



COMMITTEE FOR MINERAL RESERVES INTERNATIONAL REPORTING STANDARDS

**Title: IASB Extractive Activities Research Project**

International Accounting Standards Board  
30 Cannon Street  
LONDON EC4M 6XH  
UNITED KINGDOM  
26 July 2010

Dear Sir/Madam:

**Re: Review of Discussion Paper on Extractive Activities**

**SUMMARY**

The Committee for Mineral Reserves International Reporting Standards (CRIRSCO) has read the Discussion Paper on Extractive Activities by the Project Team dated April 2010. We appreciate the opportunity to comment. The members of CRIRSCO are geologists and mining engineers. We have therefore largely restricted our commentary to issues related to mineral resource and mineral reserve (ore reserve) reporting and disclosure of assumptions used to prepare mineral reserve and mineral resource estimates.

The views expressed herein represent the current views of CRIRSCO. We have had insufficient opportunity to consult all of our stakeholders in the National Reporting Organizations and the companies which form our strategic partner, the International Council for Mining and Metals. We did participate in the discussions held by the Mining Industry Working group (10 companies represented). We are looking forward to reading the other responses to the Discussion Paper and to further consultation and discussion within the mining industry.

Having examined the alternatives, the IASB Project Team has recommended that the mineral resource and mineral reserve definitions in the CRIRSCO Template should be used in International Financial Reporting Standards (IFRSs) for extractive activities.

We concur with this recommendation for the following reasons:

- The CRIRSCO Template and compatible National Reporting Codes and Standards are in widespread use throughout most parts of the world. The National Reporting Codes and Standards form the basis of market regulator disclosure requirements in



COMMITTEE FOR MINERAL RESERVES INTERNATIONAL REPORTING STANDARDS

most jurisdictions that have formalized mineral reserve and/or mineral resource disclosure requirements (excluding the United States Securities and Exchange Commission);

- The CRIRSCO Template includes all solid minerals, including diamonds, other gemstones, aggregates, and coal;
- The CRIRSCO Template is compatible with the Petroleum Resources Management System (PRMS), which shares common principles with the CRIRSCO Template; among these principles is the categorization of mineral resources and mineral reserves by level of confidence. Measured, indicated and inferred mineral resources are classified on geological confidence. Proved and probable mineral reserves are classified based on geological confidence and also confidence in the modifying factors used to convert a mineral resource into a mineral reserve: mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors;
- CRIRSCO and its predecessor committee (Council of Mining and Metallurgical Institutions Ad-hoc International Definition Group) have been in existence since 1994; CRIRSCO is a strategic partner of the International Council on Mining and Metals, which is funded by 19 of the largest mining companies in the world;
- Current CRIRSCO members come from USA (2), Canada (2), Australasia (2), Chile (2), South Africa (2), and UK/Europe (3). These members represent their National Reporting Organizations. Thus CRIRSCO has wide geographic representation; and
- Very little modification should be needed to the CRIRSCO Template to enable it to be embedded within IFRSs. Some guidance may need to be added related to disclosures accompanying financial reports, and CRIRSCO would be happy to work with the IASB on these changes.

We agree that there should be minimum divergence between the fundamental definitions in the CRIRSCO Template and the National Reporting Codes and Standards. CRIRSCO will work toward this objective.

A key concept for mineral resource and mineral reserve reporting is that mineral resource and mineral reserve estimates should be prepared by and/or approved by Competent Persons (called Qualified Persons in Canada). These persons must have a minimum of five years' relevant experience in the mineral deposit type in question and in the stage of development (geologists for exploration results and mineral resource estimation, mining engineers for mineral reserve estimation, preparation of life-of-mine plans and feasibility studies). Competent/Qualified Persons must be members of self-regulating professional associations that have an enforceable code of ethics.



COMMITTEE FOR MINERAL RESERVES INTERNATIONAL REPORTING STANDARDS

CRIRSCO suggests that, with respect to technical disclosure of mineral reserves and mineral resources, the user can expect a faithful representation if the entity certifies that its mineral resource and mineral reserve statements are in accord with the CRIRSCO Template or a compatible National Reporting Code or Standard and have been prepared/approved by a Competent/Qualified Person.

Much of the disclosure suggested by the Project Team relates to assumptions made in preparing mineral reserve statements, e.g. commodity price forecasts, life-of-mine plans and production schedules. For new properties, mergers and acquisitions, and initial public offerings published Competent/Qualified Persons, reports typically exist and can provide disclosure required by the user community or their advisors to make investment decisions.

For operating mines, such information exists, but is often unpublished. Preparation of disclosure could be costly. At the time of drafting IFRSs, it will be very important to have extended consultations with both preparers and users of disclosure to ensure that costs and benefits are balanced. CRIRSCO suggests relevant information could be compiled and disclosed if deemed material by the entity's Competent/Qualified Person(s).

CRIRSCO also supports the disclosure of the following information:

- Reconciliation of resources and reserve position versus the previous year and reasons for changes;
- Reconciliation of the tonnage and grade of mineral resources and mineral reserves depleted to the tonnage and grade produced; and
- Other information as appropriate.

From a technical perspective, Competent/Qualified Persons should provide inputs to risk/opportunity assessments related to asset recognition (establishment of probable economic benefits) and impairment.



COMMITTEE FOR MINERAL RESERVES INTERNATIONAL REPORTING STANDARDS

It has been a great pleasure to have worked over the last few years with the IASB Project Team ably led by Glenn Brady. He and his team have shown an excellent appreciation of the issues affecting the minerals industry and have been able to consult widely. We would hope that the comments set forth below will be useful in developing IFRSs for the Extractive Industries. We stand ready to assist you in these endeavors.

Yours truly,

Harry Parker, for  
Roger Dixon, Chairman of CRIRSCO

And the Review Team:

Harry Parker  
Niall Weatherstone  
Peter Stoker  
Ian Goddard  
Ferdinand Camisani



COMMITTEE FOR MINERAL RESERVES INTERNATIONAL REPORTING STANDARDS

**COMMENTS ON MATTERS IN THE DISCUSSION PAPER HAVE BEEN ORGANIZED WITH REFERENCE TO THE SPECIFIC PARAGRAPH(S) TO WHICH THE RESPONSES RELATE. QUOTATIONS IN *ITALICS* COME FROM THE DISCUSSION PAPER**

## **PREFACE**

**P3** We agree that a divergence of practice is not desirable, as within such an environment, it is very difficult for the reader of financial disclosure to understand what is being disclosed and to reach an informed opinion, particularly where entities engaged in extractive activities are being compared.

We also agree that for financial disclosure to be meaningful, tonnages or volumes, grades or other measure of quality, and contained (mineral resources) or recoverable (mineral reserves) valuable constituent(s) of minerals or oil and gas mineral resources and mineral reserves should be disclosed.

