

# Breakfast Series | Petroleum

Tuesday 21 August 2018

PwC



South Australian Chamber  
of Mines & Energy



@Mining\_EnergySA



South Australian Chamber  
of Mines & Energy

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South  
Australian  
Chamber  
Of  
Mines &  
Energy

# Andrew Foreman

## PwC

Breakfast Series | Petroleum  
August 2018

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# Rebecca Knol

## Chief Executive Officer

Breakfast Series | Petroleum  
August 2018

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# 2018-19 Annual Sponsors

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Mining & Extractives



Petroleum



Exploration



Energy



Legislation & Regulation



Infrastructure



Economics & Tax



External Affairs

# Social Acceptance

Fracking in the South-East & drilling in Great Australian Bight

SACOME



## Bell rings in bill for 10-year fracking ban



SA BUSINESS

**Tuna industry warns SA to be wary of jobs and economic figures, given an oil spill in Bight would decimate fishing sectors**

**The  Islander**

The Naracoorte  
**Herald**  
**Stock journal**

But SA Chamber of Mines and Energy chief executive officer Rebecca Knol says the bill is “politically motivated” and undermines the strong regulatory systems already in place.



ABC  
South East

**Hundreds unite against drilling in Great Australian Bight**

**Fighting against offshore drilling, seismic testing off Kangaroo Island**



**FULL SUPPORT:** Limestone Coast Protection Alliance chair Angus Ralton has thrown his support behind a move to legislate a fracking moratorium. Picture: SANDRA MORELLO

**Gas ban goes to vote**

Mount Gambier MP introduces bill to legislate moratorium

## The Advertiser

SA NEWS

**Independent MP Troy Bell moves to legislate ban on fracking in South Australia's South-East**



COASTAL  
**Leader**



**The fight to keep oil companies out of Great Australian Bight**



▲ Protesters against BP drilling in the Great Australian Bight clean up a mock oil spill on Glenelg beach. Photograph: Bill Doyle/GuardianWitness

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**David Maxwell**  
Managing Director, Cooper Energy

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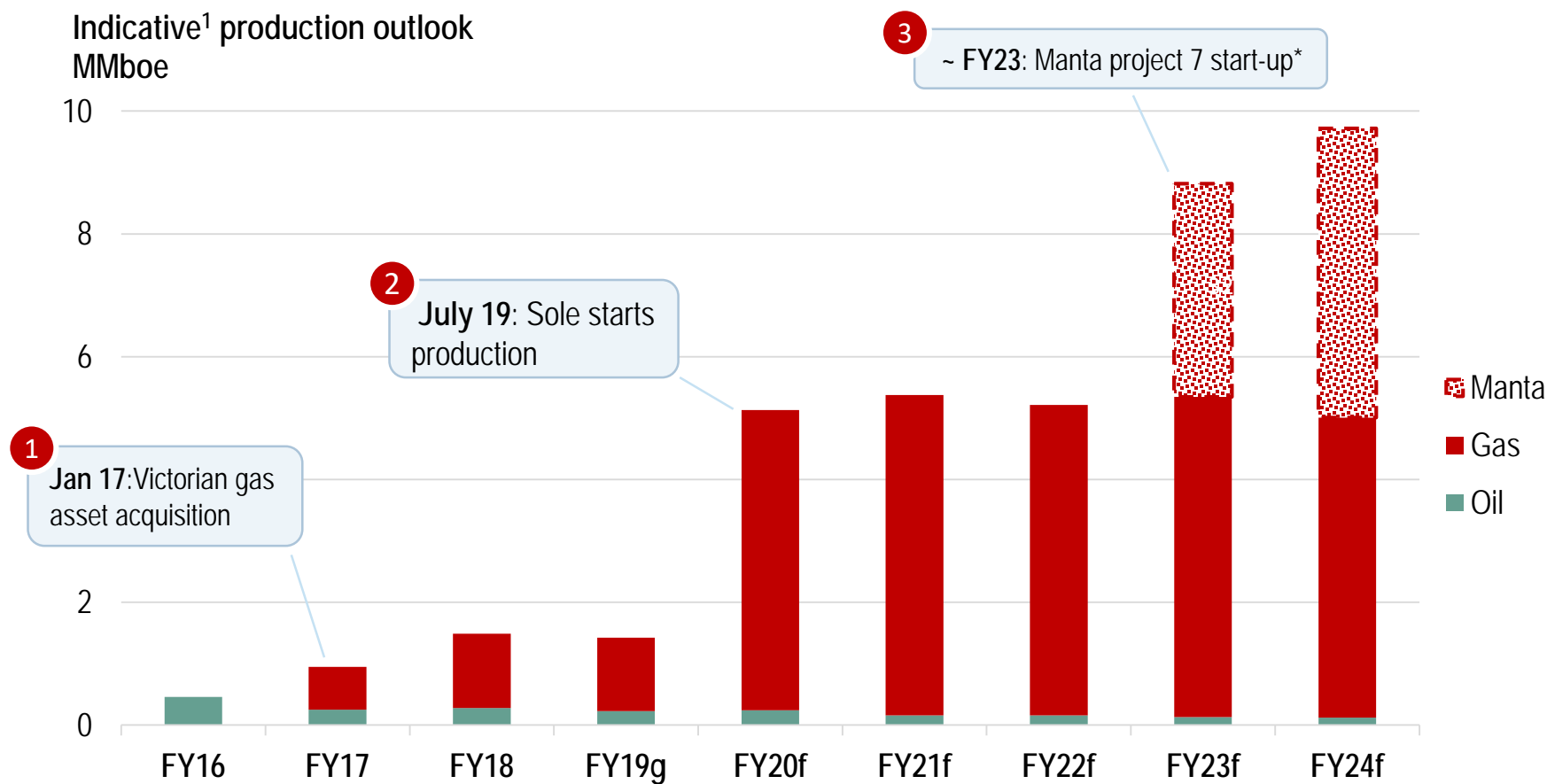






# Production outlook

In the midst of a 3 step 20x production ramp from existing resources



<sup>1</sup>Indicative and assumes:

- Sole proceeds to schedule for first gas sales July 2019
- Henry-2 development well for Casino Henry in FY20
- No exploration success

g = guidance  
f = forecast

\*subject to appraisal well & FID

# Gas business beginnings

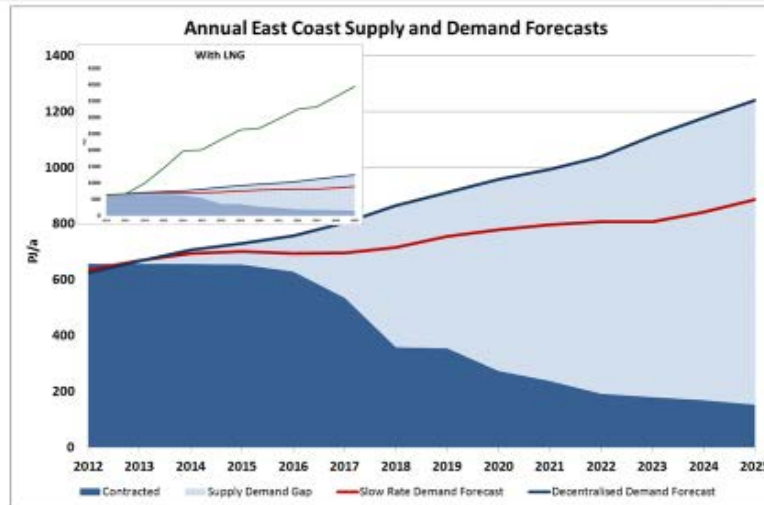
Opportunity identified in 2012: analysis conducted, strategy initiated and executed patiently

Cooper Energy 2012  
Opportunity outlined and strategy presented

Presentation to Good Oil  
Conference Sept 2012



- Multiple contract opportunities
- Increasing prices
- Resource supply opportunities
  - Cooper, Otway and Gippsland
  - conventional and unconventional
- Committed LNG projects
  - very significant impact
- Gas commercialisation key
  - a Cooper Energy strength



Sources : Contracted Supply – Wood Mackenzie GEM May 2012  
Demand – AEMO 2011 Gas Statement Of Opportunities

## Essential criteria

1. **Market competitive:** highly competitive position on cost curve
2. **Development foreseeable:** production or in production within 5 years
3. **Value adding:** add value to Cooper Energy and/or Cooper Energy can add value



