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What defines a project? Unconventional Reserves to Underpin LNG: Australian CSG – LNG Case Study

SPEE Annual Meeting 2015, Nova Scotia

Deb Ryan, MHA Petroleum Consultants

Overview

- What constitutes a project?
- Case study: Australia CSG-LNG reserves maturation process
- Reserves framework
  - Australia: PRMS (1P/2P/3P)
  - US: SEC (Proved, Probable, Possible)
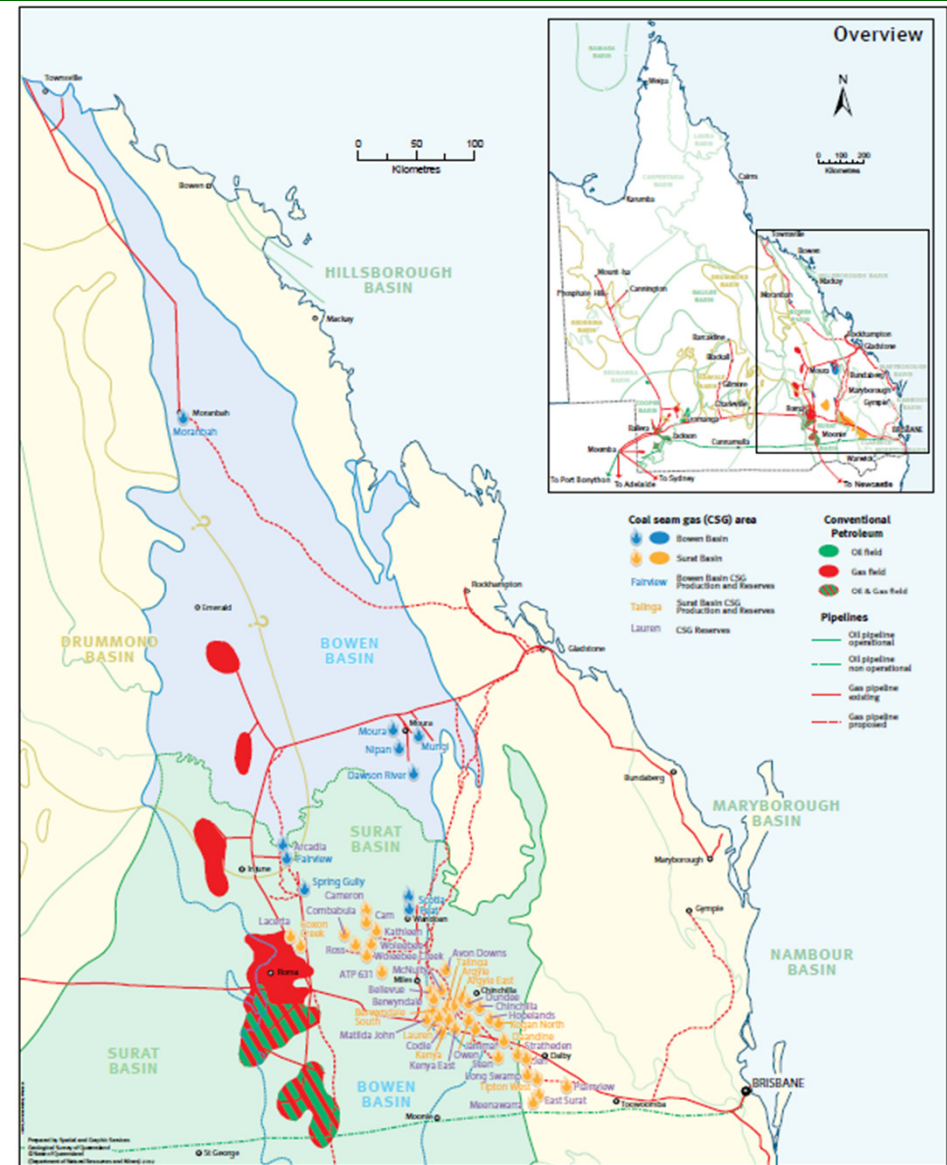- Analysis is from public data & assumed type curves

"Project"

- ## PRMS:

  – *"Each project applied to a specific reservoir development generates a **unique production and cash flow schedule**. The time integration of these schedule taken to the project's technical, economic or **contractual limit** defines the estimated recoverable resources and associated future net cash flow projections for each project. A project may be defined at various levels and stages of maturity; it may include one or many wells and **associated production and processing facilities**"*

