and some are in decline. The challenge before the world copper industry today is replacement of their capacity and increase of supply to meet the requirements of demand growth. Capital costs and operating costs have increased significantly and most of the deposits available in politically stable parts of the world have low ore grades and are therefore economically risky, especially when the large capital requirements of new mines are considered. For example, the large Tampakan deposit in Philippines now has an estimated capital cost of \$5.2 billion for 300,000 annual tonnes of contained copper production capacity (plus 320,000 ounces of gold annually). This is only for a mine, concentrator, and infrastructure operation. There will be no smelter, refinery or power plant. Antamina, also a mine/concentrator/infrastructure project, was completed in 2001 at a cost of \$2.3 billion. In its Investment Plan, MCC has proposed an investment of \$2.83 billion for the Aynak mine, concentrator, smelter, refinery, power plant, and infrastructure, a considerably larger industrial complex.

21. The Aynak complex and in part, Kabul, are to be supplied with electric power by a coal-fired generating station with a nominal capacity of 400 MW to be built and operated by MCC.
22. MCC is to construct a railway that will run to Tajikistan and presumably will provide not only service to the Aynak copper complex but also will provide commercial transport within Afghanistan.
23. MCC is to provide regional infrastructure including development of water supply from wells, and a water distribution system. In addition, MCC has committed to providing housing for its employees and their families, health care, schools, recreational facilities.
24. The Contract is very specific in its description of the obligations and responsibilities of MCC. The Government of Afghanistan negotiation team is to be congratulated for their skill in winning such commitments in the sale of the Aynak concession rights. Although the general conditions of these obligations are well-described, the Contract does not provide sufficient guidance to MCC in the implementation of its obligations, particularly with respect to procedures required. These aspects are addressed in the following Sections of this Fairness Opinion Report.
25. The IAC is firmly of the view that the general business conditions of Aynak and the generally unsettled conditions in Afghanistan will mean that the application of the Contract and its terms will have to be carried out in close and ongoing consultation between the Parties and with maximum flexibility. The IAC further wishes to emphasise that certain important aspects of the Contract will need to be modified as the Contract is applied during analysis and construction, and during the long period of copper production. It is therefore very important that the Ministry of Mines have the support of experienced, technically qualified, practical people either as staff advisors or as consultants.
26. It is very important that the Government of Afghanistan understand that the Technical Proposal and the Financial Proposal included as Appendix 6 of the Contract have not been technically and financially validated. They are conceptual analyses that lay out possible production and other scenarios. Until the full Bankable Feasibility Study (BFS) is completed, most of the content of the MCC Proposals in Appendix 6 should be treated as business development concepts and not as commitments by MCC. The potential of the Aynak Project and expectations of tangible benefits should only be assessed once the BFS is completed and approved by the Ministry of Mines.
27. The style of the Contract is workable but only if it is managed by reasonable, practical, and experienced people representing both Parties. If the Contract is administered in a highly formal and procedural manner, it is very possible that numerous situations could emerge where the contract could be revoked. Despite the existence of potentially contentious sections, the contract allows for representations to be made and discussions to take place so as to resolve difficulties. The IAC is pleased to note that the Parties had flexibility in mind when they

negotiated the Contract. The Contract provides for renegotiation as need emerges and a mandatory reconsideration every five years. The following provisions of the Contract provide for conditions of renegotiation:

a. *PART I: GENERAL RIGHTS AND OBLIGATIONS; Section 10 (c):*

“ At any time during the term of this Mining Contract, upon request of either party, the Ministry of Mines and MCC may consult with each other to determine whether in the light of all relevant circumstances the financial or other provisions of this Mining Contract need revision in order to ensure that the Mining Contract operates equitably and without major detriment to the interests of either Party. Such circumstances shall include the conditions under which the mineral production is carried out, including but not limited to, the size, location, and overburden of mineral deposits, the quality of the mineral, the market conditions for the mineral, the prevailing purchasing power of money and the terms and conditions prevailing for comparable minerals ventures. In reaching agreement on any revision of this Mining Contract pursuant to this paragraph, the Parties shall ensure that no revision of this Mining Contract shall prejudice MCC’s ability to retain financial credibility abroad and to raise finance by borrowing internationally in a manner and on terms normal to the mining industry. Such consultation shall be carried out in a spirit of cooperation with due regard to the intent and objectives of the respective Parties. Both Parties desire to realize the success of the Project for the benefit of the people of Afghanistan, the development of the nation, and economic and social growth and development.”

b. *PART XV: REVIEW OF CONTRACT TERMS; Section 57 Fiscal Provisions*

“ Fiscal Provisions

(a). The Parties shall, at five-year intervals from the collective date of this Mining Contract, review the economic terms of this Mining Contract to determine whether the Mining Contract shall be amended to provide for an adjusted allocation of economic benefits between MCC and the Government.

