

**REPORT  
of  
the Special Task Force on Mapping of the  
United Nations Framework Classification for  
Fossil Energy and Mineral Resources  
(UNFC) to Other Petroleum and Mineral  
Classifications  
(Mapping Report)**

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UNECE Ad Hoc Group of Experts on Harmonization of  
Fossil Energy and Mineral Resources Terminology  
Fifth Session, 15-16 April 2008

# Mapping Task Force (MTF) members

- Mr. Per BLYSTAD                      Co-Leader
- Mr. Ferdi Camisani-Calzolari
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- Mr. John R. Etherington
- Mr. Kirill Kavun
- Mr. James G. Ross
- Mr. Andrej Subelj
- Mr. Niall Weatherstone

# Mandate for the MTF

- *The team is to complete the mapping of the various classifications and definitions to the UNFC. Specifically, this will be the CRIRSCO/JORC, New Russian Classification and SPE PRMS terminologies.*

*The results of this initial effort can then be leveraged to support mapping of other national and international classification systems to the UNFC.*

- *To consider the changes that will be required to bring the classifications and definitions together for wide acceptance and global adoption with UN support.*
- *To include changes to the UNFC for minerals and for petroleum to align these on a project status based framework.*
- *To include recommended changes to the three underlying classifications for further consideration.*

# Report history

- Draft report presented at the Fourth Session of the AHGE in Geneva 17<sup>th</sup> – 19<sup>th</sup> October 2007
- Decided to provide opportunity for comments to the draft report until 31<sup>st</sup> January 2008
- Initial deadline for completion of report 29<sup>th</sup> February 2008
- An interim workshop arranged in Geneva 27<sup>th</sup> – 28<sup>th</sup> February 2008 with important feedback to the report. Deadline for revised report end of march 2008.
- Final report delivered 8<sup>th</sup> April 2008.

# Report structure

1. Introduction
2. Proposed changes to category and sub-category definitions
3. Mapping of the UNFC with CRIRSCO Template and SPE-PRMS Classifications
4. Mapping of the new Russian Federation Classification system to UNFC
5. Discussion of Feedback
6. Conclusion and recommendations

Attachments

## 2. Proposed changes to category and sub-category definitions

### **Harmonization of the UNFC Categories and Sub-categories**

- The MTF recognised that the mapping of UNFC to other classifications would be easier if the UNFC definitions were simplified.
- The MTF recognised that a major strength of the UNFC is its 3-D numerical codification which helps to avoid issues related to language.
- It was considered unnecessary to establish labels for each category.

## 2. ctnd...

- Two sets of definitions within the current version of the UNFC (i.e. one definition for solid minerals and one for petroleum).
- The MTF decided to develop generic principle-based definitions for each of the categories and sub-categories and recommends that the differences in application between solid minerals and petroleum are addressed in the form of additional commodity-specific guidelines.
- These generic definitions have been designed to be as simple as possible, capturing the key principles from the existing (2004) system, but excluding detailed and/or commodity-specific information that could be captured better in the guidelines.

## 2. ctnd..

- The definitions should be kept at “high level”, to maintain continuity with the current definitions and to ensure maximum potential for alignment with other systems.
- *It is the principles that are important at this level, not the specific details.*
- The MTF has used these proposed new definitions in mapping of the CRIRSCO Template and the SPE-PRMS to UNFC
- Table 1 compares proposed new definitions with current (2004) definitions

# E1 – proposed new definition

Cat.	2004 Coal, uranium and other solid minerals	2004 Petroleum	Proposal for revised UNFC definitions
E1	Quantities, reported in tonnes/volume with grade/quality, demonstrated by means of a pre-feasibility study, feasibility study or mining report, in order of increasing accuracy, that justify extraction under the technological, economic, environmental and other relevant commercial conditions, realistically assumed at the time of the determination.	Production is justified under the technological, economic, environmental and other relevant commercial conditions, realistically assumed or specified at the time of the estimation	Extraction and sale is economically viable.  Refer to definitions of E1.1 and E1.2.