INVESTOR PRESENTATION  
12 September 2012

New supply needed

4

# Portfolio style gas business focussed on south-east Australia

Today - 2 gas hubs built around most competitive supply source for south-east Australia

## Otway Hub

- Offshore gas production 6-7 PJ pa
- Gas exploration offshore & onshore
- Minerva gas plant

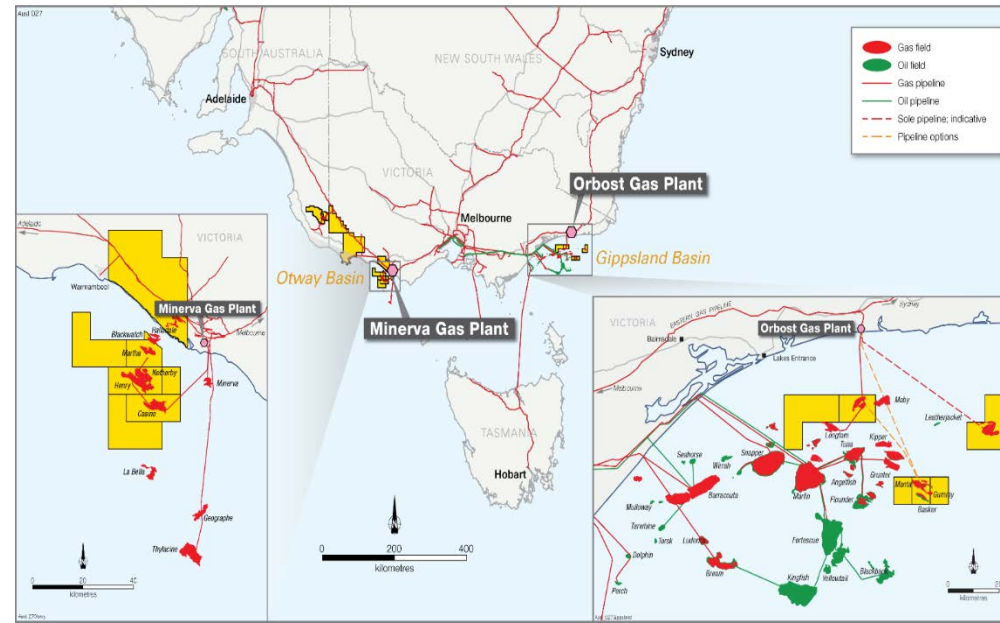
Gas (PJ) at 30 June 2018:



2P Reserves



2C Resources



2P Reserves contracted



2P Reserves uncontracted

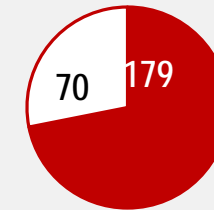


2C Contingent Resources uncontracted

## Gippsland Hub

- Sole Gas Project
- Manta gas resource
- Gas exploration

Gas (PJ) at 30 June 2018:



2P Reserves

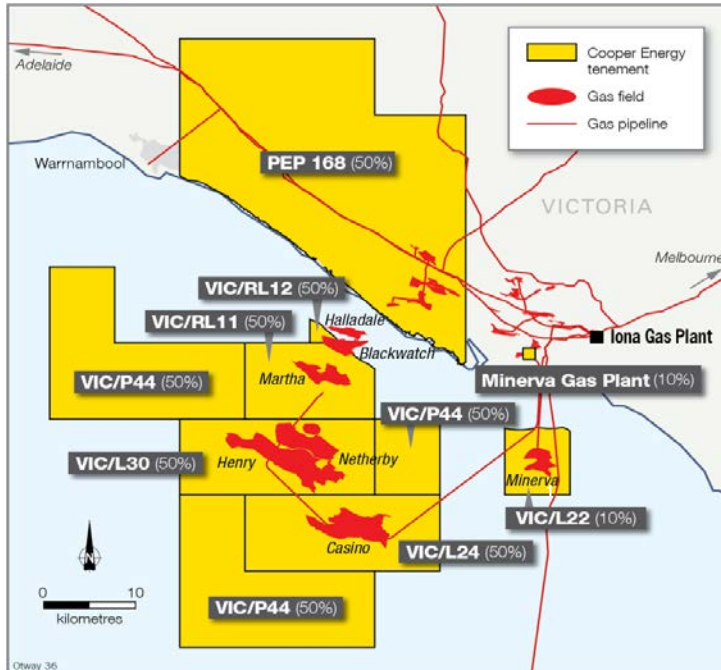


2C Resources



# Offshore Otway Basin

Gas production, new gas contracts commenced and further contracts under negotiation



## Key Assets

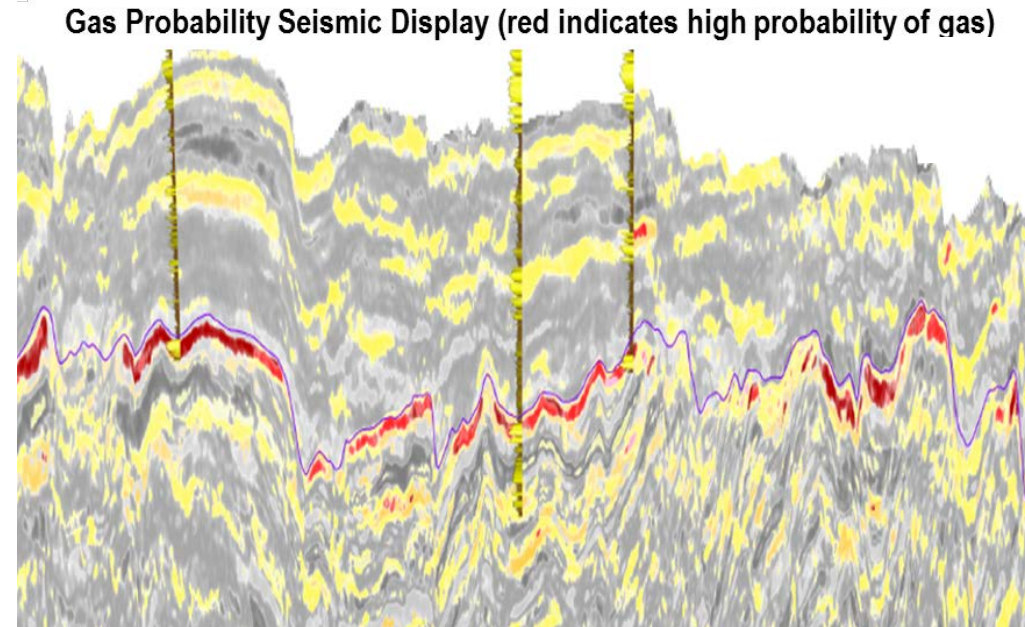
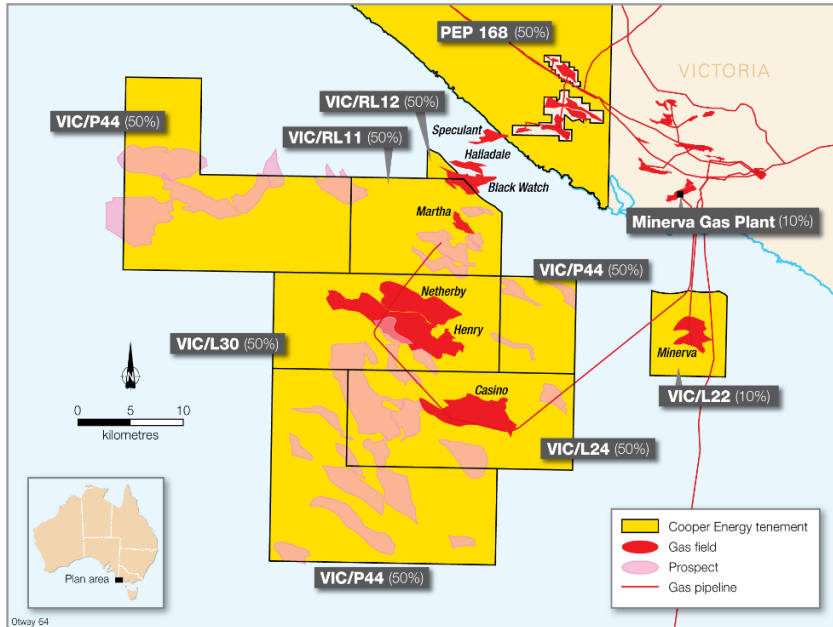
- Casino Henry gas project (50% interest and Operator)
- Minerva gas field and plant (10% interest with agreement to go to 50%)
- VIC/P44 exploration permit (50% interest and Operator)