(b). In undertaking such review, the Parties shall bargain in good faith with a view toward providing a fair and equitable division of profits in light of the economic factors prevailing at the time of the review.

(c). In undertaking such review the Parties shall be guided by, but not limited to, consideration of the following factors:

- (i). The economic value of the licence;*
- (ii). Terms of other copper agreements of comparable investment size and resource conditions negotiated by the Government within the five-year period preceding the date of review,*
- (iii). Terms of other copper agreements of comparable investment size and resource conditions negotiated by MCC within the five-year period preceding the date of review,*
- (iv). Terms of other copper agreements of comparable investment size and resource conditions negotiated by third parties.*

4.0 IMPLEMENTATION AND PROCEDURES

28. The IAC strongly believes that international standards of practice in mining and metallurgy must be adhered to throughout the implementation of the Aynak Contract. These rules and procedures have been developed by the World mining industry through lengthy periods of scrutiny and technical experience. They have evolved so as to protect the production interests of operating companies, the interests of the investment community that provides the capital for projects, and the interests of communities and host governments. In the case of Aynak, it would be in the interests of all Parties to follow these procedures and rules. These rules and procedures also form the base of the Bankable Document system used throughout the world.
29. The MCC Technical Proposal provides for an open pit mine, underground mine, concentrator, smelter, refinery, coal-fired power plant, coal mine(s), railway, town site, infrastructure and other facilities. The Contract requires that all of the components of the Technical Proposal undergo Bankable Feasibility Study (BFS) and Environmental Assessment analysis. This is an enormous undertaking and unfortunately, not all of these components at present have sufficient data and technical and other information to support such analysis. As one example, the BFS for the smelter/refinery cannot be realistically initiated before the BFS and environmental studies on the mine/concentrator are completed because of the need for production data, ore chemistry data, and metallurgical data that would be generated and analysed in the BFS of the mine/concentrator. The smelter BFS must also wait for requisite analysis on phosphate rock availability and the feasibility of a fertiliser plant.
30. In the interests of practicality and expediency, it would be better to focus the BFS on those components where the requisite amount of data are available or can be generated quickly and which will support bringing the Aynak mine into production as quickly as possible, all necessary steps having been taken.
31. Article 29 of the Minerals Law of the Islamic Republic of Afghanistan requires a feasibility study, a development plan including proposed investments and any socio-economic contributions proposed for the communities concerned; an Environmental Impact Assessment (EIA) and an Environmental Management Plan (EMP) as conditions of the granting of an Exploitation licence. The EIA and EMP are to additionally include social impact assessment and social mitigation plans respectively. The IAC considers the Environmental Impact Assessment (EIA) and the Environmental Management Plan (EMP) to be an integral part of the BFS. The BFS is not complete until the EIA and the EMP have been carried out according to international guidelines as defined by The International Finance Corporation/The World Bank.
32. The IAC proposes that the various elements of the project be placed in sequential categories as defined by available data, practicality, and implementation urgency.

Stage I:	Central deposit open pit mine, sulphide ore processing, oxide ore stockpiling, concentrator, water supply and distribution system, site infrastructure, power generation, coal mine, including requisite EIA and EMP
Stage II:	Smelter and refinery, oxide ore leach, phosphate mine, and fertiliser plant including requisite EIA and EMP
Stage III:	underground mine in Central and West deposits including requisite EIA and EMP,

4.1 BANKABLE FEASIBILITY STUDY (BFS)

33. The Contract requires a Bankable Feasibility Study (BFS) as per Part II Section 12:

“ The Parties acknowledge and agree that MCC shall submit its Bankable Feasibility Study for the Aynak Copper Deposit to the Ministry of Mines for review no later than three(3) months following the completion of its pre-exploitation activities or within sixteen (16) months of the effective date of this Mining Contract, whichever is earlier. MCC’s commitments and obligations concerning the preparation of a Bankable Feasibility Study for the Aynak Copper Deposit are more fully specified in Appendix 6 of this Mining Contract as an enforceable part of this Mining Contract. The Project Schedule shall include deadlines for the preparation of the Bankable Feasibility Study. Within one (1) month of its completion of the Bankable Feasibility Study, MCC shall submit its Mine Development Plan to the Ministry of Mines for review and approval. The Ministry of Mines shall use its best efforts to complete its review of the Mine Development Plan within two (2) month of receipt from MCC. “

34. “Bankable Feasibility Study “ (BFS) is defined in Contract in Part I (a) as:

“Feasibility study prepared in sufficient depth and detail so that the study would be normally acceptable to international lending institutions”

IAC considers the term not sufficiently detailed to have practical application and to ensure that international standards are maintained. There is some general indication of the elements of both a Pre-Feasibility Study and Feasibility Study in the Technical Proposal (Appendix 6) but it is not sufficiently detailed to provide any understanding of what the BFS will include, its level of detail, and its level of functional application. It could be inferred that it has the same meaning as that used in practice pursuant to NI 43-101 of Canadian securities law but it would be much better business practice for the Parties to give certain definition to what is required. The Parties should include the definition of ore reserves and resources as defined in Canada under NI 43-101 or in Australia’s JORC. No BFS is complete without a mineable ore reserve and at present, there is no such defined reserve in Aynak. It is expected that very extensive drilling and assaying will have to be carried out before an internationally compliant mineral resource can be

estimated and a mineable ore reserve defined. Ultimately, as the term requires, a BFS must be acceptable to an international commercial financial institution.

35. It is very likely that the geological assessment of the Aynak ore deposits will determine that there is insufficient information for definition of a reserve for both open pit mining and the subsequent development of the underground mining operation in both Aynak Central and Aynak West. The British Geological Survey (BGS) notes that Aynak has a drilled resource of 240 million tonnes at 2.3 per cent copper based on Russian drilling results and assays. However, these data do not conform to western systems for reserve and resource estimates and the BGS cautions that there are numerous satellite ore lenses included in that estimate which may not be mineable. It is almost certain that none of the resources defined by these old data could be considered as “Measured Reserves” under the NI 43-101 or JORC systems because there would have been no economic evaluation and definition of cut-off grades. This is of particular importance related to the satellite lenses.
36. MCC in their Technical Proposal refer to a mineral resource of 454 million tonnes at 1.56 per cent copper. MCC also indicate that Central Aynak requires further drilling to confirm a reserve and MCC had only received drilling data for 14 out of 77 putative holes in Aynak West. The difference between the resource estimates and the missing data provide IAC with evidence that further work on data collection and mineral resource estimation is required.
37. It would be unfortunate for all Parties if a BFS was prepared for the Aynak operation based on inadequate data. There are numerous examples of mines that prepared a complete BFS and still made errors sufficient to cause production problems and financial difficulties. Planning without adequate geological data inevitably results in production problems. It is important that MCC carry out sufficient drilling, assays, and analysis to provide defined mineral resources and ore reserves that will support a production decision.
38. The foregoing are reasons why the IAC considers it reasonable to focus the First Stage BFS on the Central Ore Body of Aynak and complete the resource and reserve definition to a level sufficient to support the BFS first stage. MCC suggests that Aynak West will require 16 months of exploration work following that at Aynak Central to bring the resource definition up to standard. Since this could take longer and divert efforts from early development of Central, IAC suggests that the BFS for underground mining of Aynak West should be delayed.
39. The Technical Proposal in Appendix 6 seems to separate the development of an Environmental Plan from the Bankable Feasibility Study. As suggested earlier in this report, it is the IAC’s opinion that EIA and EMP are integral components of the BFS.
40. MCC is required to produce a Mine Development Plan and submit it to the Ministry of Mines two months after the submission of the Feasibility Study. However, there is no indication as to the content of the mine development plan. The Afghanistan Minerals Law requires a

development plan as a precondition of granting of an exploitation licence. The IAC suggests that the Mine Development Plan incorporate financial models and plans that are based on the BFS. The Project Finance Plan can be a critical part of the Mine Development Plan and taken as a whole, they can replace the MCC Financial Proposal in Appendix 6.

41. The IAC considers the BFS and Mine Development Plan/Project Financial Plan (MDP/PFP) to be critical and central components of the Contract and together provide the analytical security for investment and construction proposed under the Contract. Obviously they must be carried out to a high standard of care and technical sophistication to avoid costly mistakes, future delays, and reduced performance by the operation.
42. The better the BFS and the construction that follows from it, the less likely that there will be problems resulting from application of Part III, Section 21 c() and (d) of the Contract:

“(c) MCC agrees that any mining, processing or treatment of ore prior to domestic sale or export shipment by MCC shall be conducted in accordance with best international mining standards as are economically and technically feasible, and in accordance with such standards MCC undertakes to use all reasonable efforts to optimise the mining recovery of ore and metallurgical recovery of minerals from the ore provided it is economically and technically feasible to do so, and shall submit evidence to the Ministry of Mines of compliance with this requirement.

