



Sole-4 subsea tree deployment

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**P50** as it relates to costs is best estimate; **P90** as it relates to costs is high estimate

# Recent milestones and events

## Building a growing gas supply business around Otway and Gippsland hubs

### Otway: production uplift and strategic gas plant acquisition

- Casino Henry joint venture commenced gas sales to Origin Energy under new contracts at market prices from 1 March
- Casino-5 workover completed; Casino Henry production ~38-39 TJ/day vs 26-27 TJ/day
- Agreement with BHP to acquire Minerva Gas Plant

### Sole Gas Project: proceeding within schedule and budget

- Orbost Gas Processing Plant siteworks underway, Downer Group performing upgrade for APA Group
- Welding of subsea pipeline advancing at Cribb Point
- Production wells: Sole-3 drilled to TD, completed and preparing for flow; Sole-4 top hole drilled, well head installed
- Total project 48% complete end-May 2018

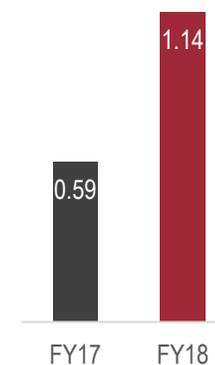
### Other Gippsland: portfolio expanded with new well located acreage

- Awarded VIC/P72 exploration permit, adjoining existing acreage and infrastructure

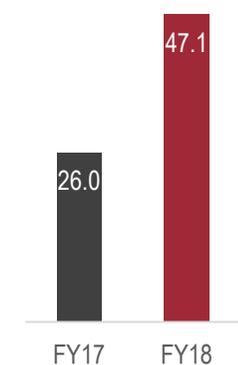
### Corporate: year to date results showing uplift from gas strategy

- March year to date revenue up 81% to \$47.1 million from \$26.0 million
- March year to date production up 93% to 1.1 MMboe from 0.6 MMboe
- FY18 production guidance increased to 1.4 to 1.5 MMboe

YTD Production  
MMboe, 3 quarters to March



YTD Sales revenue  
\$ million, 3 quarters to March



# Cooper Energy: focussed on south east Australia

305 PJ 2P + 158 PJ 2C conventional gas & exploration acreage close to markets & infrastructure

## Cooper Basin: oil production

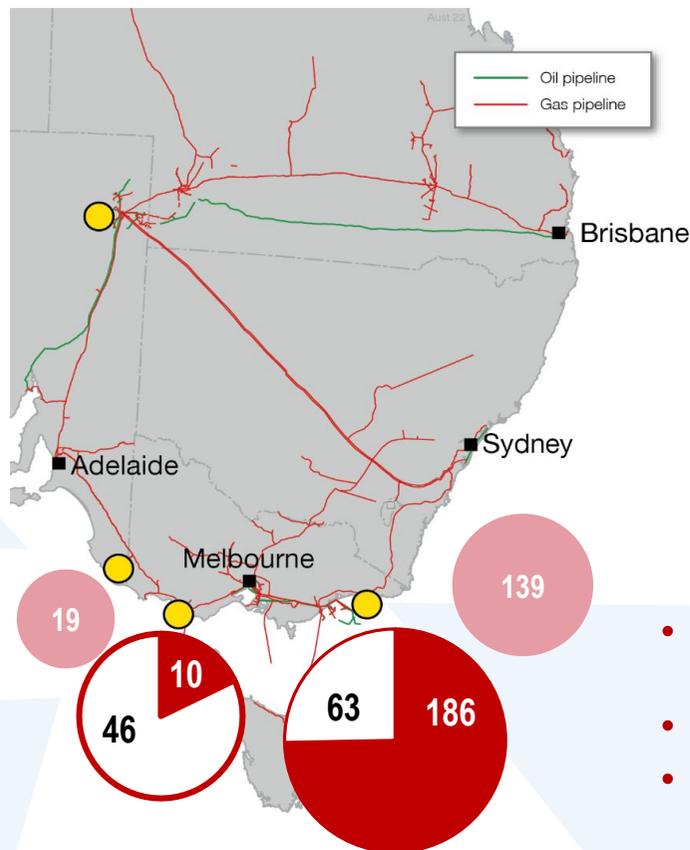
- historical production source
- production of ~250 kbbl oil pa
- low cost operations

## Otway Basin onshore: gas exploration

- gas exploration acreage
- extends over Sawpit sandstone fairway and surrounds Haselgrove discovery

## Otway Basin offshore: gas production and exploration

- 2018 production fully contracted to Origin Energy
- 46 PJ uncontracted to supply from 2019
- Minerva Gas Plant
- Prime gas exploration acreage with favourable economics



EnergyAustralia



plus other customers to come

## Gippsland Basin: gas development & exploration

- Sole gas project 249 PJ 2P<sup>1</sup> gas being developed for mid-2019 start up
- 63 PJ 2P uncontracted to be marketed in 2018
- Manta 2C gas and liquid resource ready for drilling and development decision FY20
- VIC/P72 exploration permit

● 2P Reserves contracted      ○ 2P Reserves uncontracted      ● 2C Contingent resources uncontracted



<sup>1</sup> Reserves and Contingent Resources at 25 August 2017 were announced to the ASX on 29 August 2017. The resources information displayed should be read in conjunction with the information provided on the calculation of Reserves and Contingent Resources provided in the appendices to this document. The announcement included recognition of proved and probable reserves for the Sole gas field, the contingent resource for which was previously announced 27 February 2017. The contingent resource estimate for the Manta resource was announced to the ASX on 16 July 2015.

# Current position and outlook

Cooper Energy is in the midst of a 6 year growth profile sourced from existing assets and its leverage to the south-east Australian gas market

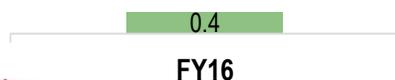
2012 – 2016

## Vision execution

Building a portfolio style gas business creating shareholder value as a cost competitive gas supplier to opportunities foreseen emerging in south-east Australia

- ✓ competitive position on cost curve
- ✓ development decision within 5 years foreseeable
- ✓ value-adding to asset or Cooper Energy

FY16 production and forecast MMboe

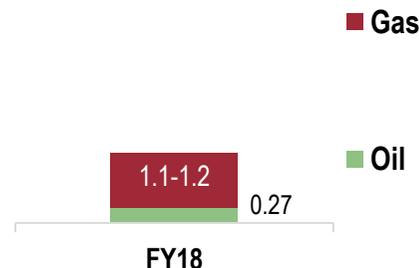


**Now:**

## Suppling & developing

- Production 1.4 - 1.5 MMboe (incl 6 PJ pa gas)
- Gas contracts with Origin, AGL, EnergyAustralia, Alinta, O-I Australia
- Developing Sole Gas Project
- Operator in Otway & Gippsland
- 223 PJ uncontracted gas
- Gas exploration acreage & resources

FY18 production forecast MMboe

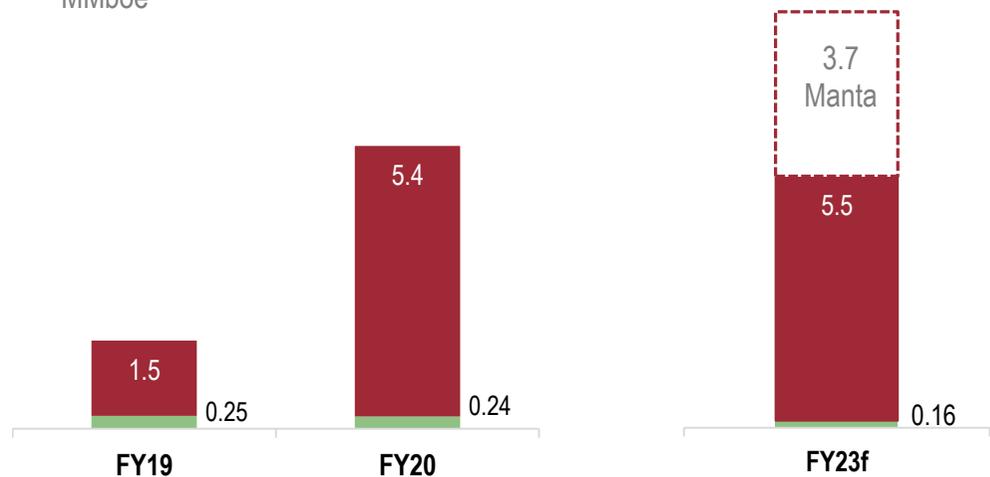


12 – 24 months:

## Delivery & growth

- Production ~ 6MMboe (over 30 PJ pa from Casino Henry, Otway Basin & Sole, Gippsland Basin)
- Otway Basin development
- Evaluating Manta gas project
- Gas exploration offshore and onshore Otway Basin
- Gippsland Basin exploration

FY19 & FY20 forecast\* production MMboe



Longer term:

## Blue sky & potential

- Production 9 MMboe
- Manta gas project
- New offshore Otway gas discovery & development
- New onshore Otway gas discovery & development
- Gippsland exploration

FY23 forecast production \*\* MMboe

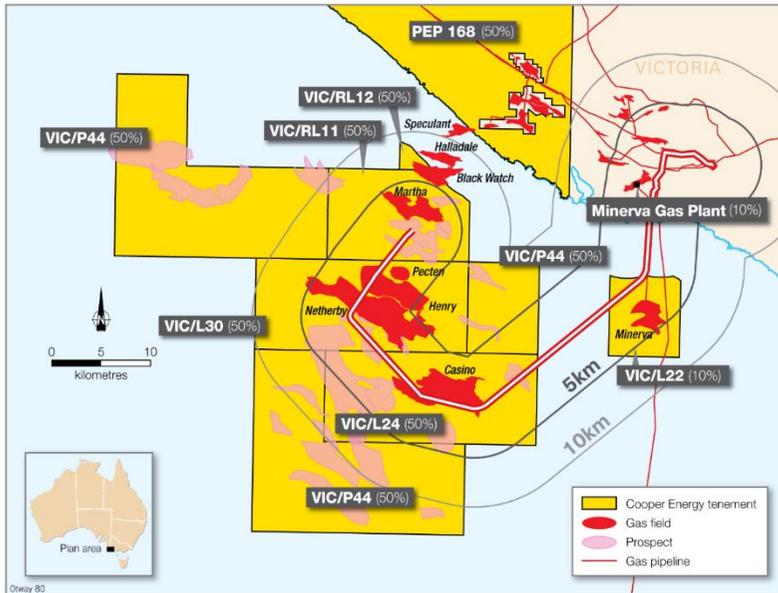


\* Indicative and includes Henry development well,

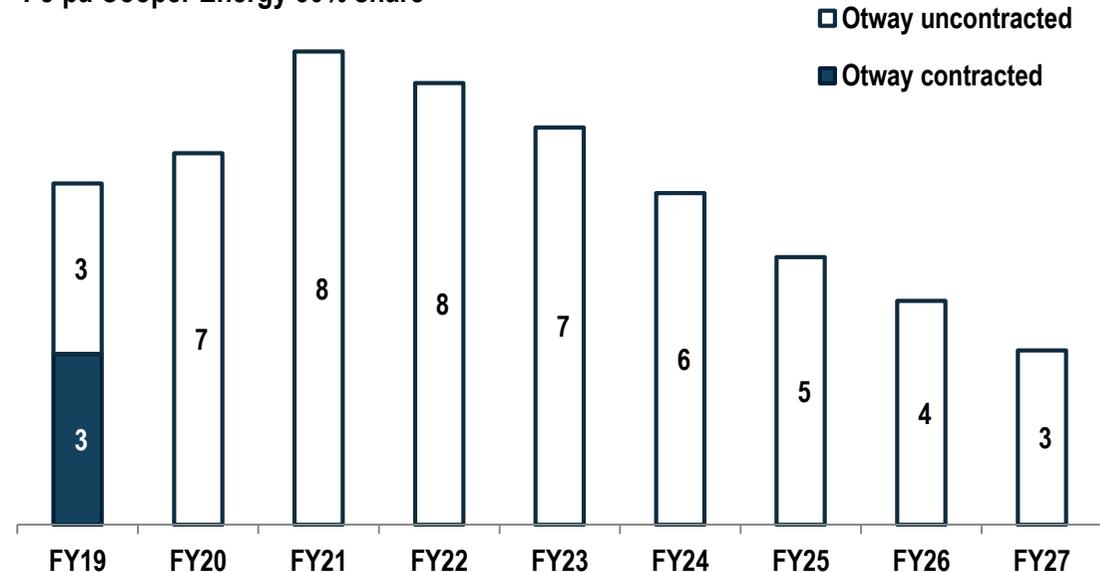
\*\* Indicative; includes Henry development well and Manta commencement Q2 FY23

