

# Morgan Stanley shale gas and oil forum "Commercialising the prize"

Ian Davies – Managing Director and CEO Sydney, 30 April 2013





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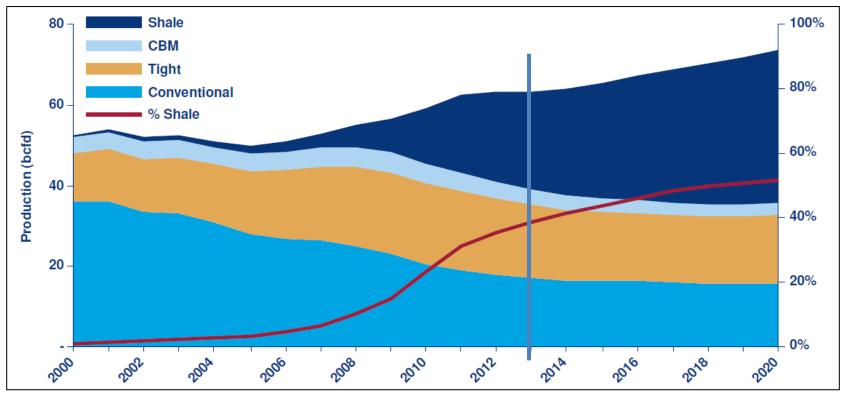
#### Reserve and resource estimates

Unless otherwise indicated, the statements contained in this drilling report about Senex's reserves estimates have been compiled by Mr James Crowley BSc (Hons), who is General Manager – Exploration and Development, a full time employee of Senex, in accordance with the definitions and guidelines in the 2007 Petroleum Resources Management System approved by the Society of Petroleum Engineers (SPE PRMS).

Mr Crowley consents to the inclusion of the estimates in the form and context in which they appear. Senex's reserves and resources are consistent with the SPE PRMS.

# North American gas supply – conventional Senex of gas to shale: Australia 10 years behind

- Conventional gas substitution from coal seam gas and tight gas sands initially
- Tight gas sands include conventional stratigraphic traps and basin centred gas, both present in material quantities in the Cooper Basin
- Traditional gas supply has been eclipsed by the rise of shale gas (and latterly liquids rich shale gas), now accounting for more than 30% of supply



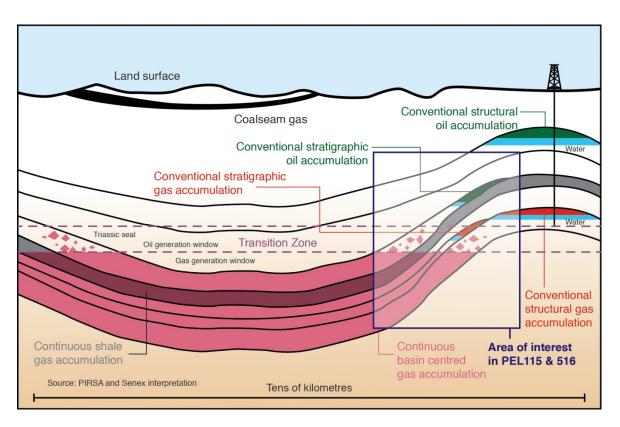
Source: Wood Mackenzie



#### The Cooper Basin hosts all gas reservoir types

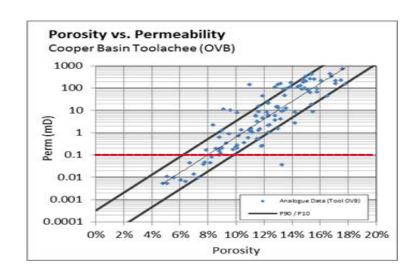
#### A continuum exists between conventional and unconventional reservoirs:

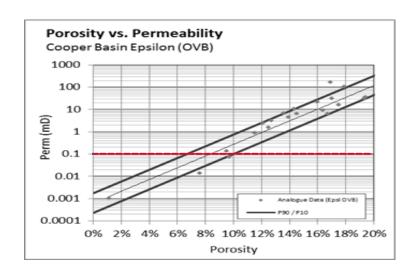
- Conventional reservoirs are those dominated by buoyancy and capillary forces
- Unconventional reservoirs are those dominated by capillary and molecular forces

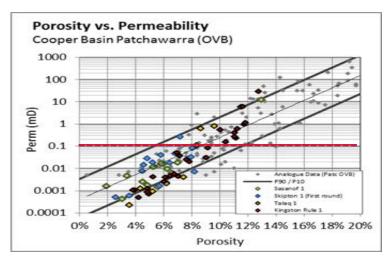


- c.95% of all Cooper Basin gas discoveries to date are in conventional structural traps
- Huge opportunities exist in other reservoir types