  – *"**Project represents the link between the petroleum accumulation and the decision-making process**. A project may, for example, constitute the development of a single reservoir or field, or an incremental development for a producing field, or the integrated development of several fields and associated facilities **with common ownership**"*
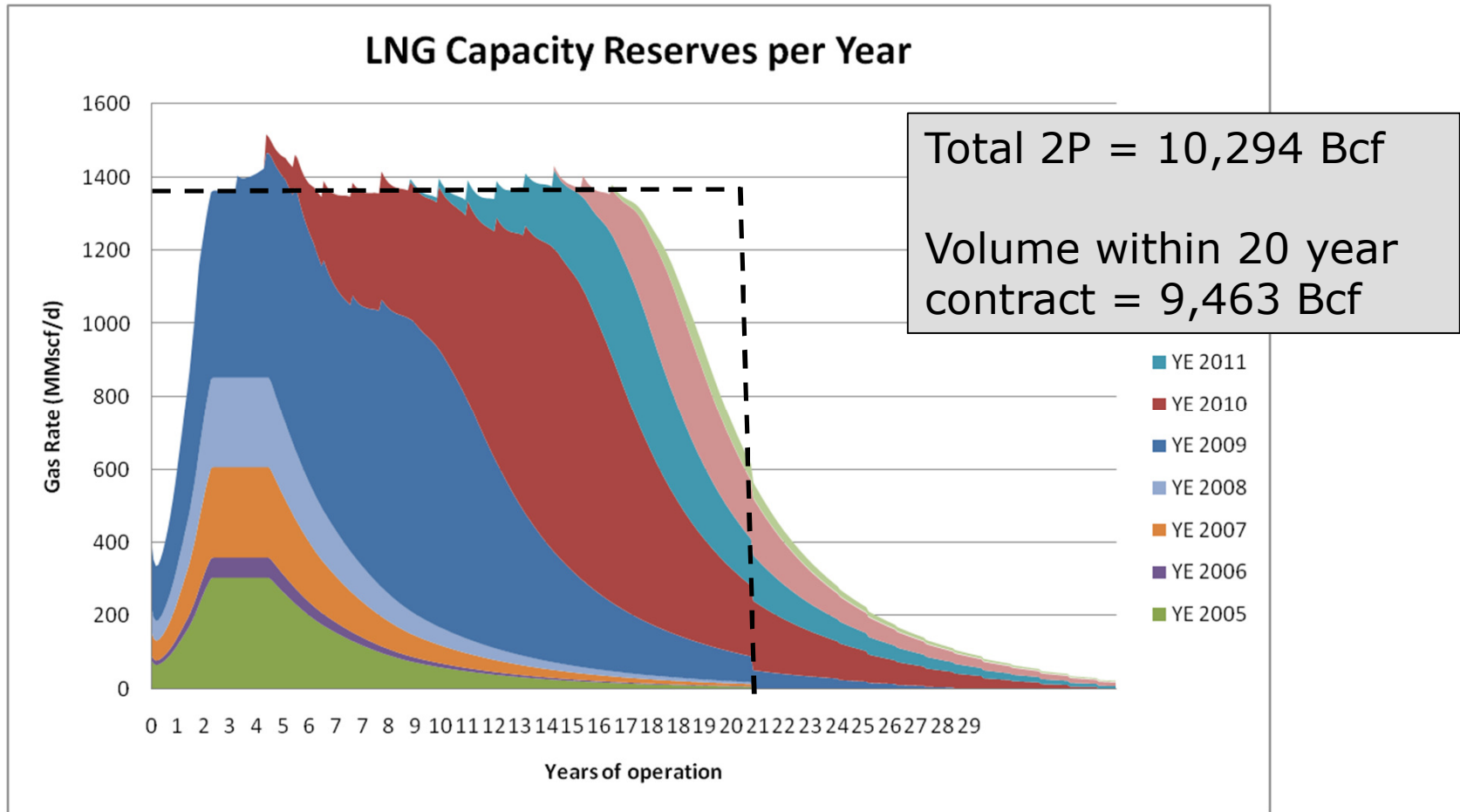
  [Ref 1]