# Offshore Otway Basin

## Gas production, development, marketing and exploration



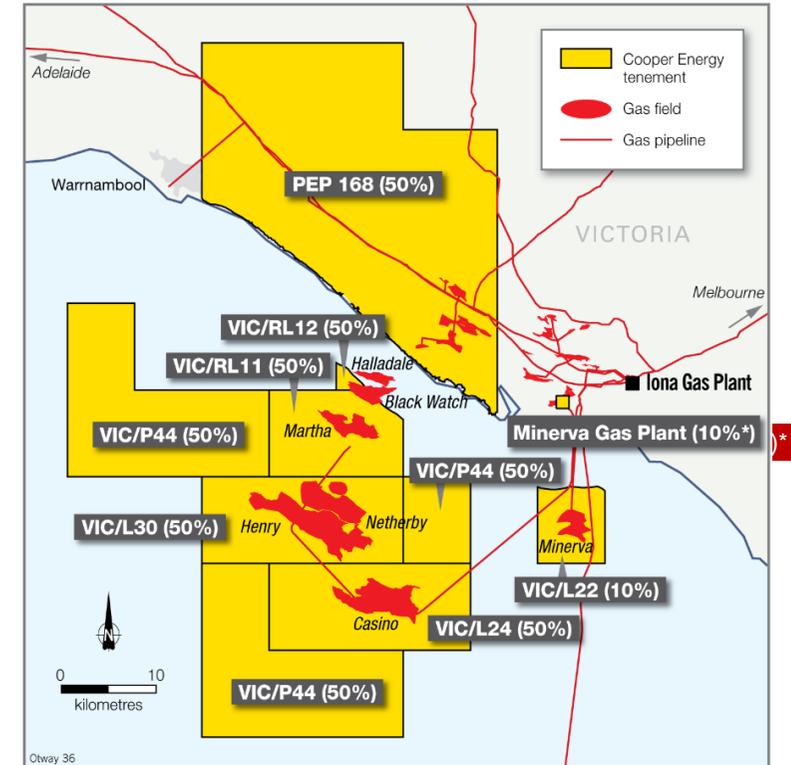
Indicative Casino Henry gas production\* PJ pa Cooper Energy 50% share



- **Current production and sales:** contracted to Origin Energy to December 2018 at current market price, processing at Iona
- **Production increasing through development:** Casino-5 uplift from workover; Henry development well proposed from late CY19
- **Marketing uncontracted gas:** uncontracted gas supply from January 2019 to be marketed in H2 CY18
- **Exploration:** highly prospective for gas, high success rate, seismic reprocessed to identify targets to propose for drilling in 2019/20; prospects identified with potential >200 PJ
- **Existing infrastructure:** supportive of development, pipelines and access to gas processing plant

# Minerva Gas Plant acquisition by Casino Henry Joint Venture

Ideally located, reduced cost and upside in production, developed reserves & 3<sup>rd</sup> party access

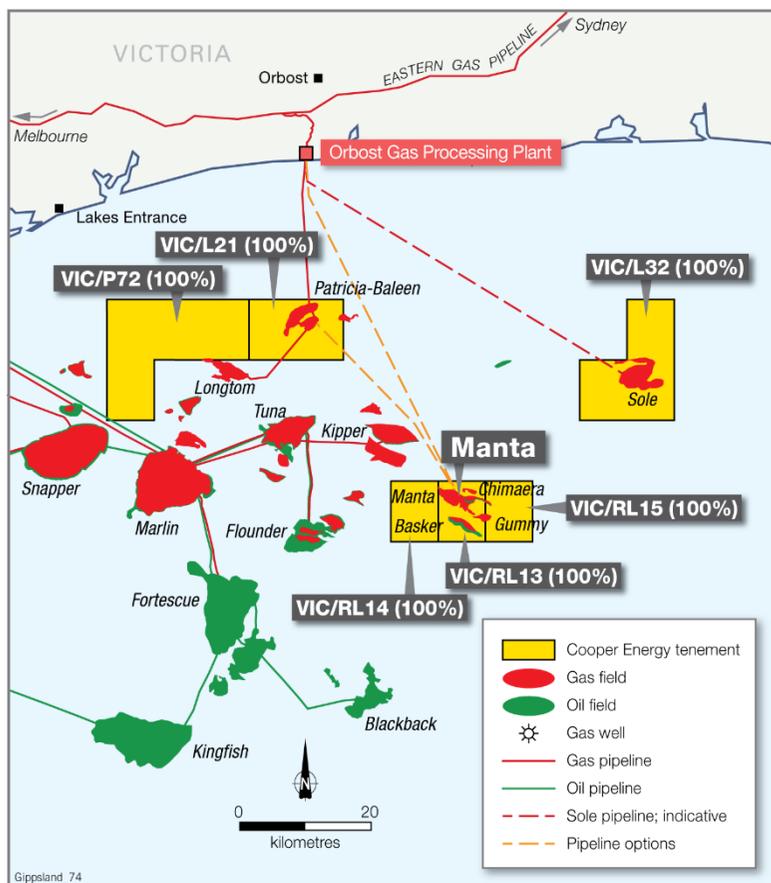


\* Equity to increase to 50% on completion of acquisition by Casino Henry Joint Venture as announced 1 May 2018

- BHP built and operated gas plant
- 150 TJ/day capacity, plus liquids handling capability
- Currently processing gas from Minerva gas field of approx 33 TJ/day (March quarter); Minerva gas field approaching end of life
- Minerva Cutback Project: engineering design advanced for connection of Casino Henry to Minerva Gas Plant
- Offers reduced processing costs; productivity & developed reserves increase on lower inlet pressure and processing for future developments

# Gippsland Basin

## Portfolio of assets and uncontracted gas ideally located for supply to south-east Australia



### Development: Sole Gas Project (100% equity and Operator)

- 249 PJ 2P<sup>1</sup> gas field being developed to supply gas from mid-2019
- FID 29 August 2017, project proceeding to schedule
- To produce 24 PJ pa over 11 year life

### Pre-development: Manta (100% and Operator)

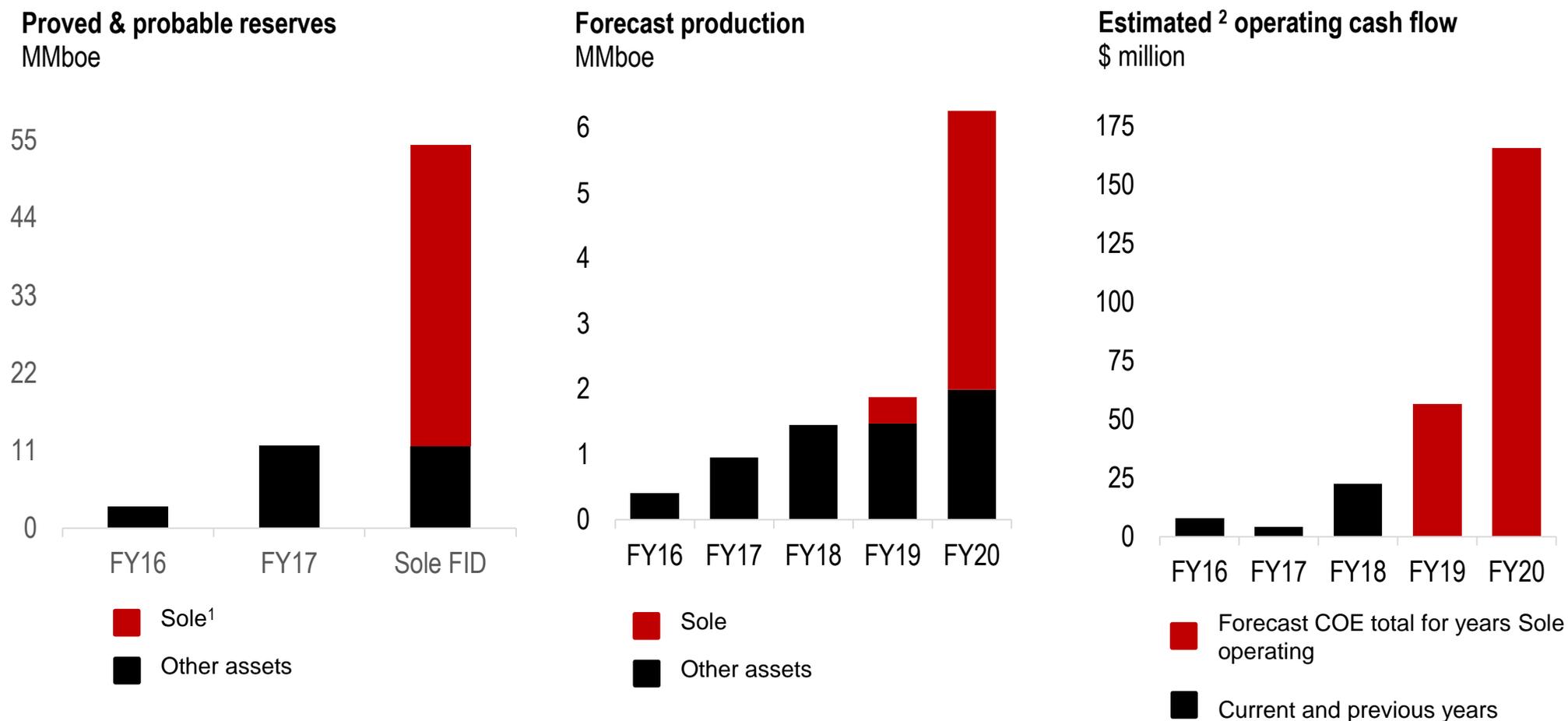
- 106 PJ 2C<sup>1</sup> gas plus 3.2 MMbbl liquids,
- Second stage development to Sole, processing at Orbost Gas Processing Plant
- Economics enhanced by cost discovery from Sole FEED and gas price and demand expectations
- Working towards appraisal well in FY20 H1

### Exploration: VIC /P72 100% equity and Operator

- Awarded May 2018 for 6 year term
- Surrounded by producing gas fields, adjoins VIC/L21 which holds Patricia Baleen project and infrastructure including connection to Orbost Gas Plant
- High quality 3D seismic data
- Work program: seismic reprocessing and 1 exploration well

# Impact of Sole on Cooper Energy

## Transformational impact on reserves and expected production and cash flows



<sup>1</sup> as announced to ASX 27 August 2017, refer appendices for further information.