We note that with respect to definition and estimation of minerals and oil and gas reserves and resources there has been considerable convergence since the start of the Extractive Industries Project in 1998. The CRIRSCO family of National Reporting Codes and Standards was established in Australia (from 1989), USA (from 1992), Canada (from 2000), South Africa (from 2000), Europe (from 2001), Philippines (2007) and Chile (2008). These codes are very similar, and their definitions and guidance were normalized in the CRIRSCO International Reporting Template (2006)<sup>1</sup>. In 2007 the Petroleum Resources Management System<sup>2</sup> (PRMS) was issued by the Society of Petroleum Engineers (SPE) et al. The PRMS was an updated version of the classification system and supporting documentation issued in 2000, 2001 and 2005. Subsequently CRIRSCO and the SPE found that the principles of mineral resource and mineral reserve estimation were similar for both the minerals and oil and gas industries. Because the implementation of the principles was found to have been adapted to specific geological and extraction practices, CRIRSCO and SPE prepared a mapping document (2007)<sup>3</sup> such that the financial standards may be applied to either industry where appropriate, but the mapping also considers those areas where modified applications could

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<sup>1</sup> CRIRSCO, 2006, International reporting template for the public reporting of exploration results, mineral resources and mineral reserves, 33 pp.

<sup>2</sup> Society of Petroleum Engineers, American Association for Petroleum Geology, Society of Petroleum Evaluation Engineers and the World Petroleum Council, 2007, Petroleum resources management system, 49 pp.

<sup>3</sup> CRIRSCO and SPE, 2007, Mapping of Petroleum and Minerals Reserves and Resources Classification Systems, Joint report to International Accounting Standards Board Extractive Activities Working Group, 11 pp.



COMMITTEE FOR MINERAL RESERVES INTERNATIONAL REPORTING STANDARDS

be required. In 2009 The United Nations Framework Classification (UNFC) was amended and incorporated mapping of the CRIRSCO Template and PRMS<sup>4</sup>.

## **SCOPE AND APPROACH**

**1.3** We concur *“that during exploration it is common to have insufficient data to evaluate whether a deposit of minerals or oil and gas will be developed and will generate future net cash inflows from the extraction and sale of the minerals or oil and gas. These uncertainties revolve around the quantity of minerals or oil and gas that exist and can be extracted given geological, technical and economic conditions.”*

Both the CRIRSCO Template for minerals and the PRMS for oil and gas are designed to classify mineral or oil and gas deposits according to level of geological, technical and economic uncertainty, thereby facilitating disclosure of the level and type of uncertainty that exists.

It should also be clear that for the minerals industry, the probability of success for greenfields exploration is typically low. We believe exploration success rates to be lower in the minerals industry than in the oil and gas industry, and there is no currently applicable analogue in minerals to converting an oil and gas production well into a production well with little extra effort. Although success rates for brownfields exploration are higher, in many cases, the success is related to lowering operating costs at an existing operation, thereby enabling extraction of additional lower grade and/or higher stripping ratio material.

**1.9** *“The main business activities (exploration, evaluation, development and production) are very similar. In fact, the traditional differences between the two industries are being reduced as a result of the lead times involved in moving to production and the ratio of development-to-exploration expenditures becoming more comparable as oil and gas exploration moves from onshore conventional oil and gas to more capital-intensive offshore oil and gas and non-conventional oil and gas (e.g. oil sands). The cash flow profile and risks and uncertainties of a non-conventional oil project may be closer to those for a minerals project than for a conventional oil and gas project.”*

What is being said here is that with time, many upstream petroleum industry projects will resemble minerals industry projects, particularly for unconventional deposits where local

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<sup>4</sup> Ad Hoc Group of Experts on Harmonization of Fossil Energy and Mineral Resources Terminology, 2009, United Nations Framework Classification for fossil energy and mineral reserves and resources, 17 pp.



COMMITTEE FOR MINERAL RESERVES INTERNATIONAL REPORTING STANDARDS

knowledge of resources and reserves within blocks will become more important. For example a typical final delineation drill hole spacing for oil sands deposits is 50 m to 100 m, which is a similar spacing to that used for porphyry-copper deposits. Similar equipment is used to drill, blast, excavate and haul the oil sands as is done in large-scale open-pit coal or metals mines.

Therefore any new IFRSs should be based on common principles, with the view that guidance as to their application may evolve with time, and that the differences between petroleum and minerals may decrease or even vanish for some projects.

**1.20, 1.21d** *“Users are looking for information, either within the financial statements or elsewhere, that will be useful in estimating the value of the entity. For an entity in the extractives industries this usually means information about reserves and resources.”*

There is provision within the CRIRSCO Template and other National Reporting Codes and Standards for preparation of public reports that will contain extended discussion as to deposit geology, mineral resources, mineral reserves and a summary of feasibility studies, including economic analyses. These reports, sometimes called Competent or Qualified Person’s<sup>5</sup> reports are very often issued in connection with mergers and acquisitions, initial public offerings, or other types of financing. However, they are uncommonly issued to support continuing operations. For information on continuing operations, the users must look to financial disclosure, management discussion and analysis and contact with management.

## **DEFINITIONS OF MINERAL RESERVES AND MINERAL RESOURCES**

**2.1 to 2.6** We are in general concurrence with the Discussion Paper. Under Section 2.6, the statement is made: *“This diversity in definitions can make it difficult to compare the reserve and resource information that has been reported by different entities. This is not helpful to users of financial reports.”*

Our view is the convergence of the National Reporting Codes and Standards, with standard definitions of mineral resources and reserves (measured, indicated and inferred mineral resources, and proved and probable mineral reserves), culminating in the CRIRSCO Template has reduced the diversity of definitions. The CRIRSCO Template and National Reporting Codes and Standards contain extensive guidance, and there is a requirement that

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<sup>5</sup> “Qualified Person” is used in Canada; “Competent Person” is used for the remaining National Reporting Codes.



COMMITTEE FOR MINERAL RESERVES INTERNATIONAL REPORTING STANDARDS

public disclosure of exploration results, mineral resources, and mineral reserves be prepared by a Competent or Qualified Person who has relevant experience, and is a member of a self-regulating professional association with the power to discipline or expel a member.

CRIRSCO is working with numerous countries including Mongolia, Russia<sup>6</sup>, China, and Indonesia to map definitions of existing classification systems to the CRIRSCO Template or to convince these countries of the advantages of developing and adopting National Reporting Codes and Standards compatible with the CRIRSCO Template.

**2.7-2.10** We concur that resource and reserves definitions should be consistent between oil and gas and minerals, and agree the definitions should be compatible with financial reporting methodologies and requirements. We agree that *“the IASB does not have the requisite technical expertise in geology and engineering disciplines to be able to develop a comprehensive set of reserve and resource definitions (and accompanying guidance).”* We also concur that mineral resource and mineral reserve definitions *“may evolve with changes in knowledge, technology and best practices”*.

Given the amount of work that has been done on common standards via the CRIRSCO Template and family of National Reporting Codes and Standards, it would be far better for the IASB to adopt CRIRSCO’s definitions for reporting mineral resources and mineral reserves than for the IASB to develop its own definitions.

**2.11-2.23** For minerals, we concur that there are really only three candidate standards:

- CRIRSCO Template;
- SEC Industry Guide 7; and
- UN Framework Classification.

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<sup>6</sup> For example, Russian Federal Government Agency State Commission on Mineral Reserves (FGU GKZ) and CRIRSCO, 2009, Guidelines on alignment of Russian mineral reporting standards and the CRIRSCO Template, 106 pp.