## Business opportunities

- Contracting uncommitted gas into south-east Australia
- Henry-2 sidetrack to lift production and reserves
- Exploration and very competitive development

# Exploration: Otway Basin offshore

## Planning for drilling of two exploration wells in 2020<sup>1</sup>



- Several prospects on trend with producing fields high-graded as potential candidates for 2020 drilling campaign
- Easily defined 3-way structural traps
- Completed 3D seismic inversion study validates Direct Hydrocarbon Indicators ("DHI") suggesting lower risk of finding gas
- Prospects are adjacent to existing infrastructure and tie-in points which facilitates accelerated time to first gas

<sup>1</sup> Future drilling plans are subject to Joint Venture approval



# Sole Gas Project

\$605 million and bringing new gas supply to south-east Australia

## Onshore project



- \$250 million upgrade to Orbest Gas Processing Plant
- Agreement to process gas from Sole, Manta and other fields
- Due for completion by July 2019



## Offshore project



- \$355 million offshore project
- 2 production wells, subsea completion, connection via pipeline and umbilical and shore crossings
- Produce and supply 249 PJ of gas from mid 2019
- Enabling customers: AGL, O-I, EnergyAustralia, Alinta Energy

# Scenes from Sole

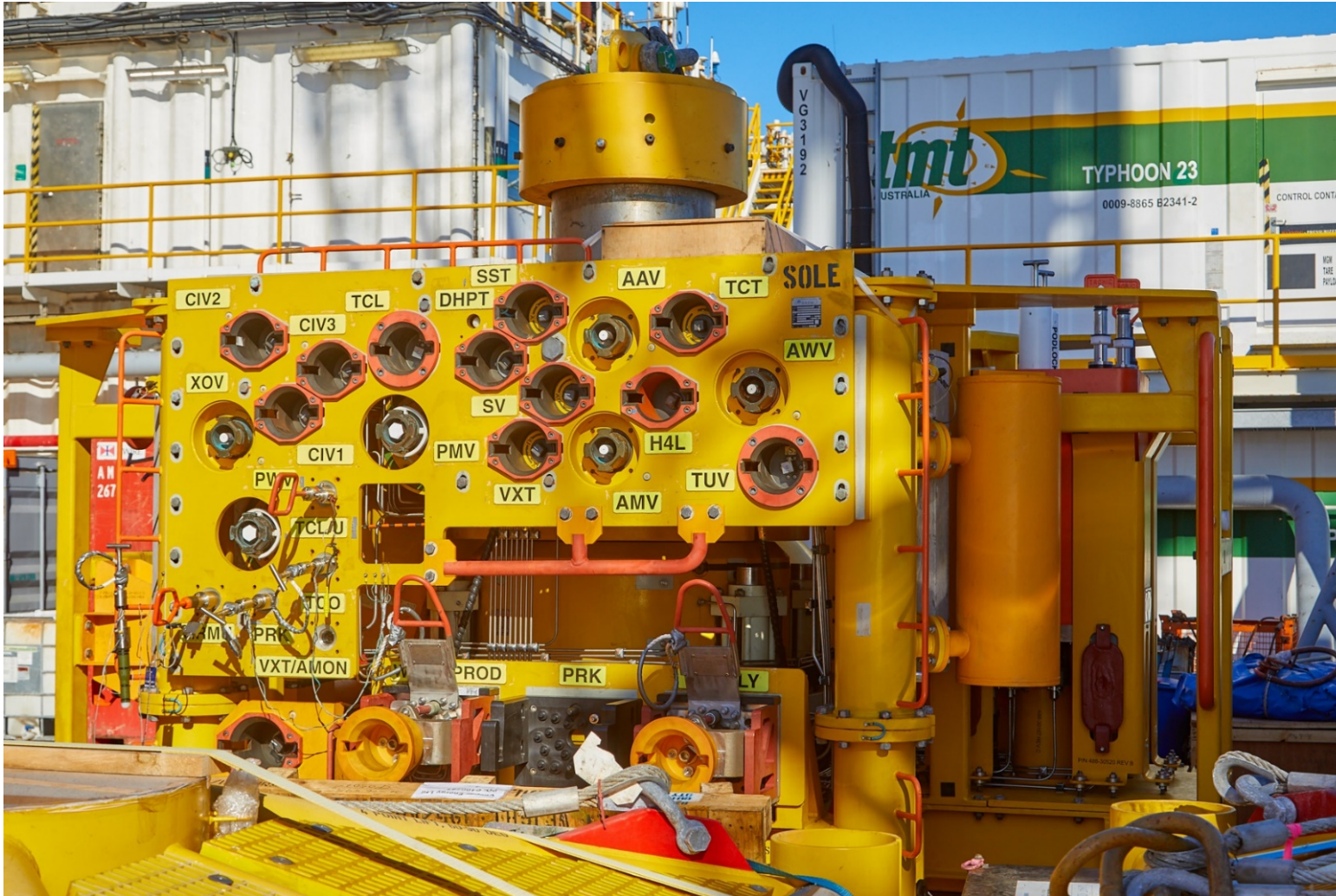
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**Drill rig: Diamond Offshore Ocean Monarch**



# Scenes from Sole



Horizontal subsea wellhead prior to deployment



# Scenes from Sole

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Deployment of Sole-4 subsea wellhead



# Scenes from Sole



R.O.V. Operations

# Scenes from Sole

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**Successful flow-back: Sole-3, 5 July 2018**



# Scenes from Sole

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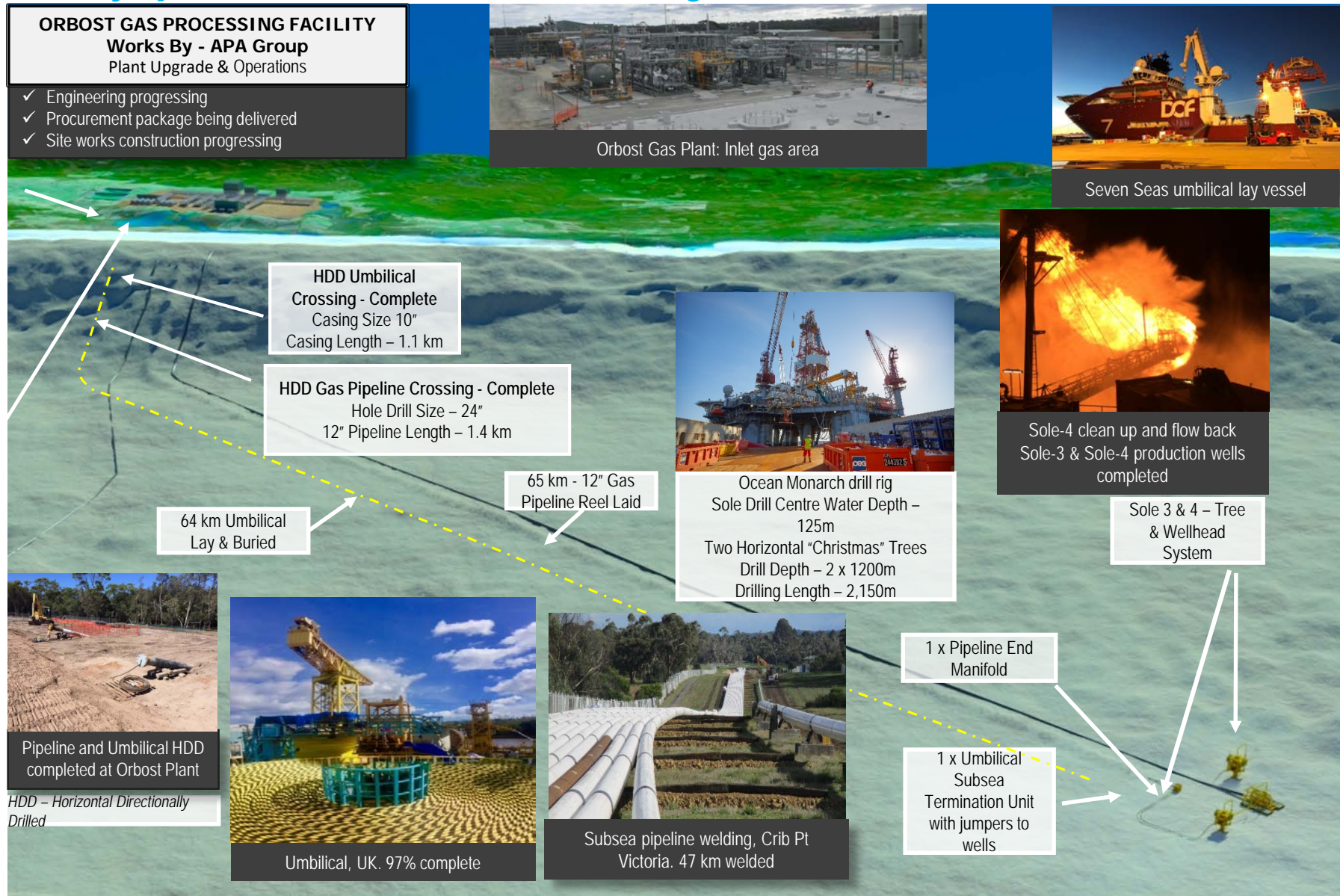


