

# An Overview of the Petroleum Resources Management System (**PRMS**) *and its Relationship to UNFC*

presented by

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# Topics for Discussion

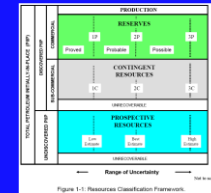
- Why are definitions needed?

DEFINE

- Brief history of PRMS and its Goals



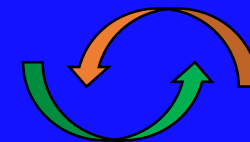
- Overview of PRMS



- PRMS adoption



- Relationship of PRMS to UNFC



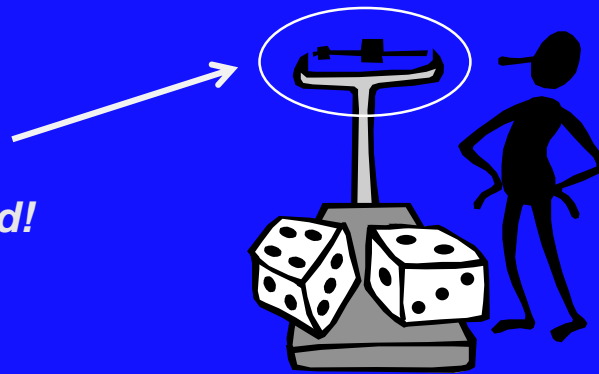
- Questions

# What's it all About?

*Its all about predicting potentially recoverable volumes under defined conditions!*

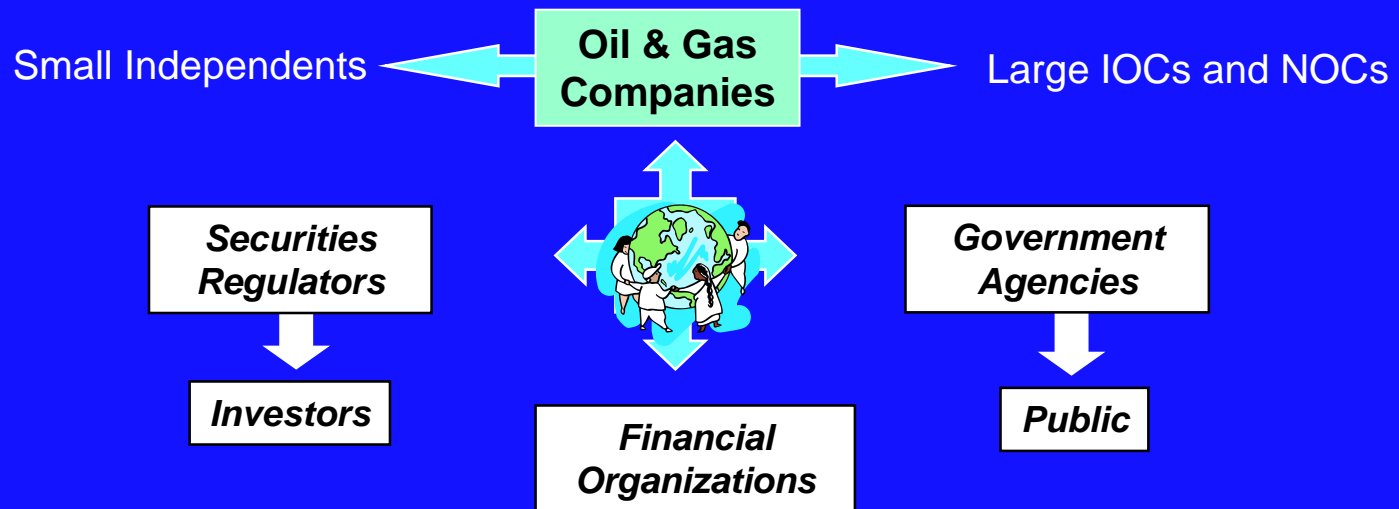
*“The quantity of usable resources is not fixed but changes with progress in science, technology, and exploration and with shifts in economic conditions.” (V. McKelvey)*

**We need an international standard!**



**We need consistency in communicating petroleum resource volumes ..... with associated risk and uncertainty!**

# Understand all Stakeholders' Requirements



**Create a Global Consensus Reference for the Industry – a “Standard”**

**All stakeholders require complete, consistent and reliable information on future production and associated cash flow estimates through full life recovery**

# Petroleum Resources Management System

Published in April 2007; maintained by SPE OGRC; co- sponsored by:



**Society of Petroleum Engineers (SPE)**



**World Petroleum Council (WPC)**



**American Association of Petroleum Geologists (AAPG)**



**Society of Petroleum Evaluation Engineers (SPEE)**

**Endorsed by Society of Exploration Geophysicists (SEG)**



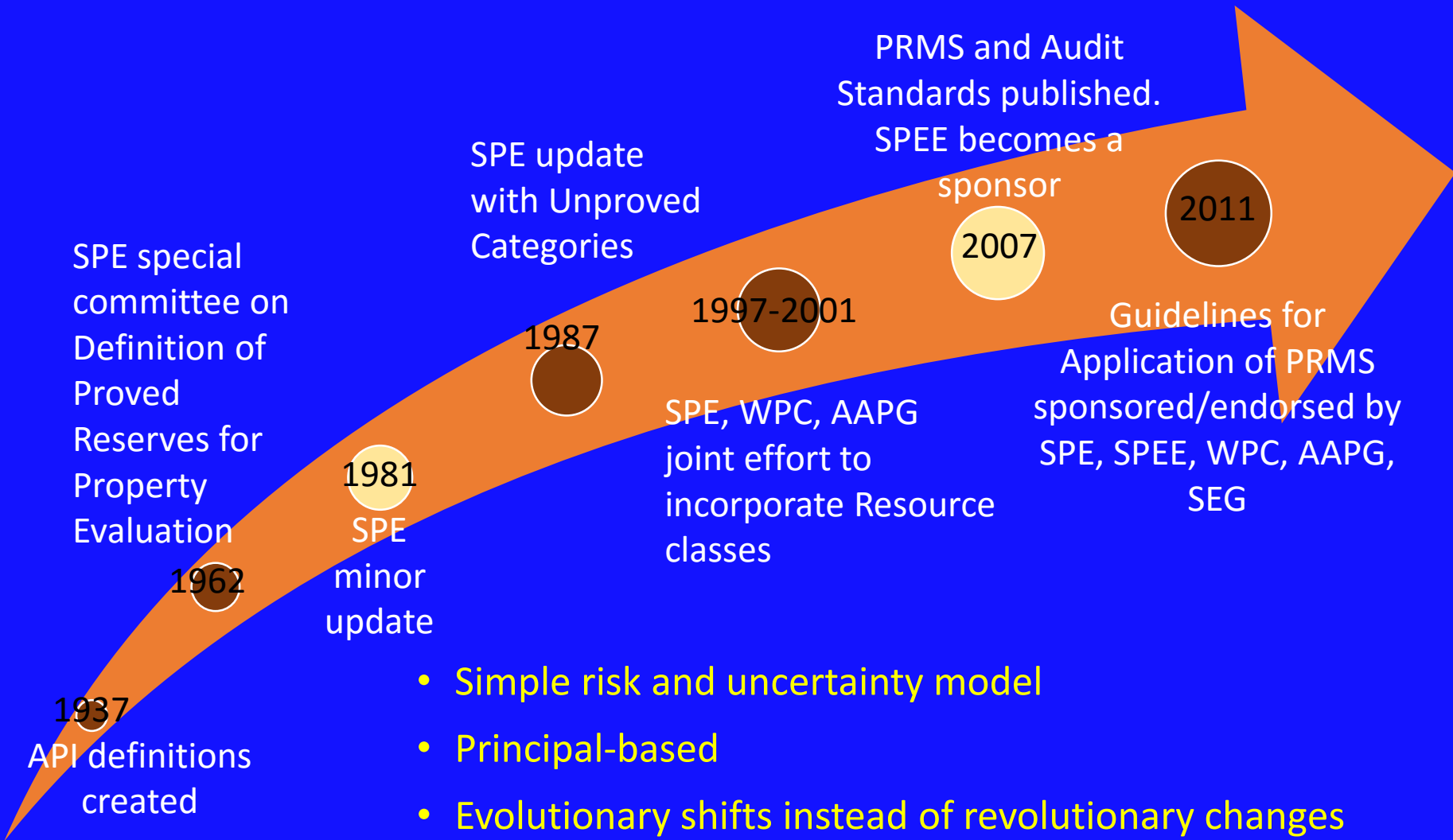
Free Download at [www.spe.org](http://www.spe.org)

# Brief History of PRMS



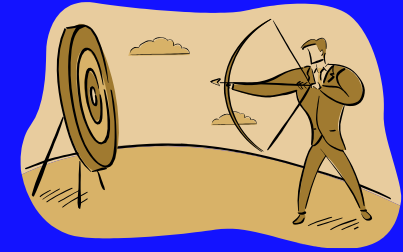
- SPE & partners recognized the need for **common global standards** for petroleum resource definitions to provide **consistency, transparency and reliability**
- Create and maintain an **international standard petroleum reserves and resources classification system** based on industry best practices
- Built on the past
- Incorporated current best practice
- Prepared for the future

# Historic Milestones



- Simple risk and uncertainty model
- Principal-based
- Evolutionary shifts instead of revolutionary changes