<sup>2</sup> Average of analyst estimates for years FY18-FY20. Averages of analyst estimates displayed are not Cooper Energy estimates and accordingly should be regarded as indicative and not as company estimates.

# Sole gas project

48% complete at end May 2018

**ORBOST GAS PROCESSING FACILITY**  
**Works By - APA Group**  
 Plant Upgrade & Operations

- ✓ Piling completed
- ✓ Plant construction contract awarded to Downer.

Site works advancing Orbest Gas Plant

Subsea trees; now installed at Sole-3 and Sole-4

Ocean Monarch drill rig  
 Sole Drill Centre Water Depth – 125m  
 Two Horizontal “Christmas” Tree  
 Drill Depth – 2 x 1200m  
 Drilling Length – 2,150m

**HDD Umbilical Crossing - Complete**  
 Casing Size 10”  
 Casing Length – 1.1 km

**HDD Gas Pipeline Crossing - Complete**  
 Hole Drill Size – 24”  
 12” Pipeline Length – 1.4 km

64 km Umbilical Lay & Buried

65 km - 12” Gas Pipeline Reel Laid

1 x Pipeline End Manifold

Sole 3 & 4 – Tree & Wellhead System

1 x Umbilical Subsea Termination Unit with jumpers to wells

HDD completed. Pipe inlet at Orbest plant

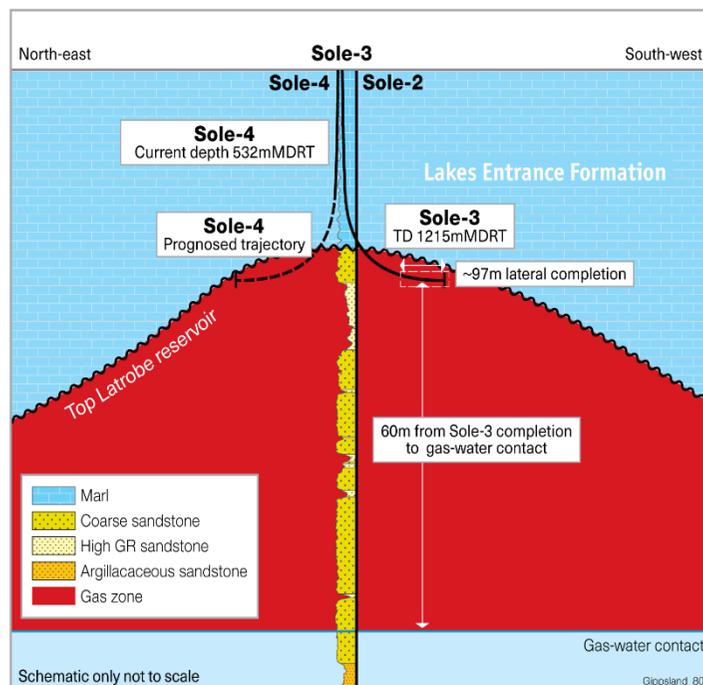
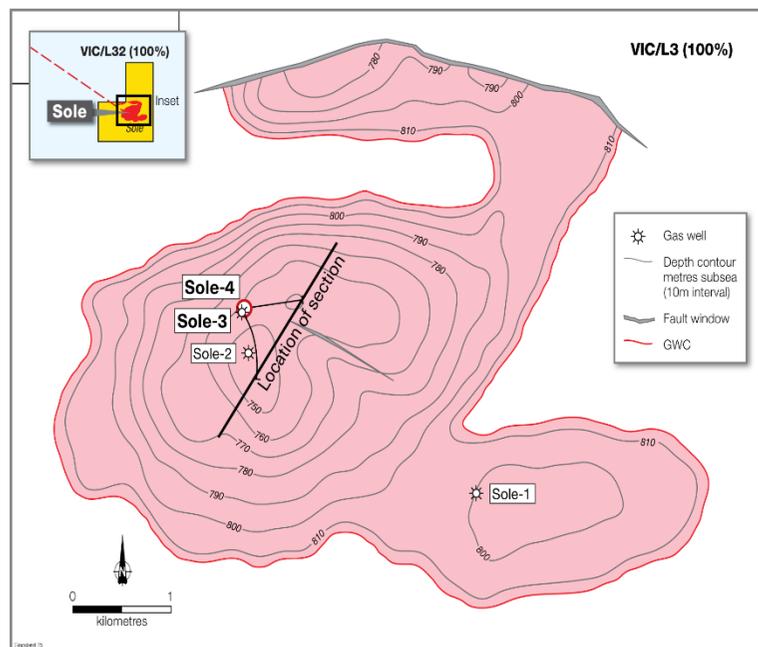
Umbilical spooling, UK. Spooling complete, end termination work commenced

Subsea Pipeline welding, Cribb Pt Victoria

HDD – Horizontal Directionally Drilled

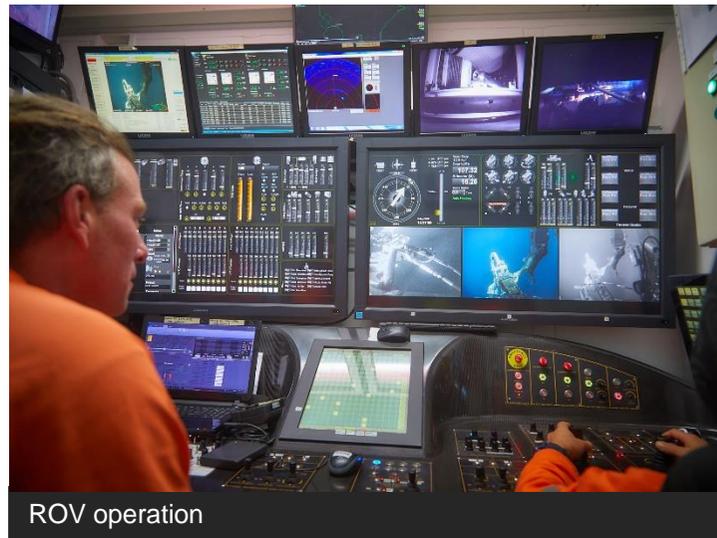
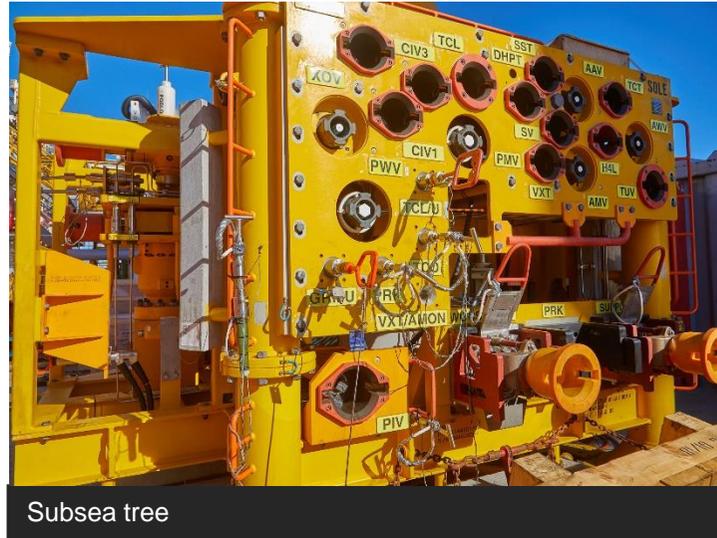
# Sole-3 and Sole-4 production wells

## Currently drilling, completion meets critical milestone for Sole Gas Project



- 2 wells drilled ~1,200 m to total vertical depth ~ 780m, including near-horizontal section of ~100 m to optimise recovery
- Sole-3 spudded 1 May, drilled to TD, reservoir section completed, preparations about to commence for clean up and flow back:
  - reservoir confirmed 100% Latrobe Group sandstone and intersected same depth as Sole-2;
  - gas indications recorded during drilling consistent with pre-drill expectations and Sole-2
- Sole-4 top hole drilled to 532 mMDRT; 13 3/8" casing installed and cemented. Wellhead in place and tested

# Ocean Monarch operations at Sole

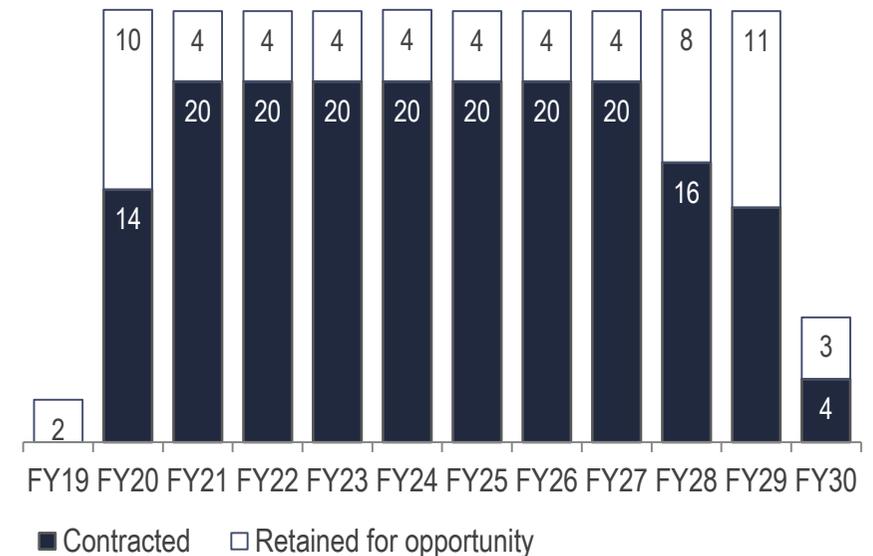


# Sole gas marketing

Long term contracts for 75% of reserves underpin project cash flows; marketing of balance to commence on completion of production wells

- Contracted 20 PJ pa<sup>1</sup> (55 TJ/day) of Sole output with blue chip customers to secure financing:
  - AGL: 12 PJ pa
  - EnergyAustralia: 5 PJ pa
  - Alinta: 2 PJ pa
  - O-I: 1 PJ pa
- Contract commencement staggered from Sept 19 gives float from scheduled start up in June 19
- Marketing of uncontracted gas to commence on completion of production wells, portfolio approach of varying durations and buyers to optimise returns and cash flows
- Options to accelerate production to be assessed