COMMITTEE FOR MINERAL RESERVES INTERNATIONAL REPORTING STANDARDS

## **CRIRSCO**

In 1992 the Council of Mining and Metallurgical Institutions (CMMI) requested the member organizations to standardize the definitions of mineral resources and mineral reserves. In 1994 the CMMI organized for that purpose the CMMI Ad-hoc International Definition Group, which was a group of professional societies representing the United States, Australia, South Africa, Canada and the United Kingdom. The Group worked on a standard set of definitions modeled on the JORC code (Australasia) and came to agreement in 1997 (Denver Accord). In 2002 the Committee for Mineral Reserves International Reporting Standards (CRIRSCO) was formed as a successor, with the objective of formulating what is now called the CRIRSCO Template (2006). In 2007, CRIRSCO became partly funded by the International Council on Mining and Metals (ICMM) which is made up of the 19 mining companies listed in Appendix A, and in 2010 a Memorandum of Understanding (MOU) was reached establishing CRIRSCO as a strategic partner with the ICMM (see Appendix A).

The MOU specifies:

- Both ICMM and CRIRSCO have a shared interest in:
  - Greater convergence around best practice standards of reporting of mineral deposit estimates (mineral resources and mineral reserves) and of exploration progress (exploration results);
  - Exploiting synergies arising from the complementary aims, expertise, and stakeholders of the two organizations; and,
  - Collaboration, as the industry is stronger and more likely to achieve its aims when it works together rather than in separate groups.
- From the perspective of ICMM, a strategic partnership with CRIRSCO should provide:
  - Broader recognition of ICMM’s support for enhanced transparency and consistency of reporting standards, which have an important bearing on the economic dimensions of sustainable development;
  - More direct access to or influence at the negotiating table when, for example, reporting standards are being developed, or where governments seek to impose unreasonable or conflicting reporting standards;
  - Access to expert advice on the linkages between resource stewardship and sustainable development; and
  - Closer indirect engagement on the issue of reporting standards with professional societies, non-ICMM mining and exploration companies, regulatory bodies, stock exchanges and legal and accounting professionals.



COMMITTEE FOR MINERAL RESERVES INTERNATIONAL REPORTING STANDARDS

- From the perspective of CRIRSCO, a strategic partnership with ICMM should ensure:
  - A more secure and sustainable financial footing, delivered through an institutional partnership where both partners have a strong alignment of interests;
  - Enhanced credibility in its negotiations with the international organizations with which it is now dealing or may deal with in future;
  - Improved access to key decision makers in the international mining industry who have a legitimate interest in many of CRIRSCO's activities, and
  - The ability to plan for the future with confidence.

Although CRIRSCO receives most of its funding from the ICMM, it does also receive support from National Reporting Organizations and other sources. Currently there are 13 committee members representing the USA (2), Canada (2), Australasia (2), Chile (2), South Africa (2), and UK/Europe (3). The entire committee meets once per year; however groups of members meet more often as required to address specific tasks. The committee members are current or former employees of mining or consulting companies, and a former securities regulatory geologist is also a member.<sup>7</sup> The current arrangement has worked well, and during the past few years key achievements have been the CRIRSCO Template—PRMS mapping exercise (2007), adoption of the CRIRSCO Template-compatible Chilean code (2008), UNFC mapping accord (2009), and considerable dialog with Russia, China, and Mongolia. One of the European members of CRIRSCO is a Russian who is heavily involved with mineral resource and mineral reserve reporting in Russia.

The National Reporting Codes and Standards that are compatible with the CRIRSCO Template are in widespread use throughout Europe, Africa, Australia, Canada, and Latin America. These codes have either been adopted by securities regulators or have been embedded in listing and disclosure rules by securities exchanges. The CRIRSCO Template-compatible National Reporting Codes and Standards are not being used for public reporting in the USA, where the SEC requires usage of its Industry Guide 7. The CRIRSCO Template-compatible SME Guide (2007)<sup>8</sup> is used internally by some mining companies in the USA.

There has been a gradual updating of the National Reporting Codes and Standards during the past five years, with the result that there currently exist slight differences of definitions of mineral resource and mineral reserve categories. An immediate goal for CRIRSCO is to reconcile changes and make suggestions for embedding a common set of definitions in the National Reporting Codes and Standards similar to the Denver Accord. There could still be differences in interpretation (guidance) within the National Reporting Codes and Standards.

<sup>7</sup> It should be clear that the members are nominated by and represent National Reporting Organizations and not their employers or clients.

<sup>8</sup> Society for Mining, Metallurgy and Exploration, 2007, Guide for reporting exploration results, mineral resources and mineral reserves, 47 pp.



COMMITTEE FOR MINERAL RESERVES INTERNATIONAL REPORTING STANDARDS

In summary, CRIRSCO is an established organization with the sole objective of developing and maintaining comparative world-wide standards and guidance for public reporting of exploration results, mineral resources and mineral reserves. CRIRSCO has the support of major mining companies and professional mining institutions, and has a track-record of progressing improvement and adoption of its standards. CRIRSCO would be pleased to have further discussions with the IASB on the subject of the adequacy of the CRIRSCO Template and National Reporting Codes and Standards to support financial reporting going forward.

### **SEC Industry Guide 7**

Industry Guide 7 is a four-page document that has been in effect for several decades. It is used by US listed companies to report mineral reserves via SEC Form 10K (domestic companies) and SEC Form 20-F (foreign companies). Only proved and probable mineral reserves can be reported, and these for an operating mine or a project having a final feasibility study. There is no provision for reporting mineral resources in Industry Guide 7; however via “Comment Letters” written by SEC staff, the entity may report measured and indicated mineral resources as “mineralized material”. The SEC does not require disclosure to be prepared by a Competent Person, although it may use moral persuasion to have a report re-written or hand cases to its Enforcement Division for prosecution.

The Society for Mining, Metallurgy and Exploration has attempted to hold a dialog with the SEC for many years. The most current attempt resulted in a CRIRSCO Template-compatible SME Guide (2007). Thus far, there has been no action on the part of the SEC to update Industry Guide 7, though in 2007-2008, the SEC did update its regulations for disclosure of petroleum reserves and resources.

It is CRIRSCO’s position that the SEC Industry Guide 7 is:

- Incomplete, as there is no provision for reporting mineral resources; and there is little guidance provided to the user as to the implementation of the definitions;
- Opaque, as proved and probable reserves may be combined;
- Conservative, to the extent that reserves cannot be declared until a final feasibility study is performed; and
- Inadequate, in that there is no requirement for reports to be prepared by a Competent Person, and there are only one or two geologists/mining engineers on the SEC staff to review technical disclosure.

Therefore CRIRSCO confirms the Project Team’s rejection of the SEC Industry Guide 7 as a candidate standard for reporting mineral reserves and mineral resources.