(d) If in the opinion of the Ministry of Mines, MCC is failing without good cause to recover Minerals in accordance with paragraph (c) of this section, it may give notice in writing of such deficiency to MCC. Within three (3) months of the receipt of this notice, MCC shall either:

(i) Commence work to improve its mining method, treatment and processing facilities to the reasonable satisfaction of the Ministry of Mines provided that MCC shall in no event be obliged to conduct mining, processing, or treatment activities otherwise than as provided in its approved Bankable Feasibility Study,”

43. It would be in the best interests of the Parties to the Contract if they were to immediately consult and agree the Terms Of Reference and content of the BFS (including the EIA and the EMP) and the Terms of Reference for the MDP/PFP so as to mitigate potential for future disagreement and delay. The fact that the project has been delayed until now by the need to remove ordinance from the site means that this consultation and agreement can be carried out in a timely manner. The terms should include development schedules, activities and reports leading up to delivery of the BFS and the MDP/PFP.
44. Once the Bankable Feasibility Study and the Mine Development Plan have been completed and approved, the Parties can replace the Technical Proposal portion of Appendix 6 with these two reports. Additionally, the implementation schedule developed in the BFS can replace any and all schedules currently included in the Contract.

45. The Part III Section 17 (b) of the Contract concerning mine closure plan and site restoration refers to the Technical Proposal in Appendix 6. It should be replaced by reference to the closure plan in the BFS in Appendix 6.
46. Under these suggestions, Appendix 6 will initially comprise the Terms of Reference for the BFS including the EIA and the EMP as well as Terms of Reference for the MDP/PFP. Following acceptance by the Ministry of Mines, the completed BFS, EIA, and EMP as well as the Mine Development Plan/Project Finance Plan will replace the Terms of Reference documents in Appendix 6.

4.2 POWER PLANT AND COAL MINE

47. The Aynak Copper complex must have its own power supply. There are no alternatives. However, a coal-fired power station that meets all environmental requirements and potentially the constraints of the Kyoto Protocols is no easy thing. If these strict terms are brought to bear, then MCC and the Ministry should/must consider alternative technologies to coal-sourced energy.
48. The Technical Proposal makes no mention of environmental controls on the power plant, specifically as related to sulphur dioxide emissions and for particulates. The coal proposed for use contains more than two per cent sulphur so it would be regarded as medium sulphur coal in the industry.
49. There are numerous clean coal technologies available or in development in the world, some capable of removing up to 98 per cent of the contained sulphur. There is no need for Afghanistan to tolerate a dirty coal fired generating station when instead it could be a demonstration of how to make a good environmentally-sound investment in energy.
50. Coal mines also require EIA and EMP as well as BFS. The MCC Technical Proposal is very tentative about the coal mine development so more detail needs to be sought and a more precise plan developed as a part of the BFS Terms of Reference.
51. Since there can be no mine development without a power source, this project should be initiated during the first stage of the Aynak BFS but it should have its own complete and independent set of reports. They should if possible be submitted at the same time as the complete Aynak BFS. This aspect may already be covered in the ancillary agreement on power generation signed in February 2009 but which was not included in this review.

4.3 SMELTER AND REFINERY AND LEACH COPPER PRODUCTION

52. The Technical Proposal from MCC contemplates production of 220,000 tonnes of refined copper, 200,000 tonnes from the smelter and 20,000 tonnes from the leaching of oxide copper

ores. However, at present, there is no BFS on the Mine and no Mine Development Plan so it is not known whether this level of production can be achieved.

53. The ore is composed of varying amounts of bornite and chalcopyrite, the copper-bearing minerals. The relative amount of sulphur in chalcopyrite is much higher than it is in bornite and the amount of sulphuric acid produced as a result of the mandatory capture of the sulphur dioxide produced when concentrates are smelted can and will vary substantially depending on the mineral composition of the ore. Until MCC has carefully documented the mineralogical composition of the ore in its mine plan and production schedule, there is no means by which to assess the amount of sulphur that will enter the smelter nor the amount of copper to expect in the concentrates (between 30% and 40% copper, a large variation). MCC suggests that the Aynak copper bearing mineral is 25 per cent chalcopyrite and 75 per cent bornite but these proportions vary considerably throughout the deposit(s). Nor do we know how much acid will be produced. All of these factors have a major effect in determining the capacity of the smelter and the level of production.
54. The leaching of oxide ores requires acid from the smelter. This part of the production plan cannot be implemented until the smelter is actively producing acid. However, the Technical Proposal suggests that oxide leach will only use about 40 per cent of the acid produced. The MCC Technical Proposal offers the construction of a fertiliser plant that would use the remainder of the acid to leach phosphate rock. However, at present there is no known mineable deposit of phosphate in Afghanistan. If the fertiliser plant was forced to import phosphate rock, it could be punitively expensive. Equally, if the smelter was forced to export acid, the costs could be crippling and to what market? If the smelter was on tidewater, these questions could be more readily answered but a landlocked and isolated smelter is very vulnerable to these problems. The new Gresik smelter in Indonesia sells its acid to the fertiliser plant next door but both facilities have ports.
55. It is virtually certain that there can be no smelter until the question of acid disposal is dealt with. Even if phosphate is discovered in Afghanistan, there is no certainty that it will be in an economic form or amount and the phosphate mine will require its own bankable feasibility study as will the fertiliser plant.
56. Heap leaching of oxide copper ores is a well-known and proven process that is used extensively in the world copper industry. The technology is relatively simple and straight-forward. However, the question of the leachability of the ore is always complicated and usually requires extensive and lengthy test work using leaching columns. The amount of test work included in the Technical Proposal is not adequate. The Aynak ore is carbonate hosted. The pH of the ore will be high and the gangue will likely consume a lot of acid. Until the test work has been completed, it will not be possible to say whether leach copper can be produced economically or not. It is also critical that MCC have a very good definition of the characteristics and chemistry of all of the ore that it is proposing to leach because the chemistry will vary.

