



Senex – balancing our portfolio

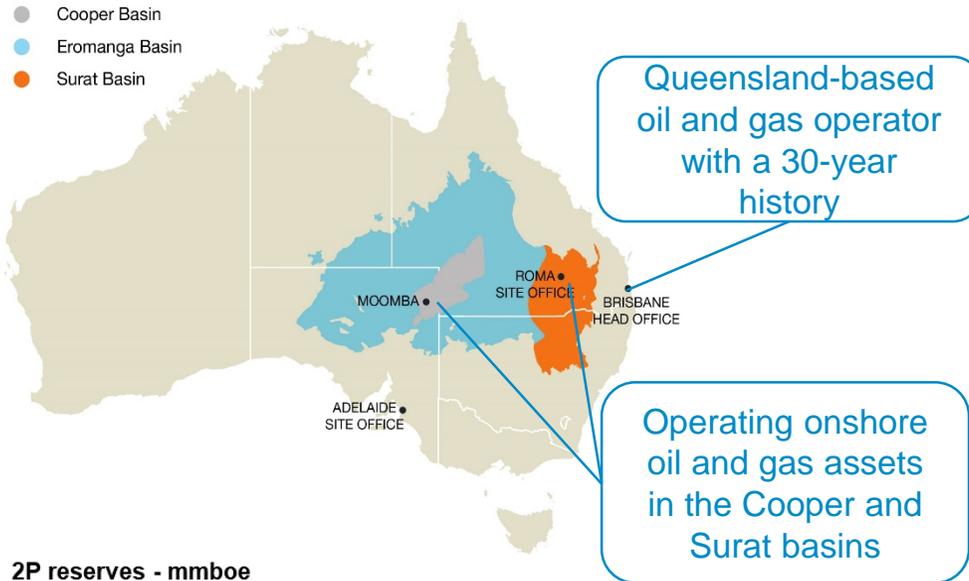
Roundtable for Oil and Gas in South Australia

David Spring, Executive General Manager Exploration



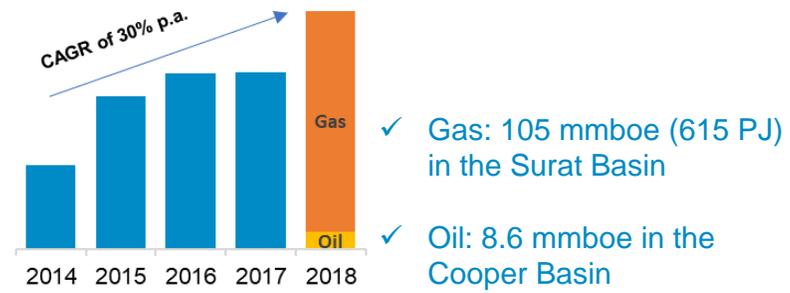


Company overview



Senex Energy Ltd (ASX: SXY)	
Market capitalisation	~\$620 million
FY18 production	0.84 mmboe
FY19 production guidance	1.1-1.5 mmboe
Target annual production run rate by end FY21	4 mmboe
2P reserves (at 30 June 2018)	113 mmboe
Cash (at 30 September 2018)	~\$58 million
Liquidity	\$150m senior secured debt facility