COMMITTEE FOR MINERAL RESERVES INTERNATIONAL REPORTING STANDARDS

## UNFC

The United Nations Framework Classification (UNFC) has been evolving since 1992, when the United Nations Economic Commission for Europe (UN-ECE) established a Task Force consisting mainly of representatives from European and ex-Communist Block countries with the aim of formulating international definitions for mineral and oil and gas resources and reserves. The classification provides a three-dimensional schema with axes related to degree of geological knowledge, degree of technical and social feasibility, and degree of economic viability. This classification now (2009) consists of non-commodity specific high-level definitions (“cells”) that can be populated by exploration information, mineral resources and mineral reserves specified in the CRIRSCO Template.

CRIRSCO suggests that the UNFC (2009):

- Is only a generalized high-level classification (umbrella system) in that it does not differentiate between oil and gas and minerals;
- Is still unfinished, and is currently the subject of further refinement;
- Provides potentially useful information to government agencies regarding mineral endowments, particularly for planned economies;
- Does not make use of the principle of competence (Competent/Qualified Person) and therefore has no recourse to disciplinary processes;
- Has no representative body in place to manage the system nor measure compliance;
- Is a complex system with more than 70 classification categories;
- Is not used in the main capital markets throughout the world; and
- Is virtually unknown in the minerals industry.

Given the “cells” in the UNFC that would be useful in financial reporting have been mapped to the CRIRSCO Template, and given that the UNFC refers to definitions and guidance listed in the CRIRSCO Template for minerals and PRMS for oil and gas, CRIRSCO confirms the recommendation of the Project Team that CRIRSCO is better positioned to work with the IASB to develop IFRSs concerning the minerals industry.

## Conclusion

As pointed out in the Discussion Paper, the CRIRSCO Template:

- *“Is regarded as the dominant international classification system for mineral reserves and resources, with the National Reporting Codes [and Standards] forming the basis*



COMMITTEE FOR MINERAL RESERVES INTERNATIONAL REPORTING STANDARDS

*of market regulator disclosure requirements in most jurisdictions that have formalized mineral reserve and/or resource disclosure requirements (excluding the US SEC);*

- *“Includes all solid minerals, including diamonds, other gemstones, aggregates, and coal”; and*
- Is compatible with the PRMS

**2.24 to 2.45** The Discussion Paper gives a particularly lucid comparison of the CRIRSCO Template and PRMS. Differences are shown to be either inconsequential or manageable.

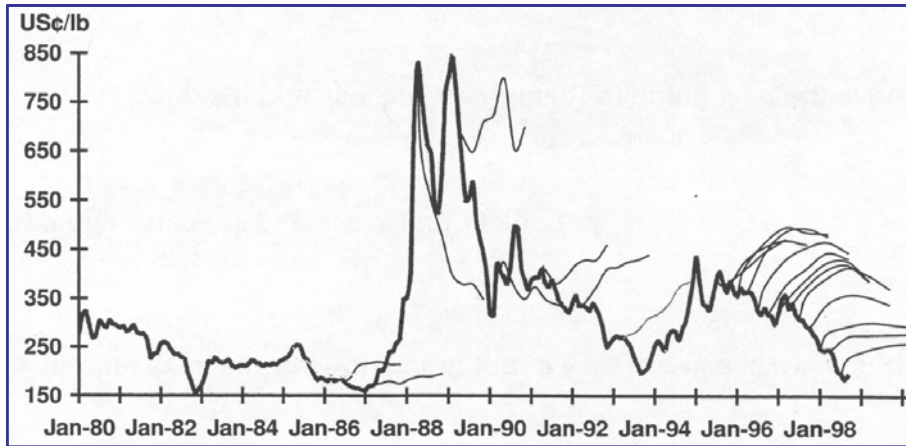
CRIRSCO will consider placing guidance in its next update of the Template *“that any feasibility study that has not been implemented within five years would require a reassessment of feasibility, and quantities would either be retained as mineral reserves, ‘refreshed’ on an annual basis, or downgraded to mineral resources as a result of that assessment,”* with *“five years”* being replaced by *“an appropriate period of time”*, as determined by the Competent/Qualified Person. It would be likely the period of time would be less than five years.

**2.46 to 2.66** The Discussion Paper notes that *“the CRIRSCO Template and the PRMS both indicate that the economic assumptions used in reserves and resources estimation should be based on the entity’s internal forecast of future conditions. The notion of using internal forecasts of economic assumptions in financial reporting without having to refer to market-based evidence is generally not supported by IFRSs.”*

CRIRSCO notes:

- For many commodities market forecasts of prices are highly volatile, and a futures market may only extend a few years into a mineral deposit’s life. For example see Figure 1.

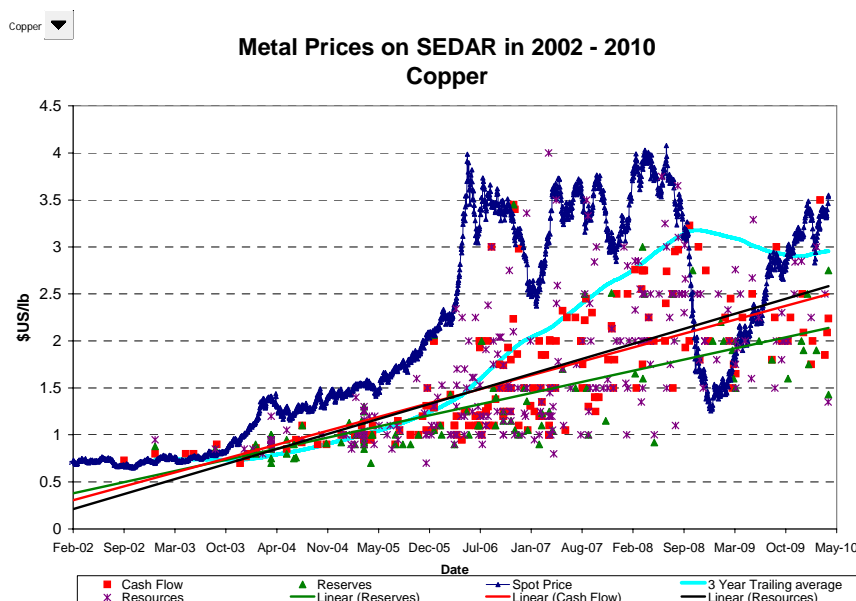
**Figure 1: Actual Nickel Prices (thick line) and Consensus Forecasts (thin lines)**



Source: J.B. Were, 4<sup>th</sup> Australian Resources Conference, 1998

- Under such cases, an entity is likely to adopt a conservative stance, particularly for a long-life project, and such conservatism would typically be adopted by others in determining fair value. This is illustrated for example, in Figure 2. Copper prices being used to evaluate mineral projects are well below the spot price and even the three-year trailing average.

**Figure 2: Published Copper Prices in Canadian National Instrument 43-101 Technical Reports**



Source: AMEC



COMMITTEE FOR MINERAL RESERVES INTERNATIONAL REPORTING STANDARDS

The Discussion Paper goes on to say: *“However, the project team recommends that the fair value hierarchy should be applied to determine what assumptions are relevant to the individual facts and circumstances of the entity and the location and type of mineral or oil and gas involved.”*

CRIRSCO concurs and will consider adding guidance to the Template.