Preparing subsea pipeline: welded 1.5 km pipeline stalks at Crib Pt



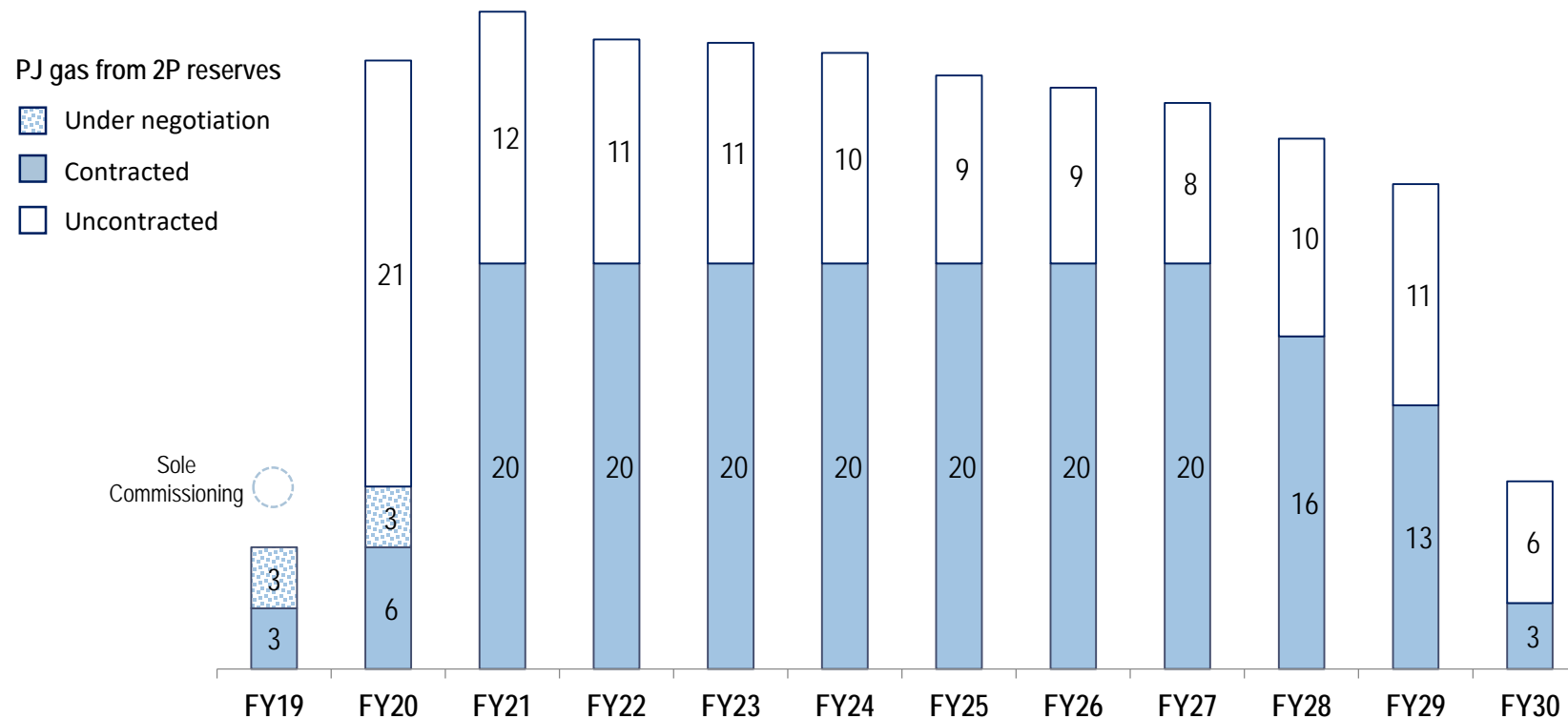
# Sole Gas Project

64% complete at end July 2018, within schedule and budget



# Gas production outlook from Otway and Gippsland (Sole)

309 PJ of gas, 128 PJ to be contracted at market prices



Note

1. Assumes:

- Sole sales commence July 2019
- Henry development well FY20 H1
- No exploration success

2. All numbers rounded and Cooper Energy equity share

- Currently negotiating CY19 supply from Casino Henry
- Soon to commence marketing of uncontracted Sole gas and Casino Henry FY20-22
- Increased interest in longer term supply from industrial buyers
- Marketing strategy employs portfolio approach across term, buyer type and demand spectrum

# FY20 offshore campaign for growth after Sole

## Preparation for a 4-well campaign from Dec quarter 2019 - a key workstream in FY19

1

### Henry-2 sidetrack <sup>1</sup>

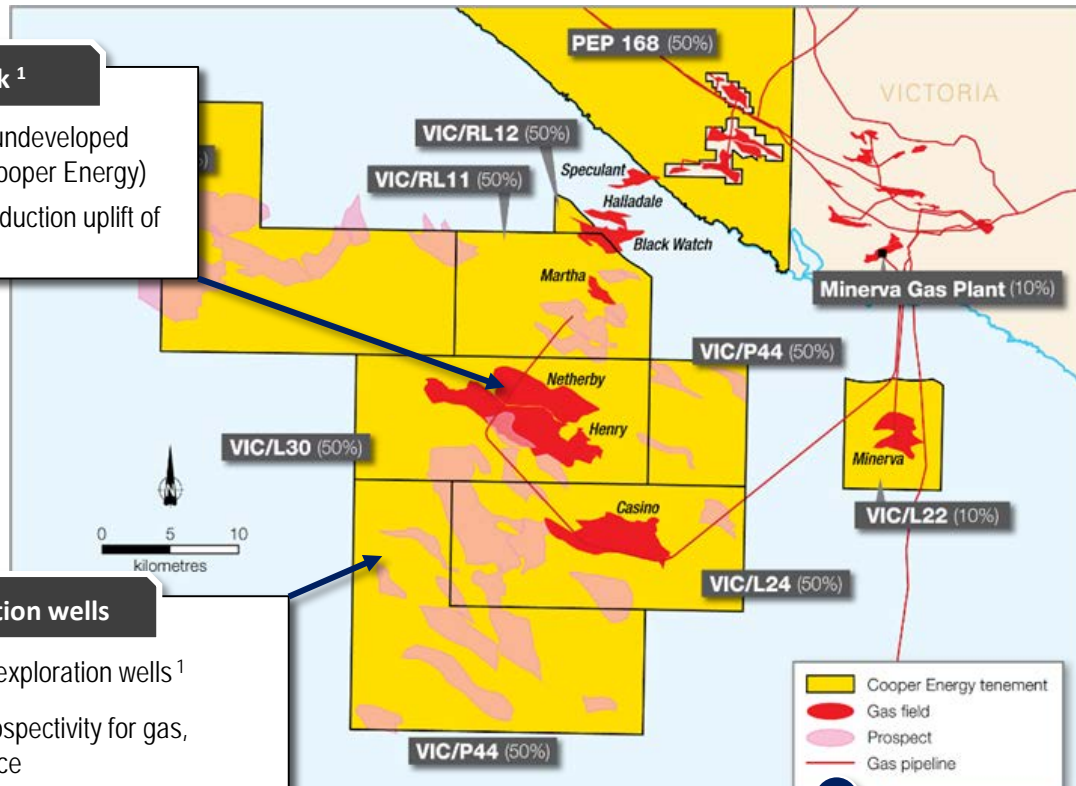
- To produce 24 PJ undeveloped Reserves (net to Cooper Energy)
- Targeting initial production uplift of ~20 TJ/day gross

