

# RESOURCE CLASSIFICATION: THE IMPACT OF UNCONVENTIONAL RESOURCES

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# OUTLINE

- RESOURCE INFORMATION USER GROUPS
- CHANGES IN RESOURCE TYPES
- EVALUATION AND CLASSIFICATION STANDARDS
  - COGEH
  - PRMS
  - UNFC
- NEW COGEH GUIDELINES
  - RESOURCES OTHER THAN RESERVES (ROTR)
  - BITUMEN



# USER GROUPS

- Business Processes
- Financial Reporting
- Government Resource Management
- Resource Studies
- No fully accepted common standards



# USERS ARE NOT HOMOGENEOUS

- Different:
  - Objectives
  - Time frames
  - Levels of aggregation
  - Risk and uncertainty profiles



# BUSINESS PROCESSES

- Internal consistency
- External consistency is not as important
- Internal review by experts
- Substantial additional internal information
- “Project” mostly individual legal entity level:  
pool, field

# GOVERNMENT RESOURCE MANAGEMENT (e.g. AER)

- Internal consistency, minimal ambiguity
- External consistency
  - Not necessarily the same as used by industry
  - Tailored to government needs
  - Not necessarily the same for all governments
- Often the subject of in-depth technical hearings
- “Project” at individual legal entity level (pool, field) sometimes at higher level of aggregation



# RESOURCES STUDIES (AER, NEB, NPD, USGS, etc)

- Internal consistency
  - External consistency not as important
    - Different organisations may use different standards
  - Aggregated to a high level
  - Long time period
  - “Project” generally large; basin, geological formation, province
  - May include resources for which there is no current recovery technology
- 
- Neither COGEH nor PRMS well suited
  - UNFC F4, G4 not well developed or tested



# FINANCIAL USERS

- Provide information to make investment decisions
- Attract and retain investors
- Users:
  - Compare companies
  - Often not experts
  - Do not have access to proprietary information
- **Credibility is critical**
- Consistency is critical
- Completeness of information



# FINANCIAL REPORTING: SUB-GROUPS

## **PUBLIC ROLE**

- **Securities (Equity markets)**
  - **Public**
  - **Private**
- **Securities exchanges**
- **Underwriters**
- \*Accounting
- \*Mergers and Acquisitions

## **INTERNAL ROLE**

- Banks (Debt market)
- Financial Analysts
  - Buy side
  - Sell side
- Contracts
  - Gas purchase
  - Futures and Forwards

\* Internal and External



# FINANCIAL REPORTING: PUBLIC ROLE (SECURITIES)

- External consistency, minimal ambiguity
  - However, may be done under different standards
- Auditable
- Users:
  - Experts (analysts etc.)
  - Non-experts (“reasonable investor”)
- May be the subject of hearings
- “Project”, typically a company



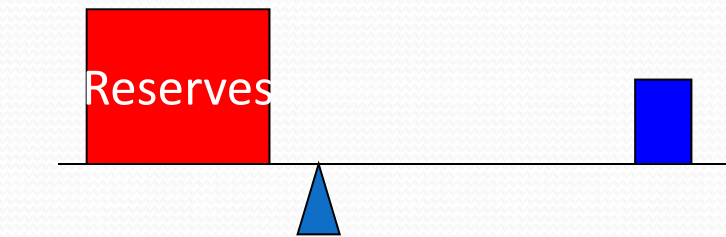
# FINANCIAL REPORTING

- Does current financial reporting give investors the information they need?
- Reserves
  - Proved reserves: Conservative, security
  - Proved + Probable reserves: Best guess
- Contingent resources: Continuing supply/revenue
- Prospective resources may be important