2P reserves - mmboe



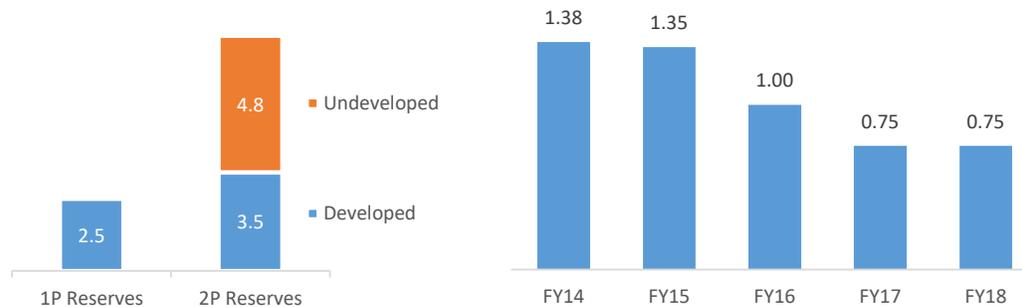


High margin conventional oil business driving cash generation

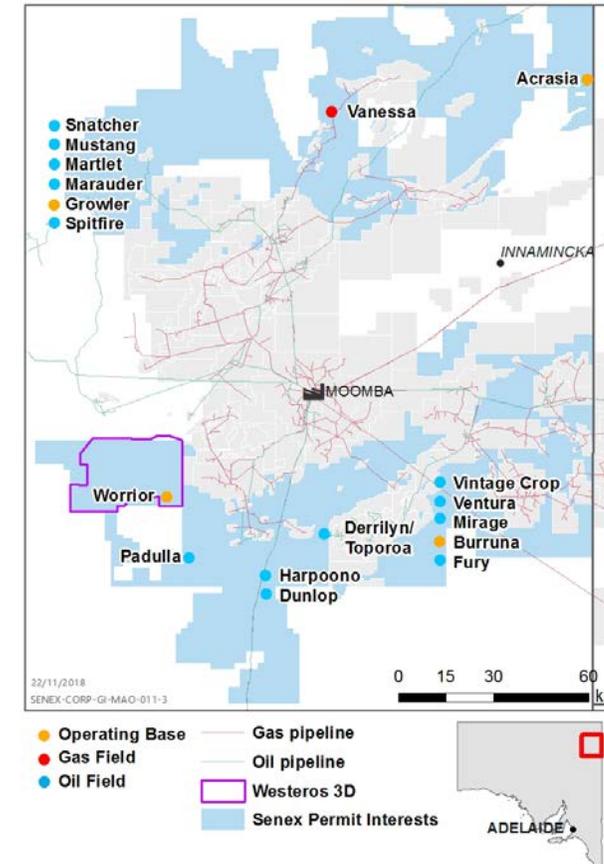
Overview

- Prioritised focus on western flank
- Ten-well FY19 drilling campaign underway; free-carried for up to \$43m
- Two commercial oil discoveries from program thus far
- 600km² 3D to be acquired in Q1 CY19 in southeast – potential high value acreage
- **Producing assets**
 - Strong production – approximately 1 mmbbl p.a. over past five years
 - Western flank operating costs ~\$29/bbl
 - Oil transported to Moomba and sold to the SACB Joint Venture and IOR
- **Exploration and development**
 - De-risking opportunities through extensive regional study
 - Over 18,000 km² of 3D seismic surveys
 - Extensive drilling data available from long operating history of the basin
 - Increasing production through horizontal development wells in Growler Field

Oil Reserves (mmbbl) and Production (mmbbl)