The discussion paper recognizes that *“the use of management’s intentions in reserves disclosures provides useful information to users of financial reports because the disclosure shows the estimated quantities of minerals or oil and gas that the entity expects to develop and produce from its operations, and therefore it provides an insight into the future cash flows that the entity might generate from those operations. The project team’s view is that those reserves should be disclosed separately from other quantities of minerals or oil and gas that would have a positive net present value (at market discount rates) if they were developed and produced, but are not currently planned to be developed and produced by the entity.”*

This may be immaterial if the quantities are small and/or the unplanned material would be mined far out in the future. Preparing mine plans to include minerals for which management has no current intent to mine may not meet the cost-benefit test. In some cases (Indonesia, Colombia), the Contract of Work or mining lease is for a fixed period, and there is no guarantee of renewal. It is inappropriate to put material that might be mined after contract expiry into mineral reserves.

The CRIRSCO Template and the National Reporting Codes and Standards do not require separate disclosure of mineral reserves for which management has and does not have a declared intent to mine. This is because management may wish to keep such information confidential to maintain a competitive advantage. If mineral reserves were being held for sale to others within a reasonable time period, CRIRSCO agrees that separate disclosure would be warranted.

**2.67, 2.68** We thank you for the complementary comments about the CRIRSCO Template and the CRIRSCO–PRMS mapping document. We look forward to working with you going forward as you develop IFRSs and would like to indicate our receptiveness to including some financial/economic disclosure guidance in future versions of the Template.

## **ASSET RECOGNITION**

**3.1 to 3.11** The Framework definitions are clear. Given an asset would be valued at historical cost, which can be reliably measured, the main requirement for asset recognition



COMMITTEE FOR MINERAL RESERVES INTERNATIONAL REPORTING STANDARDS

appears to be that *“it is probable that the future economic benefits will flow to the entity”*. This has been interpreted as more likely than not.

**3.14, 3.15** *“Normally, the price an entity pays to acquire separately an intangible asset will reflect expectations about the probability that the expected future economic benefits embodied in the asset will flow to the entity. In other words the entity expects there to be an inflow of economic benefits, even if there is uncertainty about the timing or amount of the inflow. Therefore the probability recognition criterion in paragraph 21(a) is always considered to be satisfied for separately acquired intangible assets.”*

It seems there are two types of assets here:

- Legal rights and acquisition costs apply to large tracts of ground. The tracts may contain a group of mineral deposits. The probability of a member of the group turning into a mine will be low (well lower than 50%); the potential payoff would be variable, but it could be envisioned to be enough to warrant expectation of future economic benefits. If exploration were incomplete, then it could be expected another entity might buy or otherwise farm into the property with the first owner recognizing a gain. There are companies that assemble property with just this intention. It seems fair to recognize such legal rights and acquisition costs as assets when an entity gains control of the property.
- Exploration costs, development costs, including drilling programs to delineate resources, metallurgical testwork, feasibility studies etc. are generally specific to a single orebody or sometimes contiguous orebodies. These are accounted for as separate projects, and even if more than one project results from the original land package, they will usually be evaluated separately. The probability of success (future economic benefits) is higher for a development-stage project than for an exploration-stage project. This is because mineralization will have been discovered. However, the probability will still start out less than 50% and indeed may stay less than 50%. Development results may be disappointing, and thus there may be no guarantee of a sale or farm-in. A **minority** of deposits having initial positive exploration results may eventually proceed all the way to a mining stage. For those that do, the conditional probability of success going forward will increase as the orebody is found, delineated, expanded etc. It seems fair to hold off on recognizing an asset related to exploration and mine development until the probability of future economic benefits crosses the 50% mark. This is why mining companies expense exploration and development costs until a mineral resource is found, and in most cases, sufficient pre-feasibility or feasibility studies have been performed to make success highly probable (>50%). At this point the entity has an asset it can recognize and sell to others or develop itself.





COMMITTEE FOR MINERAL RESERVES INTERNATIONAL REPORTING STANDARDS

The risk profiles of legal rights and acquisition costs assets are different from exploration and development stage assets. The legal rights and acquisition costs asset would potentially be saleable to others in a reasonable time period.

On the other hand, exploration and development of a mine can take many years. In the early stages, the expenditures are relatively low, and a number of plays will be tested on a property, each with a low probability of success, but where successful, a buyer or farm-in can usually be found to realize economic benefits, but these benefits are nearly always dependant on the uncertain and continued success of the exploration effort. The risk of failure is still high. For a development-stage project, the probability of success is higher, but costs of continuing work are also higher. For only a few deposits will the chances of success exceed 50%.

Thus it makes sense to have separate asset classes, as indeed the Discussion Paper recommends in Paragraph **3.38**. However, the legal rights and acquisition costs should be recognized as separate assets from exploration and development stage costs. The risk/reward profiles are different.

An interesting issue is at what point will the expectation of probable economic benefits occur, that is the probability of future economic benefits will be more likely than not. In the past, companies have viewed a positive pre-feasibility study (brownfields) or a positive feasibility study (greenfields) as a brightline indicator. Note that at such stages mineral reserves will be declared that will be at least probable and in most cases a mixture of proved and probable, which would indicate that the geological risk would be under control (confidence level  $\geq 50\%$ ). There are two areas that undermine the success rate though:

- Modifying factors which delay the project. There is excessive time required for permitting, environmental clearances and governmental negotiations during which time the fiscal regime may worsen: capital costs may increase because of skilled-labour and material shortages, commodity prices may decline, and exchange rates may become unfavourable; and
- For a large project, the entity's required investment going forward may be very large; hence the entity would like to be quite sure of success before recognizing an asset.

There are also more favourable conditions that might allow earlier asset recognition:

- A very rich deposit near existing plant and infrastructure. Barrick's Meikle Mine in Nevada is an example. Early drilling delineated 7 Mst at approximately 0.6 oz/st with about 4 Moz of contained gold. The mine was rushed into production about 1993 with no feasibility study; and



COMMITTEE FOR MINERAL RESERVES INTERNATIONAL REPORTING STANDARDS

- In about 2006, Rio Tinto rushed several new or expanded Western Australian iron mines into production to take advantage of high prices related to overheated Chinese markets. It was a calculated risk to do this without feasibility studies, but the company had a long history of mining iron ore in the region.

It is CRIRSCO's opinion that for most deposits, asset recognition related to development would occur at the pre-feasibility stage, but that exceptions could rightly occur, and really the determination as to when the probability of future economic benefits is more likely than not should be decided or confirmed by the entity's Competent/Qualified Persons. The confidence in the geology/resources **and** modifying factors/reserves must **both** be taken into account in making the decision. Where material, asset recognition for such exceptions should be accompanied by a Competent Person's assessment in the management discussion and analysis section accompanying the financial reports with language to the effect that the asset includes mineral resources known with a reasonable level of confidence which the entity believes could be brought into production with the establishment or modification of required permits and foreseeable favourable technical assessments and market conditions.