Sole gas production: contracted and uncontracted PJ pa



# Otway Basin, Penola Trough onshore

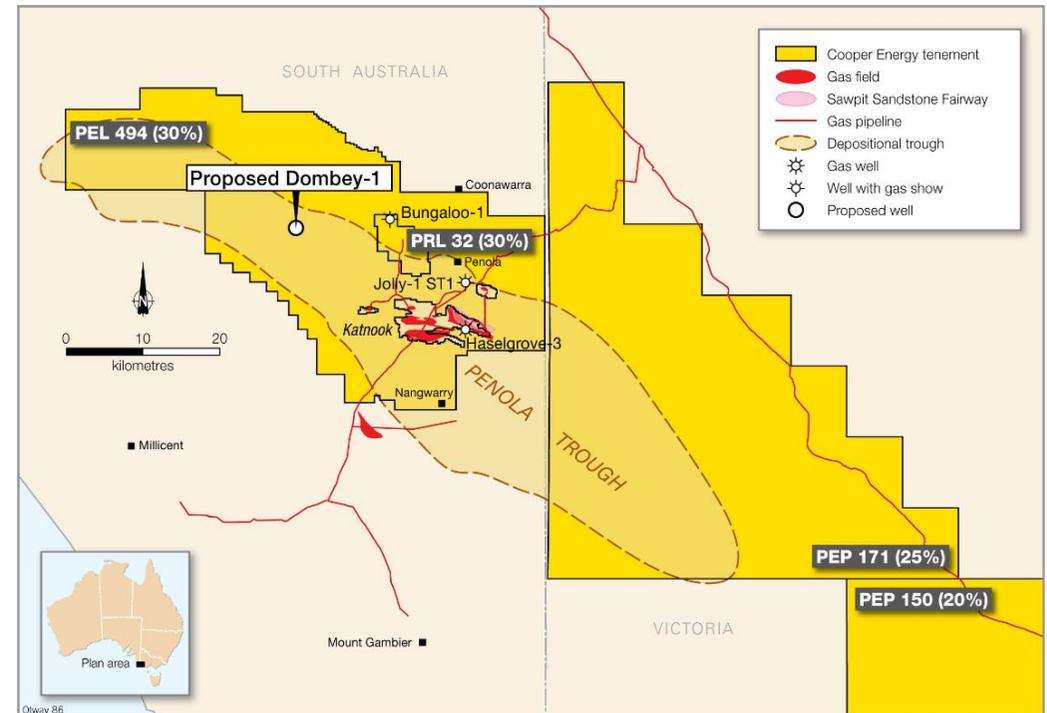
## Haselgrove results confirm prospectivity for deep conventional gas

### South Australia

- Haselgrove-3 discovery in adjoining PPL 62 confirmed conventional gas prospectivity of the Sawpit sandstone at depths below previous producing reservoirs
- SA government grant to PEL 494 JV (Cooper Energy 30% interest) of \$6.9 million awarded to drill Dombey-1 gas exploration well. Expected FY19.

### Victoria

- Prospectivity of Penola Trough acreage upgraded by Haselgrove-3 discovery
- Cooper Energy to assume 100% of PEP 171 and 50% of PEP 150 on government ratification
- Exploration permits in Victoria subject of application to suspend and extend due to state government moratorium on onshore gas production

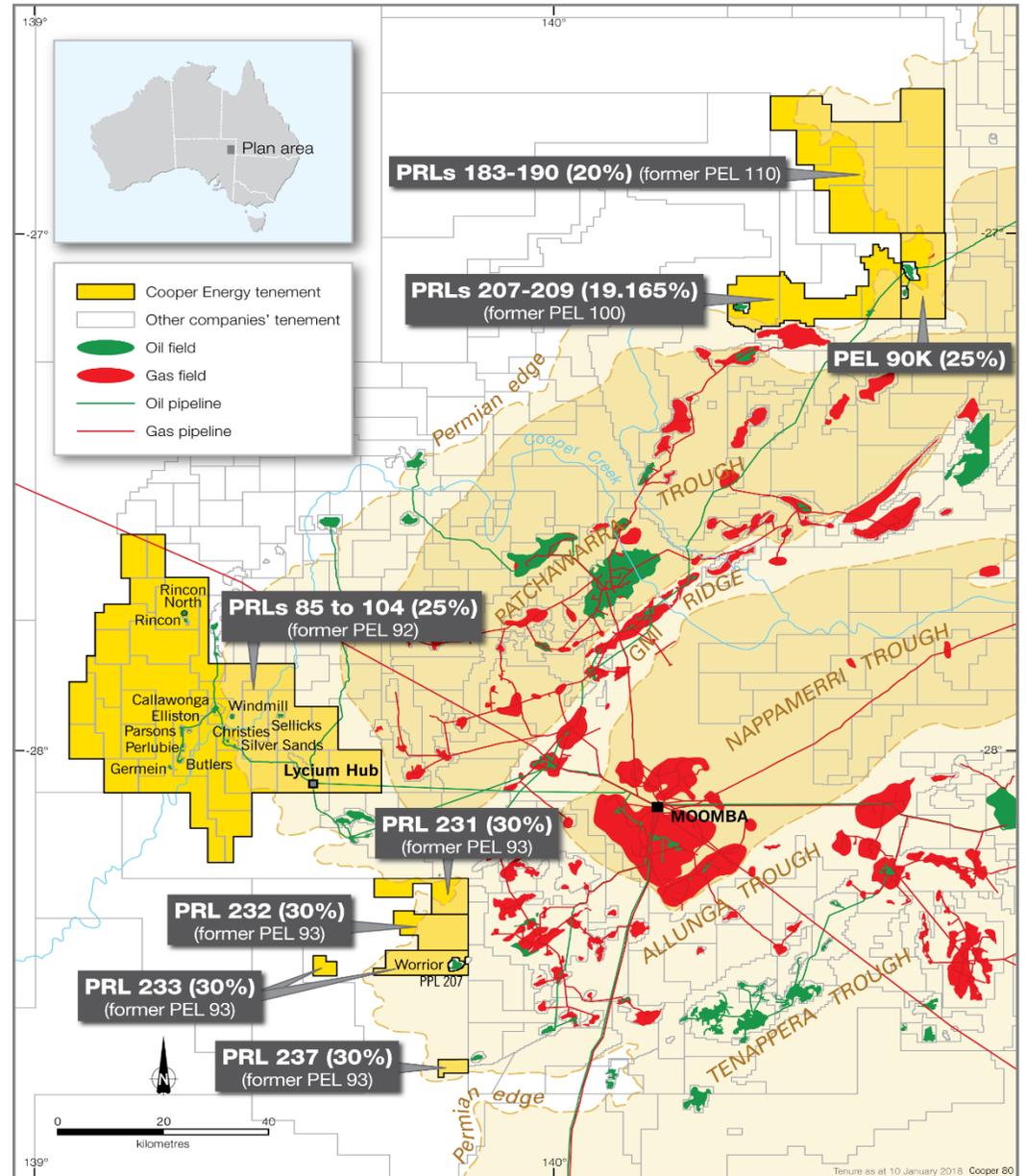
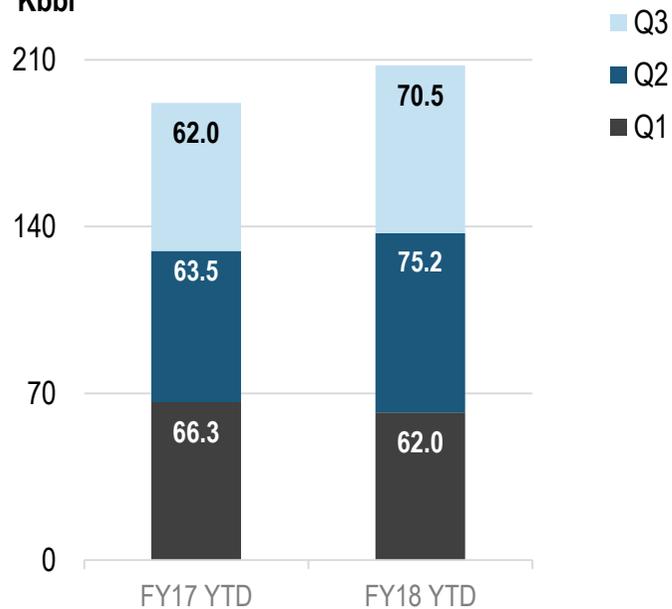


# Cooper Basin

## Low cost, high margin oil production

- YTD production of 208 kbbl vs 192 kbbl
  - connection of Callawonga wells drilled FY17
- Average realised price: A\$79.19/bbl for FY18 YTD
- Operating costs of A\$32.34/bbl for FY18 YTD

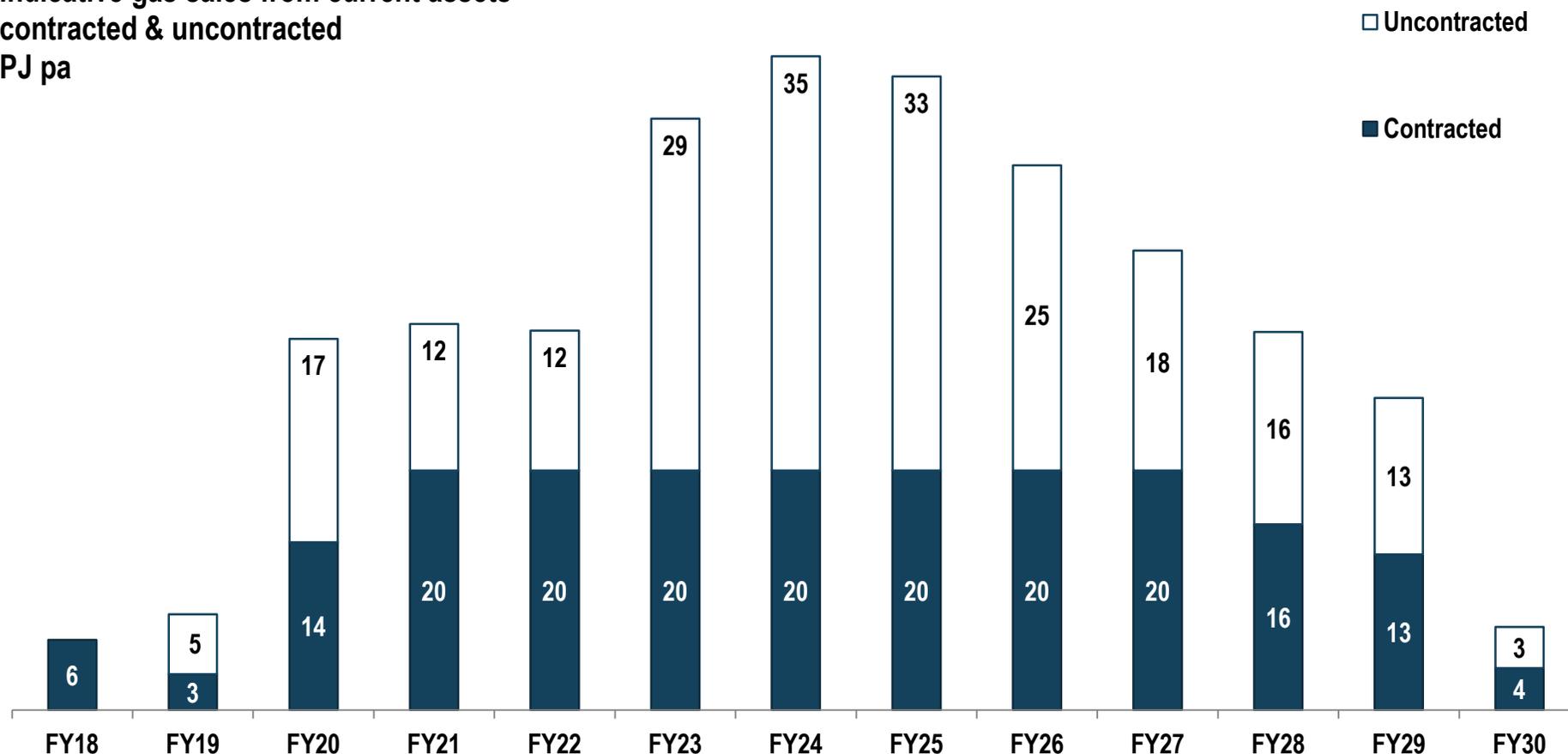
Cooper Energy Cooper Basin oil production Kbbl