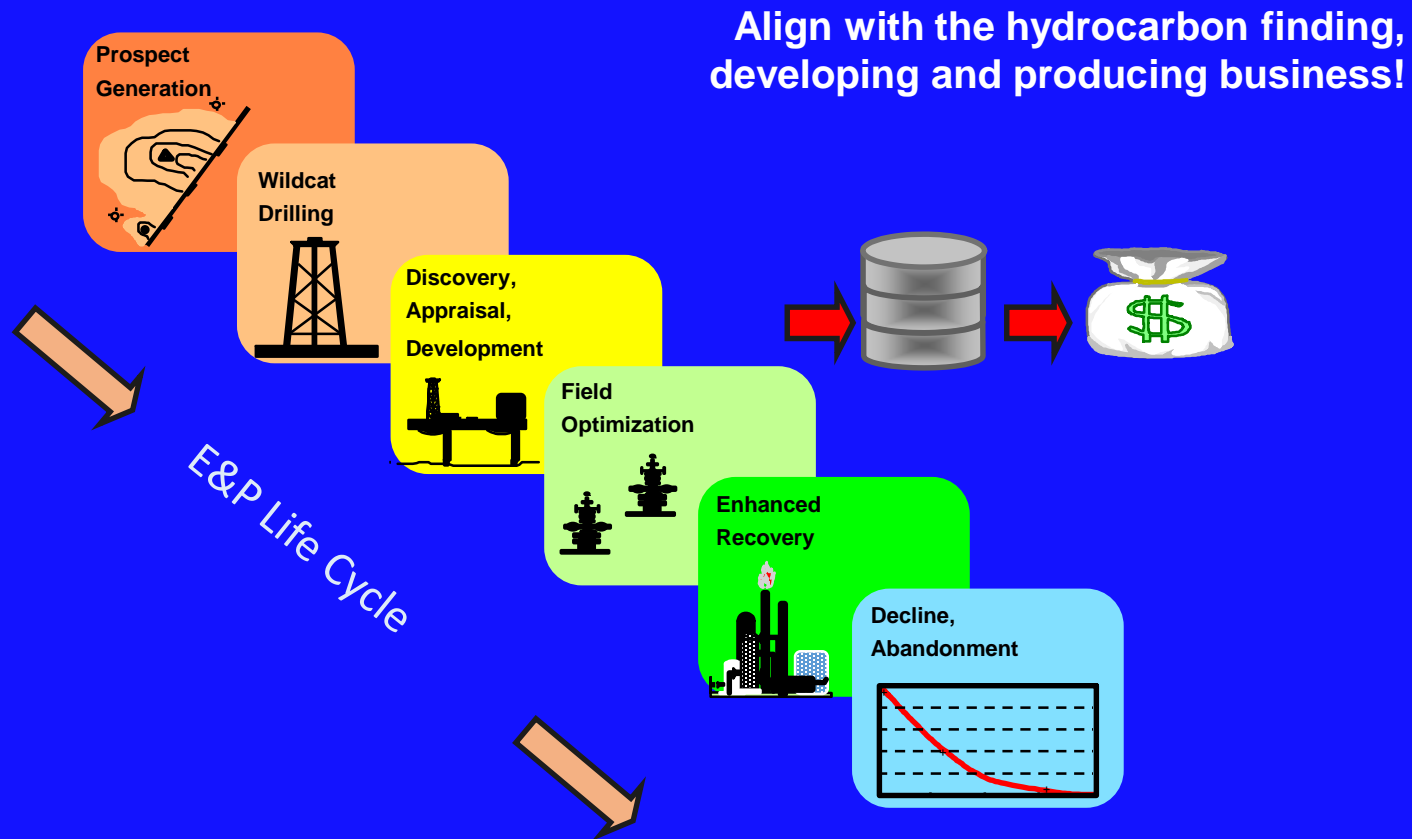
# PRMS Goals



- Provide a **common reference** for the international petroleum industry, including national reporting and regulatory disclosure agencies, and to support petroleum project and portfolio management requirements
- **Improve clarity** in global communications regarding petroleum resources
- **Supplement** with industry **education** programs and **application guides**