57. The Technical Proposal contains the bare elements of a strategic plan for a smelter/refinery/oxide leach. However, it does not provide us with any confidence that it is a workable proposition. More work is required before a BFS can be prepared on the smelter and associated operations and hence the IAC's suggestion that the smelter analysis be deferred to Stage II of the Aynak BFS.

4.4 RAILWAY

58. This is a very large project in its own right with no documentation provided. It cannot be evaluated by the IAC at this time. Suffice to say that extensive discussion will be required and the project will require its own BFS which incorporates EIA and an EMP. The IAC therefore suggests that the railway not be included in the Terms of Reference for the Aynak Bankable Feasibility Project because it risks delaying completion of the initial stages of the Aynak development which is the fundamental foundation of the Contract. The railway Bankable Feasibility terms of reference and report can be developed in parallel but separately.

4.5 WATER SUPPLY

59. Water supply is a priority item for the Aynak Project. It must be included in the BFS terms of Reference and a production and management plan as well as an EIA and EMP must be included in the final BFS. Provided that adequate assessment has been made of aquifers and underground water flows, water usage patterns, and consultation with local communities about water use has been carried out, this project could proceed quickly.

4.6 LICENCE AREAS

60. Licence area locations are specified in Appendix 1. It would be helpful if the coordinates of the licence has been endorsed by a qualified independent surveyor. This endorsement should be further supported by a translation of the terms and conditions of the licence and a copy of the original licence.

4.7 ENVIRONMENTAL PROTECTION

61. Part III; Section 15 of the Contract specifies MCC's commitments and obligations with respect to environmental protection. Specifically, it indicates that the environmental components of MCC's Technical Proposal (Appendix 6) are incorporated into the Contract as an obligation. However, the proposed actions in the Technical Proposal are very general and do not adequately reflect MCC's additional commitment to meet all World Bank Environmental and Social protection guidelines and policies as well as Afghanistan's legislative and regulatory requirements and the requirements of the Equator Principles. MCC could also be required to meet the terms of the Kyoto Protocol should it be adopted by Afghanistan or should Afghanistan consider such adoption.

62. The Equator Principles require adherence to the International Finance Corporation (The World Bank) Performance Stands and the IFC Environmental, Health, and Safety Guidelines for Mining.

Using the Guidelines, the Parties to the Contract should consult and agree Terms of Reference for Environmental, Health, Safety, and Social Assessment to be carried out as a part of the BFS. Those Terms of Reference should be incorporated into the general terms of reference for the BFS paragraph.

63. Best Available Techniques (BAT) in mining and metallurgy have been defined and agreed by the international mining community, national regulatory authorities, and multilateral agencies. The BAT for operations such as those included in the Aynak Project are readily available from the World Bank. The BAT definitions should be incorporated in the Terms of Reference of the BFS and the final project design submitted in the Bankable Feasibility Report should be consistent with BAT.

5.0 FINANCIAL COMMITMENTS: ROYALTIES

64. The Government of Afghanistan would benefit from the Contract in the following ways:

- a. Receipt of staged payments for the right to exploit the deposit;
- b. Royalties on production of copper and other metals;
- c. Income and other taxes; and
- d. Quasi-taxes in the form of social and infrastructure development

Conventional analysis would treat all of these as taxes and presumably, they would be subject to PART III; 20(c).

The most controversial of the taxes provided for in the Contract is that for Royalties in PART III Section 21. Almost without exception, World mining royalties are below five per cent whereas this section provides for a royalty of 19.5 per cent when the copper price is equal to or more than US\$2.00 per pound.