# Cooper Energy contracted and uncontracted gas profile\*

## Indicative production profile from Casino Henry, Sole and Manta

Indicative gas sales from current assets  
contracted & uncontracted  
PJ pa



Note

1. Assumes:

- Sole proceeds to schedule for March quarter 2019 first Sole gas to plant
- Manta 3 appraisal well drilled H1 FY20
- Casino Henry development well drilled H1 FY20
- No new exploration success

2. All numbers rounded; detailed on slide 23

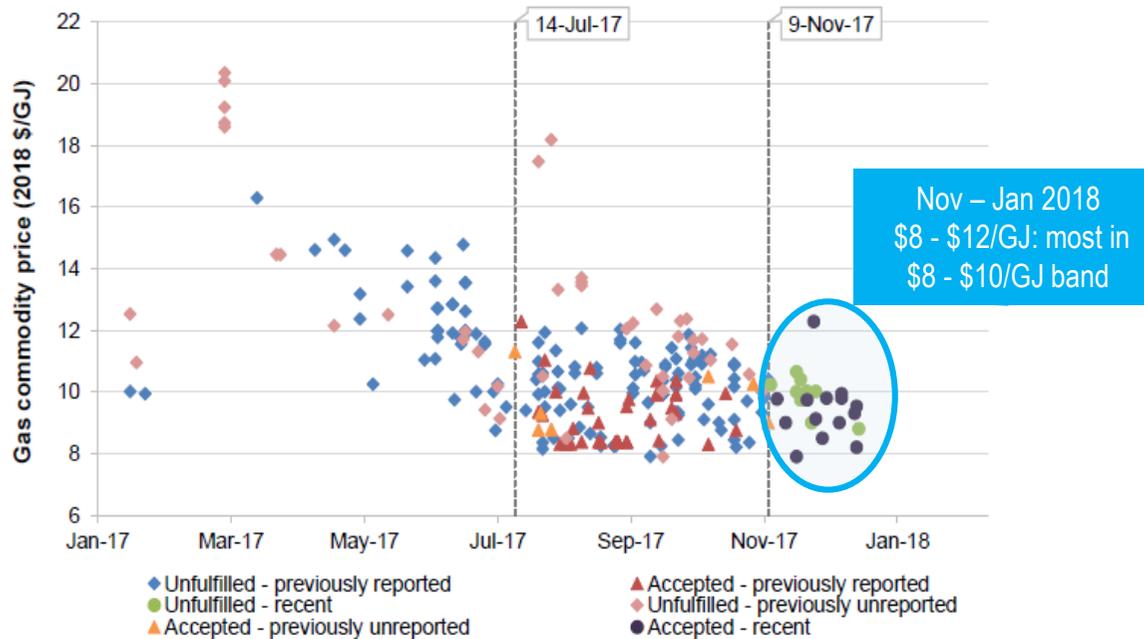
\* Comprises 56 PJ 2P Casino Henry gas and 249 PJ 2P Sole gas and 106 PJ from Manta. Cooper Energy announced Manta Contingent and Prospective Resource 16 July 2015. Cooper Energy is not aware of any new information or data that materially affects the information provided in those releases and all material assumptions and technical parameters underpinning the assessment provided in the announcement continues to apply.

# Gas price trend and expectations for south-east Australia

## ACCC finds price consolidation around \$8 - \$10/GJ and expects this to continue

### ACCC analysis of gas prices offered & accepted

Unfulfilled offers between 1 January 2017 and 14 July 2017 and all subsequent offers up to January 2018 across the east coast gas market



Source: ACCC Gas Inquiry 2017 – 2020 Interim Report April 2017

Note: Offers up to 14 July are for annual quantities of at least 1 PJ; offers after this are for annual quantities of at least 0.5 PJ.

### Expected Southern States gas prices:

ACCC expected average wholesale gas commodity prices (commodity only excludes transport)

	2018 \$/GJ	2019 \$/GJ
Producers (Vic & SA)	9.13	9.13
Retailer/aggregator	10.16	Insufficient data

Source: ACCC Gas Inquiry 2017 – 2020 Interim Report April 2018  
Based on contract information provided to ACCC

# Portfolio style business built around Gippsland and Otway hubs

Plans escalating with gas contracting and capex around 2 hubs best placed for supply to south-east Australia

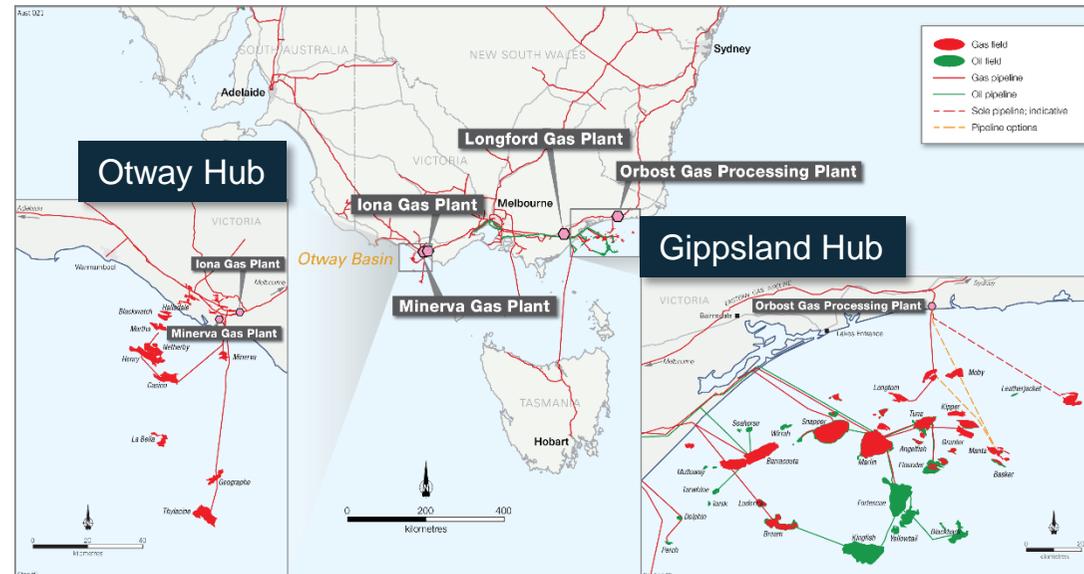
## Otway: offshore & onshore

2018:

- Marketing uncontracted gas for supply from 2019
- Onshore exploration in Penola Trough: Dombey-1 (Dec qtr)
- Preparing for Henry development well
- Preparing for 2-3 well exploration program

2019 & 2020:

- Drill Henry development well
- Drill 2 to 3 offshore exploration wells
- Minerva Gas Plant processing
- Onshore follow-on



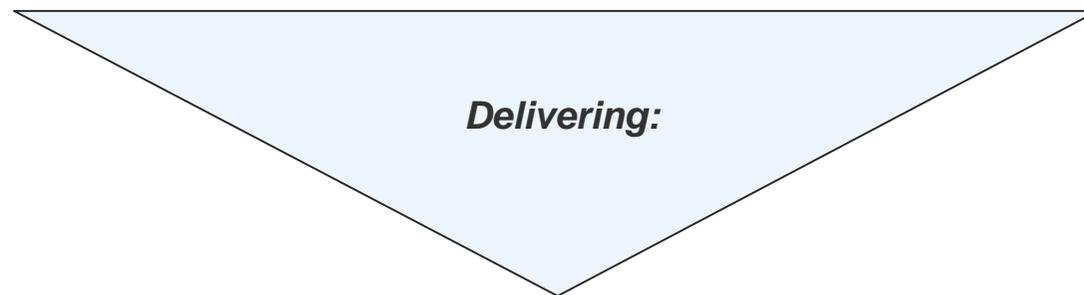
## Gippsland

2018:

- Sole gas project
- Marketing uncontracted Sole gas
- VIC/P72 exploration acreage data reprocessing

2019 & 2020:

- Sole gas project start-up
- Drill Manta-3
- Manta development decision
- VIC/P72 G & G studies, preparation for drilling



- ▶ A growing portfolio of contracts and supply to south-east Australia customers over 2019 – 2025
- ▶ A superior balance of prices for customers and returns for shareholders
  - enabled by competitive supply cost, operations and capabilities

# Current focus for value building

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## 4 key areas for value uplift in 2018 and 2019

- |                            |  |
|----------------------------|--|
| <b>1. Sole Gas Project</b> | <ul style="list-style-type: none"><li>• Safe execution of drilling and pipe welding</li><li>• Execute within schedule and budget</li></ul>   |
| <b>2. Casino Henry</b>     | <ul style="list-style-type: none"><li>• Optimisation of production operations now Casino-5 production has resumed</li></ul>  |
| <b>3. Gas marketing</b>    | <ul style="list-style-type: none"><li>• Marketing of uncontracted Sole and Casino Henry gas from mid 2018</li></ul>  |
| <b>4. Drilling</b>         | <ul style="list-style-type: none"><li>• Planning offshore campaign for late 2019/early 2020:<ul style="list-style-type: none"><li>– Henry development well,</li><li>– Manta appraisal and exploration;</li><li>– 2-3 wells offshore Otway exploration</li></ul></li><li>• Onshore Otway drilling December quarter 2018</li></ul> |

# Wrap-up

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Established east coast gas business with production ramping -up and cash inflection point with new opportunities being developed

Sound cash generating existing business

- Established low cost operations generating high cash flow/boe
- Strong balance sheet with senior bank funding
- Experienced management, Operator of key licences offshore Victoria

East coast gas exposure

- Gas projects, production, contracts and reserves focussed on supply to south-east Australia
- Marketing of uncontracted gas to commence from mid 2018 for supply from 2019

4X growth in 2 years

- Poised for 4 times growth in annual production from FY18 to FY20 through Sole & Henry
- Cash generation to surge from commencement of Sole production in 2019

Sole gas project

- Sole project is proceeding within schedule and budget
- Milestones imminent with drill and complete of production wells

'Next wave' growth

- Preparing for drilling campaign late 2019/early 2020 featuring exploration, appraisal and development drilling in Otway Basin and Gippsland (Manta) assets
- Additional upside in onshore Otway; Dombey-1 to spud in current calendar year