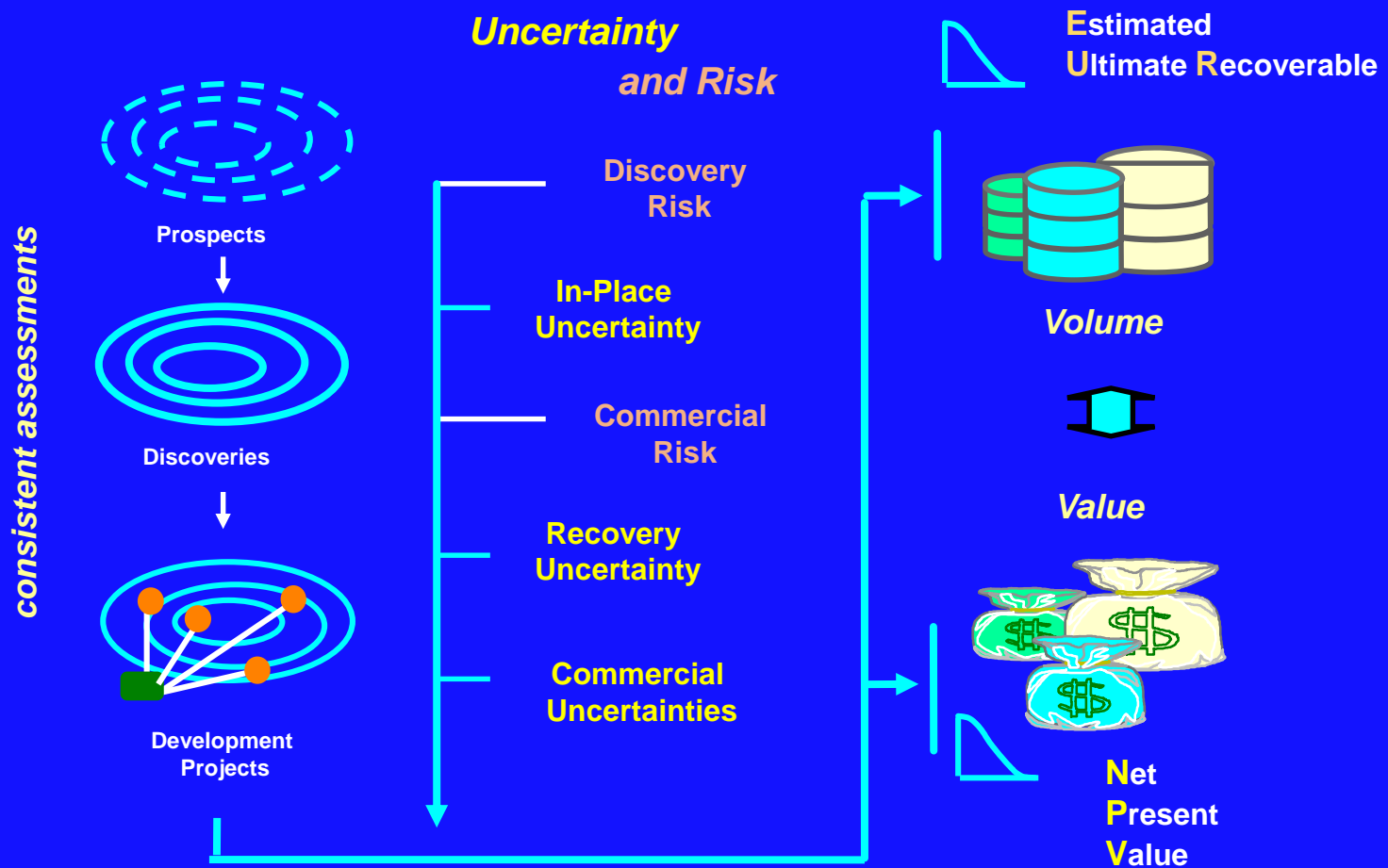
# PRMS is Designed to Support Asset Management – “Cradle to Grave”



# PRMS - Major Principles

0. **Understand the reservoir and “in place” resources**
1. The System is **“Project–Based”**
2. ▲ Classification is based on project’s **chance of commerciality**  
(technology, economic, legal, social environmental & regulatory)  
▲ Categorization is based on **recoverable uncertainty**
3. Base case uses **forecast of future conditions**
4. Provides more **granularity for project management**
5. Estimates based on **deterministic and/or probabilistic** methods
6. Reserves /resources are estimated in terms of the **sales products**
7. Reserves allocation based on **contractual entitlement**
8. Applies to both conventional and **unconventional resources**

