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**International
Accounting Standards
Board**

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These notes are based on the staff papers prepared for the IASB. Paragraph numbers correspond to paragraph numbers used in the IASB papers. However, because these notes are less detailed, some paragraph numbers are not used.*

INFORMATION FOR OBSERVERS

Board Meeting: 14 March 2008, London

Project: Extractive Activities research project

Subject: Report on review of convergence opportunities between minerals and oil & gas reserve and resource definitions (Agenda Paper 10A)

Purpose

1. This paper considers the findings from a review that compared the industry-based minerals and oil & gas reserve and resource definition and classification systems. This review was undertaken by the SPE/CRIRSCO convergence team (hereafter referred to as the 'convergence team') – which is an industry working group comprising members of the Society of Petroleum Engineers Oil and Gas Reserves Committee (SPE OGRC) and the Committee for Mineral Reserves International Reporting Standards (CRIRSCO).
2. With the review complete, it is also timely to consider the reasons for determining whether these industry-based definitions of minerals and oil & gas reserves and resources may be suitable for use in a future IFRS dealing with upstream mining and oil & gas extractive activities. These reasons are also presented in this agenda paper.

Background

3. The SPE/CRIRSCO review was undertaken at the request of the IASB¹, with the following aim:

The Committee for Mineral Reserves International Reporting Standards (CRIRSCO) and the Society of Petroleum Engineers (SPE) Oil and Gas Reserves Committee are requested to jointly undertake a program to:

- (a) firstly, review the minerals and oil & gas industry based definitions of reserves and resources to identify areas in which potential exists for achieving greater levels of convergence:
 - (i) between both sets of definitions; and
 - (ii) with accounting principles; and
- (b) subsequently, revise the definitions where it is agreed that convergence opportunities exist and the revisions are appropriate to the industry.

To the extent that convergence opportunities are not available between both sets of definitions and with accounting principles, mechanisms for ‘mapping’ the definitions to accounting requirements may need to be considered.

Further background relating to the SPE/CRIRSCO review is presented at Appendix A.

SPE/CRIRSCO review findings

4. The findings from the review are outlined in the following documents prepared by the convergence team:
- (a) Mapping of Petroleum and Minerals Reserves and Resources Classification Systems (hereafter referred to as the ‘Mapping report’);
 - (b) Appendix A: SPE_CRIRSCO Classification and Guidelines Mapping; and
 - (c) Appendix B: Petroleum and Minerals Terminology Mapping.

These documents are attached as agenda paper 10B, noting that they have been prepared with the intention they could be made available publicly to support any future IFRS. Also attached as agenda paper 10C – but not intended for general distribution – is the report that presents the convergence team’s detailed study results. [Attachments not provided in Observer Notes]

¹ Refer IASB letter of 13 December 2005 and in the subsequent Statement of Proposed Objectives and Scope.

Summary of findings

5. The convergence team found that “there is a high degree of compatibility in the classification logic that petroleum and minerals evaluators apply in determining quantities of their respective materials that reside in a field or a deposit and can be extracted and marketed”.²
6. The convergence team recommended that the nature and extent of alignment between the SPE and CRIRSCO reserve and resource classification systems should be communicated via a ‘mapping’ of the classification systems and terminology rather than through amending the reserve and resource definitions directly to achieve converged definitions of reserves and resources across the minerals and oil & gas industries.
7. The Mapping report identifies technical and historical reasons why converged definitions of reserves and resources cannot be realistically achieved. It notes that “each industry has developed separate classification and categorization logic [and in] many cases, this logic is related to the physical in situ differences in the material, the assessment techniques, and the appropriate extraction and processing methods”.³ Furthermore, it notes that “given the long history of each industry wherein these terms and approaches have become embedded in practice and, in some cases, in legal documents, such a convergence would be extremely difficult”.⁴

