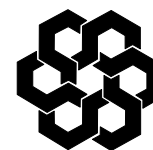


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**International
Accounting Standards
Board**

This document is provided as a convenience to observers at IASB meetings, to assist them in following the Board's discussion. It does not represent an official position of the IASB. Board positions are set out in Standards.

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

INFORMATION FOR OBSERVERS

Board meeting:	July 2005, London
Project:	Extractive Activities research project, Education session
	Comparison with key accounting principles
	(Agenda Paper 5D)

Introduction

1. This agenda paper assesses whether the definitions of minerals and oil & gas reserves and resources are broadly consistent with key accounting principles, as outlined in the following table. This is a high-level comparison only, and does not aim to comprehensively assess the definitions in accordance with accounting principles. Instead, it aims to identify where some of the differences might exist between the definitions and accounting principles so that these differences can be considered in further detail when:
 - (a) evaluating the suitability of using an existing set/s of reserve and resource definitions for financial reporting purposes; and
 - (b) identifying the options for the recognition, measurement and disclosure of reserves and resources.

Assessment of definitions with accounting principles

Issue	Observation
1. Can reserves and resources (and subcategories of reserves) satisfy the definition of an ‘asset’?	Some reserves and resources may not satisfy the test of control.
2. If reserves and resources can be assets, can they satisfy the recognition criteria?	Some categories of reserves and resources would satisfy the probable threshold test The definitions suggest that reported reserve and resource volumes can be reliably measured
3. Are any of the market assumptions used in the reserve definitions consistent with IFRSs?	JORC-defined reserves and SPE-defined probable reserves (and possible reserves) use inputs that would be expected to be consistent with accounting

Applying the asset definition to reserves/resources

2. The *Framework for the Preparation and Presentation of Financial Statements* (the ‘*Framework*’), at paragraph 49, defines an asset as:

“...a resource controlled by the entity as a result of past events and from which future economic benefits are expected to flow to the entity”.

3. For the various reserves/resources definitions to satisfy the definition of an asset, they must therefore satisfy the following components of the definition:
- (a) *control* – that is, the entity has the capacity to benefit from the reserves/resources and deny or regulate the access of others to that benefit (e.g. it holds the appropriate legal rights);
 - (b) *past event (or transaction)* – that is, the control of the reserve/resource was obtained by the entity through a past event (e.g. discovery) or by a past transaction (e.g. purchase); and
 - (c) *future economic benefits* – that is, the reserves/resources are capable of giving rise to an inflow of future economic benefits to the entity.

Control

4. Control of reserves/resources would usually be evidenced by holding legal rights to explore for, develop, and produce minerals or oil & gas. These legal rights may be acquired by purchasing outright ownership of the property, obtaining a minerals or oil & gas lease or concession, entering into a production-sharing contract, entering into a joint venture or a farm-in/farm-out arrangement, or entering into a service contract (which may also be known as a service agreement or risk service contract).