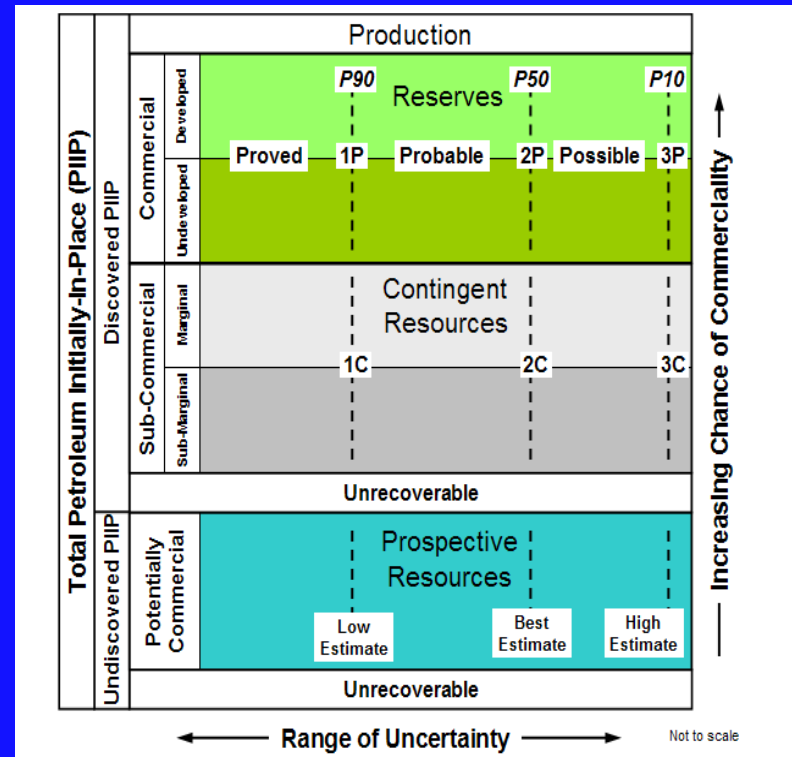
# Its all about Risk and Uncertainty



# Resources Classification

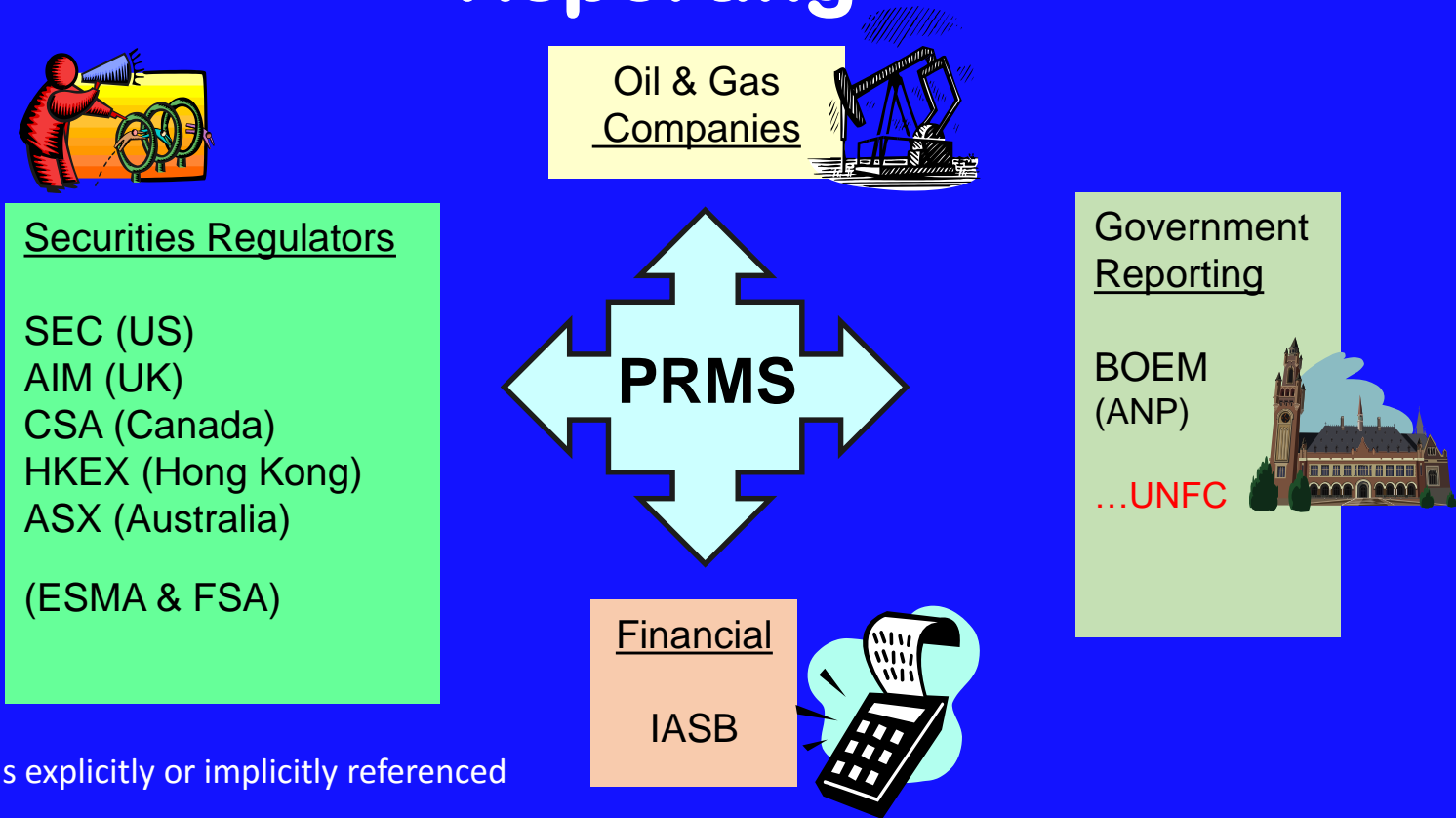
Classification (risk) ↑

- Reserves
- Contingent Resources
- Prospective Resources
- Unrecoverable



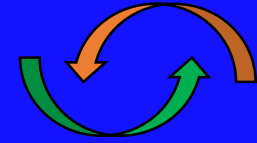
Categorization (uncertainty)