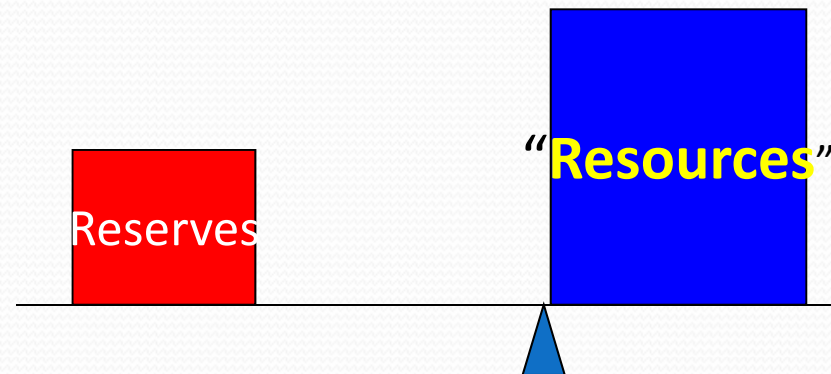
# A CHANGING BALANCE: CONVENTIONAL TO UNCONVENTIONAL

**Conventional: How do we find it?**



**Unconventional: How do we get it out?**

Large supplies of oil and gas from new "unconventional" reservoirs





# CLASSIFICATION STANDARDS

- 1920 Former Soviet Union system
- 1936 API
- 1965 SPE Proved reserves
- 1972 USGS McKelvey Box
- 1987 SPE Probable and Possible reserves
- 1987 WPC resource system and definitions
- 1997 SPE/WPC reserve definitions
- 2000 SPE/WPC/AAPG resource definitions and classification system
- 2007 PRMS Classification



# GUIDANCE

- 1979 SPE Reserves Auditing Guidelines
- 1998 SPEE Application Guidelines
- 2001 SPE Guidelines
- 2002 Canadian Oil and Gas Evaluation Handbook (COGEH) Volume 1
- 2005 COGEH Volume 2
- 2007 Petroleum Resource Management System (PRMS)
- 2007 COGEH Volume 1 update and adoption of PRMS classification
- 2007 COGEH Volume 3
- 2011 PRMS Application Guidelines





# STANDARDS:COGEH

- Introduced in 2002
- Three volumes, some updates
- Suitable, but not written specifically, for Financial reporting
- Standard for Canadian Securities disclosure since 2003
- Many reviews by the ASC
- Uses the PRMS Classification system
  - One minor difference in sub-classification of Contingent Resources



# STANDARDS: PRMS

- Introduced in 2007
- Additional guidance 2011
- Used in industry
- Not recognised by CSA or SEC
- Recognised by ESMA, Hong Kong Stock Exchange
- No published reviews similar to those published by the ASC on COGEH evaluations



# PRMS cf COGEH

- More similarities than differences
  - Differences mainly in detail
- Same classification system
- PRMS
  - Oriented towards internal company use.
- COGEH
  - More oriented towards External reporting
  - More detailed guidance
  - Includes sections on Business Practices etc. not in PRMS
- Some differences in reserves Classification
  - COGEH Same definition for Deterministic and Probabilistic estimates, which should not be significantly different
  - PRMS Different definitions for Deterministic and Probabilistic estimates