# Appendices

# Cooper Energy

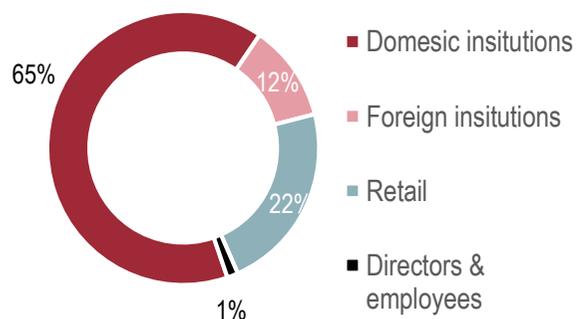
## Snapshot

### Key statistics\*

Proved & Probable Reserves	54.1 MMboe
Contingent Resources (2C)	34.9 MMboe
Production FY18 guidance	1.4-1.5 MMboe
Market capitalisation	\$608 million
Net cash/(debt)	\$132 million
Issued shares (million)	1,601.1

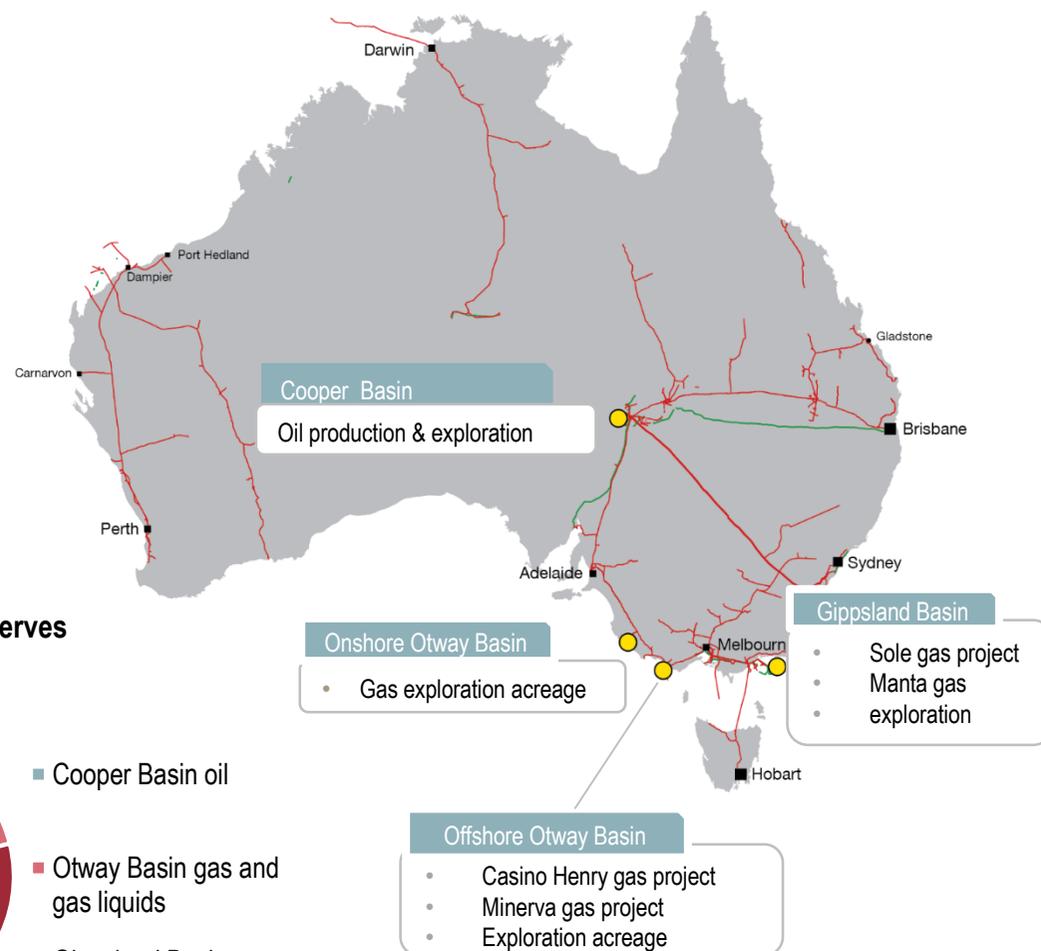
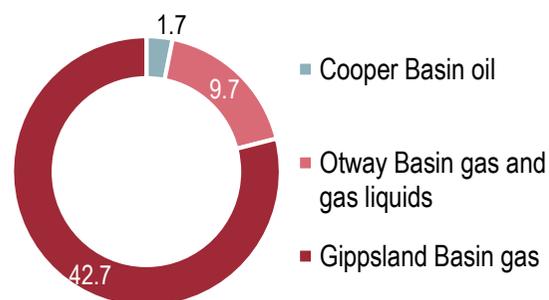
### Register composition

% of issued share capital held by:



### Proved & Probable Reserves

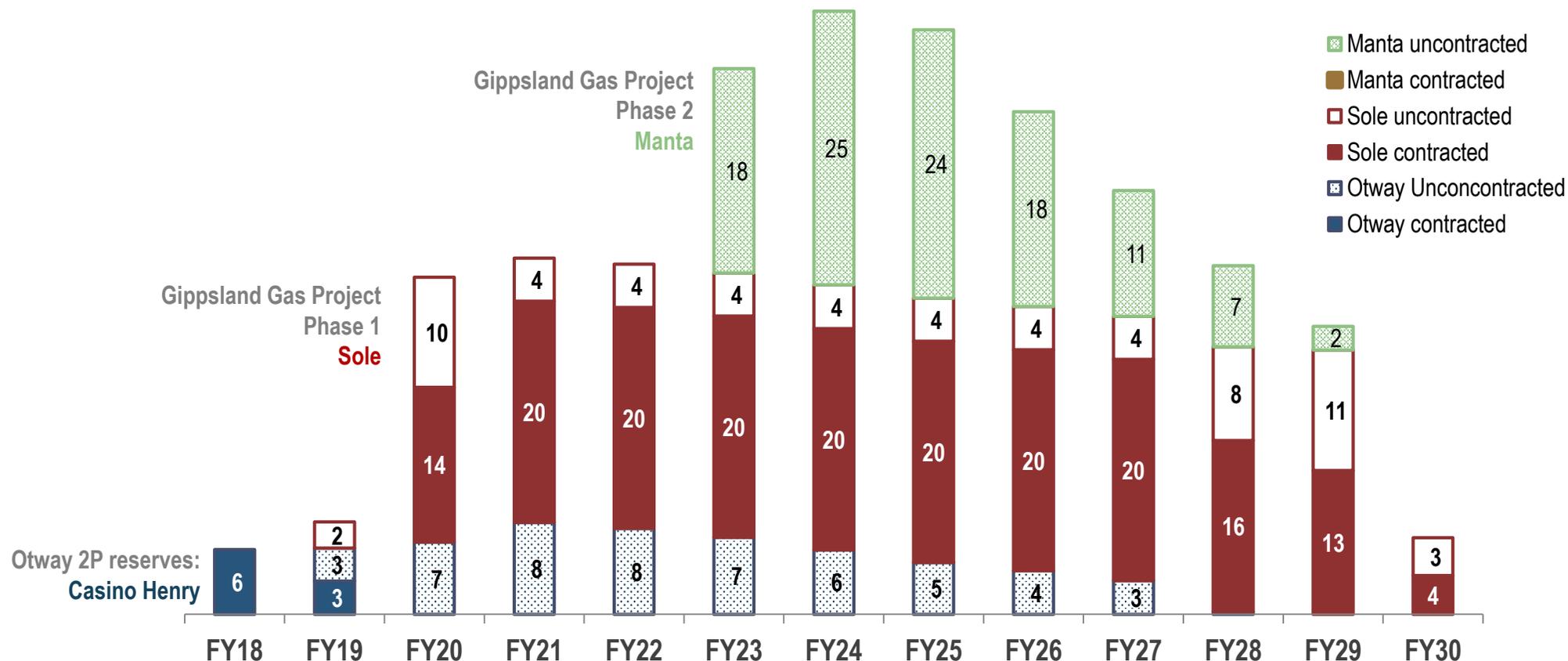
54.1 MMboe



# Cooper Energy contracted and uncontracted gas profile\* by project

## Existing assets & projects offer growth over 6 years before exploration

Gas sales profile by project  
contracted & uncontracted  
PJ pa



Note

- Assumes:
  - Sole proceeds to schedule for March quarter 2019 first Sole gas to plant
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- All numbers rounded

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# Sole gas project: the field

## Simple, well-defined structure with good reservoir quality

### Shallow depth

- Reservoir at shallow depths below the sea floor - mapped depth to top of gas column is 745 m subsea, maximum gas column height is 71.5 m

### Well defined, simple structure

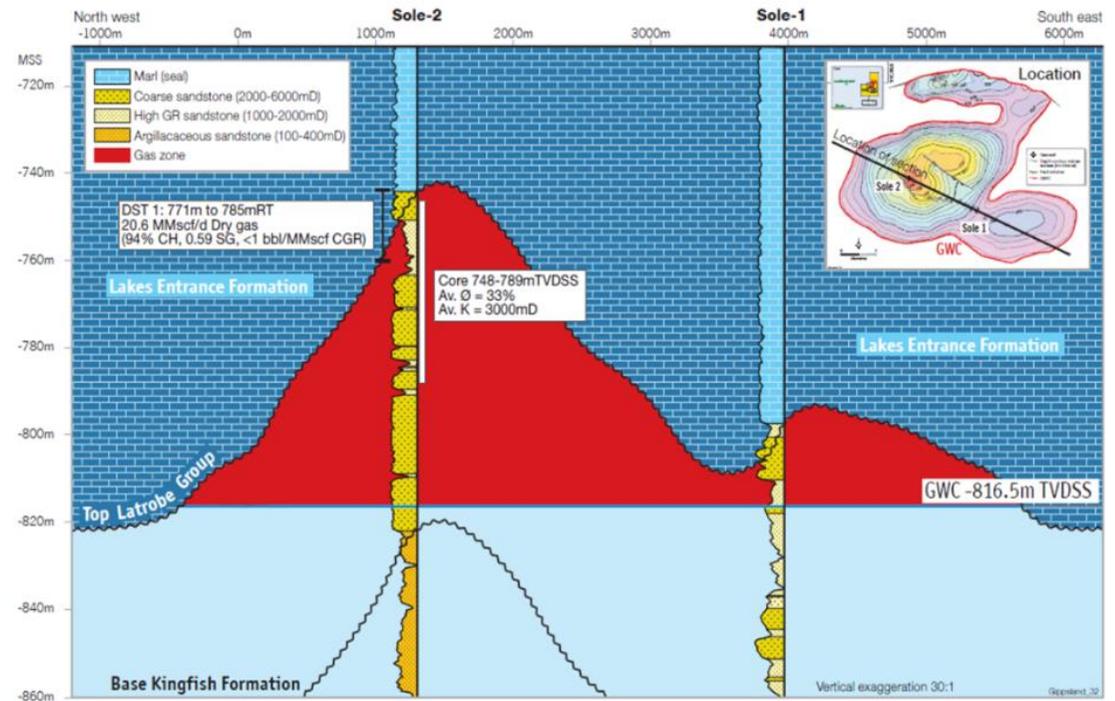
- Reservoir well defined – high structural confidence as direct hydrocarbon indicator coincides with the gas-water-contact (GWC)
- Field simple four way dip closed structure with excellent seismic definition