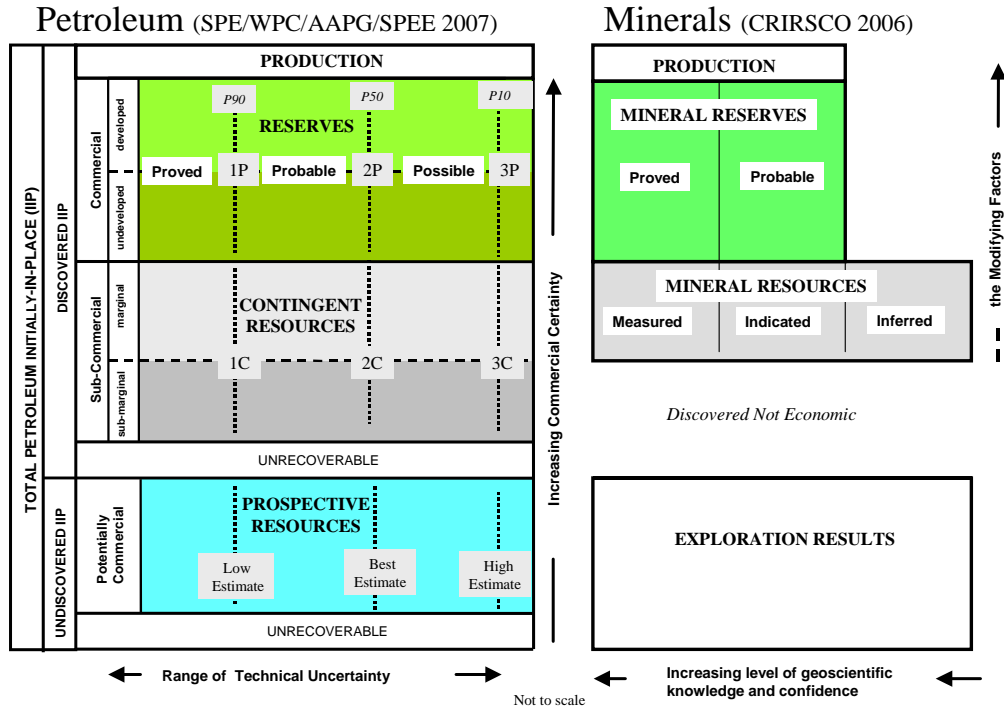
Comparable concepts

8. The diagram below (taken from the Mapping report at agenda paper 10B) provides a useful illustration of how the SPE and CRIRSCO reserve and resource classifications compare.

² Refer page 10 of the Mapping report.

³ Refer page 10 of the Mapping report.

⁴ Refer page 3 of the Mapping report.



9. Evident from this diagram is that there is broad equivalence between the:
- (a) (petroleum) reserve and mineral reserve classifications; and
 - (b) (petroleum) marginal contingent resource and mineral resource classifications.

In addition, the classifications of proved and probable reserves in both systems are considered to infer the same level of confidence in the quantity of recoverable minerals or oil & gas.

10. The following table presents the convergence team’s conclusions on each of these common concepts. These findings are considered to be particularly significant – and useful – to the possible design of an IFRS dealing with the accounting and disclosure of minerals and oil & gas reserves and resources. This is discussed further at agenda paper 10D.

<i>Common concepts</i>	<i>Comments</i>
mineral reserves & (petroleum) reserves	“Reserves are estimates of an entity’s entitlement to marketable/extractable quantities derived from a reservoir/deposit by applying a development plan taken to its economic, technical or contractual limit.” (Mapping report, page 10)

	<p>“CRIRSCO’s use of Modifying Factors in feasibility studies to define Mineral Reserves is similar to the SPE’s use of contingencies in development planning studies. CRIRSCO’s Mineral Reserves and SPE’s Petroleum Reserves classes show a similar high level of commercial certainty. Reserves are those portions of resource quantities that can be recovered by projects that satisfy specified commercial conditions using validated technology. SPE’s classification of reserves for new projects anticipates initiation of development within five-years (with some documented exceptions); CRIRSCO’s definitions require reserves to be economic, but time to anticipated production for new projects is not specified. Best practice is for unproduced reserves to be periodically validated by updated feasibility studies.” (Mapping report, page 8, item 6)</p>
<p>mineral resources & (petroleum) marginal contingent resources</p>	<p>“Mineral Resources are essentially similar to Marginal Contingent Resources in that they are waiting for something to happen before they can be converted into reserves. This may simply mean that studies of the Modifying Factors have not been undertaken or completed, or it may mean that economic conditions have to change to some extent to enable the conversion to take place. In general there will be a realistic expectation that these conditions will eventually be met.” (Mapping report, Appendix A)</p>
<p>levels of confidence applying to the categories of proved and probable reserves in the CRIRSCO and SPE systems</p>	<p>“Proved and Probable Mineral Reserves have the same general level of associated confidence as SPE’s Proved and Probable petroleum Reserves. However, the mining industry applies these confidence limits on a local scale, and PRMS applies these limits on a project scale. The sum of Proved and Probable Reserves under defined conditions is considered the best estimate of remaining recoverable quantities in both industries.” (Mapping report, page 8, item 7)</p>

Differences

11. The major differences between the SPE and CRIRSCO classifications are also evident from the diagram above – being the absence from the CRIRSCO system of classifications that are equivalent to ‘possible reserves’ and ‘sub-marginal contingent resources’. These differences, however, are not considered to diminish the suitability of using the CRIRSCO system and the Mapping report in financial reporting, because these classifications are not expected to be central to the design of an accounting or disclosure model.
12. Possible reserves are the upside potential of the oil & gas quantities recovered by a project that satisfies the reserves classification criteria (i.e. in essence, the project is commercial). The nearest equivalent to possible reserves in the CRIRSCO system is inferred resources, however it is considered that the geological certainty is inadequate to create a feasibility plan for extraction. Therefore, the upside potential is retained in the mineral resources classification as an inferred resource rather than in the mineral reserves classification. The research project team considers that the low levels of confidence associated with the possible reserves / inferred resources classifications means that these classifications are unlikely to be useful for identifying when a minerals or oil & gas asset can be recognised. There may be some information value in including these classifications in asset measurements or disclosures (this will be addressed in later research), however the information value of these classifications is expected to be subordinate to the higher confidence reserve and resource categories. For this reason, direct comparability between the CRIRSCO and SPE systems in this classification is not considered to be a priority.
13. The Mapping report explains that “Sub-Marginal Contingent Resources are those quantities associated with discoveries for which analysis indicates that technically feasible development projects would not be economic and/or other contingencies would not be satisfied under current or reasonably forecasted improvements in commercial conditions. These projects nonetheless should be retained in the inventory of discovered resources pending unforeseen major changes in commercial conditions.”⁵ In contrast, CRIRSCO does not have a comparable classification because it “does not include provision for the public reporting of mineralisation that does not have reasonable