# PRMS is the Global Standard for Petroleum Reserves and Resource Reporting



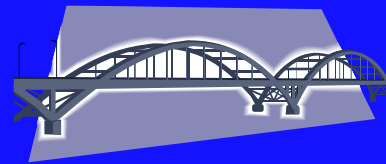
PRMS is explicitly or implicitly referenced

# SPE Relationship with UNFC



- Long-standing agreement for the SPE to provide the commodity-specific specifications for petroleum
  - Petroleum Resources Management System of 2007 (“PRMS”)

- Link provided by a **Bridging Document** in 2013

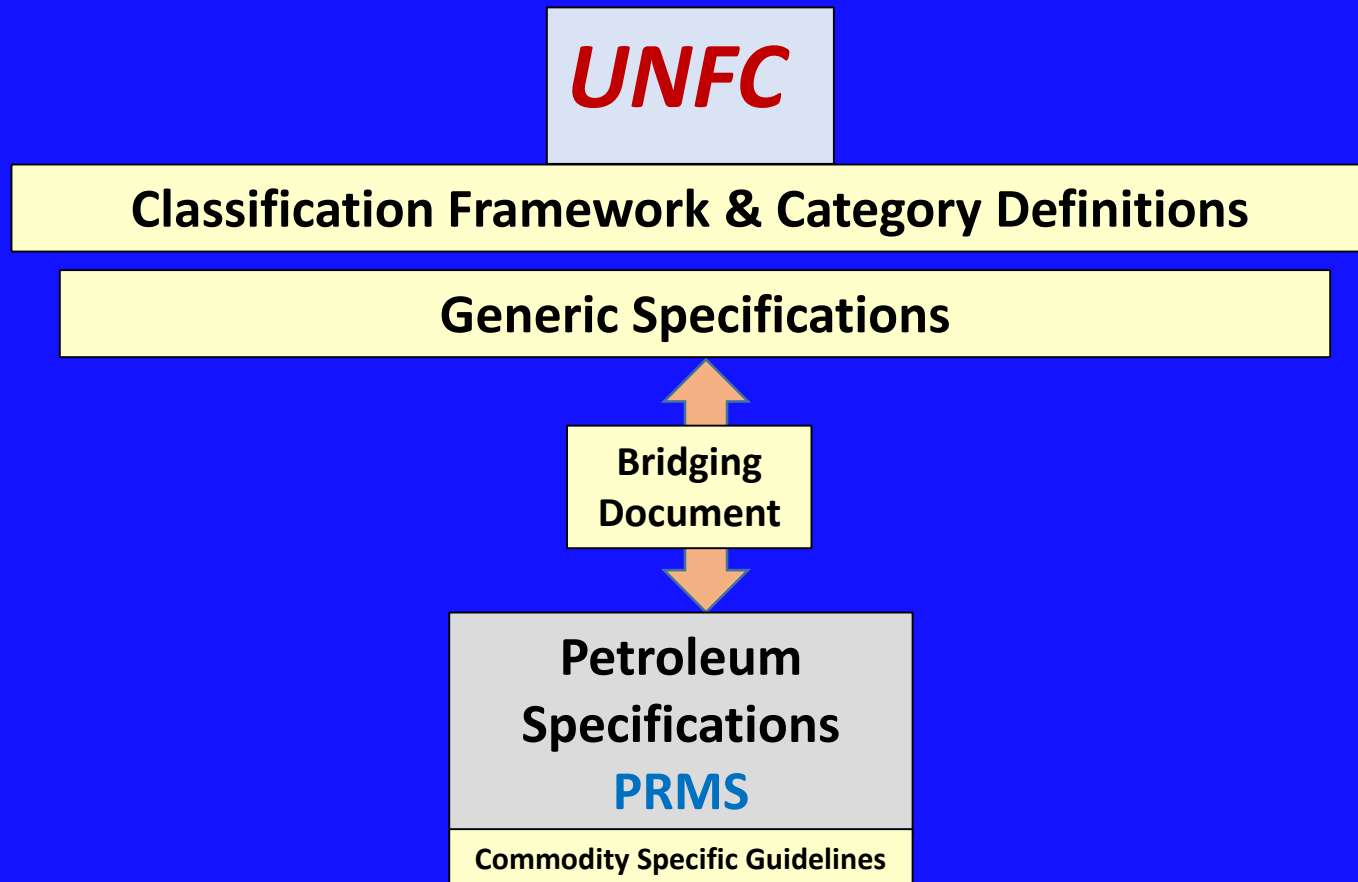


- PRMS Bridging Document, together with the UNFC Generic Specifications, provide operational application of UNFC-2009 for petroleum