## Cooper Basin sandstone reservoirs span **Senex** the range of conventional to tight "unconventional"







- "Conventional" reservoirs have average permeability >0.1 mD
- "Tight" reservoirs have average permeability <0.1 mD</li>
- Toolachee and Epsilon reservoirs are generally Conventional
- Patchawarra reservoirs span the range from Conventional to Tight



#### Senex is a major player in the Cooper Basin...

South Australian Cooper Basin focus

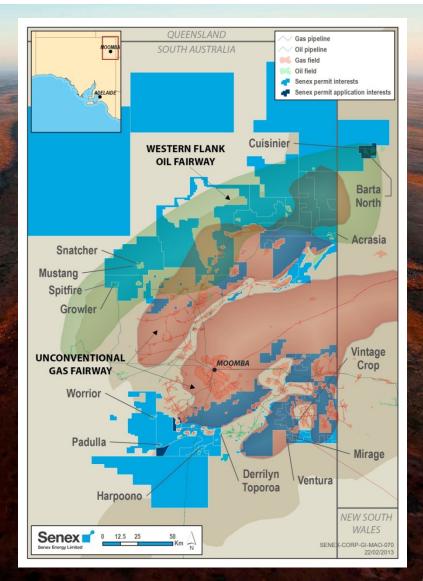
Proven oil and gas province

63 permits

14 operated oil fields

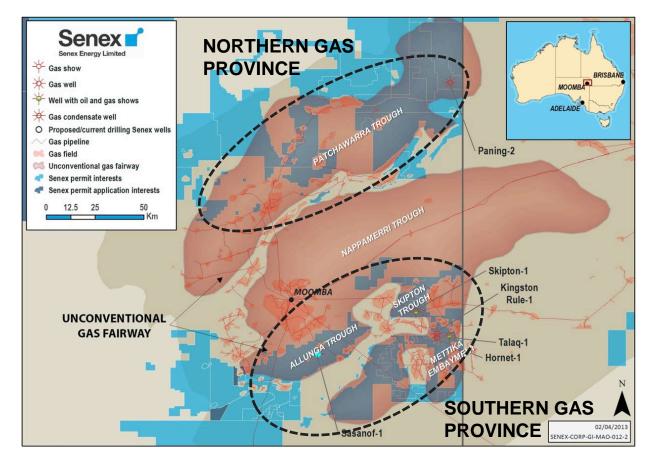
44 joint ventures

72,969 km² net acreage



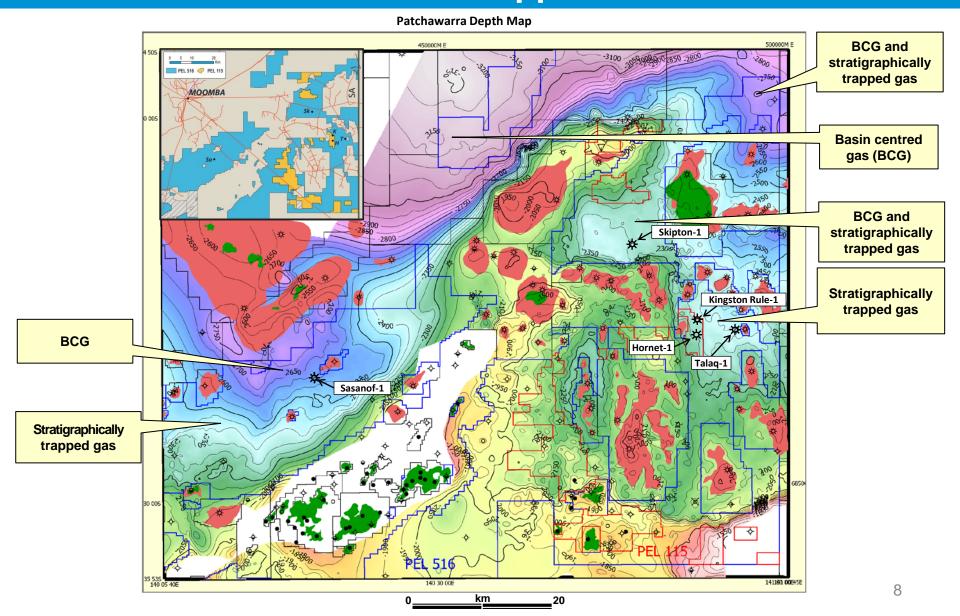
## ...with huge gas potential in the north and south SA Cooper Basin





- Multi-Tcf recoverable gas resource identified in the "Southern Gas Province"
- Paning-2 confirms gas in the "Northern Gas Province"
- 2.2+ mmscfd gas flows from Hornet-1
- 1.4+ mmscfd gas flow from Kingston Rule-1
- Targeting material contingent resource following hydraulic fracture stimulation program