# 3. Mapping of UNFC with CRIRSCO Template and SPE-PRMS Classifications

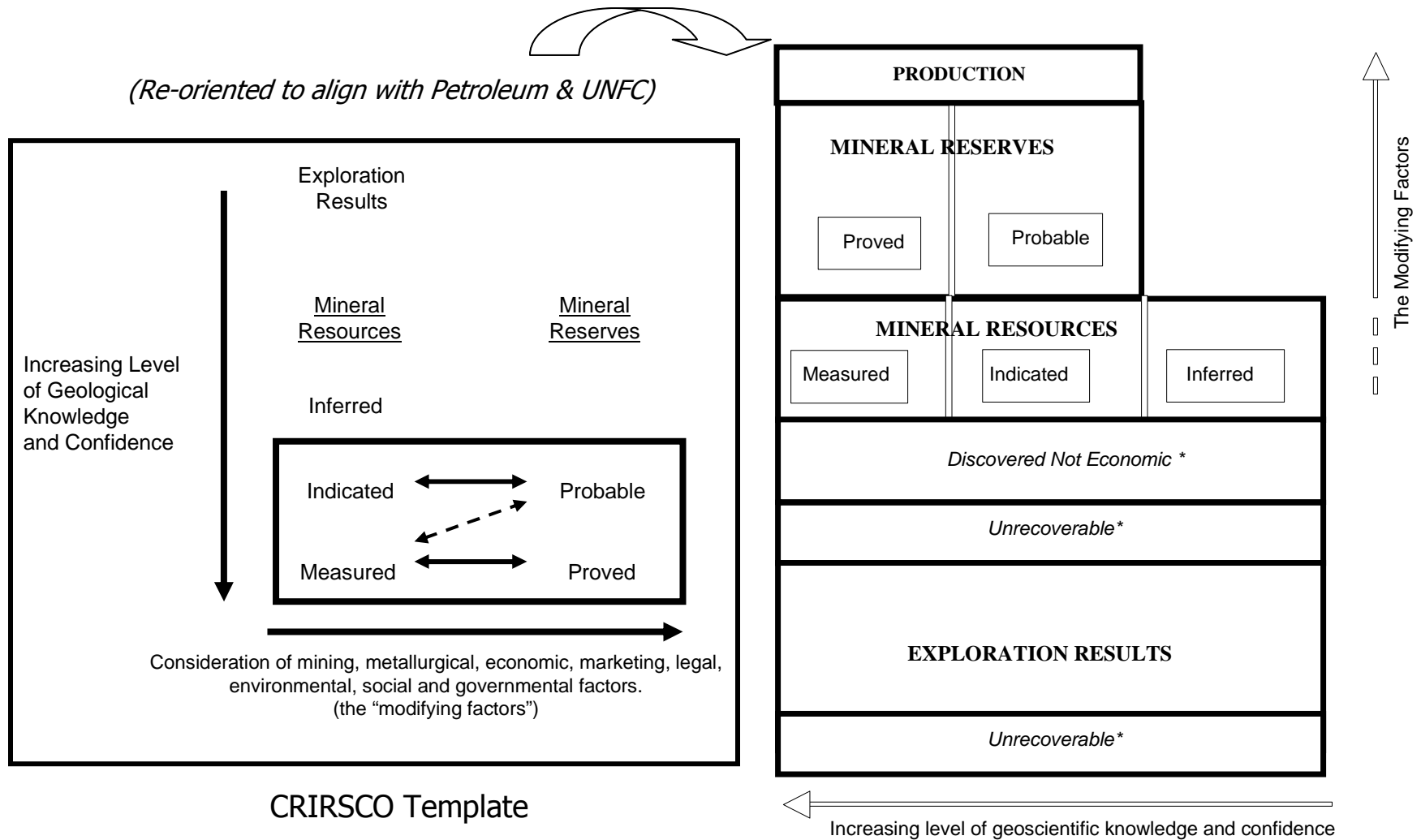
- CRIRSCO Template and SPE-PRMS previously mapped to each other in Convergence Study provided to IASB.
- Systems have different level of granularity.
- Balance between level of sub-division of the UNFC categories appropriate at generic level, and more detailed sub-divisions assigned to mapping to the more granular systems.
- Users of a particular system would apply the level of detail appropriate for that system by using the option to further category sub-division.
- Sub-divisions should be consistent with, but need not be part of, the UNFC

## 3 ctnd..

- Accepting the proposed revisions to the UNFC category/sub-category definitions provides sufficient alignment between the UNFC, the CRIRSCO Template and SPE-PRMS
- It then becomes viable for the existing detailed guidelines developed and maintained by CRIRSCO and SPE to be adopted as the standard reference guidelines for the UNFC.
- The MTF sees this potential integration between systems as being extremely beneficial to the harmonisation of terminology at a global level, and far preferable to new guidelines being developed specifically for the UNFC.

## 3.1. UNFC and CRIRSCO Template

# CRIRSCO Template for solid minerals



CRIRSCO Template

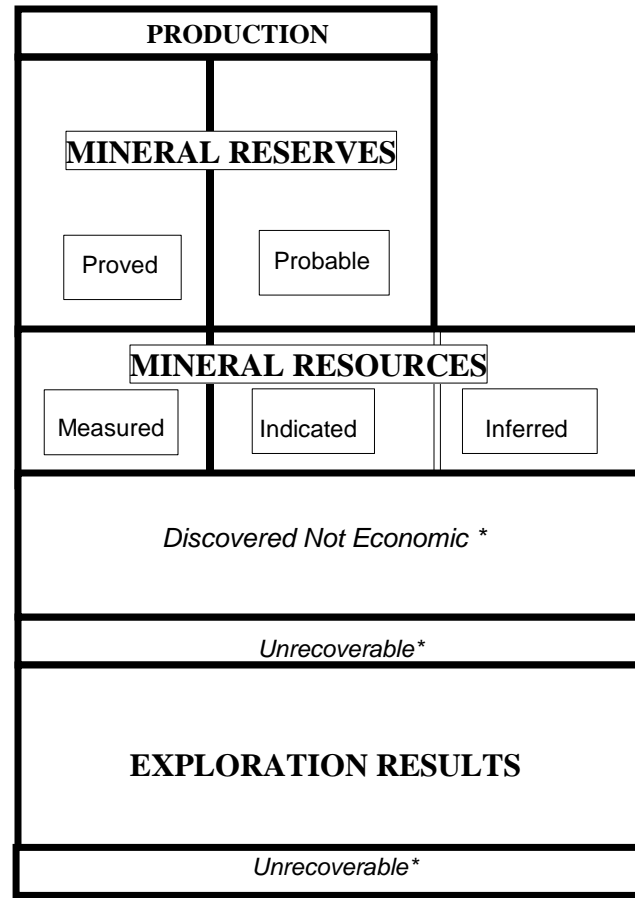
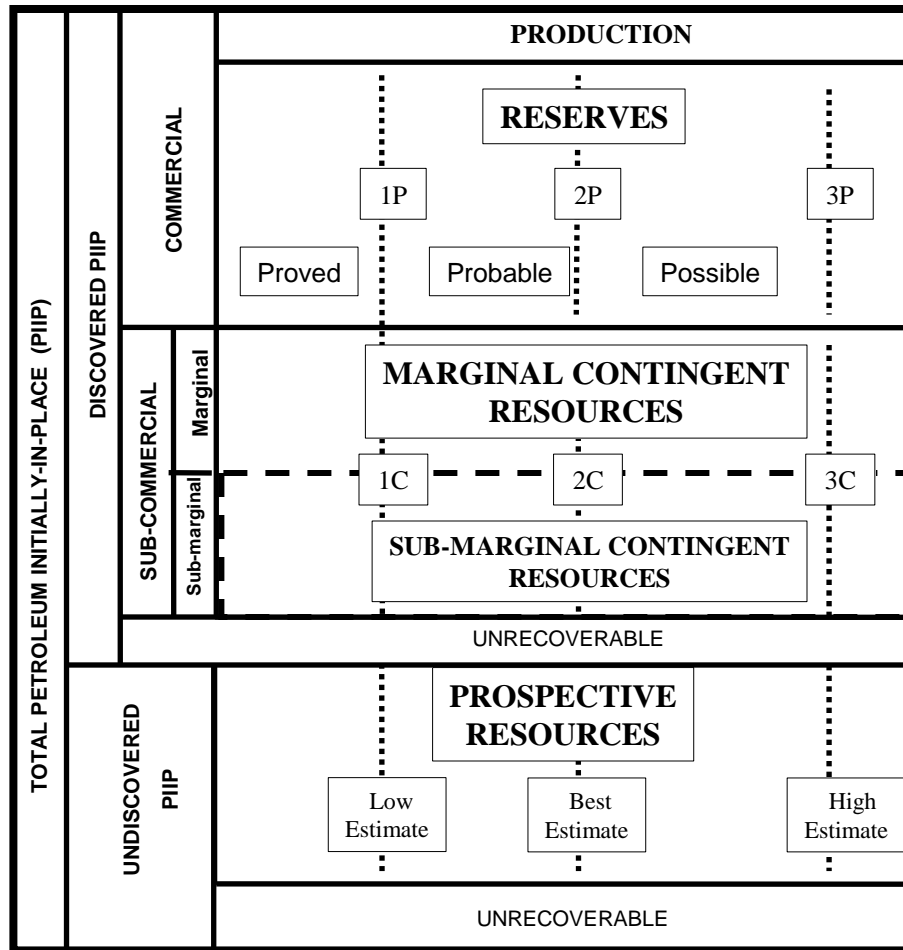
\*Not part of the Template but may be used for internal project management