prospects for eventual economic extraction, even though it may be discovered”.⁶ The research project team considers that if a minerals or oil & gas discovery is not considered to have reasonable prospects for eventual economic extraction, the disclosure of this resources classification is unlikely to provide decision-useful information and the discovery may not satisfy the asset definition and recognition requirements.

14. Other differences that have been identified between the SPE and CRIRSCO classifications relates to how the estimate is quantified and presented. This area of difference has two dimensions.
 - (a) The measurement of reserves and resources under the SPE system is presented in terms of the ‘sales quantity’ delivered at a custody transfer point according to product delivery specifications, whereas under the CRIRSCO system, the measurement is presented in terms of run-of-mine tonnage and grade (i.e. percentage of the ultimate refined product). The CRIRSCO system then requires disclosure of recovery factors that enable the ‘sales quantities’ to be computed. The Mapping report notes that best practice is to report sales quantities of product.
 - (b) In terms of an entity’s interest in reserves and resources, petroleum reserves and resources estimates are typically expressed on a net working interest (entitlement) basis after reduction for royalties and production owing to others. However, mineral reserve and resource estimates are typically reported on a 100% basis with the share attributable to the entity shown separately.⁷
15. These differences, however, do not cause an incompatibility between the reserve and resource classifications themselves. Rather the differences are a disclosure issue, and are related to how minerals and oil & gas reserve and resource disclosures are typically presented. These differences will be re-considered when the research project addresses the disclosure of minerals and oil & gas reserve and resource information.

⁵ Refer page 5 of the Mapping report.

⁶ Refer page 4 of SPE_CRIRSCO Classification and Guidelines Mapping

⁷ Refer Mapping report, page 8, items 3 & 8.

Does the Mapping report meet our needs?

16. The research project team's view is that the Mapping report (and appendices) would adequately support the development of an IFRS dealing with the accounting and disclosure of minerals and oil & gas reserves and resources. The research project team accepts that converged definitions are not feasible, primarily because of different approaches employed in estimating minerals and oil & gas reserves and resources, which are at least to some extent influenced by the different physical properties of minerals (i.e. solids) and oil & gas (i.e. fluids).
17. Absent converged definitions, by identifying the nature and extent of the similarities that exist between the CRIRSCO and SPE classification systems, the Mapping report nevertheless indicates that the CRIRSCO and SPE definitions should be capable of providing a platform for setting comparable accounting and disclosure requirements for minerals and oil & gas reserves and resources (e.g. in setting the point for initial recognition of the reserves and resources asset etc). Therefore, in the research project team's opinion, the Mapping report will be an important reference for the Board (and project team) for the duration of the research and standard-setting phases of the extractive activities project. This is not to suggest that the eventual IFRS will, after considering all the accounting issues and completion of all the due process, set the same requirements for the accounting and disclosure of minerals or oil & gas reserves and resources; rather, the Mapping report indicates that the research project's default position of identifying common accounting and disclosures is possible through the CRIRSCO and SPE classification systems.
18. Following the release of the IFRS, the Mapping report could be useful as an educational reference for users of the financial reports of entities engaged in extractive activities.

Views of the stakeholders to the SPE/CRIRSCO review

19. Representatives from the International Organization of Securities Commissions (IOSCO) and the United Nations Economic Commission for Europe's (UNECE) Committee on Sustainable Energy observed the SPE/CRIRSCO review. The following paragraphs outline their views on the review and the Mapping report.