5. The JORC Code (minerals) requires an assessment of realistically assumed legal, environmental, social and governmental factors to be able to demonstrate that, at the time of reporting, extraction could reasonably be justified and, therefore, that a reserve can be reported. Each of these factors may influence whether an entity can control the reserves. As discussed in agenda paper 5C, the JORC Code does not explicitly indicate what legal rights must be held before a reserve (regardless of whether it is a proved or probable reserve) can be reported. But, the guidelines indicate that all necessary approvals to extract the minerals need not be held at the time of reporting provided there are reasonable expectations that those approvals will be received. Therefore, JORC permits a reserve to be recognised before an entity has complete legal authority to mine. However, the intent behind allowing an entity that reasonably expects to receive any outstanding approvals to recognise a reserve is understood to relate to expectations that ancillary rights and approvals will be approved in the ordinary course of business.¹ By not having complete legal authority to mine, the issue is therefore whether the entity can still satisfy the test of control. It may be argued that control can exist if the lease or other form of tenure that is held is sufficient for the entity to deny or regulate the access of others to the reserves/resources. Alternatively, the entity might be able to realise the benefits of the reserves/resources by selling the rights it holds. In which case, if control exists on the basis of this lease or other form of tenure, the likelihood of receiving all outstanding rights and approvals to mine could then be reflected in the measurement of the reserves/resources. This would be consistent with paragraph 17A of IAS 38 *Intangible Assets*, as proposed in the *Exposure Draft of Proposed Amendments to IAS 37 Provisions, Contingent Liabilities and Contingent Assets and IAS 19 Employee Benefits*.
6. The requirements in SEC Industry Guide 7 for a mineral reserve to be capable of legal extraction at the time of reserve determination is stricter than the JORC requirements. As noted in agenda paper 5C, it is understood to require all legal rights, permits and approvals to be held before a reserve can be reported. On that basis, an Industry Guide 7 reserve would be expected to satisfy the test of control.
7. In oil & gas, the SPE definitions of reserves and contingent resources and the SEC definition of proved reserves do not appear to specify that reserves or resources must be controlled by the entity reporting them. Like the JORC Code, it is expected that an entity will be required to hold at least some of the legal rights necessary to explore, develop and produce. This seems to be supported by paragraph 10 of FAS 69 *Disclosures about Oil and Gas Producing Activities* and the *SPE Standards Pertaining to the Estimating and Auditing of Oil and Gas Reserve Information*, which require the disclosures to be made by reference to “an enterprise’s interests in” and “ownership interests” respectively.

Past event or transaction

8. JORC and the SEC’s Industry Guide 7 both require a discovered mineral deposit to exist before a reserve or a resource (mineralised material) estimate can be reported. Similarly, in oil & gas, the SEC’s definition of proved reserves and the SPE definitions of reserves and contingent resources are estimates based on known reservoirs or

¹ Also, without such a reasonable expectation that all legal rights and approvals necessary to mine the reserve would be received, it is unlikely that an entity would go to expense and effort of exploring and proving up a reserve.

accumulations. The SPE also defines prospective resources, which relate to undiscovered accumulations. A prospective resource estimate could not, of itself, satisfy the definition of an asset as no past event has occurred to confirm its existence.

Future economic benefits

9. All categories of reserves defined by JORC, SPE, the SEC's Industry Guide 7 (minerals) and the SEC's rule 4-10 (oil & gas) are considered capable of generating an inflow of future economic benefits to the entity because they are defined by reference to the mineral being economically mineable or the oil & gas being commercially recoverable. As discussed in agenda paper 5B, the economics or commerciality of extraction is determined by using net present value or internal rate of return techniques. Similarly, the definition of an asset contemplates that the inflow of future economic benefits to the entity must be determined on a net basis, otherwise the asset might have a negative value.
10. If resources (under JORC) or contingent resources (under SPE) were to be identified separately in a financial report, there may be instances where they could also satisfy this part of the asset definition. Although for the purposes of this paper, the ability for resources to independently satisfy the definition of an asset is not considered in any further detail because:
 - (a) the uncertainties associated with resources probably prevent them being recognised as assets (as discussed further below); and
 - (b) it is likely that resources would not be treated as a separate asset, but rather reflected in the recognition and measurement of a "mineral/oil & gas properties" asset or a "reserves/resources" asset.

Conclusion

11. Some reserves and resources may not satisfy the test of control. With the exception of the SEC's Industry Guide 7 (for minerals), the various definitions do not explicitly require control of the reserves/resources to be established before the reserve/resource is reported. By allowing the reporting of these estimates, it appears as though control is presumed to exist even though an entity may not have all the legal rights and approvals to mine. Accordingly if control exists, it must be capable of being demonstrated on the basis of the legal rights and approvals currently held. In contrast, the SEC's Industry Guide 7 definition of reserves would satisfy the test of control as it specifically requires the reserves to be legally extractable at the date of reserve determination.
12. Aside from the question of control, the various definitions of reserves would be expected to satisfy the definition of an asset under the *Framework*. It is possible that some mineral resources (under JORC) and contingent resources (under SPE) may also satisfy the definition of an asset, but the greater degree of uncertainty associated with them is likely to result in them not being able to satisfy the recognition criteria for an asset (discussed below). Instead, it is more likely that these resources would be reflected in the recognition and measurement of a higher order asset. Prospective resources (under SPE) are undiscovered resources and so would fail the definition of an asset.