Figure 3-1

# PRMS-CRIRSCO MAPPING FROM IASB STUDY

SPE- PRMS

CRIRSCO TEMPLATE



← Range of Uncertainty →

↑ Increasing Chance of Commerciality

← Increasing level of geoscientific knowledge and confidence

\*Not part of the Template but may be used for internal project management

# High-level UNFC to CRIRSCO Template mapping

Fundamental Characterization	Solid Mineral Classes	UNFC E axis	UNFC F axis	UNFC G axis		
				Proved	Probable	NA
<b>DISCOVERED AND MINEABLE</b>	<b>MINERAL RESERVES</b>	1	1	1	2	
				Measured	Indicated	Inferred
<b>DISCOVERED AND NOT COMMERCIALY RECOVERABLE</b>	<b>MINERAL RESOURCES</b>	2.1	2	1	2	3
	<b>Discovered Not Economic</b>	2.2	2	1	2	3
	<b>Unrecoverable</b>	3	4	1	2	3
				Zone of Mineralization		
<b>UNDISCOVERED</b>	<b>Exploration Results</b>	3	3	4		
	<b>Unrecoverable</b>	3	4			

\*Not part of the Template but may be used for internal project management

Figure 3-2

# Project development status mapping

UNFC F-axis		PRMS Sub-Classes		Template Classes	Mineral Project Development Stage
Category	Sub-category				
F1	F1.1	F1.1	On Production	Mineral Reserves	On Production (1)
	F1.2	F1.2	Approved for Development		Project Implementation
	F1.3	F1.3	Justified for Development		Feasibility Study (2)
F2	F2.1	F2.1	Development Pending	Mineral Resources	Pre-Feasibility Study (3)
	F2.2	F2.2	Development Unclarified or on Hold		Order of Magnitude Studies (4)
	F2.3	F2.3	Development not Viable		
F4		F4.1	Discovered Unrecoverable		(5, 6)
F3		F3.1	Prospect	Exploration Results	Conceptual Studies (7)
		F3.2	Lead		
		F3.3	Play		
F4		F4.2	Undiscovered Unrecoverable		(6)

\*Not part of the Template but may be used for internal project management

\*Sub categories are commodity specific and not part of UNFC generic

Figure 3-3

# Detailed UNFC to CRIRSCO Template mapping

Fundamental Characterization	Solid Mineral Classes	Mineral Project Development Stage	UNFC E axis	UNFC F axis	UNFC G axis		
					Proved Measured	Probable Indicated	----- Inferred
DISCOVERED AND COMMERCIALY RECOVERABLE	MINERAL RESERVES	On Production (1)	1	1.1	1	2	
		Project Implementation	1	1.2	1	2	
		Feasibility Study (2)	1	1.3	1	2	
DISCOVERED AND NOT COMMERCIALY RECOVERABLE	MINERAL RESOURCES	Pre-Feasibility Study (3)	1 or 2.1	2.1	1	2	3
		Order of Magnitude Studies (4)	3.2 or 2.1	2.2	1	2	3
	Discovered Not Economic	(5,6)	2.2	2.3	1	2	3
	Unrecoverable		3.3	4.1	1	2	3
UNDISCOVERED	EXPLORATION RESULTS	Conceptual Studies (7)	3.2	3.3	4		
	Unrecoverable	(6)	3.3	4.2	4		