65. The structure proposed in the contract is highly beneficial to Afghanistan and also provides much greater business stability than the conditions of changing fiscal regime evident in some other copper producing countries where governments have proposed high effective tax rates, windfall profit taxation, and higher royalties. In some cases these new conditions were imposed and then withdrawn making for a very unpredictable investment environment.
66. Since this rate will only apply if the copper price is equal to or greater than US\$2.00 per pound, this higher royalty could be seen as a way of capturing “windfall profits”, the implication being that such a high price by historical measure would be extraordinary. However, the world copper industry is in considerable difficulty because of rapidly escalating capital costs and the unavailability of economically viable deposits in well-regulated jurisdictions. It is almost certain that copper prices will have to rise in order to support these very high capital costs and the cost regime associated with production from lower grade ores or riskier locations in order to ensure availability of new supply. In other words, general supply conditions for copper suggest

sustained higher prices and the very real likelihood that prices will be such as to allow continued application of the ceiling royalty rate in the Aynak Contract.

67. Rising costs at Aynak will inevitably mean that this provision of the contract will be subject to renegotiation as provided for in Section 10 of the Contract.
68. The Government of Afghanistan recently began the process of offering its major iron ore deposits for sale through tender. Royalties approaching 20 per cent are unknown in the world iron ore industry and it is extremely unlikely that any buyers will agree such terms. Should the Government agree different and lower royalty terms in another project contract such as one for iron ore, that agreement would immediately trigger the provisions of PART III: Section 20 of this Contract:

(c). "In the event that the Government of Afghanistan enters into a contract or agreement with a third party engaged in the mining or industrial sectors that, based on the laws in force in Afghanistan at the time, affords more favourable treatment with respect to the stability of fiscal or other tax terms than have been granted to MCC under this Mining Contract, the Parties agree that the Mining Contract shall be amended to apply the more favourable treatment to MCC"

6.0 LOCAL PURCHASING: PROMOTION OF NATIONAL INTERESTS

69. PART VII Section 38 requires MCC on a best efforts basis to purchase goods and services in Afghanistan if available at comparable quality and price. This is a good objective but very difficult to achieve and often has no effect as a requirement.
70. Chile in Region II has been quite effective in developing local suppliers and subcontractors. Almost 80 per cent of Escondida procurement requirements are met within the country and almost half within Region II, the main mining area. It must be noted that some of the local procurement was from local agents of international suppliers.
71. At Antamina in Peru, the mine has approximately 1500 contractors providing goods and services of which 85 per cent are located in Peru. The top suppliers provided fuel and lubricants, maintenance of heavy equipment, supply of grinding media, shovels, explosives & accessories, construction, catering & lodging, laundry services, tires, lime, and reagents.
72. It is highly unlikely that speciality supplies required by Aynak could be provided by local contractors/suppliers in Afghanistan at present. However, if some efforts are made, both by multilateral agencies and the government, to support the development of at least some of these sectors initially as agents and later as fabricators, the good examples of Chile and Peru might prove achievable over a long period.

7.0 EMPLOYMENT AND TRAINING OF AFGHAN NATIONALS

73. PART VIII: Section 39 requires MCC to establish quotas for employment of local people which range from 50 per cent during the first three years to 85 to 100 per cent in eight years time, depending on the job classification.
74. These are probably reasonable numbers, recognising that during the first few years, many of the people would be working as trainees. In Chile, approximately 99 per cent of Escondida's employees are Chilean but this is in a country with a long tradition of mining, a sophisticated

mining education system, and a high degree of literacy (96% in Region II, the mining area). At Antamina in Peru, out of 1463 employees, only 26 are foreign nationals. These are levels of employment of nationals are objectives to be aspired to and will over years emerge as Afghanistan develops its own mining culture and educational institutions that can provide technical and managerial people.

75. Part VII Section 40 of the Contract requires MCC to provide training for Afghan nationals and to provide foreign scholarships for study abroad. This is a good objective but in addition, the IAC suggests it appropriate for the Ministry of Mining to develop its own training programme for technical staff in co-operation with educational institutions both in Afghanistan and abroad. This programme could be supported by both MCC and donor agencies and in so doing, secure a good international mix of technical standards and expectations.