Location

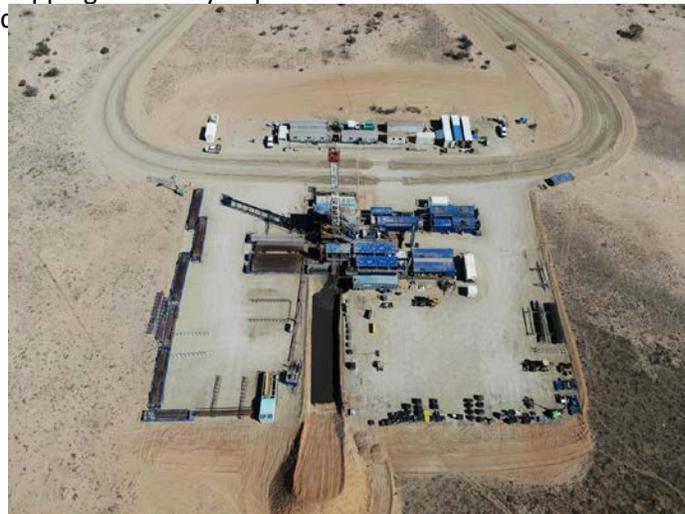




Focused Western Flank FY19 drilling campaign adding reserves and production

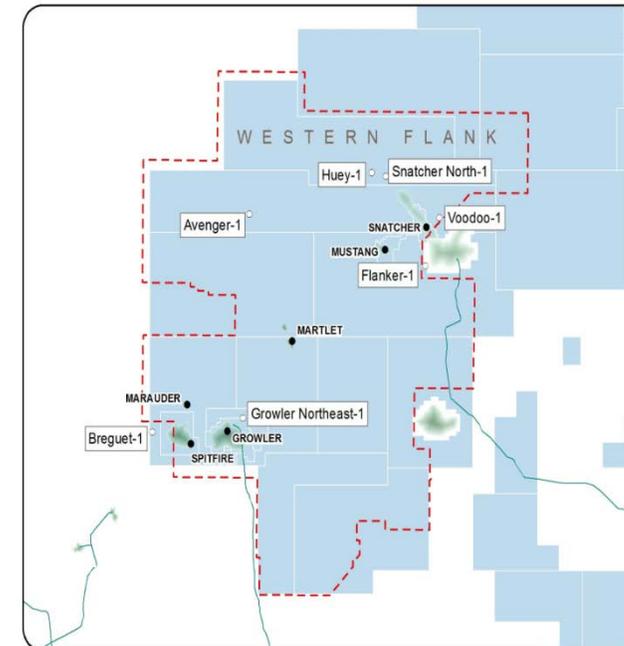
Overview of Program

- Ten-well FY19 drilling campaign underway.
- Program of balancing exploration risk, reserve replacement and production
 - Near Field (lower risk) exploration opportunities or those on proven fairways
 - Horizontal development wells following from Growler-15 success
 - Play opener exploration well
- Two commercial oil discoveries from program thus far and both wells, Breguet-1 and Snatcher North-1 online (details in Senex Quarterly report October 2018)
- Drilling efficiency gains of up to 17% against best wells in FY17 campaign.
 - Improved connection and surveying procedures
 - Elimination of wiper trips
 - Tripping efficiency improvements due to consistent crews over a longer



Breguet-1

Location



12/07/2018
SENX CORP: GI-MAO-201



Growler-15 Birkhead horizontal development well

Increasing field production through horizontal development wells

Overview and results

- Senex Energy (and Beach JV) first horizontal development well
- Successfully drilled Birkhead reservoir horizontal section of 1,037m with 578m net oil pay
- Primary and secondary subsurface objectives achieved
- Swept zone near Growler-10 isolated via liner and ESP completion run
- Spud to online in 27 days thanks to connection pre-commitment & completion run with the drilling rig
- Initial peak rate of ~ 2,000 bopd with a water cut of ~ 5%

Challenges

- Differential depletion along the planned trajectory
- Two subsurface targets separated by saddle & fault potential
- Sweep risk from offset production impacting steering and lower completion design (with isolation requirements)
- Formation damage presented a risk with open-hole completion
- Lack of horizontal / LWD logs to calibrate petrophysical functions

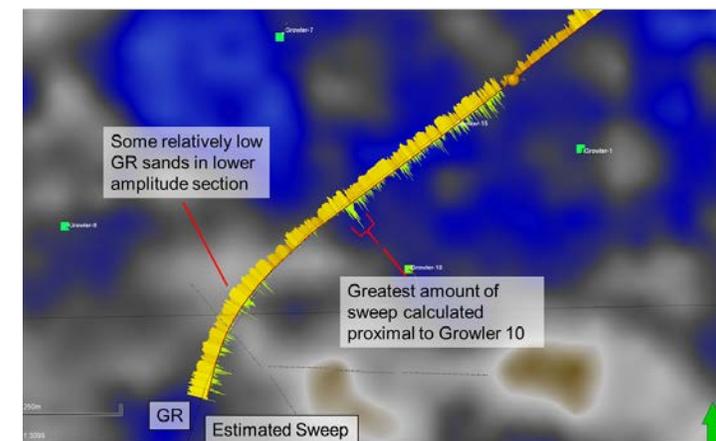
Trajectory

Reservoir Target Depth Structure Map



Seismic Amplitude Extraction at Top Reservoir Pick

Average Top Reservoir Structure Map +5m
C.I. 50cm





Senex holds significant conventional and unconventional gas acreage in the Cooper Basin

Overview

- Proven hydrocarbon system with large gross intervals of conventional and unconventional gas
- **Vanessa Gas Project**
 - The Vanessa Field is situated 87km north of Moomba in far north South Australia – the field was brought online in July 2018
 - Senex was granted \$5.82 million from the South Australian Government through the first round of the PACE Gas Grant Program to connect Vanessa-1 to market