\*Not part of the Template but may be used for internal project management

Figure 3-4

## 3.2 Mapping of UNFC and SPE- PRMS for Petroleum

# PRMS Classification

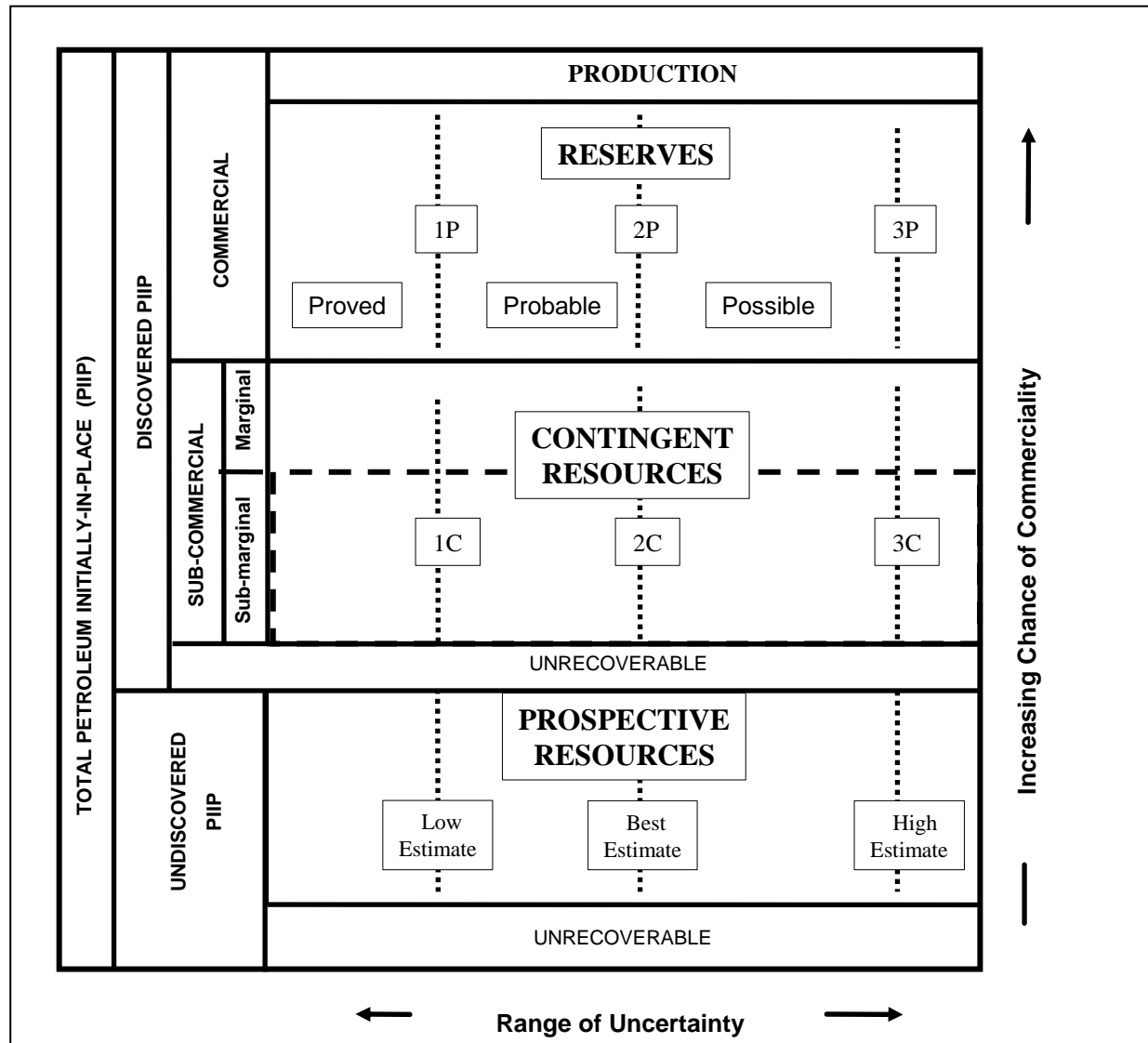


Figure 3-5

# High level mapping PRMS and UNFC

Fundamental Characterization	PRMS Resources Classes		UNFC E axis	UNFC F axis	UNFC G axis		
					Proved	Probable	Possible
DISCOVERED AND COMMERCIALY RECOVERABLE	RESERVES		1	1	1	2	3
					C1	C2	C3
DISCOVERED AND NOT COMMERCIALY RECOVERABLE	CONTINGENT RESOURCES	Marginal	2.1	2	1	2	3
		Sub-Marginal	2.2				
	Unrecoverable		3	4			
					Estimate of Potential		
UNDISCOVERED	PROSPECTIVE RESOURCES		3	3	4.1	4.2	4.3
	Unrecoverable			4			

# Detailed mapping PRMS and UNFC

Fundamental Characterization	PRMS Resources Classes	PRMS Sub-Classes	UNFC E axis	UNFC F axis	UNFC G axis		
					1P/1C low est	2P/2C best est	3P/3C high est
DISCOVERED AND COMMERCIALY RECOVERABLE	RESERVES	On Production	1.1 or 1.2	1.1	1	1+2	1+2+3
		Approved for Development	1.1 or 1.2	1.2	1	1+2	1+2+3
		Justified for Development	1.1 or 1.2	1.3	1	1+2	1+2+3
DISCOVERED AND NOT COMMERCIALY RECOVERABLE	CONTINGENT RESOURCES	Development Pending	1 or 2.1	2.1	1	1+2	1+2+3
		Development Unclarified or on Hold	3.2 or 2.1	2.2	1	1+2	1+2+3
		Development not Viable	2.2	2.3	1	1+2	1+2+3
	Unrecoverable		3.3	4.1	1	1+2	1+2+3
UNDISCOVERED	PROSPECTIVE RESOURCES	Prospect	3.2	3.1	4.1	4.1+4.2	4.1+4.2+4.3
		Lead	3.2	3.2	4.1	4.1+4.2	4.1+4.2+4.3
		Play	3.2	3.3	4.1	4.1+4.2	4.1+4.2+4.3
	Unrecoverable		3.3	4.2	4.1	4.1+4.2	4.1+4.2+4.3

# UNFC codification for Developed and Undeveloped Reserves

Fundamental Characterization	PRMS Class	PRMS Sub-Classes	UNFC F axis			UNFC G axis		
			Developed		Undeveloped	1P	2P	3P
			Producing	Non-Producing				
DISCOVERED AND COMMERCIALY RECOVERABLE	RESERVES	On Production	1.1.1.1	1.1.1.2	1.1.2	1	1+2	1+2+3
		Approved for Development	NA	1.2.1.2	1.2.2	1	1+2	1+2+3
		Justified for Development	NA	NA	1.3.2	1	1+2	1+2+3

## 4 Mapping of the New Russian Federation Classification System to UNFC

- Two parallel systems in use in the Russian Federation.
- A mapping of these systems to the current (2004) UNFC was developed and provided by the Russian experts.
- The Russian experts have not had the opportunity to compare the MTF mapping based upon the revised UNFC definitions.
- A more detailed review by the Russian experts may be necessary if the proposed changes of UNFC are adopted.