**3.39 to 3.68** We are in general agreement with the proposals made in the Discussion Paper for Unit of Account, and in grouping assets considering risk profiles, particularly for early stage projects. We do not agree with Paragraph **3.55** in which the Project Team proposes assets at:

*“physically separate locations (i.e. ones for which the rights held are not contiguous) to be separate units of account, even if they are managed as a single unit. Because they are physically separate they are likely to have different lives and other economic characteristics”*

This is a sweeping assumption and not necessarily true. There are examples where a series of coal, uranium, bauxite or diamond deposits etc. feed a common treatment plant. Each deposit could be thought of as analogous to a level in an underground mine. Really, the entity's Competent/Qualified Persons should have a say in determination of risk profiles, lives and economic characteristics of components of units of account.

## **ASSET MEASUREMENT**

**4.12** We agree that minerals and oil and gas assets are unique, and that comparable sales are difficult to find and adjust. It is possible to obtain information as to discount rates that are typical for stage of development and region. It is also possible to find information for



COMMITTEE FOR MINERAL RESERVES INTERNATIONAL REPORTING STANDARDS

exploration and development properties related to value/oz or value/pound of resources. Such yardsticks can be used prior to feasibility studies.<sup>9</sup>

**4.13** The replacement cost approach is commonly used for exploration property, under the guise of evaluating the terms of actual or potential joint ventures. For instance, if Company A has spent \$X, and it could attract Company B to spend the next \$Y on continued exploration to earn a 50% interest, then the property would be worth \$(X+Y).

**4.14-4.22** The income approach involving preparation of annual cash flows and discounting them to obtain a net present value is the most commonly used approach to evaluate mineral deposits. This usually requires at least a pre-feasibility level study for a new mine. As indicated in Figure 2, most entities are conservative in their Level 3 assumptions on commodity prices compared to market data. Missing from the Discussion Paper is mention of capital costs, which are often the largest source of uncertainty for new projects. It is very important that capital cost estimates contain contingencies that will reflect additional costs that will be incurred that the capital cost estimator has been unable to quantify. This is particularly important for cash flows based on pre-feasibility studies, where the percentage contingency can be significant (20 to 35 %).

Most companies may perform various sensitivity analyses regarding the inputs to cash flows. The use of expected value approaches and incorporating option values into fair-value assessments is becoming more common.

**4.23-4.24** Fair values are very commonly used to assign acquisition costs to assets for mergers and acquisitions or impairment tests. We concur that development of fair value is a lengthy exercise. Fair value would not meet a cost-benefit test for routine financial disclosure, and it appears from the Discussion Paper that disclosure of fair value would be of marginal use. The inputs to fair value and even the cash flows are often published in Competent/Qualified Persons reports, particularly for new projects or acquisitions. However, typically these reports are not available for continuing operations.

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<sup>9</sup> For examples see:

Ludeman, F. 1995, Acquisition costs of gold and copper reserves for years 1990 through August 1995, Mining and Business Digest, 17 pp.; and

Smith, L.D., 1995, Discount rates and risk assessment for mineral project evaluation, CIM Bulletin, V88, No. 989, pp 34-43.



**4-25 to 4-32** Standardized measures would be very difficult to implement for minerals projects because of the diversity of commodities and in many cases (coal, uranium, iron ore and most industrial minerals are examples) there are no relevant published prices, and disclosure may violate contract terms. The disclosure of a financial projection based on proved mineral reserves alone would be difficult to implement because proved and probable mineral reserves are frequently spatially intermingled and mined together. A disclosure of the percentage of production from proved and probable mineral reserves (on an annual basis) is sometimes useful for evaluating the risks for a specific project; however, for a large diversified mining company this would likely not be material. It would be useful to leave disclosure of risks to management commentary, and reserve risk in particular to Competent/Qualified Person's disclosure.

**4.61 to 4.62** We agree with the Project Team's alternative view *"to recognize an asset only when sufficient information is available to indicate the existence of economically recoverable quantities of minerals or oil and gas. This alternative would result in most exploration and evaluation costs being recognized as expenses as incurred unless those costs are otherwise capable of being recognized as assets in accordance with IAS 16 or IAS 38"*. Under this alternative, *"Exploration properties would be recognized in the financial statements – but would be measured at the cost of acquiring the rights"*.

**4.70** We agree that it is very difficult to perform an impairment test on an exploration asset. The uncertainties as to possible outcomes of additional work or even what the property would be worth to another party are often very large. We concur that *"management should be required to write down an exploration property only when, in its judgement, there is a high likelihood that the carrying amount of the property would not be recovered in full"*.

**4.80** The historical cost accounting model is routinely used for production planning and would be far simpler to implement than a current value accounting model.

**4.85** We concur with the Project Team that *"its choice of historical cost as the measurement basis is based to a large extent on doing the 'least harm', and may not meet the objective of financial reporting of providing financial information that is useful for making decisions."* However given fair value measurement does not meet a cost-benefit test and that users prefer to construct their own asset measurements, we accept the historical cost method because of its simplicity, transparency and reliability of measurement.



COMMITTEE FOR MINERAL RESERVES INTERNATIONAL REPORTING STANDARDS

We note the Project Team’s *“one clear finding is that for financial statements to provide useful information about exploration properties and minerals or oil and gas properties - the core assets of entities engaged in extractive activities – substantive disclosures about the reserves would be required. This is true whether the measurement basis is historical cost or current value”*. Generally published Competent/Qualified Persons reports provide such information. CRIRSCO and the National Reporting Organizations would be willing to assist the IASB in developing IFRSs that contain a format for disclosure that would meet a cost-benefit test and provide substantive information about reserves to the user community.

## **DISCLOSURE**

There is a considerable divergence of practice regarding disclosure in the minerals and oil and gas industries. The Project Team has proposed a disclosure environment for consideration in developing IFRSs. While useful, CRIRSCO is concerned that to provide the assumptions used in mineral resource and mineral reserve estimations so that the users of financial reports could construct their own estimates of current or fair value, the amount of detail to be provided would not meet a cost-benefit test. Therefore CRIRSCO advocates that the entity’s Competent/Qualified Person(s) would assist management in formulating material disclosure for incorporation in a financial report, and optionally providing other disclosure in Competent/Qualified Person’s reports.

**5.11** The Project Team advocates

*“(a) expressing estimates of recoverable minerals or oil and gas at different confidence intervals (e.g. proved reserves, probable reserves);*

*(b) presenting these estimates separately for properties that are subject to different risks, such as market or political risks”*.

These are routinely being done. Mineral resources are being stated on an in situ basis.

The Project Team also supports

*“(c) disclosing the main assumptions associated with these [reserve] estimates and sensitivity analysis of those assumptions; and*

*(d) providing statements of changes in these estimates from year to year”*.



COMMITTEE FOR MINERAL RESERVES INTERNATIONAL REPORTING STANDARDS

These are being done to varying degrees at present. Sensitivity analysis (c) is commonly done in pre-feasibility and feasibility studies for new properties. It could be costly to provide such information on an ongoing basis for producing properties. Changes in reserves estimates (d) from year to year and the reasons why would be useful. It is critical in the extractive industries to provide the impact of reserve additions and depletions in annual reports.