2

### Otway gas exploration wells

- 2 or more offshore exploration wells <sup>1</sup>
- VIC/P44 proven prospectivity for gas, infrastructure in place
- Targets to be selected for JV approval in FY19

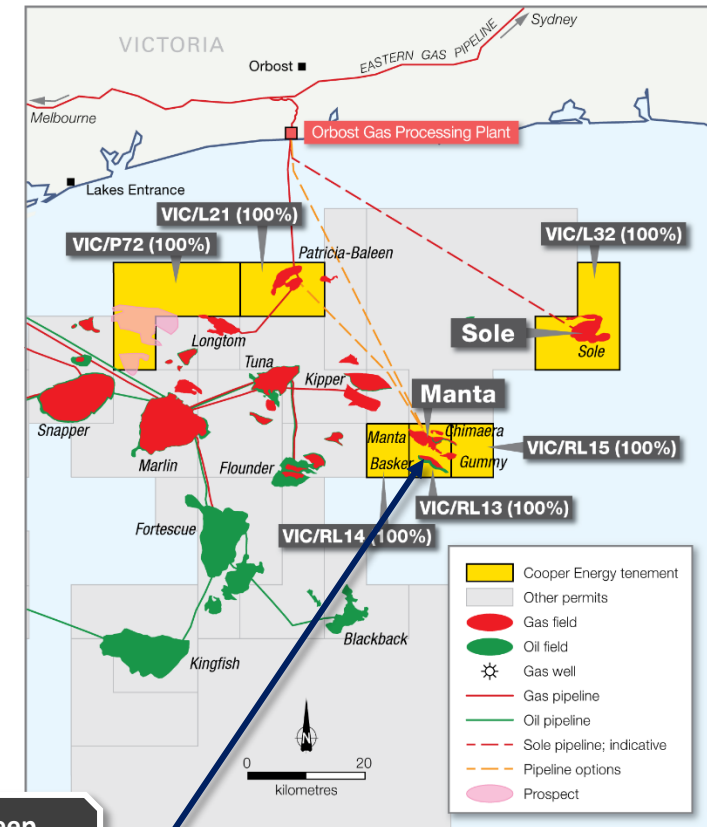
3



4

### Manta-3 appraisal & deep exploration

- Appraisal of Manta gas and liquids resources for development decision
- Exploration to test potential identified in underlying formation





# Otway Basin, Penola Trough onshore

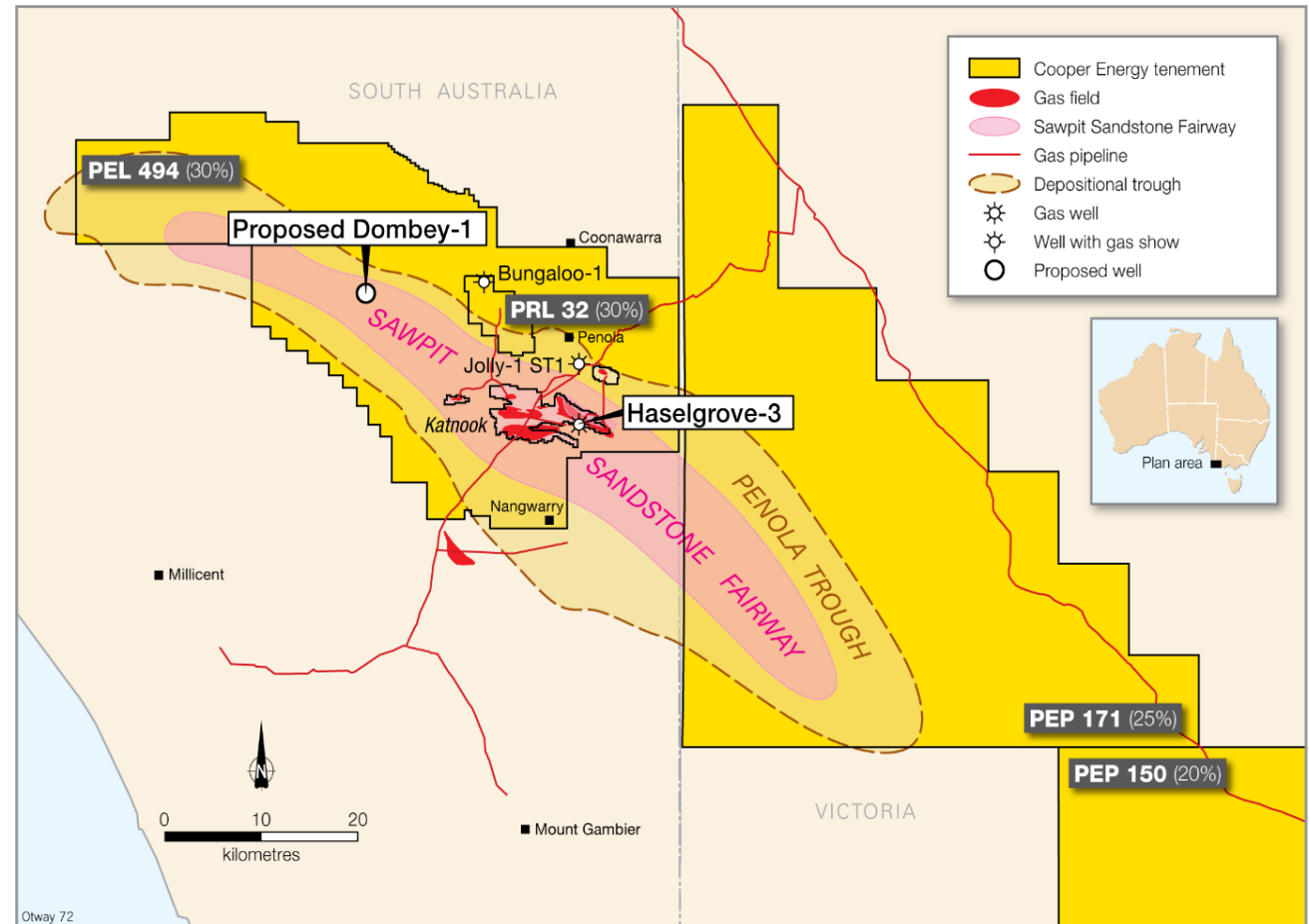
## Dombey-1 to be drilled in Sawpit Sandstone following play from Haselgrove-3 success

### South Australia

- Haselgrove-3 discovery in adjoining PPL 62 has confirmed conventional gas prospectivity of the Sawpit Sandstone at depths below previous producing levels
- SA government grant to PEL 494 JV (Cooper Energy 30% interest) of \$6.9 million awarded to drill Dombey-1 gas exploration well expected to start in early 2019

### Victoria

- Prospectivity of Penola Trough acreage upgraded by Haselgrove-3 discovery
- Cooper Energy to assume 100% of PEP 171 on government ratification
- Exploration permits in Victoria subject of application to suspend and extend due to state government moratorium on onshore gas production



# Senior Management Team

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Company Secretary &  
Legal Counsel  
Alison Evans

General Manager,  
Operations Iain  
MacDougall

General Manager,  
Development  
Duncan Clegg

General Manager,  
Commercial & Business  
Development  
Eddy Glavas

General Manager,  
Projects  
Michael Jacobsen

General Manager,  
Exploration &  
Subsurface  
Andrew Thomas

Managing Director  
David Maxwell

Chief Financial  
Officer Virginia  
Suttell



Questions

# Appendices



# Notes on calculation of Reserves and Resources

## Notes on calculation of Reserves and Contingent Resources

Cooper Energy has completed its own estimation of Reserves and Contingent Resources for its fully-operated Gippsland Basin assets, and elsewhere based on information provided by the permit Operators (Beach Energy Ltd for PEL 92, Senex Ltd for Worrior Field, and BHP Billiton Petroleum (Vic) P/L for Minerva Field — in accordance with the definitions and guidelines in the Society of Petroleum Engineers (SPE) 2018 Petroleum Resources Management System (PRMS).