## 4 ctnd..

- All classes and categories of the RF Classification can be captured by the three criteria of the UNFC.
- The terms “reserves” and “resources” have different meanings in the RF Classification and the UNFC and do not correspond to each other.
- RF Classification categories mapped to UNFC seems to be as follows:
  - “measured” resources and “proved” reserves may be equalized to RF categories of A+B+C1
  - “indicated” resources and “probable” reserves may correspond to RF C1 or C2 categories;
  - “inferred” resources may be compared with RF preliminarily evaluated C2 or prognostic P1 categories, the latter being referred to “Reconnaissance Resources” not further categorized in the UNFC current (2004).
  - According to the same scheme, this subdivision also includes RF P2 and P3 undiscovered (prognostic) resource categories.
- For mineral deposits belonging to high geological complexity groups (in compliance with the RF Classification), assignment of “resources” to “reserves” is possible as well as the use of C1 and C2 categories in design engineering

## 4 ctnd..

- Mapping all prognostic resources defined in Russia by criteria of geological knowledge (P1, P2 and P3) are to be assigned to the UNFC “Reconnaissance Resources” class.
- However, it is noted that the MTF proposes that, at commodity level of petroleum, subcategories are established that captures the different levels of prognostic resources.
- Unrecoverable resources are not taken into account by the RF Classification. Such type of estimates may be used for internal long-term planning and project management
- In-Balance economic reserves in the RF Classification and the UNFC are those which at the moment of evaluation prove to be economically efficient for recovery according to the results of technical/economic investigations.

## 4 ctnd..

- “Economic” (“In-Balance”) reserves according to the UNFC and the Russian Classification is based on feasibility or at least pre-feasibility studies.
- If the recovery of mineral resources from the subsoil proves to be economically unjustified at the moment of evaluation but is promising to be such in the foreseeable future, these quantities in compliance with the RF Classification are referred to Out-Of-Balance (subclass “1”).
- If the non-commerciality is related to the specific location of the deposit, or to social or environmental conditions, etc., the resources are also assigned to Out-Of- Balance ones (subclass “2”). This subclass of RF classification may be mapped to the class of “Discovered Not Economic Resources of UNFC.