(see details at: [http://www.unece.org/energy/se/unfc\\_2009\\_spcfc.html](http://www.unece.org/energy/se/unfc_2009_spcfc.html))

- PRMS will be maintained “evergreen” by SPE OGRC

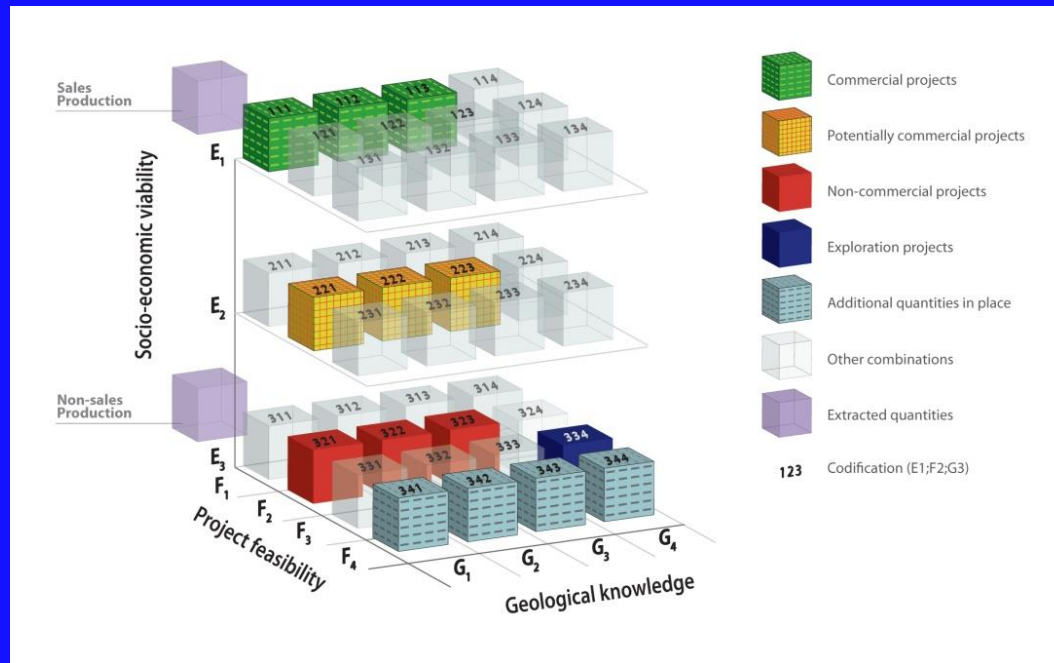
# Bridging between PRMS to the UNFC...



# PRMS The Reference Standard for Petroleum



The United Nations Framework Classification (UNFC) system identifies the **PRMS as the reference standard for petroleum reserves and resources**





# PRMS – UNFC Bridging Document

*Using Categories only*



PRMS Class		UNFC-2009 “minimum” Categories			UNFC-2009 Class
Discovered	Reserves	E1	F1	G1,G2,G3	Commercial Projects
	Contingent Resources	E2	F2	G1,G2,G3	Potentially Commercial Projects
		E3	F2	G1,G2,G3	Non-Commercial Projects
	Unrecoverable	E3	F4	G1,G2,G3	Additional in Place*
Undiscovered	Prospective Resources	E3	F3	G4	Exploration Projects
	Unrecoverable	E3	F4	G4	Additional in Place*

