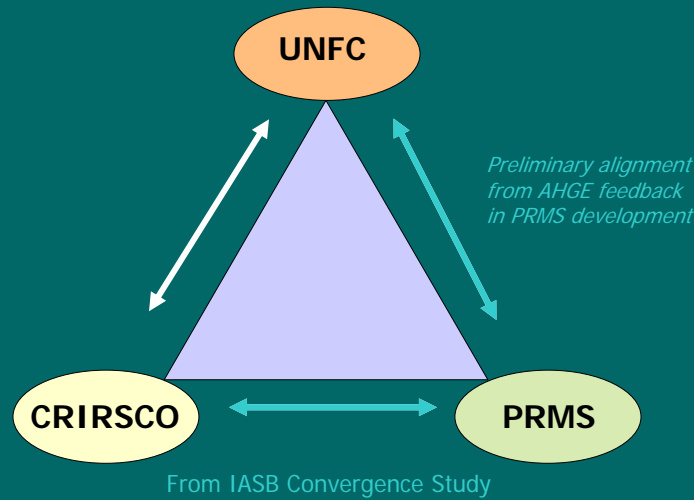


PRMS-CRIRSCO-UNFC MAPPING



1

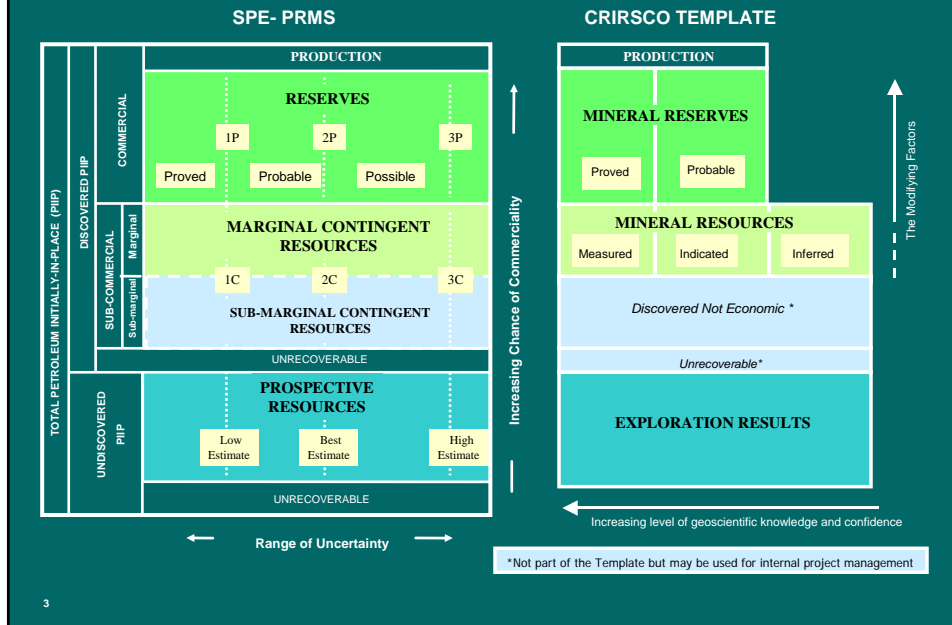
PRMS-CRIRSCO-UNFC MAPPING

Assumptions:

- 1) No significant changes can be made to PRMS and CRIRSCO-Template ...at this time...
- 2) The PRMS-CRIRSCO mapping must be consistent with the prior submittal by the Convergence Team to the IASB .. at this time....
- 3) Mapping should be kept at as high a level as possible to accommodate a broad range of stakeholders and specific circumstances.
- 4) However, where specific sub-codes are required to identify key categories, they should be clearly shown to avoid conflicts in future mappings of other systems.
- 5) The goal is to consistently translate results generated using PRMS or CRIRSCO guidelines into UNFC 3-d codes for comparison, and where appropriate, aggregation.