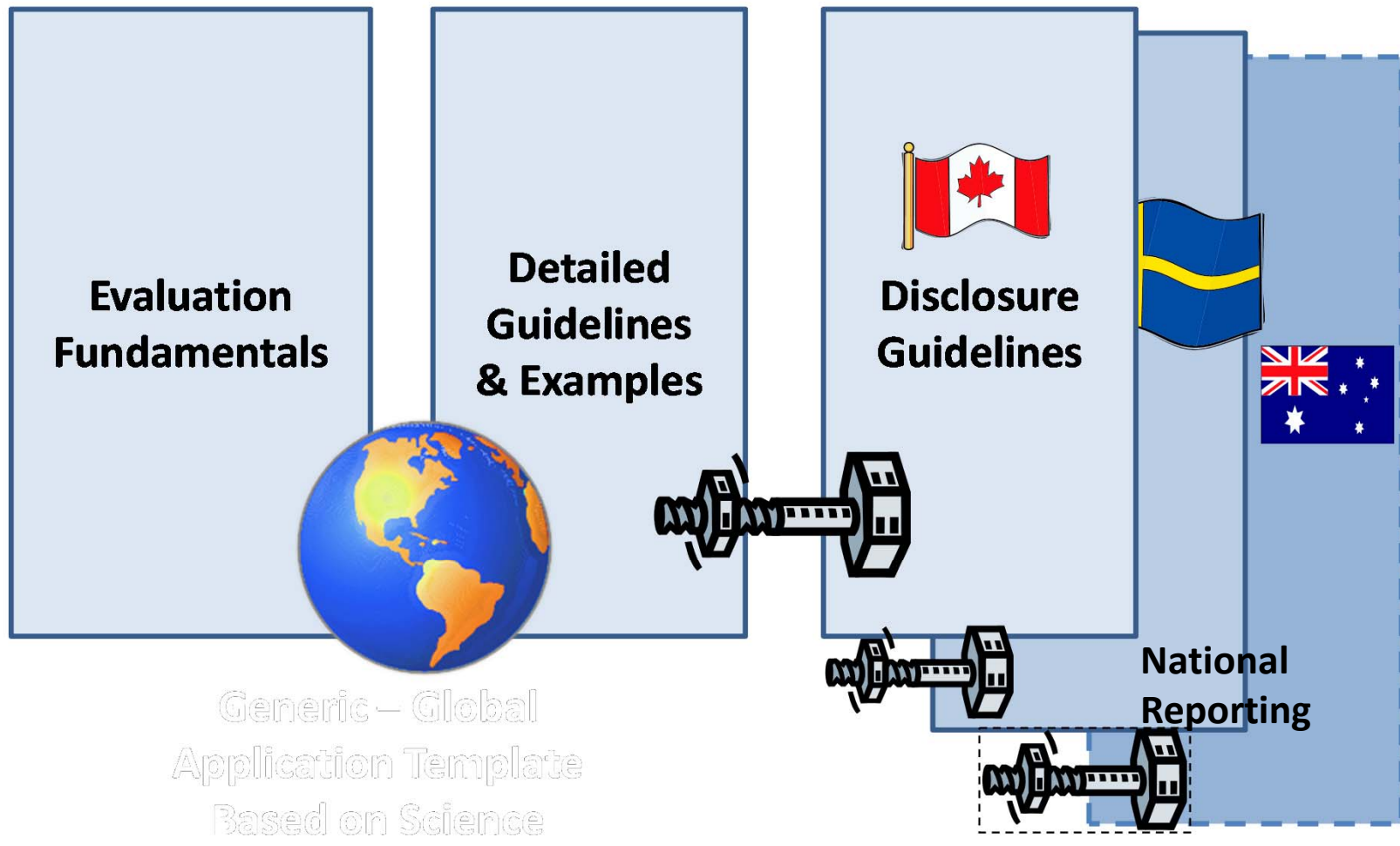


# PRMS:COGEH MERGER CONCEPT

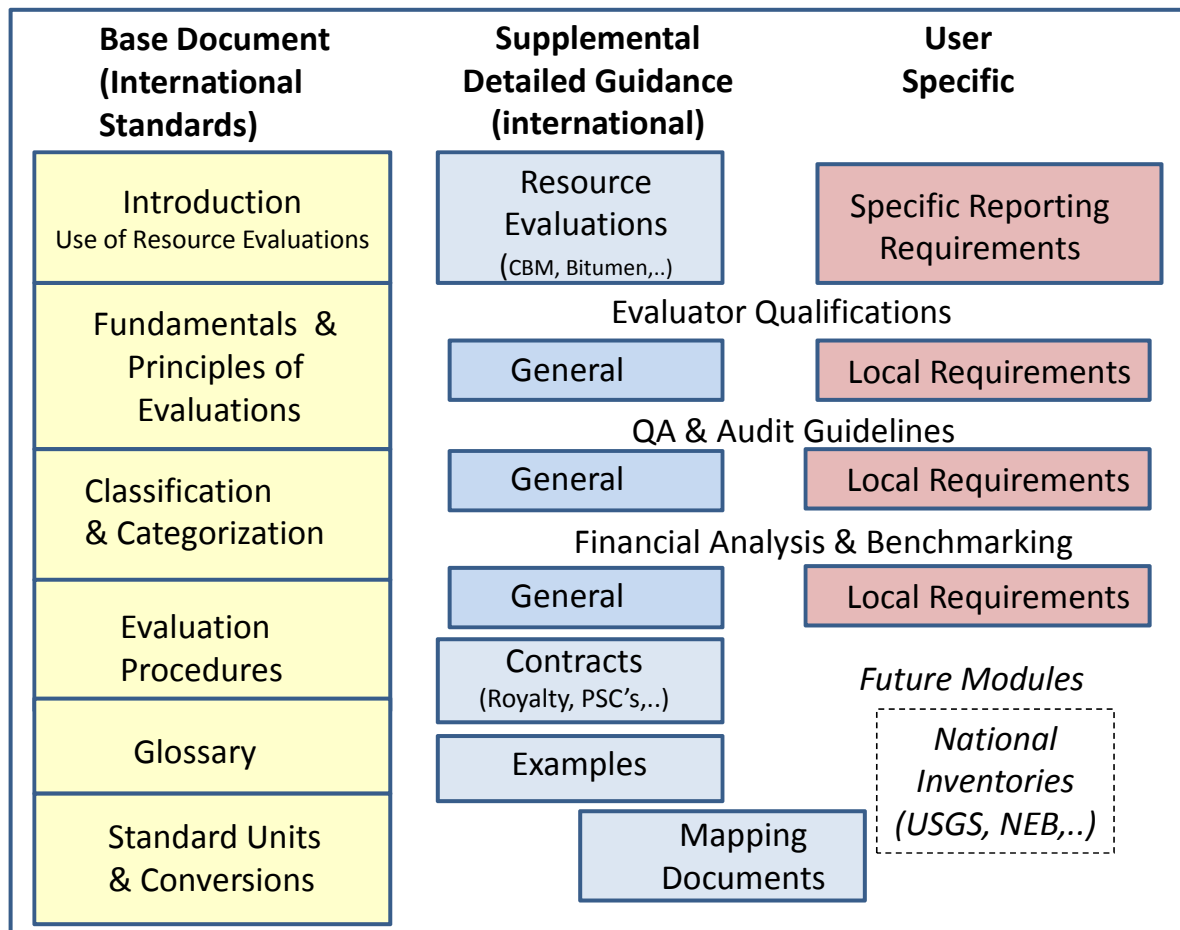
- Similar User communities
- Considerable overlap of content
  - COGEH uses PRMS classification
- Combine the strengths of PRMS and COGEH
- More efficient use of limited expertise
- Recognise that neither one currently serves all User groups adequately
- Proposal with SPE, no action likely for ?five years