All Reserves and Contingent Resources figures in this document are net to Cooper Energy.

Petroleum Reserves and Contingent Resources are prepared using deterministic and probabilistic methods. The resources estimate methodologies incorporate a range of uncertainty relating to each of the key reservoir input parameters to predict the likely range of outcomes. Project and field totals are aggregated by arithmetic summation by category. Aggregated 1P and 1C estimates may be conservative, and aggregated 3P and 3C estimates may be optimistic due to the effects of arithmetic summation. Totals may not exactly reflect arithmetic addition due to rounding.

The Company has changed the FY18 energy conversion factor consistent with Society of Petroleum Engineers (SPE) conversions and PRMS guidance. The previous conversion factor of 1 PJ = 0.172 MMboe was adopted when the Company was predominantly a Cooper Basin oil producer. With the change to a predominantly offshore gas-producing Company, a conversion factor of 1 PJ = 0.163 MMboe (5.8 MMBtu/bbl) is more consistent with industry and SPE standard energy conversions. The new conversion factor has no impact on gas reserves expressed in PJ.

The information contained in this report regarding the Cooper Energy Reserves and Contingent Resources is based on, and fairly represents, information and supporting documentation reviewed by Mr Andrew Thomas who is a full-time employee of Cooper Energy Limited holding the position of General Manager Exploration & Subsurface, holds a Bachelor of Science (Hons), is a member of the American Association of Petroleum Geologists and the Society of Petroleum Engineers, is qualified in accordance with ASX listing rule 5.41, and has consented to the inclusion of this information in the form and context in which it appears.

## Reserves

Under the SPE PRMS 2018, “Reserves are those quantities of petroleum anticipated to be commercially recoverable by application of development projects to known accumulations from a given date forward under defined conditions”.

The Otway Basin totals comprise the arithmetically aggregated project fields (Casino-Henry-Netherby and Minerva) and exclude reserves used for field fuel.

The Cooper Basin totals comprise the arithmetically aggregated PEL 92 project fields and the arithmetic summation of the Worrior project reserves, and exclude reserves used for field fuel.

The Gippsland Basin total comprises Sole Field only, where the Contingent Resources assessment at 30 June 2017 as announced to the ASX on 29 August 2017 has been reclassified to Reserves.

## Contingent Resources

Under the SPE PRMS 2018, “Contingent Resources are “those quantities of petroleum estimated, as of a given date, to be potentially recoverable from known accumulations by application of development projects, but which are not currently considered to be commercially recoverable owing to one or more contingencies”.

The Contingent Resources assessment includes resources in the Gippsland, Otway and Cooper basins. The following material Contingent Resources assessment was released to the ASX:

- Manta Field on 16 July 2015

Cooper Energy is not aware of any new information or data about Manta Field that materially affects the information provided in that release, and all material assumptions and technical parameters underpinning the Manta estimates provided in the release continue to apply.

Basker Field Contingent Resources reported on 18 August 2014 and carried unchanged through FY17 have been reclassified as Discovered Unrecoverable in FY18 due to approval of field abandonment.

# Senior management

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## **Managing Director David Maxwell**

David Maxwell has over 30 years' experience as a senior executive with companies such as BG Group, Woodside and Santos. As Senior Vice President at QGC, a BG Group business, he led BG's entry into Australia, its alliance with and subsequent takeover of QGC. Roles at Woodside included director of gas and marketing and membership of Woodside's executive committee.

## **General Manager, Development Duncan Clegg**

Duncan Clegg has over 35 years' experience in upstream and midstream oil and gas development, including management positions at Shell and Woodside, leading oil and gas developments including FPSO, subsea and fixed platforms developments. At Woodside Duncan held several senior executive positions including Director of the Australian Business Unit, Director of the African Business Unit and CEO of the North West Shelf Venture.

## **Company Secretary & Legal Counsel Alison Evans**

Alison Evans is an experienced company secretary and corporate legal counsel with extensive knowledge of corporate and commercial law in the resources and energy sectors. Alison has held Company Secretary and Legal Counsel roles at a number of minerals and energy companies including Centrex Metals, GTL Energy and AGL. Ms Evans' public company experience is supported by work at leading corporate law firms.

## **General Manager, Commercial & Business Development Eddy Glavas**

Eddy Glavas has more than 20 years' experience in business development, finance, commercial, portfolio management and strategy, including 16 years in oil & gas. Prior to joining Cooper Energy, he was employed by Santos as Manager Corporate Development with responsibility for managing multi-disciplinary teams tasked with mergers, acquisitions, partnerships and divestitures.

## **General Manager, Projects Michael Jacobsen**

Michael Jacobsen has over 25 years' experience in upstream oil and gas specialising in major capital works projects and field developments. He has worked more than 10 years with engineering and construction contractors and then progressed to managing multi discipline teams on major capital projects for E&P companies.

## **General Manager, Operations Iain MacDougall**

Iain MacDougall has more than 28 years experience in the upstream petroleum exploration and production sector. His experience includes senior management positions with independent operators and wide ranging international experience with Schlumberger. In Australia, Iain's previous roles include Production and Engineering Manager and then acting CEO at Stuart Petroleum prior to the takeover by Senex Energy.

## **Chief Financial Officer Virginia Suttell**

Virginia Suttell is a chartered accountant with more than 20 years' experience, including 16 years in publicly listed entities, principally in group finance and secretarial roles in the resources and media sectors. This has included the role of Chief Financial Officer and Company Secretary for Monax Mining Limited and Marmota Energy Limited. Other previous appointments include Group Financial Controller at Austereo Group Limited.

## **General Manager, Exploration & Subsurface Andrew Thomas**

Andrew Thomas is a successful geoscientist with over 28 years' experience in oil and gas exploration and development in companies including Geoscience Australia, Santos, Gulf Canada and Newfield Exploration. At Newfield he was SE Asia New Ventures Manager and Exploration Manager for offshore Sarawak.



**Glenn Toogood**  
Regional Manager, Beach Energy

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BEACH ENERGY LIMITED

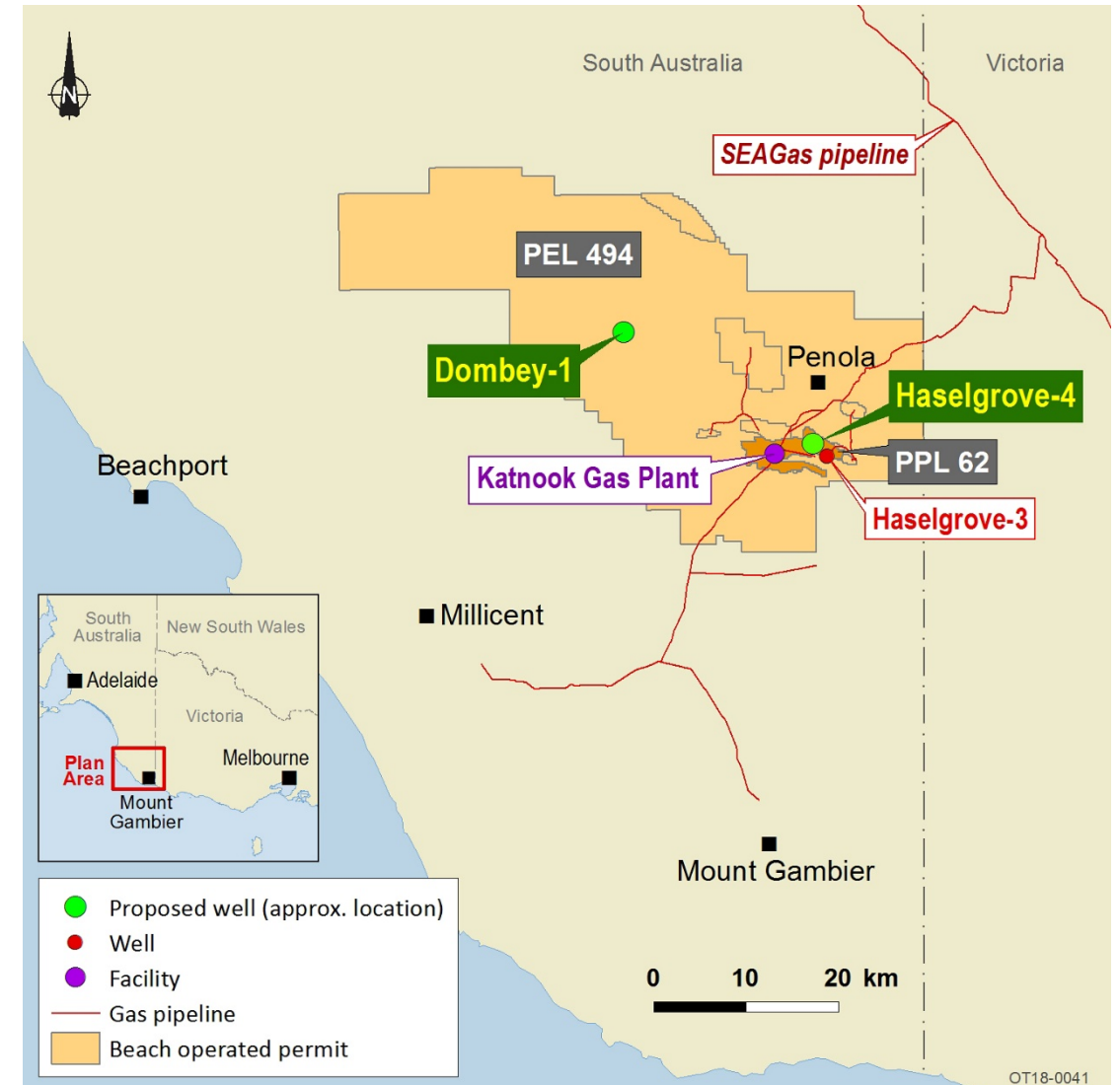
## SA OTWAY BASIN – REINTEGRATION INTO THE REGION