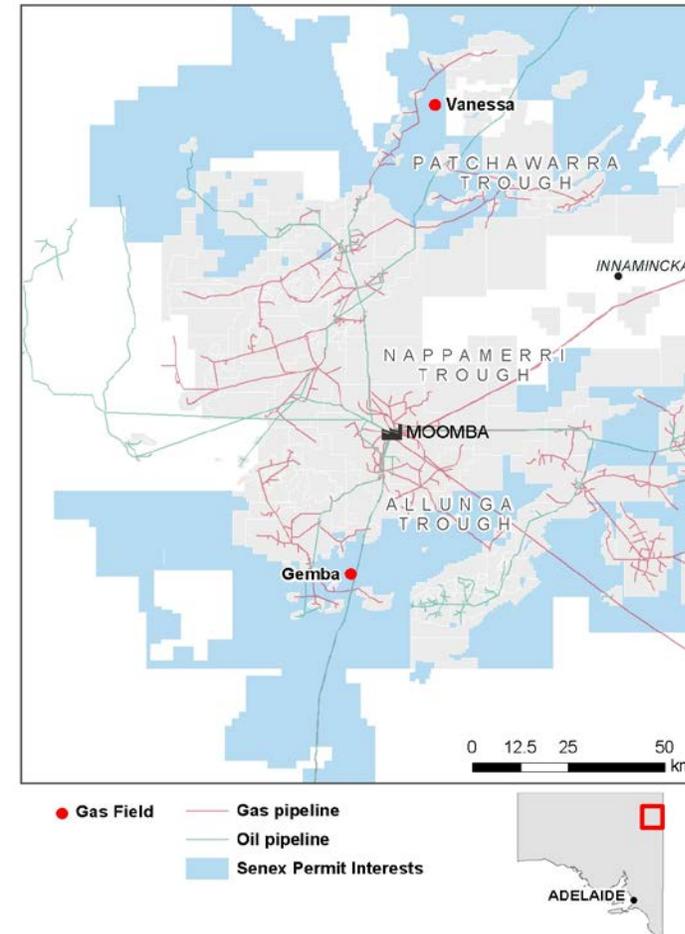
Gemba-1 gas exploration well

- Located on the southwest margin of the Allunga Trough, about 37km south-west of the Moomba Oil and Gas Processing Facility
- Senex was granted \$5.26 million from the South Australian Government through the second round of the PACE Gas Grant Program to progress the Gemba project through drilling execution to market

Unconventional acreage

- Senex’s unconventional gas acreage in the Cooper Basin includes:
 - Coals: Thick, mature Toolachee and Patchawarra coals
 - Shales: Thick, mature Roseneath and Murteree shales
 - Tight sand and coal sequences: Thick Toolachee sand and coal sequences

Location





Cooper Basin gas – Vanessa gas field

Senex holds a 57% operated interest in the Vanessa gas field, which was brought online in July 2018

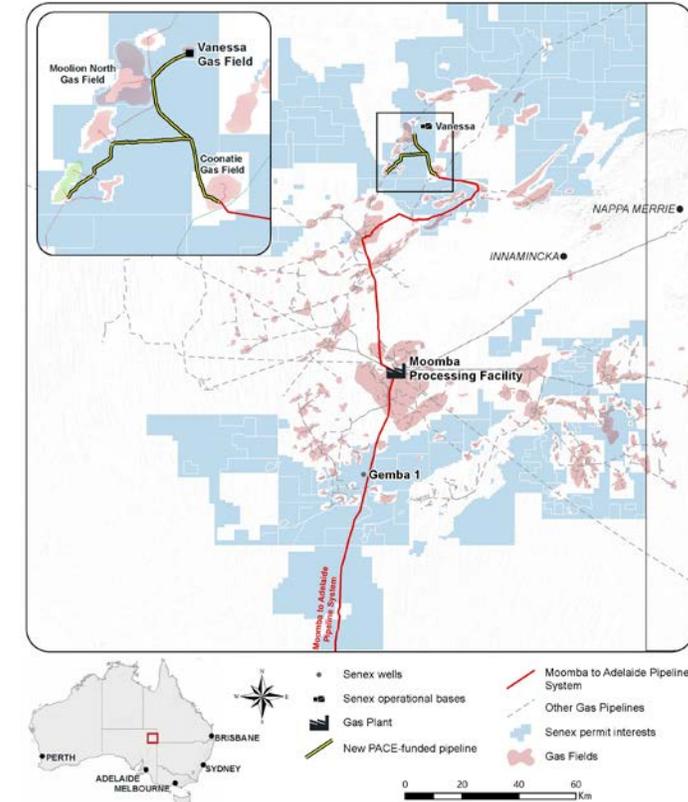
Overview

- Vanessa Field discovered July 2007
- The Senex-led gas pipeline project received \$5.82 million in funding from the South Australian Government through the PACE Gas Grant Program, with the joint ventures to match the government funding received
- Project to commercialise and infill the Patchawarra East gas trend, via two new pipelines connecting stranded gas discoveries and existing fields to market
- 87km north of Moomba – brought online in July 2018 and is about 23km from existing gas transmission infrastructure
- Vanessa ST-1 well is producing sales gas in line with funding application