8.0 SECURITY

76. Part V Section 36 and Appendix 10 of the Contract provide that the Government of Afghanistan shall be responsible for the overall security of the project and that MCC shall cooperate with the government in taking security measures requested by the Government.
77. Normally, security can be simply a matter of deploying the appropriate personnel in sufficient numbers with the right equipment. In the case of the Aynak Project, the issue is much more complex because security must be built into the design and layout of the project. The design and layout will affect the area broadly outside as well as inside and will affect even local police work in infrastructure areas that are used by the public.
78. The IAC suggests that the Government, supported by international assistance, undertake a review of security requirements of the feasibility study, construction, and operational phases of all of the elements of the Aynak operation for each component of the BFS including but not limited to the mine(s), concentrator, smelter, refinery, power plant, coal mine, town site, roads, water supply, and railway. This assessment should be carried out in cooperation with MCC during the period of the preparation of the BFS. This is of particular importance in that facilities including infrastructure will have to be designed and constructed to conform to security requirements defined by this analysis.

9.0 CONCLUSIONS AND RECOMMENDATIONS

79. The Aynak Mining Contract is a sound workable document with generally clear provisions. However, there is room for conflict between the Parties to the Contract if it is not managed by practical, professional people on both sides who will display a reasonable amount of flexibility when required. The Contract provides major sections allowing for request for renegotiation as well as mandatory reconsideration at five year intervals.
80. The BFS and the Mine Development Plan/Project Finance Plan are the two major important working document of the contract. They will define the nature of the Aynak Project and they will also establish the requirements to be met by MCC. However, because the Terms of Reference for the BFS and the Mine Development Plan/Project Finance Plan have not been determined in the Contract, there is insufficient guidance provided to assist MCC in its development of the study and the report. As a result, the IAC recommends that:

- a. The Parties meet at their earliest convenience to establish Terms of Reference for the BFS, EIA, and EMP;
 - b. Those Terms of Reference should be entered into Appendix 6 of the Contract so as to form a binding commitment on the Parties;
 - c. Once the Bankable Feasibility Report has been submitted to and approved by the Ministry of Mines, it along with its performance schedules should be entered into Appendix 6 of the Contract as a binding provision of the Contract and it should replace the Technical Proposal of MCC; and
 - d. The Ministry of Mines should be adequately advised and supported by experienced, competent, technical and financial specialists.
81. Although the Contract describes MCC's commitment to meet the requirements of Afghanistan legislation, the Equator Principles, and World Bank requirements for environment, health, and safety, there is no definition of how they will be applied to the Aynak Project in the Contract. The IAC urges the Parties as soon as possible to agree the Terms of Reference for the EIA based on the IFC guidelines for Environment, Health, Social matters, and Safety as well as IFC Performance Standards and IFC methodology for Environmental and Social Baseline and Impact Assessment. The terms of reference should also include BAT guidelines.
82. Once the EIA is completed, Terms of Reference for the EMP should be agreed by the Parties. When the EMP has been approved by the Government of Afghanistan, it should also be entered into the Contract Appendix 6 as an integral part of the BFS report.
83. As proposed by the IAC, the BFS and the Mine Development/Project Financial Plan could be divided into stages because some analyses such as those for the smelter and oxide leaching are dependent on the results of the geological and metallurgical work to be carried out on the Aynak ore. If the stages are sufficiently discreet and defined, they could be approved so that early development could proceed on such items as the mine/concentrator/tailings pond/waste pile and social infrastructure. It is likely that the first stage should be based on development of the Aynak Central deposit.
84. The smelter/refinery complex development is completely dependent on the management of sulphuric acid. The MCC Technical Proposal assumes that an appropriate phosphate rock deposit can be found and developed so as to use any acid that is not consumed in leaching of oxide ores. Since there is a great deal of uncertainty in this, it is best that the smelter/refinery feasibility be delayed until more precise definition can be given to acid management. Since the oxide ore leaching programme is completely dependent upon the availability of acid, no production of leach cathode is possible without it. However, the technical assessment of the oxide ore leaching characteristics will take longer than has been suggested so the integration of these various items should be possible and carried out in a timely fashion.
85. The Mine Development Plan/Project Finance Plan will be based on the Bankable Feasibility Study (BFs). The initial Terms of Reference for that report should be developed during the completion of the BFS so that it can be finalised shortly after completion of the BFS and then reviewed quickly. Once the Plan has been approved, it should be entered into Appendix 6 of the Contract as a binding commitment on the Parties.