Queensland CSG-LNG Projects

- Three approved:
  - APLNG (2 x 4.5mtpa)
  - GLNG (2 x 3.9mtpa)
  - QCLNG (2 x 4.3mtpa)
- One under review:
  - Arrow LNG (2 x 4mtpa)
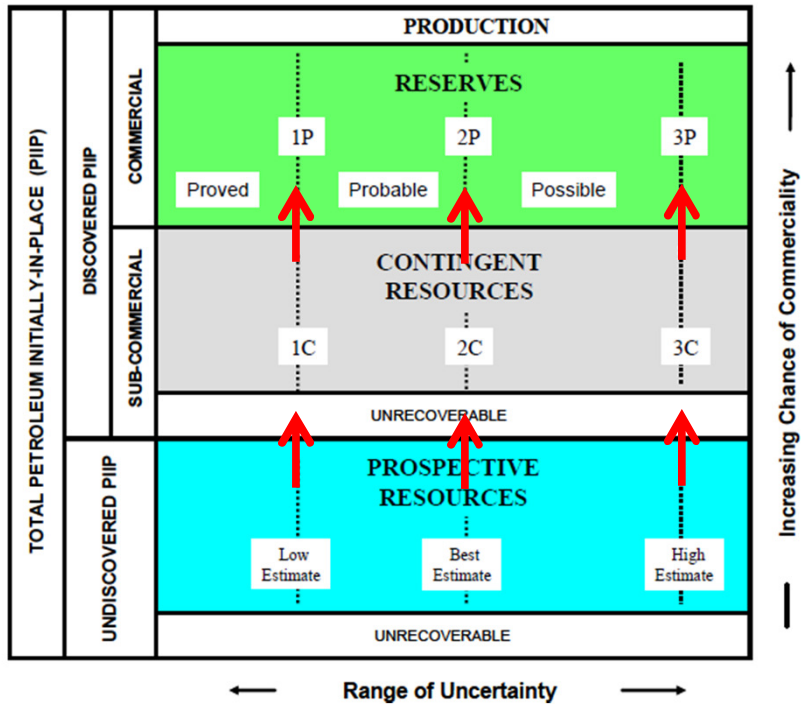- CSG from Surat and Bowen Basins
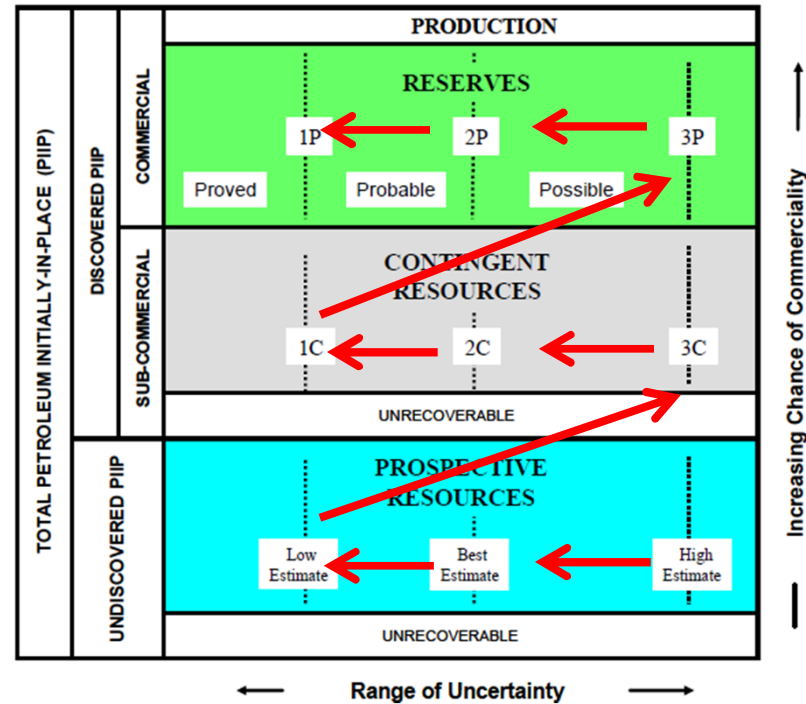- All upstream CSG to LNG

[Ref 2]

