Upstream spotlight: Cultivating Unconventional Gas



Ian Davies, Managing Director and CEO DUG Australia Conference, Brisbane, 29 July 2015





Senex overview

Market opportunity

Surat Basin coal seam gas Exploration, appraisal & development

Cooper Basin unconventional gas Exploration





Senex overview

A growth focused oil and gas exploration and production company

- Australian S&P/ASX 200 energy company
- 30 years operating experience
- Two operating regions: Cooper-Eromanga and Surat Basins
- Diversified portfolio of conventional and unconventional plays
- Large pipeline of growth assets: high quality, high equity, Senex operated



At a glance ¹	
FY15 annual production	1.39 mmboe
2P reserve base	96 mmboe
Employees	~185

(1) Net production FY2015; reserves as at 30 June 2014 with uplift from QGC JV asset swap announced 10 September 2014; mmboe = million barrels of oil equivalent



Senex overview | Extensive acreage position

~70,000 square kilometres with majority operatorship



Today's focus areas



Senex overview | A material growth pipeline

Moving material unconventional gas assets along the maturity curve





Market opportunity

East coast market remains strong

- Potential demand from domestic and export customers
- Unprecedented demand growth from new LNG plants
- Supply pressures expected to place sustained upward pressure on gas prices



Source: Core Energy Group 2014, Eastern Australia Gas Outlook 2035 (Santos Investor Presentation April 2015)





Surat Basin

Coal seam gas

Exploration, appraisal & development



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Surat Basin coal seam gas | Why?

Material long-term supply opportunity in a short market

- Strong market dynamics
- Well-located permits de-risk project, with prior development and adjacent infrastructure
- Scarcity of remaining available tenure
- Service providers offer significant experience
- Few non-LNG upstream players
- Ability to learn from more advanced projects



Methane Rita Andrea LNG tanker (photo courtesy of QCLNG)



Western Surat Gas Project | Summary

- Senex permits over 2,000 km²
- ~990 km² defined as the Western Surat Gas Project area
- Strategically located, close to existing infrastructure and transmission facilities
- Early planning work underway
- Target production plateau rate between 35 and 50 TJ/day
- First gas production by end of 2017 (target)





Western Surat Gas Project | Project credentials

Resource

- Geology relatively well understood with pilots to test reservoir performance
- Encouraging peer results in neighbouring acreage
 Market
- Multiple commercialisation and funding options given project timing and location
- Opportunity to take advantage of short market
- ✓ Few non-LNG upstream players

Infrastructure

- Proximity to infrastructure and existing transmission facilities
- Further appraisal to achieve optimal development strategy ahead of Final Investment Decision



Our most material and advanced gas project



Western Surat Gas Project | Forward plan

Achieving an investment decision



Pursuing commercialisation and funding options (gas offtake / project partner) during Stage 1



Western Surat Gas Project | Development approach

Targeting low cost field development

- 'Manufacturer's mindset' low cost, repeatability
- Entry into FEED in FY16
- Initial Concept Select study has delivered initial surface facility design and planning recommendations
- Early indications that cost savings will be achievable through:
 - Incorporating best practices from low cost examples in the global gas industry
 - Utilising learnings from similar project developments
 - Modularising equipment as far as practicable to reduce site construction time and expense
 - Designing equipment and facilities to ensure flexibility to accommodate changing field operating conditions







Western Surat Gas Project | Pilot production testing

Enhancing understanding of the reservoir

- Bring existing pilot locations online during FY16
- Data is used confirm development planning assumptions:
 - Drilling (locations, completion design)
 - Project size (surface facilities, optimal plateau production rates)
 - Water disposal (facilities options)
- Pilots to be utilised during the development phase of project







Cooper Basin

Tight gas / basin centred gas / deep coal *Exploration*



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Cooper Basin unconventional gas | Why?

Material long-term supply opportunity in a short market

- Significant resource prospectivity
- Strong east coast gas market and technology provides support for previously uneconomic play types
- Tight gas prospects are most mature unconventional play type
- Basin centred gas prospects are most material unconventional play type
- Materiality and scale (running room) are key





Cooper Basin unconventional gas | Summary

Exploring in a proven basin with Origin Energy

- Joint venture with Origin Energy a partner with a long history and understanding of the Cooper Basin
- Permit areas provide exposure to strong East Coast gas market, access to infrastructure in a proven basin
- Stage 1 work program (\$105m) is focused on:
 - Achieving gas flows from large and continuous gas accumulations
 - Prioritising tight gas and basin centred gas plays
 - A de-risking approach that targets a range of play types across multiple horizons
- Separate Joint Ventures in the North (including Planet Gas) and South, targeting different play types





Cooper Basin unconventional gas | Play types

Targeting tight gas and basin centred gas plays



• Drilling locations will be targeting multiple horizons in the Permian section with vertical wells, increasing the size of potential resource

Tight gas:

- Structural or stratigraphic
- Potentially regionally extensive
- Fracture stimulation
 required
- Focus for south area of project

Basin centred gas:

- Regionally extensive
- Reservoir typically requires more extensive fracture stimulation
- Focus for north area of project



Cooper Basin unconventional gas | Southern play

Chasing potential stratigraphic extensions to existing discoveries



Allunga Trough play characteristics:

- Shallower and lower temperature than
 the Nappamerri Trough
- Gas, liquids and condensate potential in line with neighbouring fields
- Prospective play locations are close to infrastructure

Work program update:

- Seismic survey completed
- Two drilling prospects agreed by the joint venture for planned drilling in H1 FY16
- Close to nearby discovery Bauhaus-1: 150 metres of net pay and flow rates of 800 mscf/d on drill stem test



Cooper Basin unconventional gas | Northern play

Chasing basin centred gas and stratigraphic traps



Patchawarra Trough play characteristics:

- Lower temperature and lower pressure than the Nappamerri Trough
- Gas, liquids and condensate potential
- Very material potential resource base

Work program update:

- Processing of seismic surveys commenced
- Two drilling prospects to be identified following seismic interpretation – target drilling in H2 FY16
- Proximity to existing hydrocarbon accumulations proves the existence of regional reservoir and source rock



Conclusion

Cultivating unconventional gas

- Surat and Cooper Basins well positioned to meet gas market demand
- Materiality and scalability of unconventional assets are key
- Senex assets are well located in proximity to existing infrastructure and transmission facilities
- Different stages of maturity provides near term material supply opportunity





Questions



Image: Senex led the launch of the first night-vision capable helicopter in the Cooper Basin in 2014, supporting workers and community in remote South Australia.





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The relevant qualified reserves and resources evaluator statements can be found :

- In respect of the Cooper Basin, at page 17 of the Senex annual report released to the ASX company announcements platform on 26 August 2014 (in the reserves and resources statement); and
- In respect of the Surat Basin, in the ASX announcement titled "Completion of Surat Basin gas asset swap" on 16 December 2014.

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