86. The Royalties imposed by the contract at 19.5 per cent are extremely high by world standards. It is highly unlikely that the Government will be able to secure such high royalties in future resource project development agreements. Since the Contract specifies that any more favourable agreements on tax with other parties will require the application of those more favourable terms to the MCC contract, the high royalty regime is unlikely to survive.
87. The programme for employment of Afghan nationals is appropriate. The IAC suggests that it be complemented by development of educational and technical programme development between the Ministry of Mines, local educational institutions, and mining and metallurgical schools abroad. This programme could be supported by donors and MCC.
88. The IAC recommends that a security requirements analysis be carried out by the Government of Afghanistan with international support during the period of the Bankable Feasibility Study and that this report consider the security requirements of the Aynak Project and how that might affect the design of the Project and associated infrastructure. This should be done in close consultation with MCC so that the designs can be incorporated in the BFR.
89. The Contract requires that MCC use local sources of supply of materials and services where practicable and competitive. Since it is likely that few of these suppliers currently exist in Afghanistan because it has never had a mining industry, some effort should be made by the Government and aid agencies to support entrepreneurial development in these areas.
90. Appendix I of the Contract should be modified slightly through the addition of a qualified surveyors approval and signature on the coordinates of the licence area. Further, the licence should be appended in translation and appended in its original form.

10.0 GUIDANCE FOR FUTURE PROJECTS

91. The most important finding concerns the relationship of Technical Proposals, Bankable Feasibility Reports, Mine Plans, and Environmental Management.
92. All tenders will require Technical Proposals and all contracts to some extent, depending on negotiations, will hold the bidder to his proposal. However, practical application will always require a Bankable Feasibility Study and Report which will be more comprehensive and form the basis for all operational plans in particular Mine Development Plans
93. Furthermore, all Projects will require Environment Assessments and Environmental Management Plans. It is most likely that future contracts will also require that projects meet environmental requirements as laid out by the Equator Principles and The World Bank/IFC.
94. Future contracts should define a process for the structuring of Feasibility Studies, Environmental Assessments, and the development of Bankable Feasibility Reports and Environmental Management Plans.
95. Future contracts should require that Bankable Feasibility Reports, Mine Development Plans, and Environmental Management Plans once approved be incorporated as binding parts of the contract.

APPENDIX: IAC MEMBERS

Brian Felske (Chairman):

Mr. Felske is an independent mining industry consultant. He was formerly a financial industry mining analyst and formerly mining advisor to RBC Dominion Securities (RBC Capital Markets) and Wood Gundy (CIBC World Markets). Following that, he advised some of the world's largest institutional investors in Canada, the U.S., and the U.K. on the mining sector. He is a long-term advisor to Codelco-Chile, the world's largest copper producer and PPC/Nippon Mining of Japan, the world's largest buyer of copper concentrates. He has been a World Bank consultant for 29 years. He is President of LMD Financial Services, a Limited Market Dealer regulated by the Ontario Securities Commission, and trustee of Central Gold Trust, a publically-listed bullion investment trust. He has worked extensively on mining and metallurgical project evaluations in South America, North America, Eastern Europe, Africa, and Central Asia. He lives in Toronto Canada.

Patrick Gorman:

Mr. Gorman is a mining engineer with thirty three years of managerial, technical and project experience in a wide range of business, cultural and climatic environments and commodities. He has managed development programmes, pre-feasibility and bankable feasibility studies, conceptual evaluations, scoping and acquisition studies and provided post privatisation support and technical audits for project financing. Mr. Gorman's feasibility study experience has included Escondida copper in Chile, Rebecca gold in Zimbabwe, Loma de Niquel in Venezuela, Castellanos lead/zinc in Cuba. He has led or been a key member of long term technical re-development and co-operation programmes at Trepca-UNMIK in Kosovo, Jiangxi Copper in China, Buryatzoloto Gold in Russia and Zhayrem Manganese in Kazakhstan. He has extensive experience in the formation, management, legal representation and business development of mining companies, consultancies and EPCM company subsidiaries with offices in Australia, Chile and the UK. He lives in Norwich UK.

Paul Nelles:

Dr. Nelles is a mining engineer with a PhD in mineral processing with more than thirty five years of executive, technical, operational and project experience in base metals, gold, dimension stone and industrial minerals mining companies. He managed worldwide successfully in a wide range of business, cultural, corporate, social and climatic environments. Dr. Nelles has directed as chief executive or member of the executive management team mine and quarry operations and mine development programmes, but also major divesture programmes. As team member he worked on pre-feasibility, bankable feasibility studies and evaluations. He also restructured successfully as the key responsible

executive state owned companies in Kosovo (Post & Telecom, coal-based power company, railway, airport, water & waste companies). Major employments throughout his career were with Metallgesellschaft (mining subsidiary) from mine engineer to head of international mining department, DESTAG, a worldwide operating German dimension stone mining, processing and marketing company with a minority shareholding of Anglo American Corporation, where he served as technical director and CEO, Normandy LaSource as executive general manager operations and United Nation Mission in Kosovo as Trepca Manager and deputy managing director of the Kosovo Trust Agency. He lives in Germany.