Views of IOSCO representatives

20. [Paragraph omitted from Observer Note]
21. [Paragraph omitted from Observer Note]
22. [Paragraph omitted from Observer Note]

UNECE views

23. Comments on the Mapping report from the Bureau of the UNECE Ad Hoc Group of Experts (AHGE) on Harmonisation of Fossil Energy and Mineral Resources Terminology included that the Mapping report:
 - (a) “establishes alignment at a “high level” between the 2007 SPE and the 2006 CRIRSCO classifications”;
 - (b) “brings a clearer understanding of the two classifications, and represents a significant document in the current process of developing a classification, not only of fossil energy and mineral resource quantities, but also of the extractive activities that are of direct relevance to the four principal needs that the AHGE is aiming to serve, namely:
 - (i) long sighted energy policies
 - (ii) government resources management
 - (iii) corporate business process management and
 - (iv) financial reporting”.
24. As background, the principal mission of the AHGE is to facilitate the successful implementation of Resolution 2004/233 of the United Nations Economic and Social Council ensuring worldwide application of a common terminology for Fossil Energy and Mineral Resources. Resolution 2004/233 states:

At its 42nd plenary meeting, on 16 July 2004, the Economic and Social Council, recalling its decision 1997/226 of 18 July 1997, welcomed the endorsement by the Economic Commission for Europe of the United Nations Framework Classification for Fossil Energy and Mineral Resources and decided to invite the Member States of the United Nations, international organizations and the regional commissions to consider taking appropriate measures for ensuring worldwide application

of the Framework Classification. The Council noted that that new classification for fossil energy and mineral resources, which now included energy commodities (for example, natural gas, oil and uranium), was an extension of the earlier framework developed for solid fuels and mineral commodities, on which the Council had taken similar action in 1997 upon endorsement and recommendation by the Economic Commission for Europe. The UNECE has been considering Options for Long-term Governance of the United Nations Framework Classification on Fossil Energy and Mineral Resources

Minerals and oil & gas reserve and resource definitions suitable for use in an IFRS

25. Although the research project team's initial view is that the Mapping report demonstrates that the CRIRSCO and SPE classification systems are sufficiently comparable to support the development of an IFRS that might set similar accounting and disclosure requirements for minerals and oil & gas reserves and resources, the research project team thinks it would be prudent, at this time, to confirm the basis for defining minerals and oil & gas reserves and resources that shows the most promise for the eventual IFRS. The preferred option for defining reserves and resources would be presented in the research project's discussion paper, with constituents invited to comment on whether they agree or disagree with this view.

Reserve and resource definition options

26. In broad terms, the options available to the Board for defining reserves and resources for financial reporting purposes are:
- (a) to develop a new set of definitions;
 - (b) to modify the existing definitions; or
 - (c) to use existing definitions.
27. The only reason for the Board to consider developing a new set of reserve and resource definitions would be if the definitions currently in use are perceived to be deficient in some way, and it is unlikely that the deficiency could be resolved by making modifications to the existing definitions. The research project team expects that the only possible deficiency in the existing definitions that could warrant this action is that there is not a single existing set of reserves and resources definitions that applies equally to both minerals and oil & gas. The research project team does not believe that this is a viable alternative for the Board to seriously consider. Firstly, the Board 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) and so the Board would have to engage technical experts to assist. Secondly, the convergence team has advised that the different physical properties between minerals and oil & gas, and as a consequence the different assessment and extraction techniques employed, makes a single set of definitions unrealistic to achieve. Thirdly, the Board would be custodian of the definitions and responsible for their ongoing maintenance to avoid the definitions failing to keep pace with industry developments that have become generally accepted. Finally, minerals and oil & gas companies may not be willing to use the IASB-developed definitions for their internal management purposes, and therefore companies may have to maintain two sets of reserve and resource records – one for external financial reporting purposes and one for internal use.⁸

28. The research project team notes that, during the July 2005 education session, the Board indicated that developing its own (comprehensive) set of reserve and resource definitions was not an alternative that should be explored further. Identified as a possible option was the development of an ‘overarching’ definition of reserves and resources. This ‘overarching’ definition could be used to identify, from a financial reporting perspective, the core characteristics of a reserve and resource, with the reserve and resource estimates determined in accordance with an existing set of reserve and resource definitions that are consistent with the core characteristics identified. However, this is not considered to be a separate option for defining reserves and resources for financial reporting purposes. Rather this is, in effect, one possible mechanism for referring to a specific set of reserve and resource definitions in an IFRS without having an explicit cross-reference to those definitions within the IFRS.
29. The other two definition options – using existing definitions or modifying existing definitions – would result in separate reserves and resources definitions being used for minerals and oil & gas. The difference between these two options is that modifying the existing definitions has the benefit of potentially achieving a convergence between the minerals and oil & gas definitions and/or bringing the definitions closer to accounting principles. It is for this reason that the Board initiated its request to the SPE and

⁸ The research project team notes that this may happen in some jurisdictions already, where the reserve and resource classification system that is used for regulatory disclosure purposes is different from the classification system used by the company internally to manage their minerals or oil & gas assets.

CRIRSCO to undertake a review to compare their respective reserve and resource classification systems and identify any potential convergence opportunities.