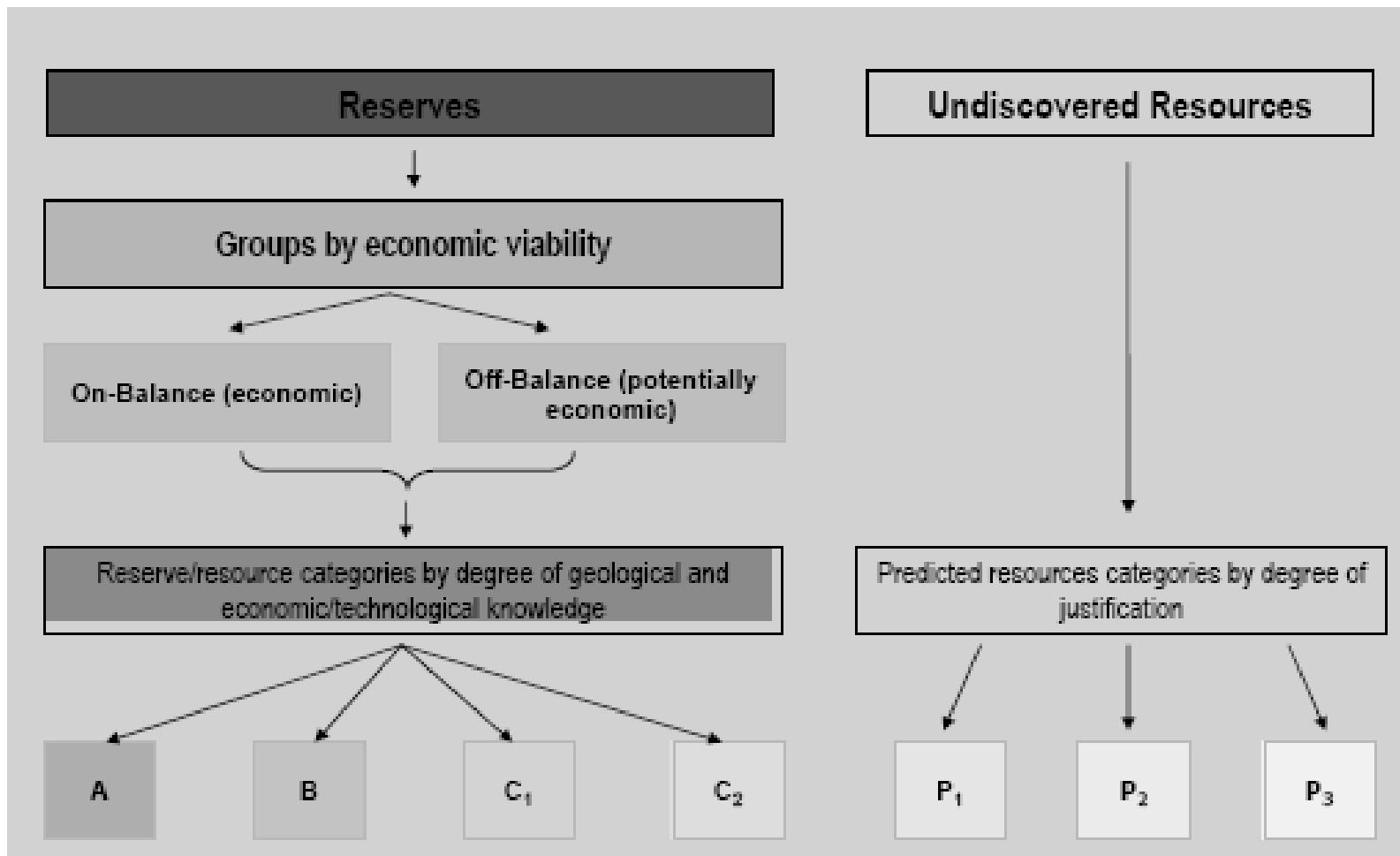


Figure 4-1

## Russian Federation Mineral Classification (RF-M-2006)

Fundamental Characterization	Groups By Economic Efficiency	Operational Project Status & Level of Technical-economic Evaluation	Categorized by Level of Geological Assurance	UNFC E axis	UNFC F axis	UNFC G axis		
Economic (In-balance)	RESERVES	Not provided for in RF classification		1 <sup>1</sup>	1.1	1	2	3
		Not provided for in RF classification				1	2	3
		Detailed Exploration Feasibility Study	A, B, C <sub>1</sub> , C <sub>2</sub> Explored/Evaluated		1.3	1	2	
		General Evaluation Pre-Feasibility Study	C <sub>1</sub> , C <sub>2</sub> Evaluated	2	2		2	
Potentially Economic (Out-of balance)	RESERVES (in UNFC – Resources)	Detailed Exploration Feasibility Study	A, B, C <sub>1</sub> , C <sub>2</sub> Explored/Evaluated	2.1	1.3	1	2	3
				2.2	1.3	1	2	3
		General Evaluation Pre-Feasibility Study	C <sub>1</sub> , C <sub>2</sub> Evaluated	2	2		2	
		Not provided for in RF classification		3	3 & 4	1	2	3
Undiscovered	RESOURCES	Prospecting Opportunity Studies	C <sub>2</sub> , P1, P2 Preliminarily Evaluated & Predicted	3	3			3
		Regional Geological Studies Geological Report	P2, P3 Predicted (order of magnitude for P3)	3	3	4		

1 Subcategories E1.1 (Normal Economic) and E1.2 (Exceptional Economic) not provided for in RF classification

Figure 4-2

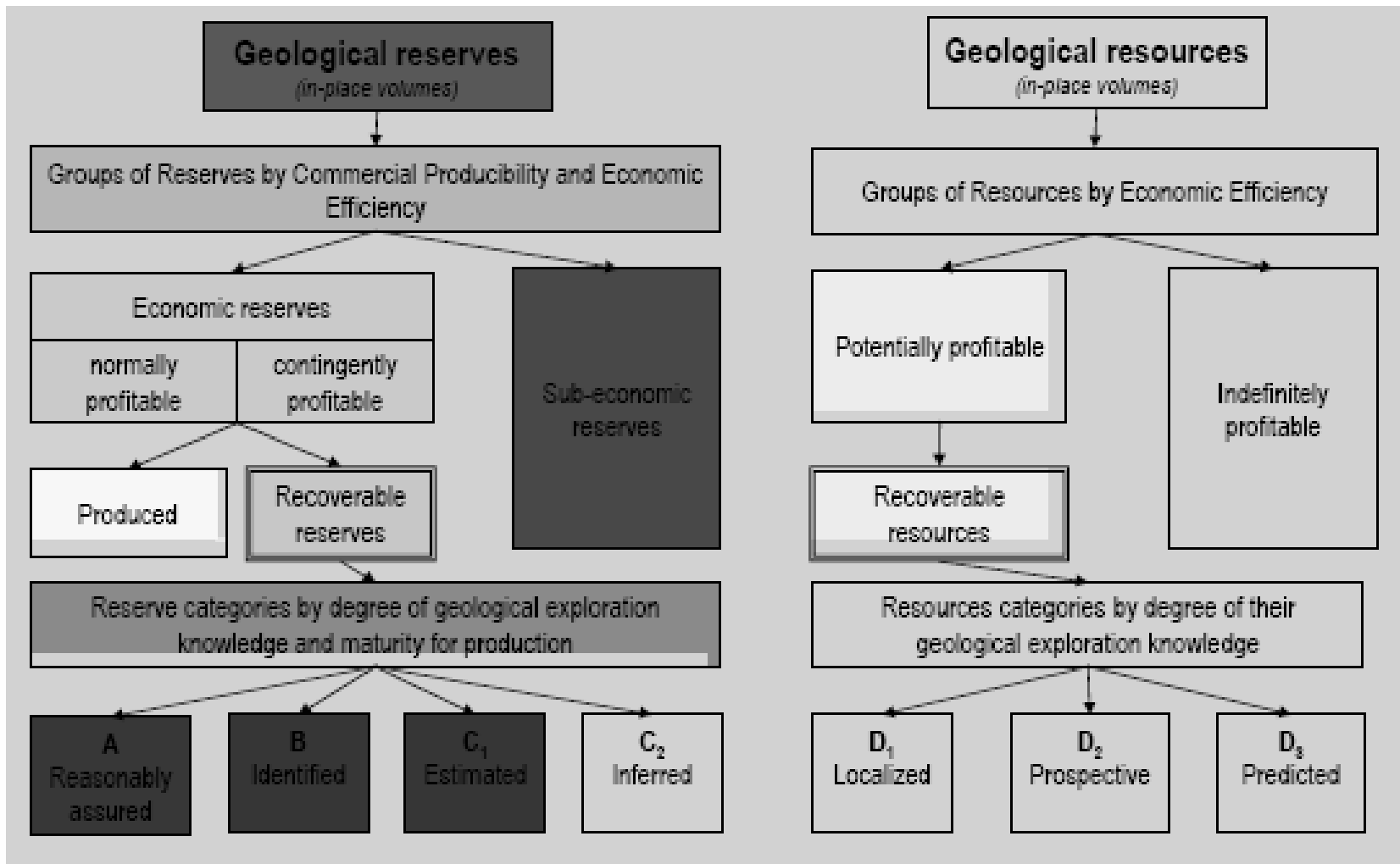


Figure 4-3

Fundamental Characterization	Groups By Economic Efficiency	Categorized by Project Maturity	Categorized by Level of Geological Assurance	UNFC E axis	UNFC F axis	UNFC G axis		
Geological (In-Place) Reserves	ECONOMIC RESERVES	On Production	A	1	1.1	1		
		Committed Development Project	B+C <sub>1</sub>		1.2		2	
		Uncommitted Development Project	C <sub>2</sub>		1.3			3
	Sub-Economic Reserves			2				
	Unrecoverable Reserves			4.1				
Geological (In-Place) Resources	Potentially Economic	Localized Recoverable	D <sub>1</sub>	3	3	4		
		Prospective Resources	D <sub>2</sub>					
		Undiscovered Resources	D <sub>3</sub>					
	Intrinsically Economic Resources							