**5.21-5.22** Most mining companies are using external resource and reserve auditors on a non routine basis to examine problems and to suggest solutions. These auditors are typically experienced geologists and mining engineers who are independent consultants or work for independent consulting companies. Use of independent external resource and reserve auditors for corporate assurance is relatively rare, and thus far the reliance on internal Competent Persons to provide assurance has worked fairly well. The concern that *“auditing the disclosure of reserves information would be very costly and that there is a lack of appropriately qualified independent consultants”* is more related to personal practices used by the entity’s individual estimators that frequently either do not have built-in checks or an audit trail that can be followed to ensure a procedure has been performed correctly.

Probably the most important item to audit from a financial perspective would be the mineral resource classification (measured, indicated and inferred) and the mineral reserve classification (proved, probable), which would typically take only a day per property, assuming it had been previously vetted by a company’s Competent/Qualified Persons, with a statement of relevant assessment criteria and findings (see Table 1 of CRIRSCO Template).

**5.29** Since most mining companies do include mineral resources in their strategic business plans, it is material to disclose mineral resources as well as mineral reserves. For gold companies, which typically may have mines with short lives and tight drill spacings, total reserves typically cover about 10 years’ production. It is essential for the user to know what mineral resources are in the pipeline. For base or ferrous metals companies, with typically long reserve lives, the user can evaluate the mineral resource base and form an opinion of the growth potential, as growth will typically come from bringing new properties on line as well as expansion of existing mines. In summary, for the minerals industry it should be mandatory to disclose both mineral reserves and mineral resources.

**5.30** *“The project team considers that concerns about uncertainties associated with reserve and resource estimates can be mitigated by including a brief definition of each reserve classification as part of the reserve quantity disclosure”.* Certainly the definitions



COMMITTEE FOR MINERAL RESERVES INTERNATIONAL REPORTING STANDARDS

listed in the CRIRSCO Template would help. More complete discussion could be disclosed in a Competent/Qualified Person's Report.

**5.41-5.49** *“estimating reserves estimates with reference to the portfolio effect is inconsistent with the objective of using disaggregated disclosure to identify main risks and uncertainties associated with specific reserve estimates”.* The mining industry generally states reserves by property, but where it would not be material to achieving the objective, some aggregation by groups of properties should be both practical and permissible.

CRIRSCO agrees that disclosure of reserves and resources should be separately done by commodity. *“The project team notes that the CRIRSCO Template does not separately identify developed and undeveloped reserves, although this classification exists as part of the United Nations Framework Classification.”* CRIRSCO accepts this idea as useful as well as the practice of AngloGold Ashanti of listing separately mineral reserve assets that are for sale.

The sample disclosure of information contained in Exhibit 5.4 (BHP Billiton practices) is useful disclosure. The Competent/Qualified Person should be named, or the user directed to documentation containing this information. The latter generally applies for large mining companies having tens if not hundreds of Competent Persons responsible for mineral reserves and mineral resources estimation.

**5.50-5.67** CRIRSCO concurs with the statement made by the Project Team: *“In contrast, the use of historical average price assumptions is not supported by most entities in the minerals industry, where there is a strong preference to use management's forecast price assumptions. Those supporting the use of forecast price assumptions note that management makes business and investment decisions using expected future prices rather than current prices. Accordingly, they argue that estimating reserves using future prices provides a more faithful representation of the estimate than if reserves were estimated using current prices.”*

The estimation of mineral reserves is not a simple task. It involves economic evaluation of blocks of ground which may be as small as 10 x 10 x 5 m. Once evaluated, these blocks are assembled into a life-of-mine plan which has many considerations involving stripping or access to the ore, blending and stockpiling and ancillary but no less important dewatering, environmental management and sustainable development plans. It would be onerous, wasteful of time as well as misleading to expect a company to prepare a mineral reserve statement for public disclosure using a life-of-mine plan, tied to different price assumptions such as those dictated by standardized measures, three-year historical averages, etc. that it did not intend to follow.



COMMITTEE FOR MINERAL RESERVES INTERNATIONAL REPORTING STANDARDS

Publication of prices could introduce a competitive disadvantage or could be construed as price signalling, triggering a possible antitrust investigation, and there are some contracts for which disclosure of terms would invalidate them. In these cases management discussion on pricing may have to be general or qualitative. In other cases (precious metals companies), prices used to estimate reserves are routinely disclosed. In summary, publication of prices should be optional.

Production schedules are usually declared in Competent/Qualified Persons reports. This can be extremely useful information, but may be considered sensitive, particularly where groups of companies have interlocking property positions and are using common infrastructure. It would probably be sufficient to provide the user a regional or entity-wide forecast of future production.

Sensitivity analysis can be useful disclosure and is also contained within Competent/Qualified Person's reports. However, sensitivity analysis is very difficult to do well because of the inter-relationships of various economic factors. Therefore simple (single factor) sensitivity analysis can be misleading. Thus neither type of sensitivity analysis may meet a cost-benefit test. If an entity feels that sensitivity analysis is useful disclosure, then sensitivity analysis should be a pre-planned activity and performed in parallel with base-case reserve estimation. It is interesting to note in the Discussion Paper that some companies in the gold industry have taken sensitivity analysis on board.

Where the historical average price over a three-year period falls below the price used to estimate reserves and in preparation of a life-of-mine plan, the SME Guide (2007) suggests checking the cumulative undiscounted cash flows using the historical average price to see they are still positive, and if not to disclose the price at which the cumulative undiscounted cash flows become positive. The Project Team is not aware of any minerals entities that are disclosing this type of reserves sensitivity. This is probably because since the test was developed most entities have used prices for reserve determination that have been less than the three-year average prices (see Figure 2).

**5.68-5.71** Reconciliation provides extremely important disclosure. CRIRSCO agrees that reconciliation of changes in mineral resources and mineral reserves should be broken down by components. As suggested by the Project Team these would be:

- (a) *“discoveries and extensions;*
- (b) *revisions of previous estimates, which may include revisions as a result of:*
  - (i) *geological factors (e.g. a better understanding of the geology as a result of additional drilling activities*
  - (ii) *commodity price factors*





COMMITTEE FOR MINERAL RESERVES INTERNATIONAL REPORTING STANDARDS

- (iii) *other economic factors (eg change in taxation or discount rates);*
- (c) *production of minerals or oil and gas;*
- (d) *acquisition of reserves through the purchase of minerals or oil and gas; and*
- (e) *disposal of reserves through the sale of minerals or oil and gas properties.”*

CRIRSCO would add that a comparison between mineral reserves and mineral resources depleted by mining versus and production (tonnage and grade) is extremely useful disclosure as it demonstrates the efficiency of operations. However, the disclosure could be limited to material differences, say greater than 10 %.

Reconciliation should also show transfers of mineral resources between categories (measured, indicated and inferred), and transfers from mineral resources to mineral reserves.

**5.72-5.97** Given the user community prefers to make its own calculations of current or fair value, disclosure of current or fair value does not appear to meet a cost-benefit test:

*“Preparers in the minerals and oil and gas industry do not support a requirement to disclose a current value measurement of minerals or oil and gas properties. They do not believe the disclosure can be justified on cost-benefit grounds, owing to the expected costs involved to prepare the disclosure and limited benefits they believe it would provide to users (especially users who are not familiar with the disclosure) given that the measurement does not provide a meaningful assessment of value. They also believe that the current value measurement has no relevance for internal management purposes”.*

### **Concluding Comment on Disclosure**

It is suggested that there is a conundrum:

- To be useful disclosure would have to be detailed;
- Such detailed disclosure will be costly to prepare;
- Financial reports do not have room for the requisite detail and commentary; and
- In some cases disclosure would reveal management intentions that might compromise its ability to compete.