## Historically, conventional structural traps Senex May have been drilled – material opportunities remain

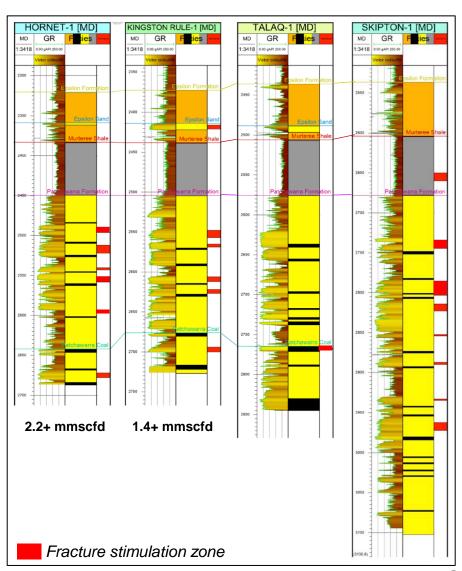


## Encouraging results from the current fracture stimulation program...



Well	Formations	Stages <sup>1</sup>
Kingston	Patchawarra	4
Rule-1	Epsilon	1
Hornet-1	Patchawarra	5
Skipton-1	Patchawarra	7
	Murteree	1
Talaq-1	Patchawarra coal	1
Paning-2 <sup>2</sup>	Toolachee	1
	Epsilon	2
	Patchawarra	2

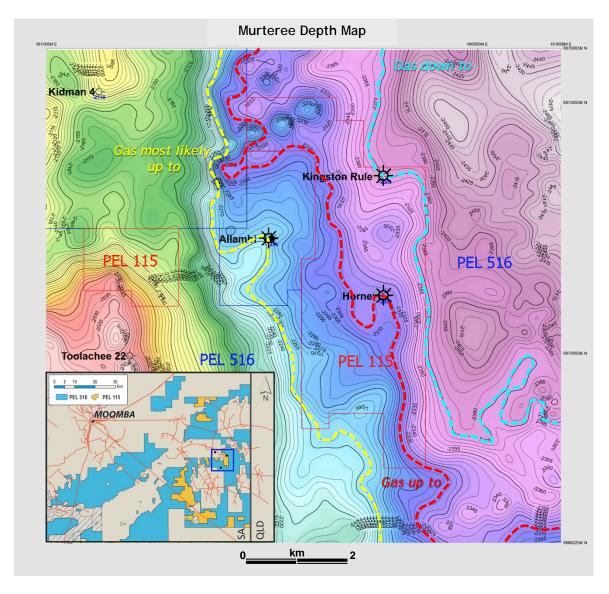
<sup>&</sup>lt;sup>1</sup> Number of stages attempted or planned, subject to change



<sup>&</sup>lt;sup>2</sup> Target zones under evaluation

#### ...with a significant stratigraphic gas accumulation identified





Potentially 100's of Bcf recoverable gas potential within the Patchawarra tight sands of Hornet-1 and Kingston Rule-1

- Kingston Rule-1 tested the known down-dip limit in PEL 115
- Hornet-1 tested an up-dip extent of the stratigraphic accumulation
- Likely extends along strike into PEL 516 and up-dip to Allambi-1
- Commercialisation through existing infrastructure

#### Multi-Tcf gas potential in conventional and Senex tight reservoirs

- Gas discoveries at Hornet-1 and Kingston Rule-1
- Pilot program required to confirm deliverability and reserves
- Program objectives so far:
  - Gas to surface: resource definition
  - Continual cost reduction
- Appraisal wells planned for FY14 to confirm extent with exploration wells to test BCG play
- Dedicated rigs being brought in country, with enhanced service company support





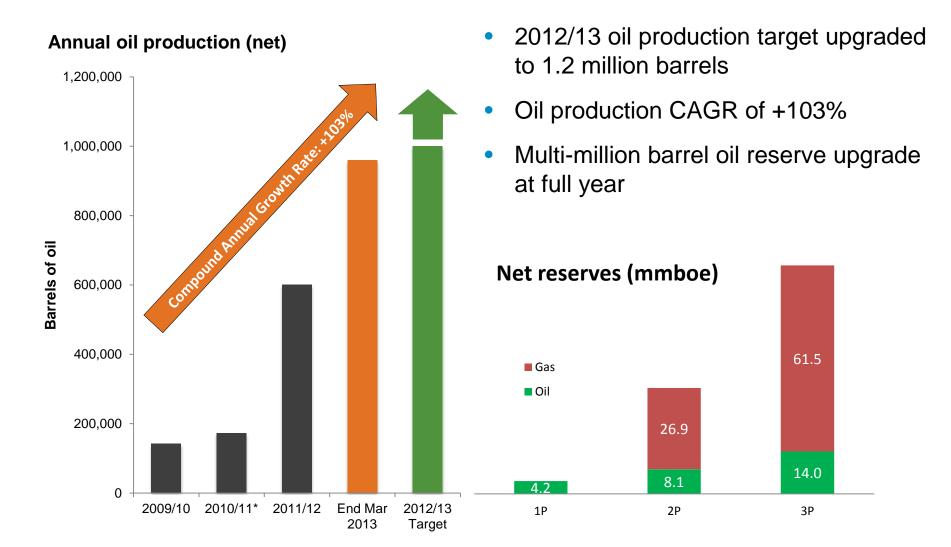
#### "Commercialising the prize"