Figure 4-4

# 5 List of Feedbacks

- Austria (OMV)
- Canada (the members of NEB, ASC, ERCB, CIM, SPEE)
- Germany (RWE-dea)
- Hungary (Hungarian Office for Mining and Geology)
- USGS
- WEC
- Poland (Commission of Mineral Resources, Ministry of Environment)
- Russian Federation (RF AHGE)
- Ukraine (State Commission on Reserves)
- China (Ministry of Land and Resources)
- CRIRSCO Board
- India
  
- IAEA/OECD NEA
  
- All feedback received is found in Attachment 2. In addition, Ukraine's presentation at the interim workshop is attached.

# Comments from countries where UNFC has been applied

- **Ukraine** (in 1997 by law) ✓
- **China** (as a national standard in 1999) ✓
- **Poland** (adapted) ✓
- **Hungary** (applied without codification) ✓

# 5 Discussion of feedback

- 5.1 Defining Reserves and Resources
- 5.2 Clarifying In-Place versus Recoverable Quantities
- 5.3 Accommodating National Inventory Approaches
- 5.4 Attributing Mineral Reserves based on Pre-Feasibility Studies
- 5.5 Stage of Exploration versus Level of Confidence in Estimates
- 5.6 Mixing of Incremental and Scenario Terms
- 5.7 Maintaining Simplicity in the 3-d Matrix Approach
- 5.8 Developed and Undeveloped Reserves
- 5.9 Sales and Non-Sales Production
- 5.10 Impact on Prior Applications of UNFC

# 5.1 Defining reserves and resources

- Problem of clarity in defining the terms “reserves” and “resources” results in significant confusion.
- Although the terms are widely used in both the petroleum and minerals industries, they are subject to different definitions, interpretations, and applications.
- The current (2004) UNFC includes definitions of Classes using these terms, but the terms themselves were not given separate definitions except for proved reserves.

## 5.1 ctnd..

The MTF considered two options:

1. UNFC defines “reserves” and “resources” (“sets the standard”).
2. Some members proposed that the revised UNFC text avoids reliance on these terms and defines Classes (where necessary) using simple non-technical terminology.
  1. This could serve to enhance global communications at the level of the umbrella system without compromising the very specific (and carefully defined) usage of the two terms at the detailed level of systems such as the CRIRSCO Template, the SPE-PRMS and the RF classification.

***Option 2 is recommended.***

## 5.2 Clarifying In-place versus Recoverable quantities

- Important topic to address to avoid confusion in communication
  - How to capture recoverable quantities and in-situ (minerals) / in-place (petroleum) quantities in a consistent way
  - “mass balance” (produced/remaining recoverable/unrecoverable) (UNFC, SPE-PRMS)
  - Mineral reserves and petroleum reserves treated alike (recoverable)
  - Mineral resource (in-situ),
  - Mineral inventories (in-situ, and including MR)
  - Contingent resource (recoverable),

## 5.2 ctnd.

- Option 1
  - **Create a new Category (F4)** that refers to those residual quantities located “in the ground” in accumulations/deposits for which no technically feasible development plan has been defined.
  - In PRMS this would represent initially-in-place minus all reported recoverable quantities. Since there is not an equivalent to initially-in-place in the Template, and no estimates of tonnage and grade are made beyond Mineral Resources, the F4 Category would not be used
  - This approach recognises the equivalence between Contingent Resources and Mineral Resources in terms of representing potentially recoverable quantities, and hence facilitates both being assigned to F2 and/or its sub-categories without requiring any changes to the definitions as set out in the draft Task Force report.
  - This approach provides the option (but not requirement) for both petroleum and solid minerals to express quantities as in-place or (potentially) recoverable. The proposed F2.4 sub-category is not required in this option as Unrecoverable (i.e. additional quantities remaining in-place) would be uniquely defined by E3.3/F4.

## 5.2 ctnd..

- Option 2
  - Differentiate remaining in-place (and in situ) estimates from recoverable quantities by appending an alpha character on the G-axis (e.g. G1P is high confidence in-place and G1R is high confidence recoverable).
  - This option would create complexity in a purely numeric designation (language independent to avoid English alphabet letters) as originally envisaged by UNFC.
- **The MTF recommends utilising option 1**

## 5.3 Accommodating national inventory approaches

- National inventories may require a different approach from CRIRSCO and SPE-PRMS
- Basin/play level approach
  - Projections within F2 and F3 domain, parts may be assessed as E1.
  - “Project” concept difficult for less mature portions
- **MTF believe these types of analyses can be accommodated in UNFC – but careful mapping is required to ensure appropriate level of consistency**

## 5.4 Attributing mineral reserves based upon pre-feasibility studies

- Historically, a Feasibility Study was required to attribute Mineral Reserves.
- Under the current (2004) UNFC, Probable Mineral Reserves could be assigned on the basis of a Pre-Feasibility Study.
- The difference between the current UNFC (2004) and the proposed new definitions is that all “reserves” would now fit into F1 rather than be split between F1 and F2, thus providing alignment between the UNFC, the CRIRSCO Template and SPE-PRMS.
- The proposed UNFC generic definitions do not use the terms Feasibility or Pre-Feasibility Study, because:
  - They are too specific in relation to the critical distinction that is between reserves and contingent/mineral resources; and,
  - They are commodity-specific, having no meaning in most of the petroleum sector.
- The overall intent of the guidelines is to ensure that, provided studies are sufficiently complete for a company to be able to demonstrate a technically and commercially viable development project, then reserves may be attributed. F1.3 aligns with petroleum’s criteria for projects that are “Justified for Development”.