30. As noted earlier in this paper, the convergence team considers that, although convergence in the wording of the minerals and oil & gas definitions could not be realistically achieved, it is feasible to communicate the nature and extent of alignment between the SPE and CRIRSCO systems via a 'mapping' of the classifications and terminology used. In addition, although the Mapping report is the tangible product of the SPE and CRIRSCO review to communicate the alignment between their systems, it should also be noted that the SPE, in its 2007 revision of its reserve and resource classification system, which is known as the Petroleum Resource Management System (PRMS), also incorporated some amendments to its definitions which enhanced the comparability between the SPE and CRIRSCO systems.
31. The research project team considers that the convergence team's mapping approach achieves, in effect, the same outcome that would be provided by modifying the existing definitions directly. That outcome being to, firstly, assist the research project team (and the Board) to develop proposals for comparable accounting and disclosure requirements for both minerals and oil & gas reserves and resources and, ultimately, to assist financial reporting users to better understand the similarities and differences between minerals and oil & gas reserves and resources.⁹
32. The convergence team noted that some of the differences between the SPE and CRIRSCO systems that remain are the result of historical factors. While it would seem possible, at least in concept, for these historical differences to be removed from the minerals and oil & gas definitions, the industries have not proposed making these changes. Therefore, if such changes were considered essential, it might require unilateral action by the Board to modify those definitions for use in an IFRS. This is not considered to be a viable alternative for the reasons enunciated in paragraph 27 in relation to developing new definitions.

⁹ As noted above, a guiding principle for the conduct of the research is to identify, and then consider the appropriateness of, setting comparable accounting and disclosure requirements for minerals and oil & gas reserves and resources. This principle is being applied because the nature of upstream extractive activities in the minerals and oil & gas industries are considered to be sufficiently similar in terms of the underlying asset (the minerals or oil & gas), phases of operations that are undertaken before the asset is ready for use or sale, and the risks and uncertainties associated with those phases of operations.

33. Through a process of elimination, the most viable option for defining reserves and resources in an IFRS is therefore considered to be the use of the existing definitions of minerals and oil & gas reserves and resources. The following section identifies and undertakes a preliminary assessment of the main existing reserve and resource systems.

Existing reserves and resources definition options

34. The most prominent definitions of minerals and oil & gas reserves and resources internationally are:
- (a) mineral reserve and resource definitions based on the *CRIRSCO International Reporting Template for the Public Reporting of Exploration Results, Minerals Resources and Mineral Reserves* ('the CRIRSCO template' or CRIRSCO system), which are based on (and agreed with the developers of) the:
 - (i) *Australasian Code for Reporting of Mineral Resources and Ore Reserves* (the JORC Code)¹⁰;
 - (ii) *Canadian Institute of Mining, Metallurgy and Petroleum Standards on Mineral Resources and Reserves Definitions and Guidelines*;
 - (iii) *South African Code for Reporting of Mineral Resources and Mineral Reserves* (the SAMREC Code);
 - (iv) *Code for Reporting of Mineral Exploration Results, Mineral Resources and Mineral Reserves* (Europe);
 - (v) *Society for Mining, Metallurgy and Exploration's A Guide for Reporting Exploration Information, Mineral Resources, and Mineral Reserves* (United States of America); and
 - (vi) *The Minerals Resources Committee of the Institution of Mining Engineers of Chile: Code for the Certification of Exploration Prospects, Mineral Resources and Reserves*;
 - (b) the *Petroleum Resource Management System* (PRMS) sponsored by the SPE, the World Petroleum Congress, the American Association of Petroleum Geologists, and the Society of Petroleum Evaluation Engineers;

¹⁰ Prepared by the Joint Ore Reserves Committee of the Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia.

- (c) the *United Nations Framework Classification for Fossil Energy and Mineral Resources* (UNFC); and
- (d) the United States Securities and Exchange Commission's mineral and oil & gas definitions, which are located in:
 - (i) Regulation S-X, Rule 4-10 *Financial accounting and reporting for oil and gas producing activities pursuant to the Federal Securities Laws and the Energy Policy and Conservation Act of 1975*; and
 - (ii) SEC Industry Guide 7 - *Description of Property by Issuers Engaged or to Be Engaged in Significant Mining Operations*.

Assessment criteria

35. The research project team thinks that the following criteria may help determine which definitions of reserves and resources are likely to be most suitable for financial reporting purposes:
- (a) Criterion 1: scope of the definition system;
 - (b) Criterion 2: technical robustness of the definition system;
 - (c) Criterion 3: applicability to financial reporting uses;
 - (d) Criterion 4: acceptance of the definition system; and
 - (e) Criterion 5: definition system infrastructure and management processes.
36. These criteria are discussed below, noting that no single criterion is considered to be so persuasive as to be able to determine a preferred definition option in isolation of the other proposed criteria. So, for example, definitions that provide for comparability across the range of minerals and oil & gas will not be preferred if comparability is achieved at the cost of the reported information not being relevant, reliable or understandable.

Criterion 1: Scope

37. Scope refers to the breadth of coverage of minerals and oil & gas reserves and resources included in the definition system. Comparability of reported information is likely to be

enhanced if a definitions system has a broad scope and its requirements apply equally to all items within its scope. Thus, at face value, a minerals reserve and resource definition system that applies equally to all minerals would be preferable to definitions that are different for different types of minerals (e.g. base metals, coal, uranium, diamonds).