2

PRMS-CRIRSCO MAPPING FROM IASB STUDY



3

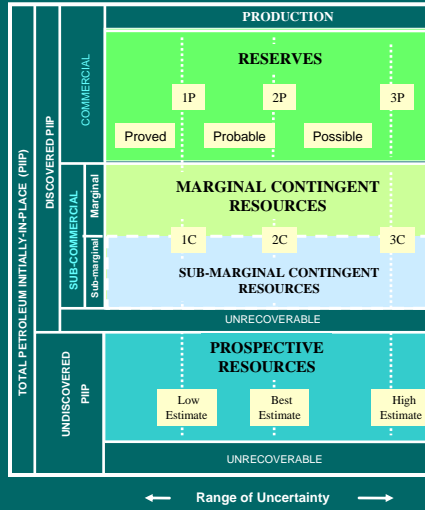
PRMS PRINCIPLES

The total estimated quantities of hydrocarbons generated by nature will be accounted for in the system, whether previously produced* or remaining (including those quantities predicted, but yet to be discovered).

(*produced = sales + non-sales)

4

PRMS 2007



“Project-based” System

Classification based on the characteristics of the **project** being applied.

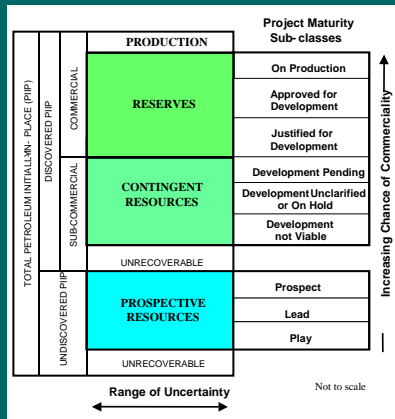
Ultimate recovery is the sum of recoveries from all defined **projects** that will be applied to an accumulation.

Categorization expresses the relative uncertainty in the estimates of quantities that will be recovered by a **project**.

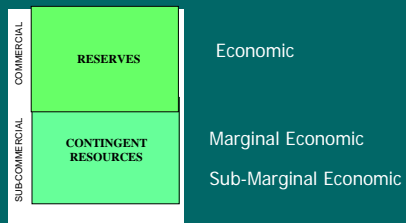
5

PRMS Classification: “Project Status Modifiers”

Project Maturity



Project Economics



Project Operational/Funding Status



Project Status modifiers may be applied independently or in combination.

6

PRMS "Economic Status"

"*Economic* refers to the situation where the income from an operation exceeds the expenses involved in, or attributable to, that operation." (NPV>0)

Reserves	Reserves <u>must be economic</u> under reasonably forecast conditions.
Marginal Contingent Resources	Currently <u>economic or projected to be economic</u> under reasonably forecast improvements in commercial conditions but are not committed for development because of one or more contingencies.
Sub-Marginal Contingent Resources	Technically feasible but <u>would not be economic</u> under reasonable forecast improvements in commercial conditions and/or other contingencies would not be satisfied.

Specifically references contingencies

Where evaluations are incomplete, the economic status may be defined as "undetermined".

Additional economic status modifiers may be applied; for example: Non-sales and Unrecoverable.

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PRMS "Project Maturity" Sub-classes

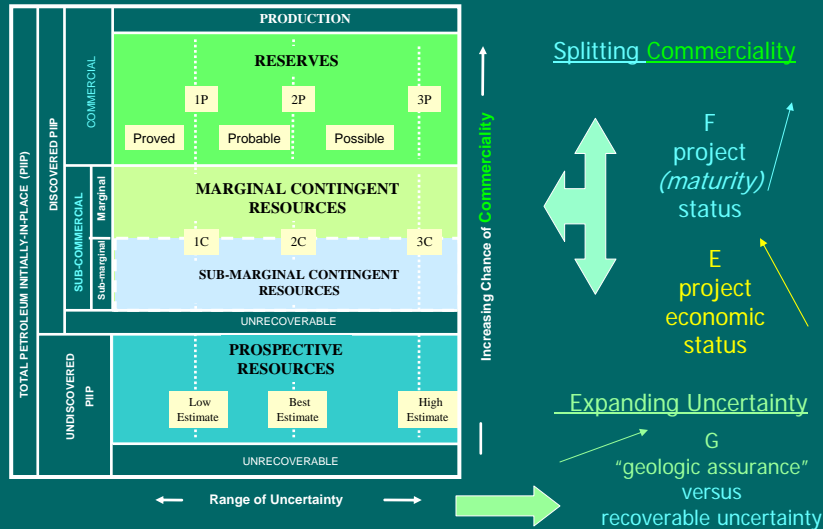
Projects are sub-classified according to project maturity levels and the associated actions (business decisions) required to move a project towards commercial production.