Reserves with Time- Dec 2013

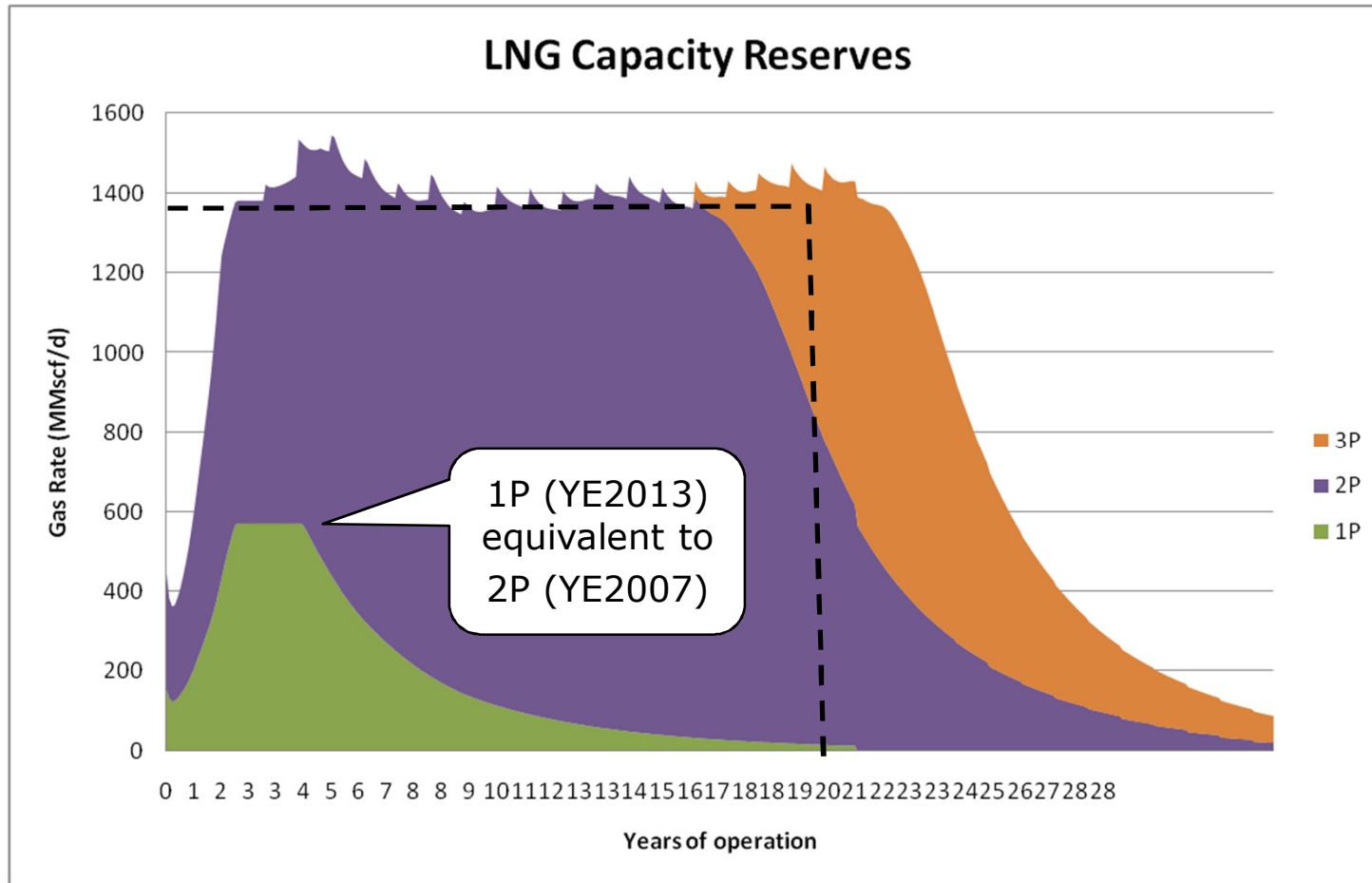LNG Capacity Reserves per Year

Total 2P = 10,294 Bcf

Volume within 20 year contract = 9,463 Bcf

Reserves maturation

Probabilistic maturation

Deterministic maturation

[Ref 1]

1P/2P/3P:YE13 Reserves vs LNG Demand

[Ref 4]

US & Australian LNG Reserve Challenges

US Evaluation	Australian Evaluation
1P SEC	2P PRMS
Mix of small and large operators	Large operators
Upstream: Many companies (operators and non-operators)	Upstream: Single company (JV)
Upstream, pipeline, LNG different operators	Upstream, pipeline, LNG same operator
Scattered acreage	Large blocks of continuous acreage

▸ Project definition for US LNG?
   – Would the size of the operator impact assessment?
   – How to quantify non-operator positions?
   – For LNG operator: how to quantify customers now and for next 20 years

MHA

Acknowledgements

■ John Seidle, Tim Hower and all the partners at MHA Petroleum Consultants

■ Thanks to SPEE for the opportunity to present

■ Contact Information:

Deb Ryan

MHA Petroleum Consultants

Email: dryan@mhausa.com

Phone: (303) 277 0270

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[4]: Ledesma, D., Henderson, J., Palmer, N., 2014, The Future of Australian LNG Exports: Will domestic challenges limit the development of future LNG Export Capacity?, The Oxford Institute for Energy Studies, OIES Paper: NG 90

Further reading

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