38. Scope also refers to the depth of the definition system; in other words, how many different reserve (and, possibly, resource) classifications are defined. Whether classifications are defined for undiscovered resources is likely to be irrelevant in a financial reporting context, as it is unlikely that the disclosure of this information would be considered to be decision-useful to analysts. However, the user survey found that most analysts are interested in the disclosure of proved and probable reserves, and in some cases, especially in the minerals industry, the disclosure of resource categories as well. Therefore the scope of the definition system would need to be sufficiently comprehensive to include those classifications.

Criterion 2: Technical robustness

39. The application of technically robust definitions should result in reliable information relating to reserves and resources being provided. Technical robustness is considered to relate to whether the definitions, as drafted, are clear, complete, and capable of being consistently applied and independently verified.

Criterion 3: Applicability to financial reporting uses

40. Definitions of reserves and resources may be used to specify disclosure requirements that amplify the information presented on the balance sheet. For instance, the disclosure of reserve volumes might be used to support an assessment that the carrying amount of a minerals or oil & gas asset is considered to be recoverable. The definitions may also be used to specify accounting requirements, such as identifying the point of initial recognition of a minerals or oil & gas asset (refer agenda paper 10D) or for prescribing the basis for calculating depreciation and amortisation of mining or oil & gas assets useful for setting disclosure requirements. Given these (and other) uses of reserve and resource information, assessing whether a set of definitions is suitable for application in financial reporting will depend on whether the core components of the definitions are

compatible with existing financial reporting methodologies and requirements (e.g. how price and exchange rate assumptions are made).

Criterion 4: Acceptance of the definitions

41. This criterion considers the extent to which the definitions are currently accepted by users, preparers and regulators for public reporting (i.e. reserve and resource statements or financial reporting) and/or internal management, as this is considered to provide support for the usefulness of the definitions to meet specific information needs. Furthermore, definitions that are generally accepted are likely to be well understood by users and preparers.

Criterion 5: Infrastructure and management processes supporting the definitions

42. The suitability of the infrastructure and management processes supporting a set of reserve and resource definitions is particularly important if the Board is to feel confident that future versions of the reserve and resource definitions are also expected to be suitable for use in financial reporting. The factors that may influence such an assessment include:
- (a) who ‘made’ and/or ‘controls’ the definitions, and whether they are sufficiently independent from the preparers of reserve and resource estimates (i.e. whether it is possible for any special interest groups to exert undue influence on the definitions);
 - (b) whether the ‘controller’ or sponsor of the definitions is committed to supporting, and is able to support, the definitions into the future;
 - (c) whether the definitions are developed and updated in accordance with a full and transparent due process; and
 - (d) whether the definitions are subject to regular reviews and (where appropriate) revisions.
43. This criterion is considered to be most relevant if the IFRS’s usage of the reserve and resource definitions is through an ambulatory reference (i.e. the reference would along the lines of “[insert name of definitions] as amended from time to time”). Under this

approach, any change in the definitions could have an immediate consequential effect on international financial reporting. Consequently, the Board would want to be assured that the definitions are appropriately maintained and that any revisions have a valid basis and have been subject to appropriate due process arrangements. In contrast, this criterion is less relevant if the IFRS contains a fixed reference to those definitions (i.e. the reference would along the lines of “[insert name of definitions] as in force as at [specify date]”) or if the definitions were reproduced in full in the IFRS. This is because in order for revisions to the definitions to have any affect on international financial reporting, the Board must make a deliberate standard setting decision to update the IFRS to either refer to, or incorporate, the revised definitions.

SEC definitions

44. As discussed in agenda paper 9, the SEC has issued a Concept Release as part of a review of its definition of proved oil & gas reserves and the corresponding disclosure requirements. [Part of paragraph omitted from Observer Note] Until this process is complete, the research project team does not think it is appropriate to reach a final conclusion on the suitability of using the SEC definitions in an IFRS environment. Instead, the research project team intends to closely monitor the SEC process.

45. [Paragraph omitted from Observer Note]

United Nations Framework Classification for Fossil Energy and Mineral Resources

46. The *United Nations Framework Classification for Fossil Energy and Mineral Resources* (hereafter referred to as the ‘UNFC’) is “a universally applicable scheme for classifying petroleum and solid mineral (including energy mineral) reserves and resources. The Classification is designed to allow the incorporation of currently existing terms and definitions into this framework and thus to make them comparable and compatible”.¹¹ The UNFC is designed to be a classification system capable of communicating information on fossil energy and mineral quantities that can meet the needs of:

- (a) long-sighted energy policies;

¹¹ Refer AHGE Mapping Task Force Report – October 9, 2007

- (b) government resources management;
- (c) corporate business process management; and
- (d) financial reporting.

In that regard, the UNFC is designed to classify everything from the reserves to be produced through developed projects that are on production through to resources that may (eventually) be produced but are as yet undiscovered (i.e. prospective resources).