Class/Sub-class	Definition	Guidelines
Reserves/ Justified for Development	Implementation of the development project is justified on the basis of reasonable forecast commercial conditions at the time of reporting and there are reasonable expectations that all necessary approvals/contracts will be obtained.	In order to move to this level of project maturity, and hence have reserves associated with it, the development project must be commercially viable at the time of reporting, based on the reporting entity's assumptions of future prices, costs, etc. ("forecast case") and the specific circumstances of the project. Other than such approvals/contracts, there should be no known contingencies that could preclude the development from proceeding within a reasonable timeframe .
<i>Specifically references contingencies</i>		
Contingent Resources/ Development Pending	A discovered accumulation where project activities are ongoing to justify commercial development in the foreseeable future.	The project is seen to have reasonable potential for eventual commercial development, to the extent that further data acquisition (e.g. drilling, seismic data) and/or evaluations are currently ongoing with a view to confirming that the project is commercially viable and providing the basis for selection of an appropriate development plan. The critical contingencies have been identified and are reasonably expected to be resolved within a reasonable time frame.

8

PRMS-UNFC MAPPING ISSUES

Mapping from a 2-d matrix to a 3-d matrix



PRMS-UNFC MAPPING ISSUES

Splitting Commerciality into (E-axis) and (F-axis)

*"When a project is **commercial**, this implies that the essential social, environmental and **economic conditions** are met, including **political, legal, regulatory and contractual conditions**.*

In addition a project is commercial if the degree of commitment is such that the accumulation is expected to be developed and placed on production within a reasonable time frame. "

A project is only **economic conditional** on price, costs, and timing.
Timing and cost are **conditional on contingencies**.
Project decisions are based on **economics + contingencies**.

PRMS-UNFC MAPPING

E-Axis = Economic Status

Economic: NPV >0 (under reasonable forecast of future conditions)

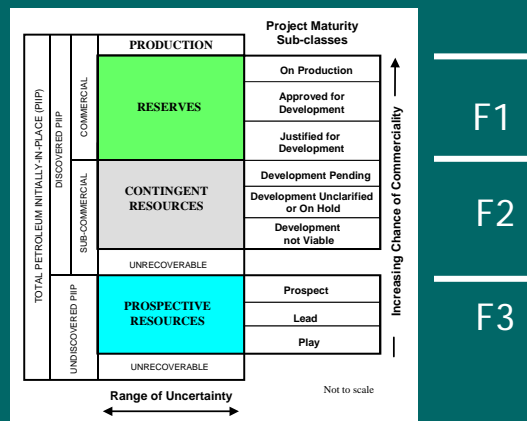
E1	Economic	E1.1
	Short term non-economic or requires subsidies	E1.2
<hr/>		
E2	Marginal Economic	E2.1
	Sub-Marginal Economic	E2.2
<hr/>		
E3	Non-sales	E3.1
	Economics Not Determined	E3.2
	Non-Economic (unrecoverable)	E3.3

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PRMS-UNFC MAPPING

F-axis = Project Maturity

Alignment from
AHGE feedback
in PRMS
development



F1

F2

F3

Primarily defined on contingencies

Contingencies: economic, marketing, legal, environmental, social, governmental and technical (requires developing technologies).

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PRMS-UNFC MAPPING

New Sub-codes Required

Unrecoverable Quantities on the F-axis

New sub-code for discovered unrecoverable: E3.3;F2.4
(subject to enhanced recovery projects)

New sub-code undiscovered unrecoverable: E3.3;F3.4

Developed/Undeveloped on the F-axis

Allocation of reserves quantities based on operational and funding status of wells and/or facilities. *(an allocation within a sub-class)*

New sub-codes *(e.g Developed F1.1.1; Undeveloped F1.1.2)*
(Developed Producing F1.1.1.1)

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PRMS-UNFC MAPPING

G-Axis = Level of Uncertainty in Quantity Estimates

PRMS extends “geological assurance” to define level of confidence* in estimates of sales quantities derived from a defined project.