Applying the asset recognition criteria to reserves/resources

13. In accordance with paragraph 83 of the *Framework*, an asset is recognised if:
- (a) it is probable that any future economic benefit associated with the asset will flow to the entity; and
 - (b) the asset has a cost or value that can be measured with reliability.

Probable future economic benefits

14. Probability in this context refers to the degree of uncertainty that the future economic benefits associated with the asset will flow to the entity. Assessments of this degree of uncertainty are made using information available when the financial statements are prepared (i.e. after the financial year end) that provide evidence of conditions that existed as at the balance sheet date.²
15. Various accounting standards give further guidance on the meaning of probability. IAS 37 *Provisions, Contingent Liabilities and Contingent Assets* indicates that probable means “more likely than not to occur”.³ In other words, there is a greater than 50% likelihood that an event will occur. IAS 37 mentions that the ‘more likely than not’ interpretation does not necessarily apply to other Standards, but nonetheless it represents the generally understood meaning of probability. Other standards, for instance IAS 16 *Property, Plant and Equipment* and IAS 38 *Intangible Assets*, also refer to probability. In particular, IAS 38 requires that, for intangible assets, probability of the expected future economic benefits is to be assessed using reasonable and supportable assumptions that represent management’s best estimate of the set of economic conditions that will exist over the useful life of the asset.⁴
16. The subcategories of reserves and resources as defined by each of the codes/definition sets may be different from the probable future economic benefits limb of the asset recognition criteria in two areas:
- (a) confidence thresholds; and
 - (b) assumptions used.
17. A ‘more likely than less likely’ / greater than 50% likelihood confidence threshold is close to the level of confidence specified in the SPE (oil & gas) definition of probable reserves. A slight difference emerges because, under probabilistic methods, a probable reserve can be reported based on a 50% probability that the quantities recovered will equal the sum of estimated proved + probable reserves. In contrast, under the JORC Code (minerals), a probable reserve would be expected to have a level of confidence in the order of 75-85% certainty. As a probable reserve estimate does not include proved reserves estimates, an aggregated proved + probable reserves would have a combined confidence level in excess of that applying only to probable reserves.⁵

² Refer *Framework*, paragraph 85 and IAS 10 *Events after the Balance Sheet Date*, paragraph 8.

³ IAS 37, paragraph 23.

⁴ IAS 38, paragraph 22.

⁵ This paper has not attempted to apply the probable future economic benefits criterion to the SEC definitions. Under SEC Industry Guide 7 (minerals), for a proved reserve to be reported the sites for

18. The probability limb of the recognition criteria assesses probability based on future conditions. The JORC definitions permit the use of forecast conditions when estimating proved reserves, probable reserves and the resources categories. The SPE definitions only permit forecast conditions to be used in estimating probable, possible and contingent resources. Forecast conditions cannot be used in estimating SPE proved reserves, or when reporting under SEC Industry Guide 7 (minerals) or SEC Rule 4-10 (oil & gas).

Reliable measurement

19. The second limb of the asset recognition criteria requires that the asset has a cost or value that can be estimated reliably. This requires the measure to be:
- (a) free from material error and bias;
 - (b) complete;
 - (c) prudent; and
 - (d) a faithful representation of the underlying transaction, item or event.⁶
20. Assessing whether particular reserve and resource values satisfy the reliable measurement asset recognition criteria is outside the scope of this paper. However, all the various reserve and resource codes/definitions appear to address reliable measurement of reserve and resource volumes by:
- (a) in the case of the JORC Code and the SPE Code,⁷ requiring competent persons or qualified reserve estimators to prepare and be responsible for the reported estimates;
 - (b) using different categories of reserves and resources for different levels of confidence;
 - (c) referring to form and/or nature of testing and analysis that should be performed to be able to generate the required level of confidence; and
 - (d) requiring or encouraging disclosures to accompany and support the reserve and resource estimates.