47. Complementing the SPE/CRIRSCO review undertaken for the Board, the AHGE requested the SPE, on behalf of the oil & gas industry, and CRIRSCO, on behalf of the minerals industry, to compare the SPE and CRIRSCO systems with the UNFC with a view to harmonising terminology and providing supplementary guidelines to assist users in interpreting the UNFC beyond the definitions. Work on the UNFC mapping effort is progressing and is scheduled for further discussion at an AHGE meeting on 27-28 February 2008. (The research project team will be represented at one session of this meeting via conference call.)
48. The research project team considers that the UNFC is a classification system that is still maturing, with work underway on, among other things:
 - (a) mapping the UNFC to the SPE and CRIRSCO systems (as mentioned above);
 - (b) developing supplementary guidelines to assist interpretations of the UNFC (as mentioned above); and
 - (c) determining an appropriate long-term governance model for the UNFC.
49. For this reason, the research project team does not yet believe it is appropriate to apply the assessment criteria (as outlined above) to ascertain whether the UNFC might be a viable alternative for use in an IFRS. The broad scope of the UNFC corresponds to the broad scope of the extractive activities research project, and at face value the objective of a universally applicable classification system that can be responsive to the four needs is meritorious. However, in the research project team's view, the AHGE needs to demonstrate that, for instance, the UNFC can be:

- (a) consistently applied and independently verified for the purposes of disclosing reserve and resource information to capital market participants; and
- (b) accepted for use by the minerals and oil & gas companies that are preparing the disclosures to the capital markets and by the analysts and other financial reporting users in making their investment decisions.

SPE and CRIRSCO industry definitions

50. The dominant international classification system for:

- (a) mineral reserves and resources is the CRIRSCO Template (i.e. the CRIRSCO system); and
- (b) oil & gas reserves and resources is the PRMS (i.e. the SPE system).

Although these are separate reserve and resource definition systems, the Mapping report complements the definition systems by explaining the similarities (and differences) between them, thereby promoting a common understanding across both systems.

51. Assessing the CRIRSCO and SPE systems according to the criteria identified above, the scope of these definition systems is considered to be sufficient to support financial reporting uses. Both systems have a broad scope in terms of coverage of types of minerals and oil & gas. The CRIRSCO system includes all solid minerals, including diamonds, other gemstones, industrial minerals, stone and aggregates, and coal. The SPE system includes all types of 'conventional' and 'unconventional' petroleum, and therefore includes, among other things, crude oil, natural gas, coalbed methane, natural bitumen (tar sands) and oil shale deposits. The definition systems are also sufficiently comprehensive, insofar as they both provide classifications for quantities of minerals or oil & gas that, as a minimum, are expected to have reasonable prospects for eventual economic extraction. Even though the IFRS may not ultimately utilise all these classifications, the classifications are nevertheless available for use in the IFRS if appropriate.

52. The CRIRSCO and SPE systems are capable of being applied for use in financial reporting. This is best illustrated in agenda paper 10D (about identifying the point of initial recognition of a minerals or oil & gas asset).

53. The research project team has not undertaken any independent assessments of the technical robustness and acceptance of the CRIRSCO and SPE definitions. However confidence in the CRIRSCO and SPE systems seems to be evident from the fact that both systems are used (directly or indirectly) by some, but not all, of the major capital markets around the world, and because these definition systems also tend to be used by extractive entities for internal resource management.
- (a) For minerals reporting, the Mapping report explains that the CRIRSCO system “... combines the basic components of a number of national reporting codes and guidelines that have been adopted in similar forms by all the major agencies outside of the United States Securities and Exchange Commission (SEC). The classification is applied, with small modifications or extensions, by most mining companies for the purpose of internal resources and reserves management”.
 - (b) For oil & gas reporting, the Mapping report explains that the SPE system (i.e. the PRMS) “...are technical guidelines that are adopted in slightly modified form for internal resource management by most oil and gas companies. Most of the major regulatory agencies have developed disclosure guidelines that impose classification rules similar to, but not directly linked to, PRMS. Regulatory agencies typically mandate disclosure of only a subset of the total reserves and resources defined in PRMS...”.
54. Nevertheless, the research project team believes that it may be worthwhile to consult with major securities regulators to identify whether any regulatory issues would be expected to be encountered if the IFRS were to link accounting and disclosure requirements to the CRIRSCO and SPE systems. The research project team proposes consulting with both securities regulators from jurisdictions that currently regulate entities that use either the CRIRSCO or SPE systems in their accounting (e.g. usually at the moment for depreciation and impairment purposes) and disclosures as well as securities regulators from jurisdictions that rely on reserve and resource definitions other than those based on the SPE and CRIRSCO systems.
55. In terms of corporate governance and process matters, Appendix B [not reproduced in Observer Notes, but information can be found at www.criusco.com and www.spe.org] provides some background on the SPE and CRIRSCO structures. Recently, the SPE

OGRC has developed new corporate governance guidelines and the SPE Board, which approves the PRMS, also has similar governance processes in place. The research project team understands that governance processes applying to CRIRSCO and its relationships with the individual jurisdictions with reserve and resource reporting code are still maturing.