# PRMS-COGEH CONCEPT

## USER SPECIFIC NEEDS



# PRMS-COGEH CONCEPT







# PROPOSED OUTLINE

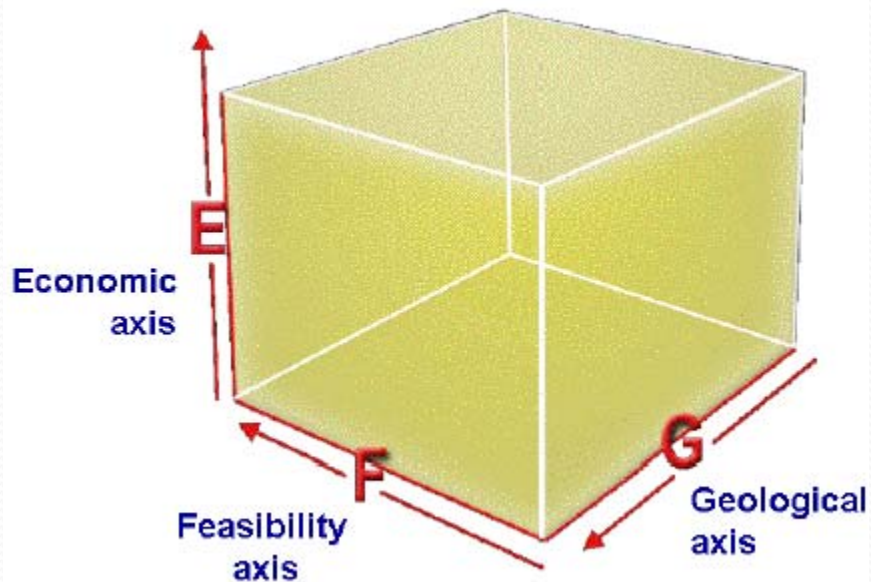
- **PART IA: INTRODUCTION**
- **PART IB: FUNDAMENTALS**
  - Definitions, classification concepts, etc
- **PART II: DETAILED GUIDANCE**
  - General procedures, accumulation specific guidance, etc.
- **PART III: USER SPECIFIC REQUIREMENTS**
- **GLOSSARY**

# UNITED NATIONS FRAMEWORK CLASSIFICATION

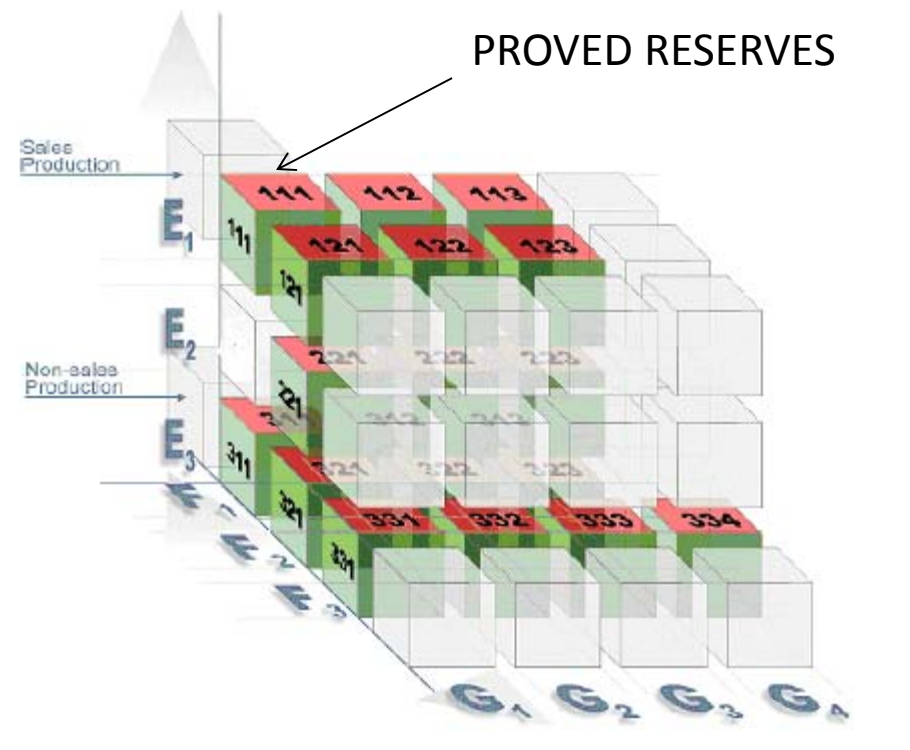
- High level unifying classification for solid minerals and hydrocarbons
  - PRMS oil and gas standards
  - CRIRSCO for minerals
  - IAEA Red Book for Uranium
- UNFC 2009
- Specifications 2013
- Technical Advisory Group to be established