- Material Cooper Basin gas resource position
- Technology to reduce costs:
  - Reservoir understanding
  - Service providers: drilling, casing, cementing, logging, completions, fracture stimulation
  - International interest in Cooper Basin continues to grow
- Markets:
  - 1. Domestic
  - 3<sup>rd</sup> party supply to LNG
  - Brownfields LNG
  - 4. Greenfields LNG



### Senex has a rapidly growing, material oil E&P business

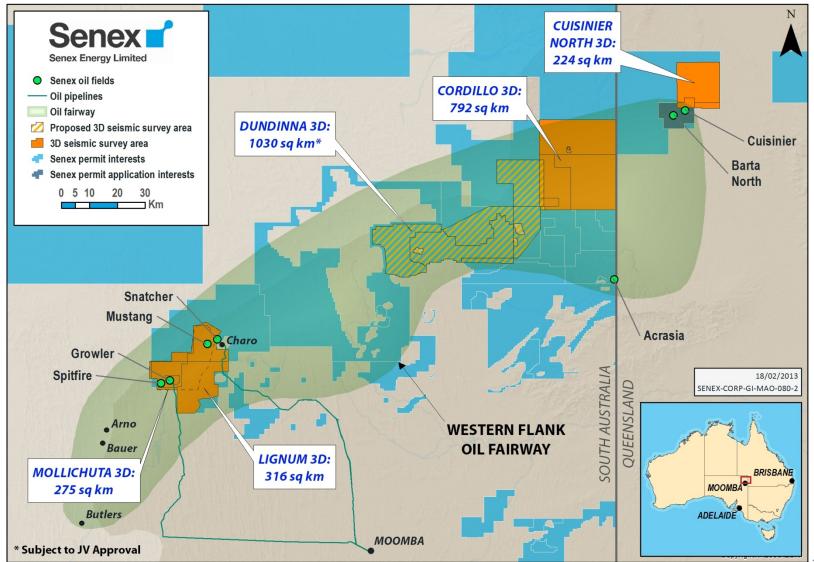




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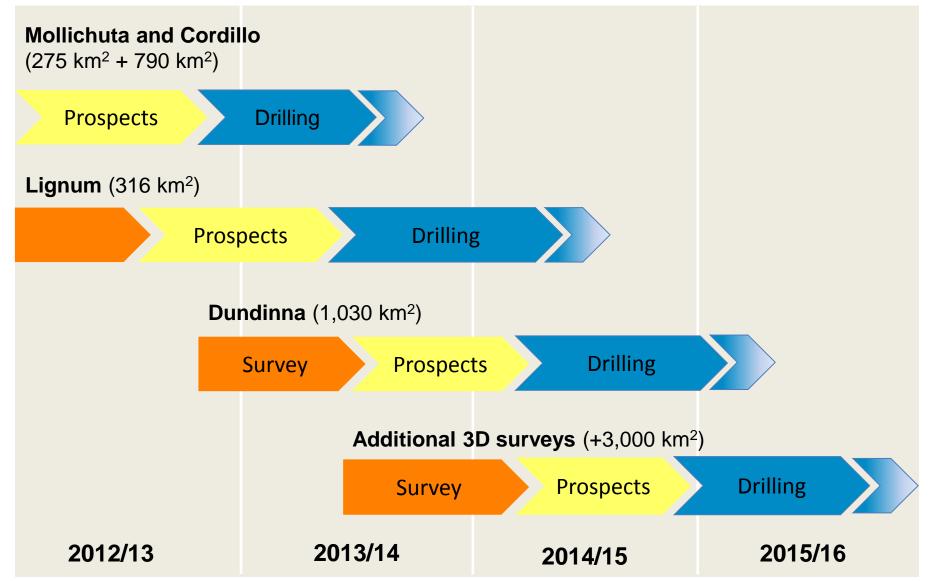
## 3D seismic unlocking the western flank oil fairway...





## ...with a large pipeline of opportunities being developed







#### **Positioned for success**



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