Summary

Location	PEL 182 / PRL 135
Operator	Senex
JV partners	Senex 57%, Beach Energy (43%)
Status	One producing gas well
2P Reserves as at 30 June 2018	0.145 mmmboe gas; 0.098 mmmbbl condensate (net)

Location





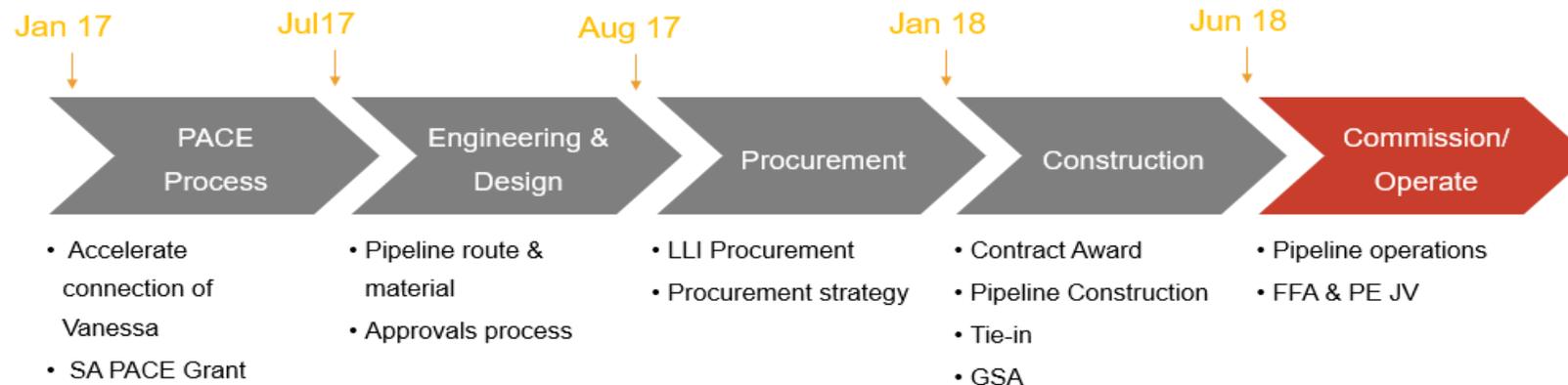
Vanessa Project highlights

Senex delivering PACE funded gas project to market

- \$11.6M project to commercialise and infill the Patchawarra East gas trend, via two new pipelines connecting stranded gas discoveries and existing fields to market with South Australian Government PACE grant funding (50%)
- Senex / Beach volumes from Vanessa have been sold to Pelican Point Power Station, assisting them to bring on alternative gas fired generation in SA that had previously been shut in
- Excellent example of collaboration between the Cooper Basin participants to bring this project together
- Transfer of Patchawarra East (PE) pipeline to PE joint venture following commissioning
- Brought new pipeline construction contractor into the Cooper Basin – providing new competition for those services
- Project delivery delayed by pipe coming from Texas when Hurricane Henry hit in Sept 2017



Photo – Fibre spar pipe laying





Well successfully intersected gas in the target zones with volumes above expectations