# UNITED NATIONS FRAMEWORK CLASSIFICATION



- Three criteria:
  - E Economic and Social Viability
  - F Field project status and Feasibility
  - G Geological knowledge



FOR PETROLEUM





# OTHER STANDARD SETTERS

- SEC/FASB
- United States Geological Survey
- Norwegian Petroleum Directorate
- Alberta Energy Regulator (ERCB)
  - Established reserves  $\neq$  COGEH, PRMS reserves
- Russia
- China
- Etc.



# RESOURCE GUIDELINES

- Classification framework (PRMS) provides for all resource classes
- Both COGEH and PRMS
  - General guidance applies to all resource classes
  - But, focus is on conventional reserves
- COGEH Vols 1, 2, 3
- PRMS Application Guidelines



# RESOURCE GUIDELINES

- Hundreds of ASC reviews
  - Large increase in Contingent resource disclosure
  - But, lack of consistency
- 2010 Letter from ASC to SPEE Calgary requesting improved COGEH Guidelines on Contingent resources
- SPEE Calgary Resource Guidelines Committee





# RESOURCE GUIDELINES

- Working draft 31 May 2013, issued for comment
- Over 500 comments received end July
- Interim Draft 14<sup>th</sup> August
- Draft scheduled for comment to SPEE members by end August.
- Final version issued in time for use for end-2014 reporting season
  
- ROTR = Resources Other Than Reserves



# DRAFT CONTENTS

1. Introduction
  2. General Requirements for Classification of ROTR
  3. Petroleum Initially-In-Place (PIIP)
  4. Projects
  5. Contingent Resources
  6. Discovered Unrecoverable PIIP
  7. Prospective Resources
  8. Aggregation
- Supplementary Glossary



# ISSUES

- WHAT IS:
  - An accumulation, a reservoir?
  - Current definitions for conventional resources
- DISCOVERY CRITERIA?
  - Known Accumulation: Well, test or logs/cores + good analog
  - We know where it is but don't have a test.
    - May not be a discovery under present guidelines!
    - Green River Shale not yet “discovered”???



# PROJECTS

- RECOVERY TECHNOLOGY
  - Established technology
  - Technology under development
  - Pilot projects
  - Experimental projects
- EVALUATION SCENARIO
  - Projects often large

- PROJECT STATUS
  - Conceptual
  - Pre-development studies
  - Development studies
- PROJECT MATURITY
  - Pending
  - On Hold
  - Unclarified
  - Not Viable



# CONTINGENCIES

- ECONOMIC STATUS
  - Economic (PRMS Marginal)
  - Sub-Economic (PRMS Sub-marginal)
  - Undetermined
- TECHNICAL
  - Technology under development
- NON-TECHNICAL
  - Legal, Regulatory approval, Access to Markets
  - Political, Social licence?



# SOCIAL LICENCE

- PRMS “When a project is commercial, this implies that the essential social, environmental and economic conditions are met ...”.
- Also specified in UNFC
- COGEH refers to political contingencies, which could include social.
- **Nowadays a major issue, but no guidance.**





# BITUMEN GUIDELINES

1. Introduction
  2. Classification
  3. Fiscal Regime
  4. Project Management and Costing
  5. Evaluation
    1. Introduction
    2. Bitumen in Place
    3. Mined Bitumen
    4. In-situ (wellbore) recovery
- Draft to SPEE COGEH Steering Sub-Committee in Jan 2011



# FINANCIAL REPORTING

- SHOULD PROVIDE ALL RELEVANT INFORMATION FOR MAKING INVESTMENT DECISIONS
  - MATERIAL INFORMATION
- RESERVES: Proved, Proved + Probable
- CONTINGENT RESOURCES
- PROSPECTIVE RESOURCES



**QUESTIONS?**