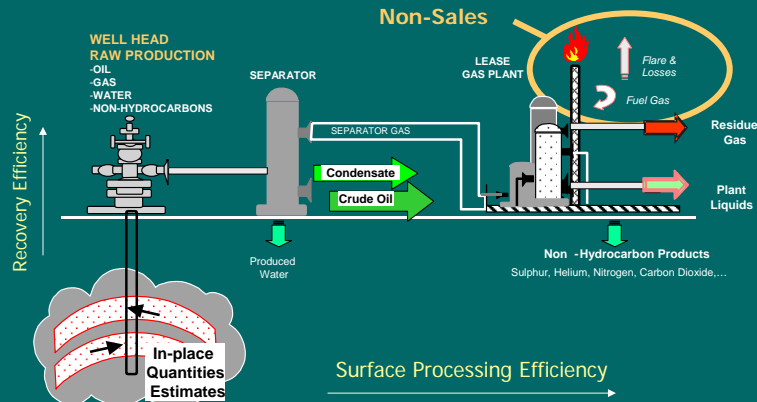
*(*includes resources in-place plus project recovery and processing uncertainties)*

Discovered	G1 HIGH LEVEL OF CONFIDENCE
	G2 REASONABLE LEVEL OF CONFIDENCE
	G3 LOW LEVEL OF CONFIDENCE
Undiscovered	G4 POTENTIAL, NOT YET CONFIRMED, ACCUMULATION

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MODELING PETROLEUM REFERENCE POINTS

In PRMS, all recoverable quantities are quoted in terms of **sales products** in their condition as delivered to a reference point according to sales specifications.



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PRMS-UNFC MAPPING

Incremental vs Cumulative (Scenario) Estimates

PRMS uses either **incremental terms** (e.g. *Proved = G1*) or **scenario terms** (e.g. *Proved + Probable = 2P = G1 + G2*).

Scenarios derived from, or related to, probability distribution functions (PDF) (e.g. *There should be at least a 50% probability (P50) that the quantities actually recovered will equal or exceed the best estimate (2P)*).

Quantity Estimates in Undiscovered Accumulations

PRMS uses the same approach for undiscovered - conditional on discovery and assuming a development plan. All undiscovered are "G4" to align with minerals.

To indicated a range of outcomes where there is an associated discovery risk,

use new sub-codes of G4 (e.g. *low estimate = G4.1*)

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PRMS-UNFC HIGH LEVEL MAPPING

Demonstrates alignment with minerals mapping

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				
					Estimate of Potential		
UNDISCOVERED	PROSPECTIVE RESOURCES		3	3	4.1	4.2	4.3
	Unrecoverable						

*

(using incremental terms)

*(C1/C2/C3 not officially part of PRMS)

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PRMS-UNFC DETAILED MAPPING

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	1.1 or 2.1	2.1	1	1+2	1+2+3
		Development Unclarified or on Hold	3.2 or 1.1 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	2.4	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	3.4	4.1	4.1+4.2	4.1+4.2+4.3

(using scenario terms)

(new codes)