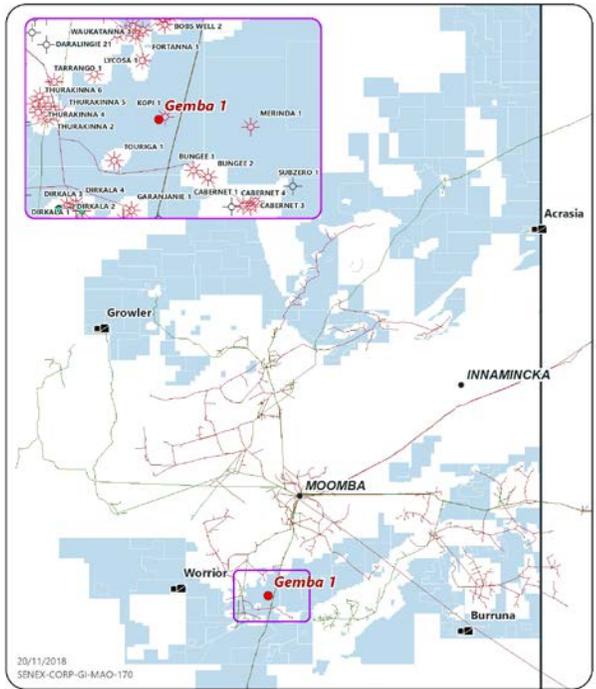
Overview

- Senex was granted \$5.26 million from the South Australian Government through the second round of the PACE Gas Grant Program to progress the Gemba project
- Located on the south-west margin of the Allunga Trough, about 37km south-west of the Moomba oil and gas processing facility
- Designed to evaluate the gas potential of the low permeability intra-Patchawarra sandstones,
- Senex successfully drilled the Gemba-1 exploration well in Q4 FY18 intersecting gas in the target zones with volumes ahead of pre-drill expectations
- The well was extended to a total depth of 2,795 metres (from 2,685 metres) given encouraging gas shows in the Dullingari group, representing a potential new gas play
- Senex has started a fracture stimulation and testing program with initial flow results expected in Q3 FY19
- **Gemba-1 may confirm substantial resource, de-risks nearby exploration opportunities as well as being a potential play opener**

Summary

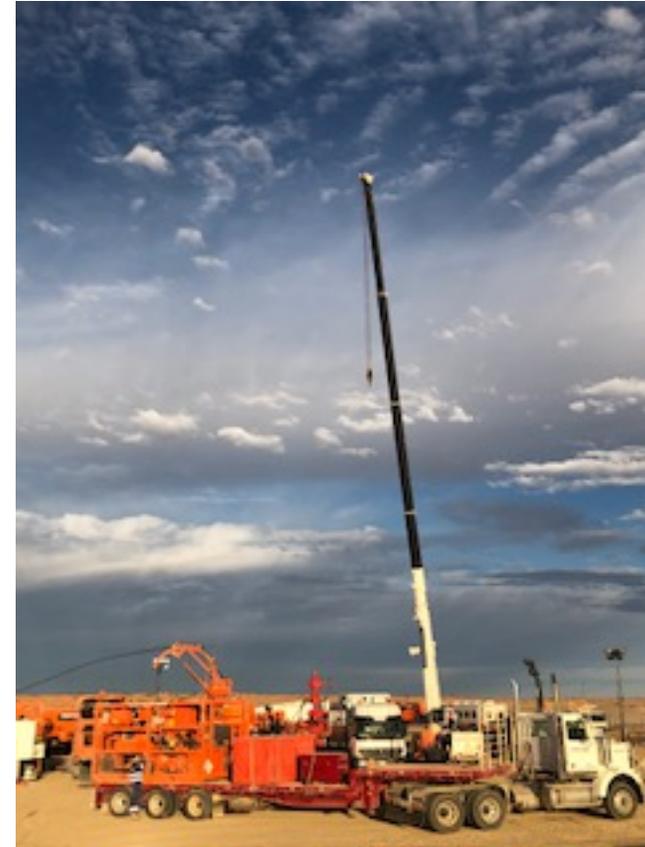
Location	PEL 516
Operator	Senex 100% owned and operated
Status	One exploration well – drilled, cased and suspended. Frac operations commenced.