CRIRSCO suggests that with respect to technical disclosure of reserves and resources, the user can expect a faithful representation if the entity certifies that its resources and reserve statements are in accord with the CRIRSCO Template-compatible National Reporting Code or Standard and have been prepared/approved by a Competent/Qualified Person.



COMMITTEE FOR MINERAL RESERVES INTERNATIONAL REPORTING STANDARDS

Further, the entity could produce a Competent/Qualified Person's Report which would contain more detailed disclosure and explanations for assumptions made. Such a report could be located on the entity's website and summarized in its financial reports.

At the time of drafting IFRSs, it will be very important to have extended consultations with both preparers and users of disclosure to ensure that costs and benefits are balanced.

**APPENDIX**

**MEMORANDUM OF UNDERSTANDING BETWEEN**

**INTERNATIONAL COUNCIL ON MINING AND METALS (ICMM)**

**AND**

**COMMITTEE FOR MINERAL RESERVES INTERNATIONAL REPORTING STANDARDS (CRIRSCO)**



### 3. Objectives of a strategic partnership between ICMM and CRIRSCO

Both ICMM and CRIRSCO have a shared interest in:

- greater convergence around best practice standards of reporting of mineral deposit estimates (mineral resources and mineral reserves) and of exploration progress (exploration results)
- exploiting synergies arising from the complementary aims, expertise and stakeholders of the two organisations
- collaboration, as the industry is stronger and more likely to achieve its aims when it works together rather than in separate groups.

*From the perspective of ICMM*, a strategic partnership with CRIRSCO should provide:

- broader recognition of ICMM's support for enhanced transparency and consistency of reporting standards, which have an important bearing on the economic dimensions of sustainable development
- more direct access to or influence at the negotiating table when, for example, reporting standards are being developed, or where governments seek to impose unreasonable or conflicting reporting standards
- access to expert advice on the linkages between resource stewardship and sustainable development
- closer indirect engagement on the issue of reporting standards with professional societies, non-ICMM mining and exploration companies, regulatory bodies, stock exchanges and legal and accounting professionals.

*From the perspective of CRIRSCO*, a strategic partnership with ICMM should ensure:

- a more secure and sustainable financial footing, delivered through an institutional partnership where both partners have a strong alignment of interests
- enhanced credibility in its negotiations with the international organizations with which it is now dealing or may deal with in future
- improved access to key decision makers in the international mining industry who have a legitimate interest in many of CRIRSCO's activities
- the ability to plan for the future with confidence.

### 4. Roles, responsibilities and reciprocal obligations

In broad terms, the primary role of ICMM will be to provide ongoing funding and some limited administrative support related to the strategic partnership. CRIRSCO's role will be to deliver on the work program it agrees between its members, with consultative input from ICMM on the nature and scope of its activities, and by mutual agreement on the related level of ICMM support.

More specifically, the responsibilities/reciprocal obligations of ICMM include:

- provide financial resources to CRIRSCO in pursuit of its activities in a timely manner, up to an agreed maximum annual allocation, and on receipt of satisfactorily completed expenses claims. Such funding will be limited to legitimate expenses that CRIRSCO incurs, as opposed to core funding the salaries of any of the representatives of national reporting organizations who participate in CRIRSCO
- to actively explore, on a quarterly basis, appropriate opportunities, venues or vehicles to deliver mutually supportive messages for any relevant aspects of the respective work programmes of the partners
- to provide an opportunity for CRIRSCO to report to and directly engage with EWG on past activities and future priorities, on at least an annual basis
- to provide the level of administrative support required in support of the strategic partnership.

The responsibilities/reciprocal obligations of CRIRSCO include to:

- operate as an independent entity while remaining proactively supportive of ICMM's objectives

- engage with ICMM on the scope of its proposed annual work program and appropriate level of support on an annual basis, with ICMM approving the proposed expenditure as part of its normal annual budgeting process
- to actively explore, on a quarterly basis, appropriate opportunities, venues or vehicles to deliver mutually supportive messages for any relevant aspects of the respective work programs of the partners
- to provide an opportunity for ICMM to provide input to CRIRSCO on its past activities and future priorities, on at least an annual basis
- proactively continue to pursue its aims with the support of ICMM and other contributors.

## 5. Project management and implementation

The management of the ICMM/CRIRSCO strategic partnership will be undertaken by the program director with responsibility for ICMM's Reporting and Assurance work program (currently Aidan Davy) and the chair of CRIRSCO (currently Roger Dixon) or his/her nominated representative.

## 6. Level of funding

ICMM's current level of funding to CRIRSCO is £70,000 per annum (approximately US\$116,000). CRIRSCO's current funding requirements are relatively modest because nearly all its activities are undertaken voluntarily and because there is no use of professional consultants. ICMM's contribution would take the form of direct support for an institutional partner.

A number of CRIRSCO stakeholders fund its current activities, with significantly different vested interests in and capacities to pay for its work. Until CRIRSCO became a task force of the ICMM, national reporting organizations and representatives' employers were CRIRSCO's prime support base, with the latter continuing to provide significant assistance.

The proposed level of support to CRIRSCO by ICMM for 2010, based on CRIRSCO's proposed activities, is £70,000 (see Table 1).

## 7. Terms and conditions

The parties shall refrain from any action that may adversely affect CRIRSCO and shall fulfil their responsibilities/reciprocal obligations with full regard for the interests of CRIRSCO.

The parties shall refrain from any action that may adversely affect ICMM and shall fulfil their responsibilities/reciprocal obligations with full regard for the interests of ICMM.

## 8. Duration and review


This strategic partnership commitment will be for an initial period of three years, subject to satisfactory annual reports on progress to EWG and, as appropriate, a decision on renewal by the ICMM Council.

**Table 1: CRIRSCO's Proposed Activities and Budget for 2010**

<b>Activity</b>	<b>Proposed Budget UK Sterling</b>
Annual Meeting	45 000
UNECE Meetings	10 000
Alignment with potential new members	12 000
CRIRSCO template and branding	3000
<b>TOTAL</b>	<b>70 000</b>

**On behalf of ICMM**

Signature



Print name

R. Anthony Hodge

Position

President

Date

3 June 2010

**On behalf of CRIRSCO**

Signature



Print name

Roger Dixon

Position

Chairman

Date

9 June 2010

## **ICMM MEMBER COMPANIES**

Anglo American

AngloGold Ashanti

African Rainbow Minerals

Barrick

BHP Billiton

Freeport-McMoRan

Goldcorp

Gold Fields

Lihir Gold

Lonmin

Mitsubishi Materials

Minerals and Metals Group

Newmont

Nippon Mining & Metals

Rio Tinto

Sumitomo Metal Mining

Teck

Vale

Xstrata