inspection, sampling and measurement must be spaced so closely and the geologic character must be so well defined that size, shape, depth and mineral content of a reserve are well-established. A probable reserve can be reported where the spacings between sites are farther apart but there is a high enough assurance in the data to assume continuity between the sites. Despite the construction of these definitions being different from the JORC definitions, they are understood to anticipate similar levels of confidence. SEC Rule 4-10 (oil & gas) is not considered further as it only defines proved reserves, which are considered to have a confidence level at least equal to the level in the SPE definition of proved reserves.

⁶ Under the IASB/FASB Conceptual Framework Project, 'faithful representation' is identified as a core qualitative characteristic and is intended to replace the concept of reliability. Prudence will cease to be a qualitative characteristic.

⁷ The SPE requirements for a qualified reserve estimator are not enforced by the SPE. But, they may be enforced by a jurisdiction that uses the SPE Code to regulate the reporting of oil & gas reserves and resources.

Conclusion

21. Provided the reliable measurement criteria can be satisfied for reserve and resource values – noting that it is not being considered in this paper – some categories of reserves and resources would be expected to satisfy the asset recognition criteria. A ‘more likely than not’ interpretation of probable for financial reporting purposes would be expected to lead to proved and probable reserves being capable of recognition under both the minerals and oil & gas definitions. Depending on the unit of account that is adopted for the asset – say, the asset is defined by reference to the mineral property rather than a category of reserve – then some resources and possible reserves (under SPE) may be capable of recognition also. This will become more pronounced if the IASB adopts the approach proposed in the revisions to IAS 37 and IFRS 3 *Business Combinations* that probability is a factor for measurement.

Are any of the market assumptions used in the reserve definitions consistent with IFRSs?

22. IAS 36 *Impairment of Assets* provides guidance on the use of assumptions when calculating an asset’s value in use. Specifically, paragraph 36 states:

In using information from financial budgets/forecasts, an entity considers whether the information reflects reasonable and supportable assumptions and represents management’s best estimate of the set of economic conditions that will exist over the remaining useful life of the asset.

23. In relation to assumptions used in measuring fair value, the *Exposure Draft of Proposed Amendments to IFRS 3 Business Combinations*, at paragraph E8 (Appendix E), notes that “market inputs refer to the assumptions and data that marketplace participants would use in their estimates of fair value”. Where quoted prices for identical or similar assets in active markets would not be available and differences between similar assets would not be able to be objectively determined, paragraph E21 indicates that valuation techniques to be used in such cases (i.e. for Level 3 estimates) must “emphasise market inputs, including quoted prices generated by actual (observable) market transactions, adjusted as appropriate”.
24. As outlined in agenda papers 5B and 5C, the economic assumptions to be used in estimating reserves/resources definitions are:
- (a) JORC (minerals) – requires the use of realistically assumed economic factors, which is interpreted to mean forward-looking estimates that reflect the entity’s reasonable and supportable short and long-term expectations;
 - (b) SEC Industry Guide 7 (minerals) – requires the reserve to be economically extracted at the time of reserves determination, which is interpreted to generally mean current conditions and, in the case of prices, a three-year historic average commodity price;
 - (c) SPE (oil & gas) – requires the use of:
 - (i) current economic conditions (but with averaging of historic prices and costs) for proved reserves; and
 - (ii) future economic conditions for probable reserves; and

- (d) SEC Rule 4-10 (oil & gas) – requires the use of existing economic conditions, which generally means the year-end prices and costs must be used.
25. Thus, only the JORC reserves definitions and the SPE definitions of probable and possible reserves would be expected to be consistent with the accounting's view on economic/market assumptions as per IAS 36 and the proposed amendments to IFRS 3.