Location





Cooper Basin gas – Gemba-1



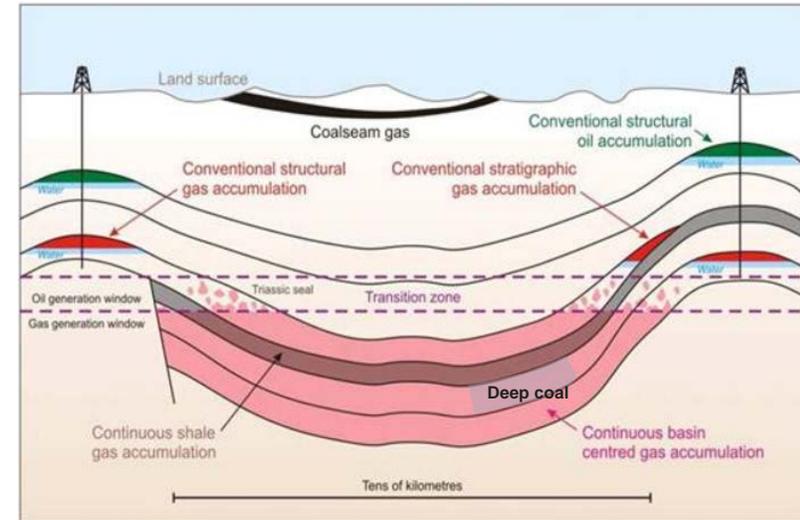


What is deep coal

Overview

- Deep Coal is not CSG
- The Deep Coal resource is mainly the free gas resource (thermogenic). Not adsorbed biogenic gas.
- Deep coal is typically >3200m, mature (>1.1 Ro%)
- Gas in deep coal is stored within the organic porosity (inertinite cell lumen structure), matrix porosity of coal and fracture porosity of coal
- Where porosity <8%, the gas can be “trapped” within the coal independent of structural closure (eg. Washington-1).
- Fracture stimulation is required to access this gas
- The **success** of the play is dependent upon understanding the **geomechanical properties of coal, the stress regime and engineering a stable horizontal wellbore.**

The Play



Patchawarra Coal Analogue
Google earth view of a portion of the Ob River in Siberia. Dominate peat swamps with minor streams draining into main river channel (~50x100km)



Defining the Deep Coal resource within the Patchawarra Trough

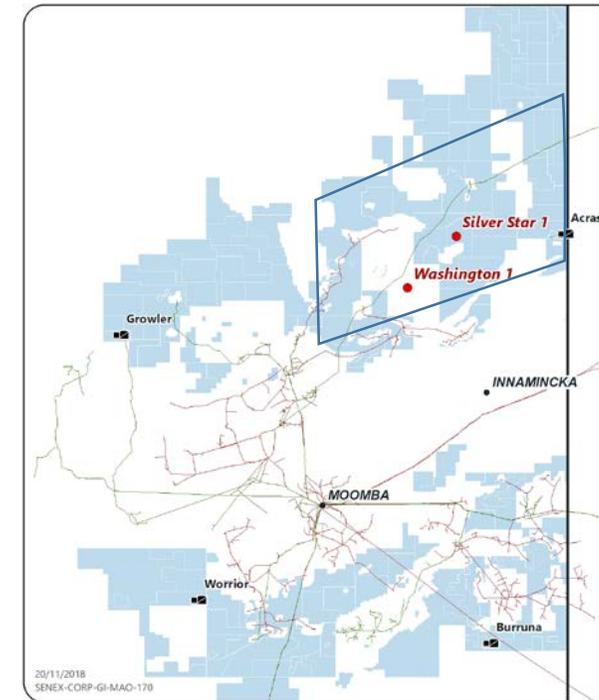
Characteristics

- Senex has developed a basin-wide 3D Trinity Model to define the “sweet spot” for the Patchawarra Trough.
- Senex estimates a GIP of ~8-11 TCF for the Patchawarra Trough Permian coals in Senex permits
- Characteristics include:-
 - Proximal to existing pipelines and infrastructure
 - Coal thickness (>5m individual seam for fracking)
 - Coal maturity (>1.1 Ro%) and condensate window (1.1-1.4 Ro%).
 - ~3200m depth
 - Porosity <8%
 - Coals in a normal stress state (facilitate vertical fracture propagation)
 - Stress contrasts between sandstone and coal may contain growth within zone

Summary

Location	North eastern Patchawarra Trough SA
Operator	Senex 100% owned and operated
Status	One exploration well – drilled, cased and suspended