Recommended action items

56. The research project team recommends that:

- (a) the research discussion paper be drafted on the basis that the best prospects for defining minerals and oil & gas reserves and resources, at this stage, appears to be with using the CRIRSCO and SPE definition systems. By using these definitions for the purposes of drafting the discussion paper, the SPE/CRIRSCO Mapping report can be used to propose, where appropriate, comparable accounting and disclosure requirements across the minerals and oil & gas industries;
- (b) the members of the SPE OGRC and CRIRSCO be thanked for the time and effort they have devoted to completing a comprehensive comparison of their respective definitions and to preparing the Mapping report (and attachments). Special thanks should be extended to John Etherington, John Ritter and Duncan Frost of the SPE OGRC and Niall Weatherstone, Harry Parker, John Postle, and Pat Stephenson of CRIRSCO;
- (c) the SPE OGRC and CRIRSCO should be encouraged to keep the Mapping report evergreen as future revisions are made to the SPE and CRIRSCO definitions; and
- (d) the progress of the SEC and UNFC processes be monitored to confirm whether those systems might offer viable alternatives for defining reserves and resources in an IFRS.

57. Other matters that will require further action include:

- (a) considering whether the preferred definitions of reserves and resources should be incorporated into the IFRS and whether this should be by a cross reference to the definitions systems (either a fixed or ambulatory reference) or whether the definitions should be directly incorporated into the IFRS. (The research project

team notes that the question of accounting standards using standards developed by other industry bodies is not unique to the extractives project); and

(b) [Paragraph omitted from Observer Note]

History of the SPE/CRIRSCO convergence review

1. The Board has previously held education sessions on the definitions of minerals and oil & gas reserves and resources in April 2005 and July 2005.
2. In July 2005, at the research project's second education session, the Board considered comparisons between:
 - (a) the major minerals and oil & gas industry definitions of reserves and resources;
 - (b) those industry definitions and the SEC's minerals and oil & gas definitions; and
 - (c) those definitions with some key accounting principles.

Differences between the definitions that were identified included differences in specificity, methodologies (e.g. economic assumptions, confidence levels), language, and the scope of the definitions. Although some of the differences identified appear to be a consequence of the physical differences between mineral and oil & gas deposits, other differences seem attributable to the fact that the definitions were developed and updated independently of each other in each industry.

3. The July 2005 education session also included a discussion on some of the possible approaches for defining reserves and resources for financial reporting purposes. At that session, Board members tentatively indicated support for exploring the use of a generic definition of 'resources' for recognition purposes (which may be on either a historical cost or a fair value basis) that encompasses minerals and oil & gas reserves and resources. Under this approach, disclosures supporting the recognition and measurement of 'resources' (as generically defined) would be based on or be similar to existing reserves and resources definitions used in the industries. Board members also indicated to the minerals and oil & gas industry representatives present that the industries should consider converging elements of their definitions that perhaps need not be different between the industries (e.g. price and economic assumptions used to determine whether a deposit is economic, the degree of confidence associated with different categories of reserves and resources). Achieving convergence between the

definitions would be expected to be beneficial to the development of an IFRS that applies to mineral and oil & gas reserves and resources.

4. Following a written request from the IASB Chairman, the minerals and oil & gas industries – through the SPE OGRC and CRIRSCO – have agreed to review their definitions of reserves and resources to identify opportunities for refining the industry-based definitions to potentially improve their suitability for application in financial reporting as well as remaining suitable for other industry-based uses. These refinements may be in the form of elements of the definitions converging or alternatively involve the ‘mapping’ of one set of definitions to the other set. The project team together with representatives from the IOSCO (including the SEC) and the United Nations Economic Commission for Europe’s Committee on Sustainable Energy are participating in this review as observers.
5. As part of the research project’s fourth education session, held in June 2007, a representative from the convergence team – John Etherington from the SPE – provided the Board with an update on the review findings thus far. Mr Etherington noted that recent changes to PRMS have resulted in substantial consistency between the two systems. Furthermore, the review findings were indicating that there is a high degree of compatibility in the classification logic that oil & gas and minerals evaluators apply in determining quantities of oil & gas or minerals that reside in a field or deposit. However, Mr Etherington explained that the SPE and CRIRSCO do not consider that word-for-word convergence of the SPE and CRIRSCO definitions represents an achievable solution for communicating the nature and extent of alignment between the two systems. Instead, the SPE and CRIRSCO proposed that a ‘mapping document’ be developed to explain the similarities between the systems and the terminologies used within each of the industries. During the education session, the Board noted that it was encouraged with the progress and direction of the SPE/CRIRSCO review.
6. The convergence team submitted its final report and the mapping document to the research project team on 5 September 2007.