# Developing the SA Otway Basin

- Re-intergrating the supply of local natural gas into local markets





# Rebuilding industry presence in light of protracted opposition

Demonstrating long history of co-existence





# Special interest groups opposing activities

Overuse of the 'community' term when referencing opposition

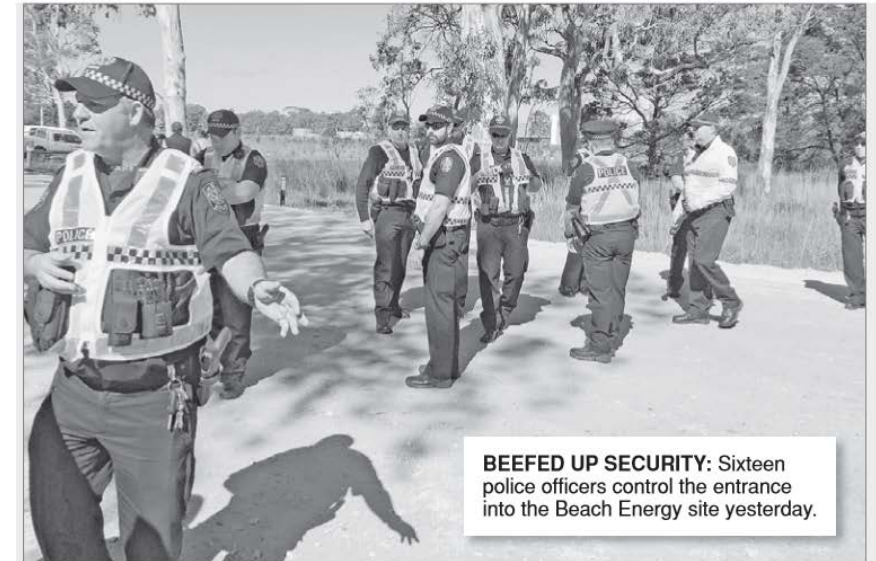


## Gas mining protests escalate outside of Penola drill site

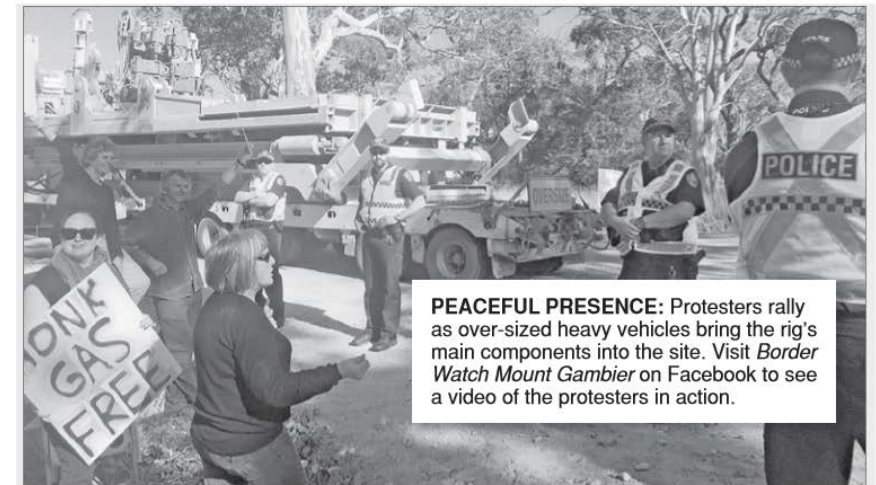
Campaigners threatened with arrest  
after swarming trucks in attempt to halt rig equipment delivery



**PROTESTING:** Limestone Coast Protection Alliance members and supporters prevent trucks carrying parts of the gas drilling rig to the Penola Haselgrove-3 site.



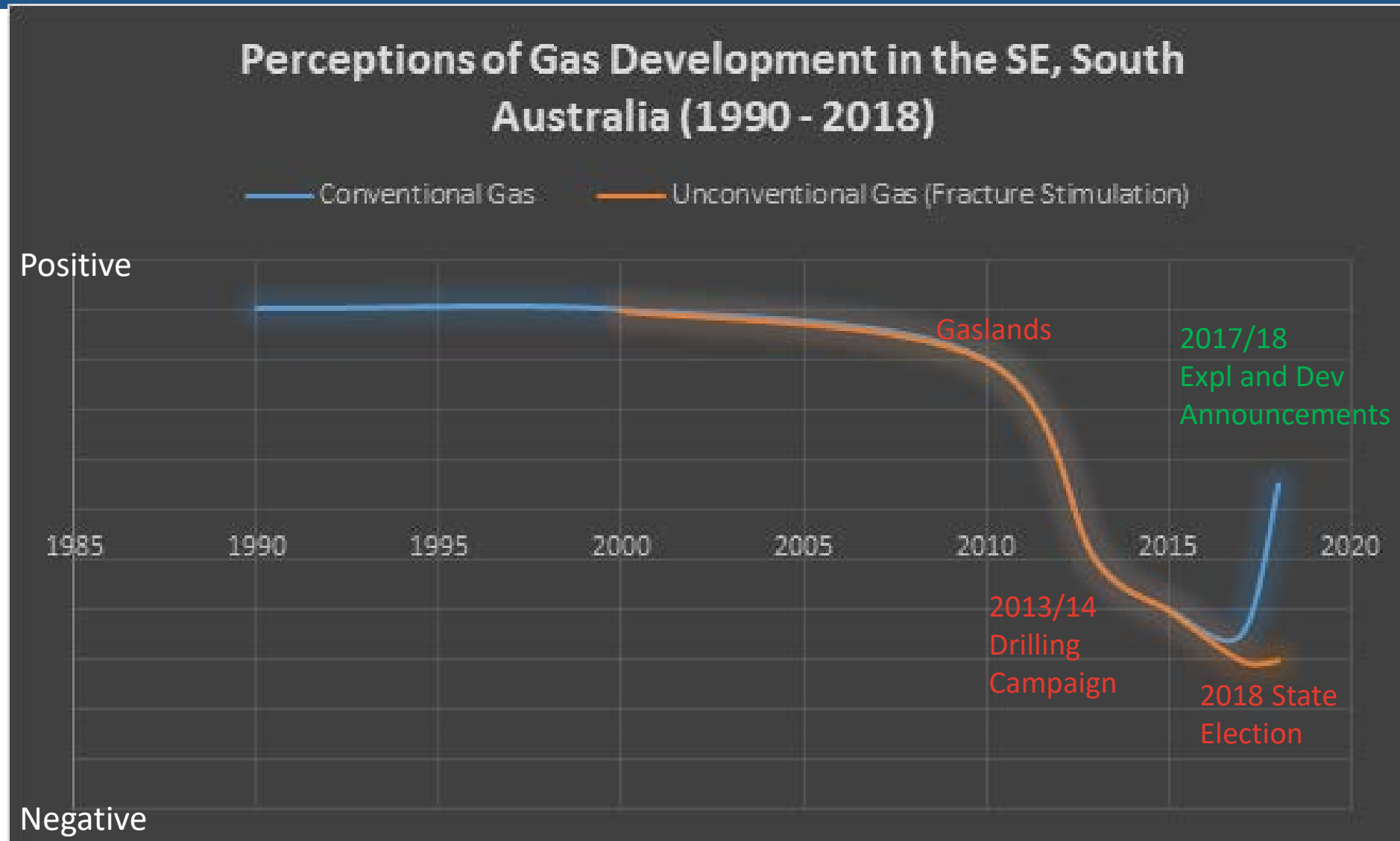
**BEEFED UP SECURITY:** Sixteen police officers control the entrance into the Beach Energy site yesterday.