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PRMS-UNFC DETAILED MAPPING

Defining Developed/Undeveloped Using F-axis Sub-codes

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

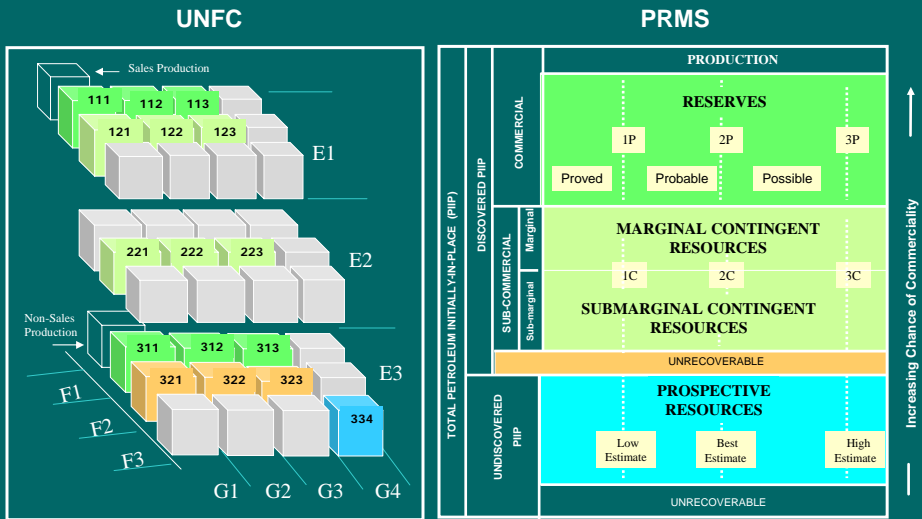
(new codes) (using scenario terms)

NOTES:

Developed/Undeveloped is an allocation of quantities based on operational and funding status of associated projects and may not align with maturity sub-classes.

Each allocation has an range of estimated sales quantities *(even Developed Producing has a range of estimated recoveries)*.

ALIGNING PRMS-UNFC CLASSIFICATION MATRICES



Back up Slides

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PROPOSED UNFC E-AXIS DEFINITIONS

E1	Extraction and sales is economically viable.
E1.1	Extraction and sales is economically viable on the basis of realistic assumptions of future market conditions.
E1.2	Extraction and sale is economic in spite of current adverse market conditions that are expected to be of a short-term nature if long-term forecasts remain economic. Extraction that is deemed to be economic as a consequence of subsidies also falls into this sub-category.
E2	Economic extraction has not been fully demonstrated.
E2.1	Extraction has not yet been fully demonstrated to be economic, but on the basis of realistic assumptions of future market conditions, it is more likely than not that economic extraction may take place in the foreseeable future.
E2.2	Extraction is not economic on the basis of realistic assumptions of future market conditions, and eventual economic extraction would require a substantially higher commodity price to render it economic.
E3	Extraction is of a non-commercial nature, it is not economic to extract or economic viability has not yet been determined.
E3.1	Extraction without sale.
E3.2	Economic viability has not yet been determined.
E3.3	Estimated quantities that are in-situ, but where there is currently considered to be no potential for eventual economic extraction.

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PROPOSED UNFC F-AXIS DEFINITIONS

F1	A project that has been demonstrated to be technically and commercially feasible and it is justified to assume that the project will be implemented.
F1.1	The project is currently extracting
F1.2	All necessary approvals have been obtained, capital funds have been committed, and implementation of the development project is under way.
F1.3	Implementation of the development project is justified on the basis of reasonable forecast commercial conditions at the time of reporting, and there are reasonable expectations that all necessary approvals/contracts will be obtained and commitments made.
F2	A development project that has not yet been demonstrated to be technically and/or commercially feasible and its implementation its not yet justified to assure that the project will be implemented.
F2.1	Project activities are ongoing to justify commercial development in the foreseeable future.
F2.2	Project activities are on hold and/or justification of development may be subject to significant delay. .
F2.3	There are no current plans to develop or to acquire additional data at the time due to limited potential.
F2.4	No technically and/or commercially feasible extraction project is currently defined.
F3	Project evaluation is incomplete or lacks sufficient definition to establish technical and commercial feasibility
F3.1	Prospect
F3.2	Lead
F3.3	Play
F3.4	Undiscovered/Unrecoverable

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PROPOSED UNFC G-AXIS DEFINITIONS

G1	Quantities associated with a known deposit that can be estimated with a high level of confidence.
G2	Quantities associated with a known deposit that can be estimated with a reasonable level of confidence.
G3	Quantities associated with a known deposit that can be estimated with a low level of confidence.
G4	Estimated quantities associated with a potential, but not yet confirmed, deposit or accumulation.
G4.1	Quantities associated with an undiscovered deposit that can be estimated with a high level of confidence.
G4.2	Quantities associated with an undiscovered deposit that can be estimated with a reasonable level of confidence.
G4.3	Quantities associated with an undiscovered deposit that can be estimated with a low level of confidence.

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