### Excellent porosity and permeability

- Average porosity greater than 30%
- Permeability greater than 1 darcy

### Composition

- H<sub>2</sub>S (but no CO<sub>2</sub>) removal required - gas contains 1% CO<sub>2</sub>, 0.15% (1500 ppm) H<sub>2</sub>S and less than 1bbl condensate / MMcf
- H<sub>2</sub>S to be removed in plant with proven Thiopaq biological process

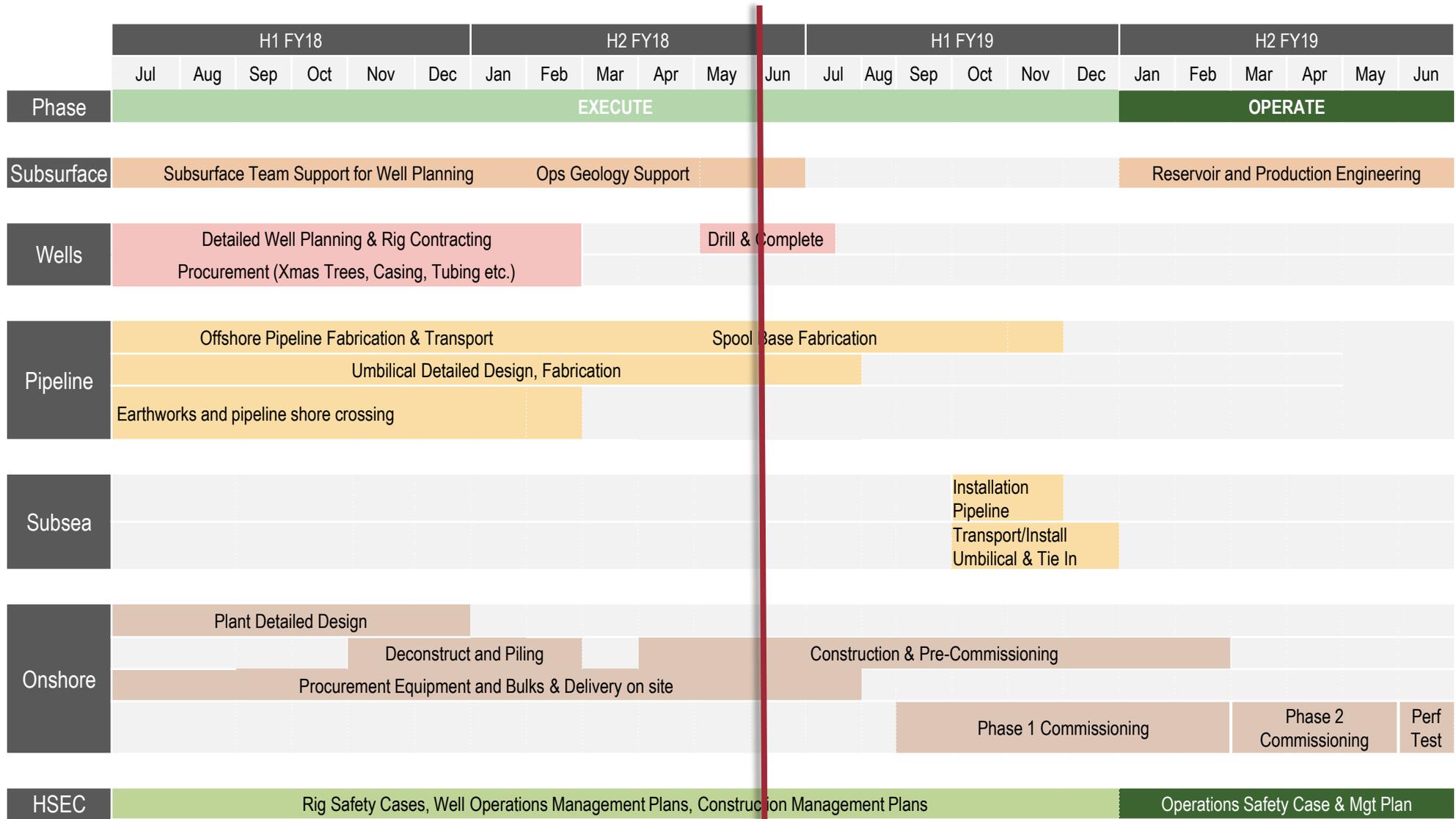


### Discovery & appraisal

- Sole-1 drilled by Shell in 1973 on the flank of the field intersected 16 m of net gas pay in the Palaeocene Kingfish Formation
- Sole-2 drilled by OMV in 2002 near the crest of the structure intersected 68 m net gas pay. Production test flowed gas to surface at 20.6 MMcf/d

# Sole Gas Project schedule

As at May 2018



# Manta gas field

## Contingent resource plus significant deeper exploration potential

### Geological setting

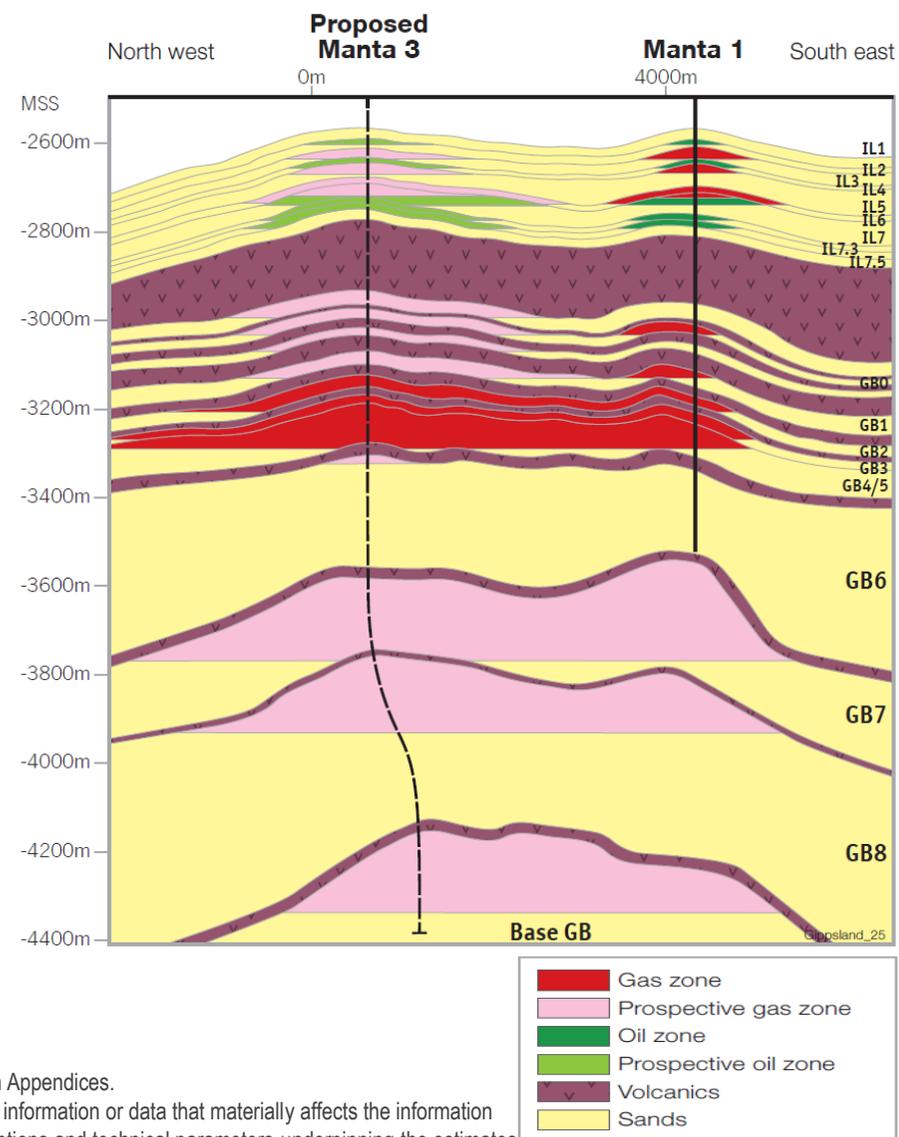
- a structural three-way dip, one-way fault closure against a NE-SW trending fault
- Manta-1, exploration well drilled in 1984, and Manta-2A, production well drilled in 2006
- Gas, condensate and oil, within sands of the top Intra-Latrobe Group and the deeper Golden Beach Subgroup

### Exploration upside

- Potential for discovery of gas bearing reservoirs in the Golden Beach formation below the proven gas reservoirs at Manta-1. Untested structures are mapped below the maximum depth of the Manta-1 discovery well
- By drilling c. 1,000 metres deeper than Manta-1, several additional targets can be tested whilst appraising the proven gas & oil in the Intra-Latrobe and Golden Beach formations
- Evaluation of the Manta field prospectivity is being incorporated into conceptual planning for Manta-3.

### Resource

- Gas resource of 106 PJ 2C Contingent and Risked Prospective Resource of 10 PJ<sup>1</sup>
- Re-assessed Best Estimate Net Prospective Resource<sup>2</sup> in Manta and Chimaera is 97.5 MMboe consisting of 491 PJ gas and 13.1 MMbbls oil and gas liquid (Cooper Energy 100% net share)
- The estimated quantities of petroleum that may be potentially recovered by the application of future development project(s) relate to undiscovered accumulations. These estimates have both an associated risk of discovery and a risk of development. Further exploration, appraisal and evaluation is required to determine the existence of a significant quantity of potentially moveable hydrocarbons.



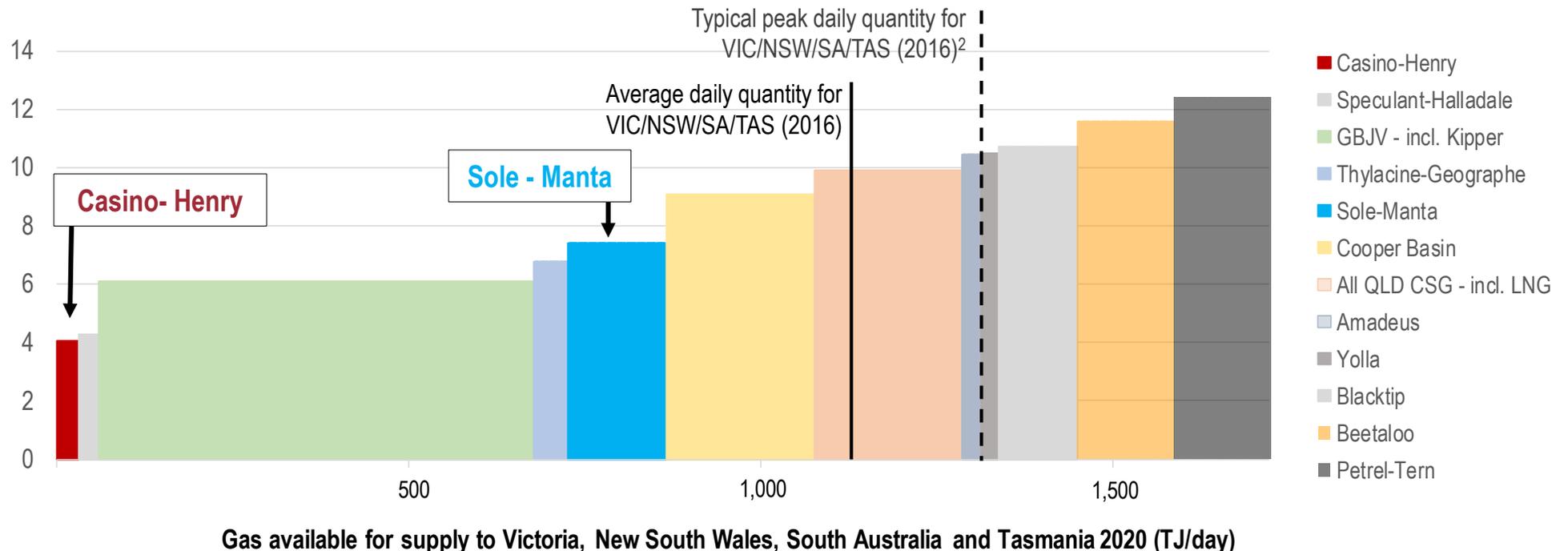
<sup>1</sup>As announced to ASX on 16 July 2015. Refer to notes on Reserve and Resource calculation in Appendices.

