

UNFC Specifications General Issues

**Prepared for the Fifth Session of the
Ad Hoc Group of Experts on
Harmonization of Fossil Energy
& Mineral Resources Terminology**

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UNFC Specifications General Issues

- Purpose of this session:

To introduce aspects that it *may* be useful to specify at a general level, i.e. which would apply to:

- All applications
- All commodities

UNFC Specifications General Issues

- Separate discussions to follow for either application-specific aspects:
 - Energy Policy
 - Government Resource Management
 - Business Process Management
 - Financial Reporting
- Or for commodity-specific aspects:
 - e.g. different minerals (coal, diamonds, industrial minerals)

UNFC Specifications General Issues

- Some general issues that could impact global communications:
 - Incremental vs. scenario reporting
 - Reporting reference point
 - Risking of resource quantities

UNFC Specifications Incremental vs. Scenario Reporting

- **Minerals**

- Incremental method is the industry standard for reporting mineral reserves and resources
 - measured, indicated, inferred mineral resources
 - proved, probable mineral reserves
- Aggregation of different categories is permitted, provided quantities are also reported separately
 - e.g. proved and probable reserves
- Can report mineral resources inclusive of, or additional to, reserves, but basis must be clearly documented

UNFC Specifications Incremental vs. Scenario Reporting

- **Petroleum**

- Scenario method is becoming the industry standard for reporting petroleum reserves and resources
 - low, best, high estimates; P90, P50, P10 estimates
 - proved (1P), proved plus probable (2P), proved plus probable plus possible (3P) reserves
- Incremental approach is still used for reporting to some extent
- Should always have at least three estimates to capture range of uncertainty (low, best, high)

UNFC Specifications General Issues (1)

- Incremental vs. scenario reporting
 - Not a major problem, but reporting must always be completely unambiguous

UNFC Specifications Reporting Reference Point

- Minerals

- Mineral reserves are generally quoted as delivered to the processing plant (“as mined”), with sales recovery or yield factor quoted separately
- Some mineral reserves are quoted as sales (marketable) quantities
 - CRIRSCO recommended practice is that “as mined” estimates should also be provided
- Mineral resources are *in situ* estimates of what may be viewed as “potentially economically recoverable”

UNFC Specifications Reporting Reference Point

- Petroleum
 - Petroleum reserves and resources are meant to be sales quantities under SPE-PRMS, but industry practice is inconsistent (e.g. fuel gas is sometimes included in reserves)
 - In integrated projects, sales point may be an internal transfer between upstream and downstream operations
 - Contingent and prospective resource estimates are often too preliminary to properly account for non-sales production

UNFC Specifications General Issues (2)

- Reporting reference point
 - should always be clearly stated, but is a standardised basis possible?

UNFC Specifications Risking of Resource Quantities

- ***Exploration projects*** have a risk of no discovery and a risk that, if discovered, the project will be too small to be commercially viable
- ***Contingent projects*** have a risk of not being commercially viable

UNFC Specifications Risking of Resource Quantities

- Risk element must be captured in some way, especially when aggregating estimates for multiple projects
 - Misleading to aggregate un-risked estimates
 - Misleading to report only risked estimates for individual projects

UNFC Specifications Risking of Resource Quantities

- Risk element can be captured either:
 - *Qualitatively*, using F axis sub-categories
 - OK for individual projects, but not for aggregation
 - Could be linked to defined ranges of risk

UNFC Specifications Risking of Resource Quantities

- Or:
 - *Quantitatively*, by risking the forecast quantities
 - Misleading for individual projects, better to provide un-risked estimates and risk factor separately
 - Aggregation OK, provided handled probabilistically (or limited to the risked mean estimate)
 - Can be applied for all types of projects (e.g. at corporate level or at country level)

UNFC Specifications General Issues (3)

- Risking of resource quantities
 - There is no industry standard approach for capturing risk quantitatively in either minerals or petroleum sectors

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- Any other general issues?