Location



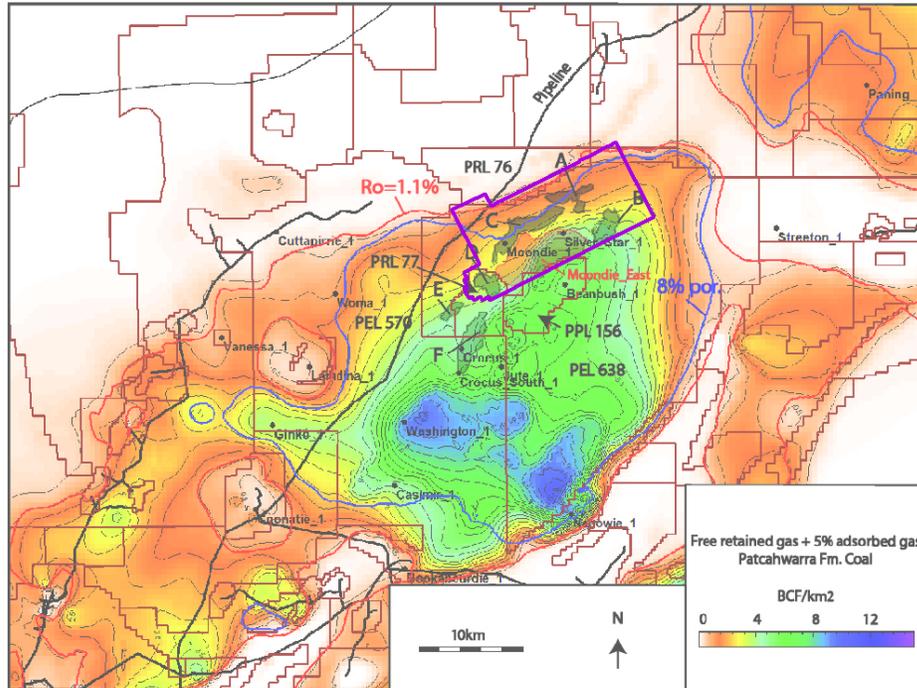


Deep Coal Play – a significant resource

Significant resource within the Patchawarra Trough

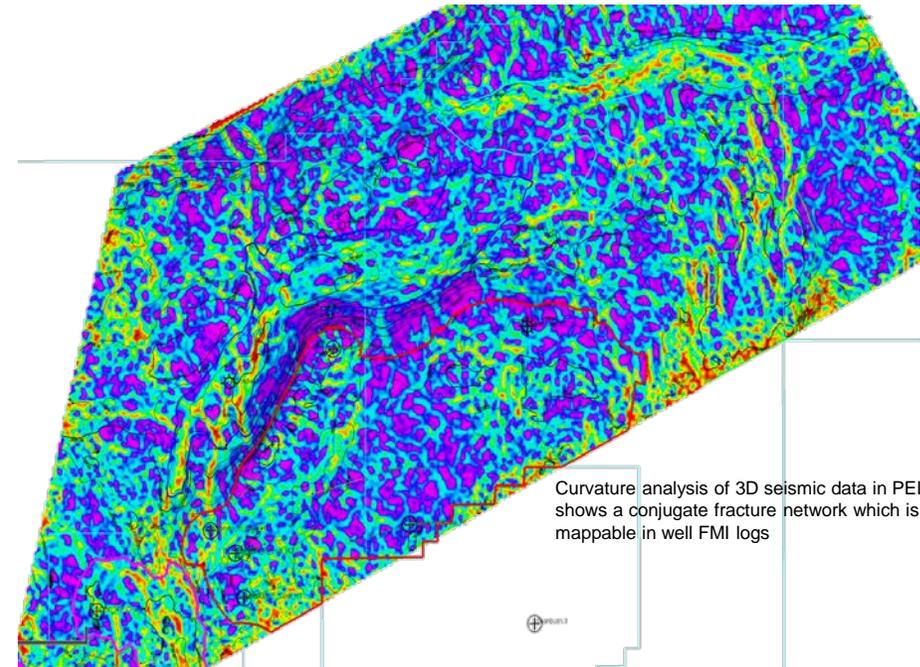
Deep Coal Resource Map

Extract of basin-wide Trinity Deep Coal Resource Map



North Patch. Deep Coal GIP (TCF)*			
Patch.		Tool.	
P50	P10	P50	P10
5.2	7.3	2.8	3.9

Fracture Network



- The key to unlocking this resource lies in working with the natural fracture network instead of against it.



Wrap up

- Material exploration and production position in Cooper Basin oil
 - prioritising oil exploration, appraisal and development in western flank, focused on Birkhead play
- Moving to build material gas business, with support from South Australian government
 - PACE Grant project Vanessa is providing gas to Pelican Point power station (ENGIE)
 - potential for PACE Grant project Gemba to deliver gas in 2019/20
- Unconventional gas acreage in Cooper Basin includes shales, coals and tight sand with current focus on material deep coal opportunity
- Sharing of knowledge, data, innovative ideas adding value
 - operational efficiency and subsurface knowledge
- Continuing to create strong relationships and future in South Australia





Thank You