**PEACEFUL PRESENCE:** Protesters rally as over-sized heavy vehicles bring the rig's main components into the site. Visit [Border Watch Mount Gambier](#) on Facebook to see a video of the protesters in action.

# Understanding the drivers of perception

*The role negative external campaigns have played to erode public support*





# Rebalance negative local media

Changing the narrative of gas development and benefits to the region

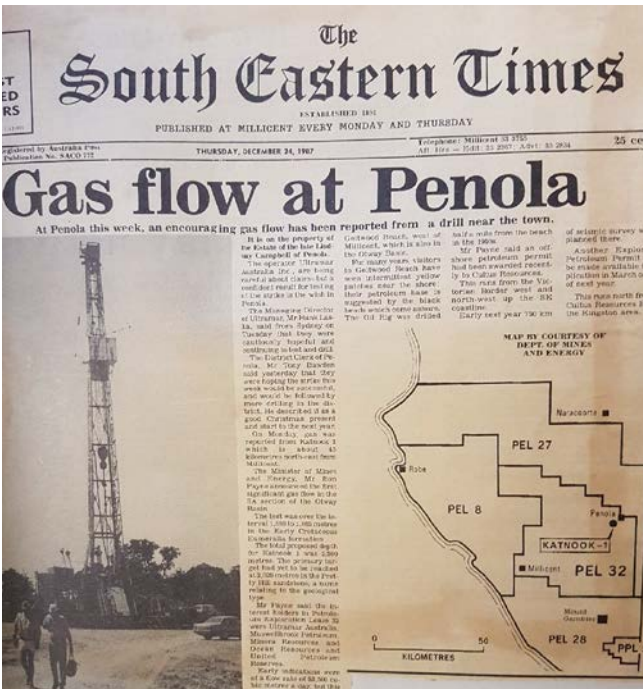


1980-2014

2016

2017

2018



## Fracking 'locked out'

Liberals reveal gas mining moratorium election pledge

## Gas search alarm

State Government clears way for onshore exploration in South East



FRACK OFF: Campaigners against gas mining gather at the Blue Lake yesterday to send a clear message to the State Government over its aggressive gas mining agenda. Picture: SANDRA MORELLO

## Gas drilling dismay

Coonawarra vigneron slams State Government approval for exploration

## Gasfield protest warning

Campaigners step up effort to prevent South East fracking

## Gas 'not opposed'

Wattle Range mayor open to conventional search but remains firm against fracking

## Drill site inspected



## Gas search gains support

Development body hopes resource benefits will flow to region

## Drillers break ground



DRILLING UNDER WAY: Beach Energy South East manager Glenn Toogood stands in front of the towering drill rig, which is now fully operational at the Haselgrove-3 well site south of Penola. The rig has the capacity to lift a staggering 350 tonnes, which is the equivalent of a Boeing 747. Picture: SANDRA MORELLO

## Work ramps up at Penola gas exploration site



Continued page 6

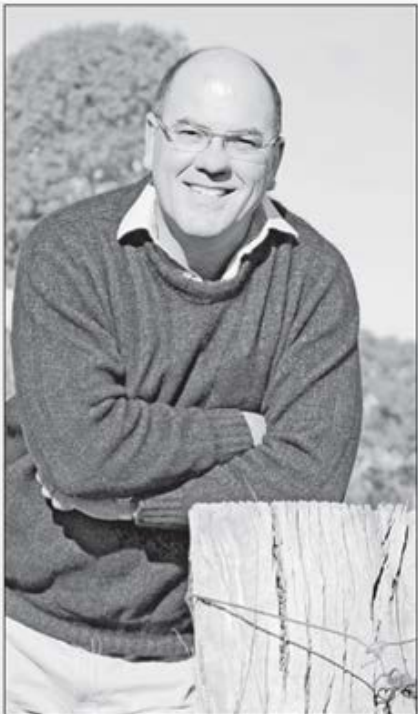
# Identifying major influencers

Building the narrative of gas development and benefits to the region



## Gas 'not opposed'

Wattle Range mayor open to conventional search but remains firm against fracking



**WE NEED GAS:** Wattle Range Mayor Peter Gandolfi has stated his council is not opposed to increased gas exploration and mining, but remains firm against fracture stimulation, otherwise known as fracking.



ABC  
South East



Wattle Range  
COUNCIL



The Border Watch



Kimberly-Clark

THE PENNANT  
PENOLA

## Gas search gains support

Development body hopes resource benefits will flow to region

### Gas search good news for Millicent mill

KIMBERLY-CLARK Australia Millicent Mill manager Scott Whicker has welcomed Beach Energy's announcement it will step up its gas activities near Penola.

"The exploration for additional conventional gas resources in the South East region is also promising in its potential to provide long-term security of local supply," Mr Whicker said.

"Energy is a significant cost for our operations despite the high efficiencies at which we operate all of our electrical generation and thermal systems.

"We are certainly hoping locally-sourced natural gas will provide a significant reduction in our energy costs.

"The State Government's Plan for Accelerating Exploration (PACE) grant program which helped fund the exploration has been critical in making our goal of lower energy costs a potential reality."

The Millicent Mill had used gas from Katnook for over a decade until 2005, when its supplies became exhausted.

The plant has since used gas from the SEAGAS pipeline into Victoria.

While Beach Energy previously announced its looming Dombey-1 conventional drilling well 20km north-west of Penola, it will now also move ahead with the Haselgrove-4 project.

Haselgrove-4 will be located 7km south of Penola in close proximity to the existing network of Haselgrove wells.

Beach Energy will start community consultation early next month with sessions to be held in Penola and Millicent on August 1 and 2.

Meanwhile, the region's peak environmental action group has vowed to continue to protest against the roll-out of new conventional gas exploration projects in the region.

Limestone Coast Protection Alliance committee member Cate Cooper vowed the group would again stage protests against the drilling programs.

She warned conventional drilling remained a risk to the environment given exploration techniques drilled through the region's aquifers.

Ms Cooper said the alliance received significant community support for its protest campaign during the Haselgrove-3 drilling project.



**MINING INSIGHT:**  
Beach Energy senior drilling engineer Melanie Mackie speaks to Regional Development Australia Limestone Coast board members Lew Parsons, Alan Richardson, Scott Whicker, Judy Nagy and Erika Vickery at the Penola drilling site.



Regional  
Development  
Australia  
LIMESTONE COAST



# Re-building Beach Energy and industry brand

Consolidating presence in the region through re-investing in local community groups



Mens  
**Shed**  
PENOLA



**Mount  
Gambier  
Pony Club**



# End - Thankyou



## Beach Energy Limited

PO Box 193

Penola SA 5277

Website: [www.beachenergy.com.au](http://www.beachenergy.com.au)

## Glenn Toogood

Regional Manager – South East

[glenn.toogood@beachenergy.com.au](mailto:glenn.toogood@beachenergy.com.au)

Mob: 0437 027 672





**Glenn Toogood**  
Regional Manager, Beach Energy

**Q & A**

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# Speakers

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SACOME



**David Maxwell**  
Managing Director,  
Cooper Energy



**Glenn Toogood**  
Regional Manager,  
Beach Energy



**Xavier Moore**  
Commercial Advisor,  
Equinor

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