<sup>2</sup>As announced to ASX on 4 May 2016. Cooper Energy confirms that it is not aware of any new information or data that materially affects the information included in the announcements of 16 July 2015 and 4 May 2016 and that all the material assumptions and technical parameters underpinning the estimates in the announcements continue to apply and have not materially changed.

# South-east Australia<sup>1</sup> gas supply costs in 2020\*

## Cooper Energy projects are cost competitive for south-east Australia

Delivered Melbourne city gate cost for gas from eastern Australia available for delivery to domestic market in 2020\*  
AUD / GJ



\* Note: all estimates are as calculated by EnergyQuest and based on known capital expenditure to date, which may exceed cost to the current project owner(s).

Source: EnergyQuest

- Delivered Melbourne city gate gas cost in 2017 AUD based on economic upstream cost (including acceptable return) and pipeline charge
- Average daily volume determined by upstream reservoir & facilities capacity and taking account of pipeline capacities, from known gas reserves and resources with access to infrastructure and anticipated to be available in 2020/21
- Excludes gas that may be available from storage

<sup>1</sup> South-east Australia comprises New South Wales, Victoria, South Australia and Tasmania

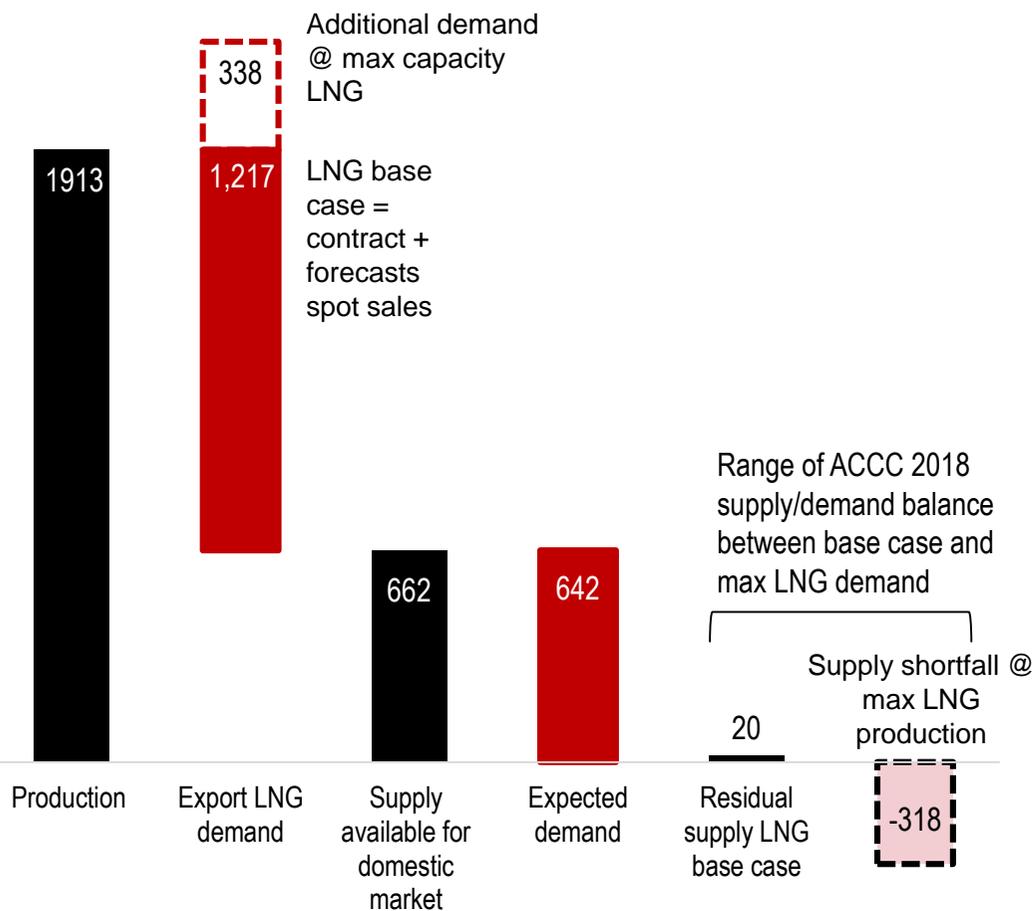
<sup>2</sup> Cooper Energy estimate. Represents 75% percentile of 2016 daily gas flows

# Forecast eastern Australia gas supply and demand outlook

## Tight market forecast\* for 2018 and 2019

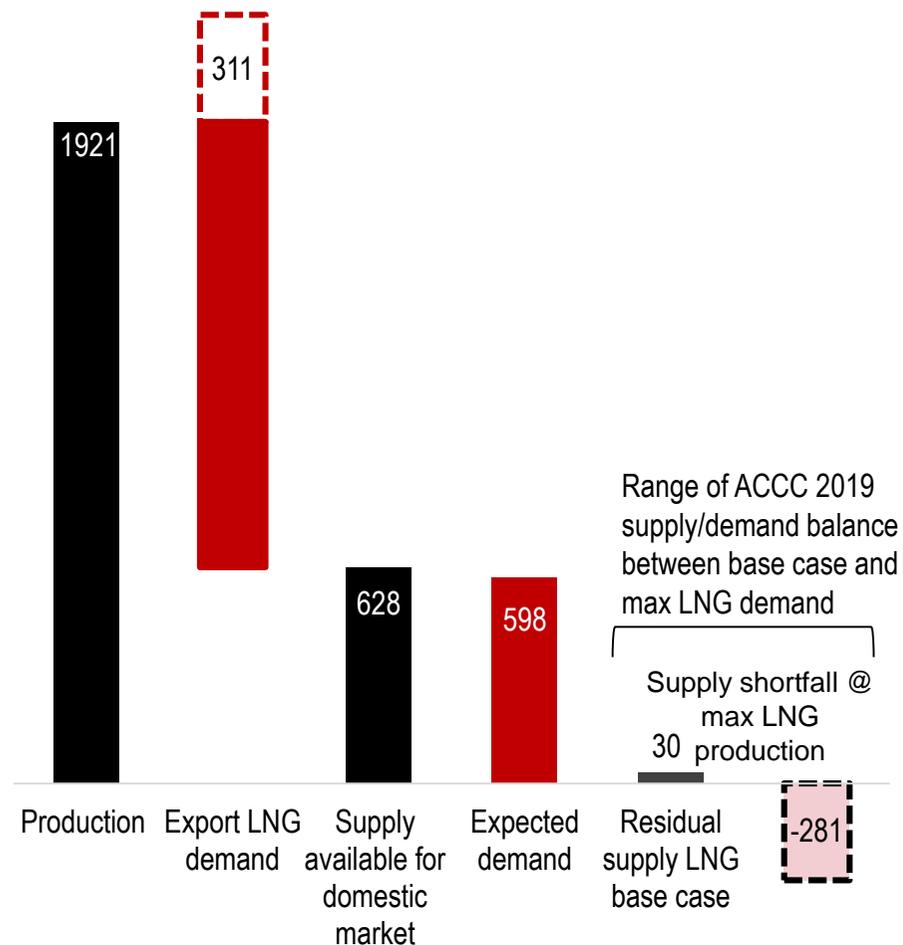
2018

PJ



2019

PJ



# 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 18 years' experience in business development, finance, commercial, portfolio management and strategy, including 14 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.

# Notes on calculation of Reserves and Resources

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## Notes on Calculation of Reserves and Contingent Resources

Cooper Energy has completed its own estimation of reserves and resources in accordance with the definitions and guidelines in the Society of Petroleum Engineers (SPE) 2007 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 based on information provided by the permit Operators Beach Energy Ltd, Senex Ltd, Santos Ltd, and BHP Billiton Petroleum (Victoria) P/L. Cooper Energy undertook the following analytical procedures to estimate the Reserves: independent interpretation of 3D seismic data; analysis of historical production data to assess accessed gas volumes and future production forecasts; review of the Operator's reservoir and production simulation models to define raw gas recovery consistent with existing processing facilities; and independent probabilistic Monte Carlo statistical calculations to establish the range of recoverable gas. 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 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, reserves are those petroleum volumes that are anticipated to be commercially recoverable by application of development projects to known accumulations from a given date forward under defined conditions. Reserves at 25 August 2017 were announced to the ASX on 29 August 2017. 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 comprise Sole field only (announced to the ASX on 27 February 2017 and subsequently reclassified to reserves) and is net of fuel gas.

## Contingent Resources

Under the SPE PRMS, contingent resources are those petroleum volumes that are estimated, as of a given date, to be potentially recoverable from known accumulations but for which the applied projects are not considered mature enough for commercial development due to one or more contingencies.

The Contingent Resources at 25 August 2017 assessment includes resources in the Gippsland, Otway and Cooper basins and were announced to the ASX on 29 August 2017. Cooper Energy is not aware of any new information or data that materially affects the information provided in those releases, and all material assumptions and technical parameters underpinning the estimates provided in the releases continue to apply.

The following material contingent resources assessments have been released to the ASX:

- Manta Field on 16 July 2015; and
- Basker and Manta fields on 18 August 2014.

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

# Abbreviations

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\$, A\$	Australian dollars unless specified otherwise
Bbl	barrels of oil
Boe	barrel of oil equivalent
EBITDA	earnings before interest, tax, depreciation and amortisation
FEED	Front end engineering and design
GJ	Gigajoules
kbbbls	thousand barrels
m	metres
MMbbl	million barrels of oil
MMboe	million barrels of oil equivalent
MMbtu	million British Thermal Units
NPAT	net profit after tax
PJ	petajoules
TJ	terajoules
TRCFR	Total Recordable Case Frequency Rate. Recordable cases per million hours worked
1P reserves	Proved reserves
2P reserves	Proved and Probable reserves
3P reserves	Proved, Probable and Possible reserves
1C, 2C, 3C	high, medium and low estimates of contingent resources