## 5.5 Stage of exploration versus level of confidence in estimates

- Current (2004) UNFC text for G-axis labels denotes both the stage of exploration and the level of confidence
- Current F-axis definitions focus more on mining studies (Feasibility report..)
- New definitions for G-axis are limited to an indication of the level of confidence in both in-situ quantities and expected recovery efficiency.
- New definitions for F-axis are more explicit project maturity oriented
- **The proposed UNFC definitions provide G categories that are designed to accommodate both petroleum and solid minerals. While the words are different, this should not prevent alignment with assessments under UNFC-2004 mineral guidelines.**

## 5.6 Mixing of incremental and scenario terms

- Incremental approach used in Minerals
- Increasingly, scenario approach is used in Petroleum for characterising uncertainties.
  - Low, best and high estimates (1P, 2P, 3P)
  - Scenario terms can be disaggregated
  - 2P coded as 111 + 112
- Both methods can be used

## 5.7 Maintaining simplicity in the 3-D matrix approach

- Concern regards complicating the simple 3x3x4 matrix vs. multiple levels of sub-categories (e.g. F1.1.1.1)
  - Sub-categories developed for mapping SPE-PRMS
  - Commodity-specific. Not defined at generic level
- Defining classes in a revised UNFC will require to clearly document relevant sub-categories as this may not be evident from higher level categories

## 5.8 Developed and undeveloped reserves

- Developed (Producing, Non-producing) and Undeveloped Reserves
- Reserves status categories (funding and operational status) - mainly applied to petroleum
  - Accommodated in PRMS
  - Not part of the CRIRSCO Template, but applied by some mineral companies to satisfy specific regulatory and accounting reporting requirements
- Recommends that such allocations be represented by assigning quantities to commodity-specific sub-categories on the F- Axis.

## 5.9 Sales and non-sales production - 1

- Not all quantities produced/extracted will ultimately be sold in the commercial market.
- The Non-sales term was originally introduced in UNFC to allow for quantities produced in barter economies.
- In petroleum, the extracted material may be consumed (lease fuel), lost (e.g. flared gas), or simply re-injected.
- Petroleum tracks both raw wellhead production and sales quantities (after surface processing, lease fuel use and losses) and all reserves and resources should be quoted in terms of sales quantities at a defined transfer point.
- E3.1 is used to capture those remaining quantities projected to be non-sales in the development plan.

## 5.9 ctnd.....

- Minerals use the term Run-of-Mine to define the raw extraction in terms of tonnes and grade and this forms the basis of Mineral Reserves estimates.
- If there are any losses prior to on-site processing, they may be noted but are typically not significant or tracked separately. Such losses end up in tailings which may be re-worked in the future. Even if there is stockpiling, it has already been captured in Run-of-Mine production and reserves.
- The impact of on-site processing prior to transfer/sale (mineral processing recovery factor) is reported separately from the tonnage and grade that are reported as Mineral Reserves.
- **Thus there may be no Non-sales quantities reported for Mineral Reserves.**

## 5.10 Impact on prior applications of UNFC

- The UNFC has already been adopted (or adapted) as a national system and applied to solid minerals by a number of countries including China, India, Indonesia and Ukraine.
- The Task Force recognised that its recommended changes could lead to some complications for existing users.
- If the proposals of the Task Force are accepted then a re-evaluation of the existing classifications would be appropriate.
- It is noted that any such re-evaluation **should not** require any re-assessment of quantities as such, but a check on the impact of the changes to the category/sub-category definitions in terms of possibly modifying the codification of the quantities in some cases.
- **Overall, it was felt that the benefits of establishing a fully-harmonised generic classification system out-weighed the disadvantages associated with change.**
- **It is accepted that these national systems may need to be re-mapped if the UNFC is updated and the codification adjusted where required.**

## 6. Conclusions and recommendations

- Current UNFC (2004) is inconsistent in the context of mapping to the CRIRSCO Template and SPE-PRMS.
- Key issue is that a probable petroleum reserve and a probable mineral reserve mapped differently in UNFC.
- This issue was fixed by use of generic definitions reflecting general principles rather than narrow commodity constraints.

## 6 ctnd..

- MTF has simplified current category and sub-category definitions such that they incorporate the necessary principles for all commodities, without material deviation from their current meaning.
- Detailed and/or commodity specific information is proposed captured in commodity-specific guidelines.
- MTF proposes removal of the text labels attached to the current UNFC (2004) definitions.

## 6 ctnd..

- MTF recommends that the proposed changes in the UNFC definitions are accepted by AHGE and a revised document is generated as soon as possible to reflect those changes.
- The mapping of the CRIRSCO Template and the SPE-PRMS systems against the revised definitions illustrates the high level of harmonisation that has been achieved.
- Given this level of harmonisation, it is envisaged that the existing guidelines for the two systems could be applied to the UNFC with little, if any, modification
- The mapping of the Russian Federation classification system to proposed new UNFC definitions is considered to be only preliminary at this stage. Further discussions and interaction with the Russian experts is necessary to finalise the mapping work.

## 6 ctnd.

- The MTF hope that additional national classification systems will be mapped to a revised UNFC as soon as feasible. The onus for the mapping effort would lie with the agency that applies the classification system, but should be supported by the AHGE. Such mappings should be formatted similar to section 3 with sufficient detail to establish equivalency to UNFC categories and classes. Further indications of alignment with the CRIRSCO Template (for solid minerals) and PRMS (for petroleum) should form part of the mapping report. Any significant areas where such alignment is not feasible should be noted and the reasons for lack of alignment should be documented.
- The MTF recommends that a “working group” is established with similar membership to that of the Mapping Task Force with a mandate to provide advice and guidance to any such mapping effort, with particular emphasis on maintaining a standardised format for the mapping document and ensuring consistency with the existing mapped systems.

Thank you!

**REPORT  
of  
the Special Task Force on Mapping of the  
United Nations Framework Classification for  
Fossil Energy and Mineral Resources  
(UNFC) to Other Petroleum and Mineral  
Classifications  
(Mapping Report)**

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