Figure IV.2 UNFC-2009 published 2013

# PRMS – UNFC Bridging Document

## Using Sub-Categories

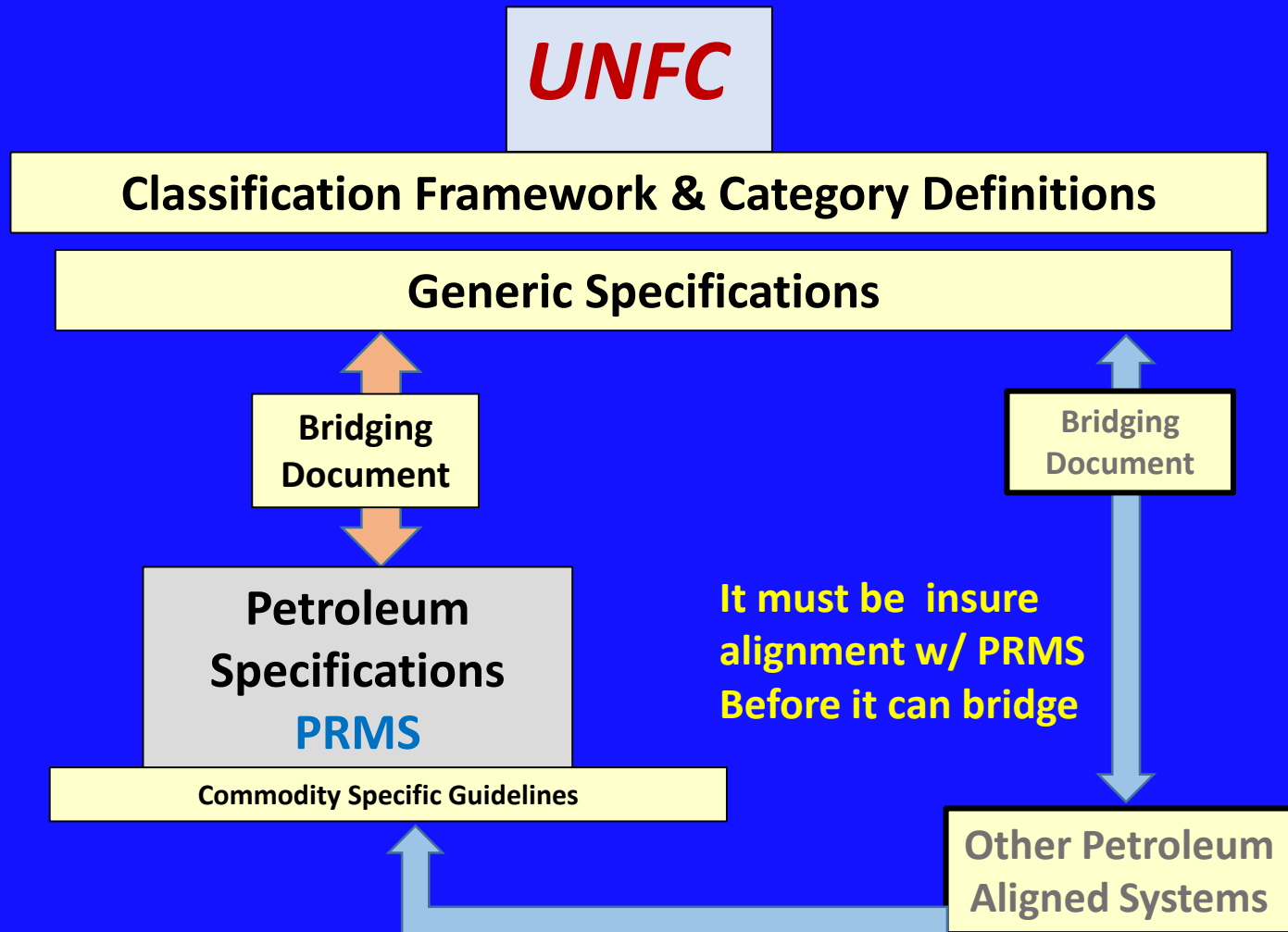


	F1.1	F1.2	F1.3	F2.1	F2.2	F2.3	F3.1	F3.2	F3.3	F4				
E1.1	1	2	3	4							Reserves	On Production	1	
E1.2	1	2	3									Approved for Development	2	
E2			4	4	5							Justified for Development	3	
E3.1	12	12	12	12	12	12					Contingent Resources	Development Pending	4	
E3.2		6	6	6		8	9	10				Development Unclarified or On Hold	On Hold	5
												Unclarified	6	
E3.3		7	7	7	7							Development Not Viable	7	
											Unrecoverable	11		
Undiscovered											Prospective Resources	Prospect	8	
												Lead	9	
												Play	10	
											Unrecoverable	11		
Special Cases												Defined but not classified in PRMS	12	
												Less Common Mappings		

*Facilitates transfer of quantities to correct class or sub-class*

Figure IV.3 UNFC-2009 published 2013

# Other Systems: Must be Comparable



For other systems seeking alignment, a bridging document to UNFC-2009 is required which allows results considered to be comparable with **no significant difference** to those that would result from the application of the classification system for which the Bridging documents with the UNCF aligned Systems.

# Concluding Remarks

- UNFC-2009 provides common language for classification and reporting of petroleum resources
- PRMS 2007 is the industry-standard classification for petroleum resources and reserves

# Are We There Yet?

**Have we achieved a global common code?**

**Not quite!... but ...the building blocks are in place which will allow greater harmonization and consistency in the area of natural resources assessment and reporting.... ...and valuation.**



**PRMS and UNFC will both be part of the solution!**

**Thank you!**

**Questions?**