

# Gas business & oil production

Noosa Mining & Exploration Conference

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21 July 2016

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## Qualified petroleum reserves and resources evaluator

This report contains information on petroleum resources which 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 Exploration Manager, holds a Bachelor of Science (Hons), is a member of the American Association of Petroleum Geologists and the Society of Petroleum Engineers and 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.

## Rounding

All numbers in this presentation have been rounded. As a result, some total figures may differ insignificantly from totals obtained from arithmetic addition of the rounded numbers presented.

## Dollars

Unless otherwise specified, all dollar amounts are expressed Australian dollars.

## Reserves and resources calculation

Information on the company's reserves and resources and their calculation are provided in the Appendices to this document.

# An introduction

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**Cooper Energy** is a \$100 million market cap exploration & production company with:

- **cash** generating Cooper Basin **oil production**; and
- an emerging **gas** business possessing supply contracts with **blue-chip customers** in eastern Australia and gas plant and resources which are **cost-competitive** and ideally located.

We expect Phase 1 of our Gippsland Basin gas projects will transform\* Cooper Energy:

**>6 times growth**  
in proved & probable **reserves**  
within 6 months

**> 4 times growth**  
in annual **production** within 3  
years

**> \$90 million pa**  
**revenue** with strong long  
term free cash flow

# Since we presented last year....

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## Gas projects: moved ahead

- ✓ Resource upgrades for Sole and Manta gas fields
- ✓ Gas supply Heads of Agreements with AGL and O-I Australia
- ✓ Sole project Front End Engineering and Design
- ✓ Funding strategy

## Portfolio: focussed on Aust.

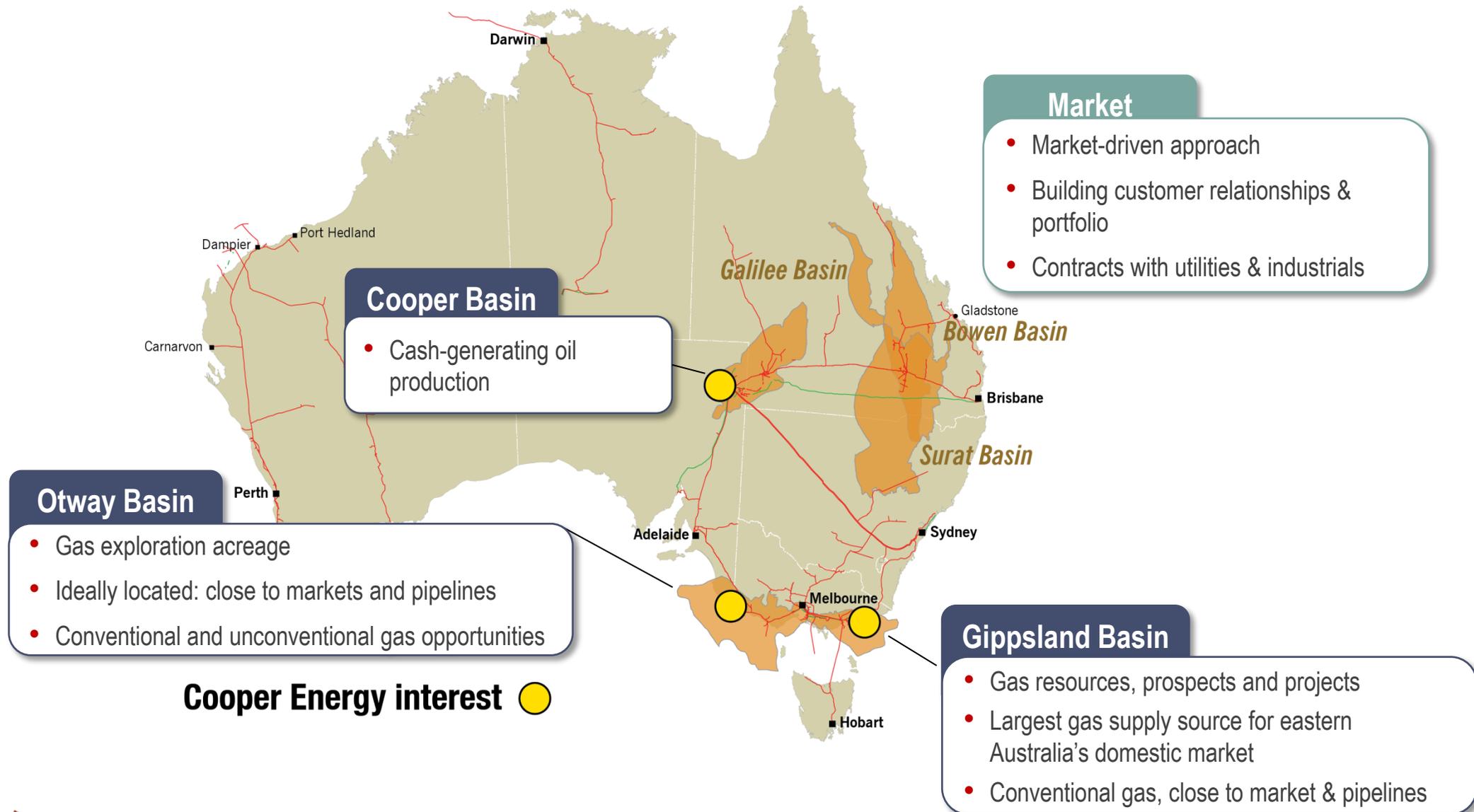
- ✓ Indonesian exploration assets sold
- ✓ Indonesian production assets subject to sale contract
- ✓ Withdrawn from 2 of 3 Tunisia permits
- ✓ Completing work program for remaining Tunisian permit

## Capital: strengthened

- ✓ Oversubscribed institutional placement
- ✓ Share purchase plan
- ✓ 30 June cash up 26% to \$50 million
- ✓ Register strengthened

# Australian portfolio

Production & exploration assets built around market fundamentals, low cost and foreseeable development

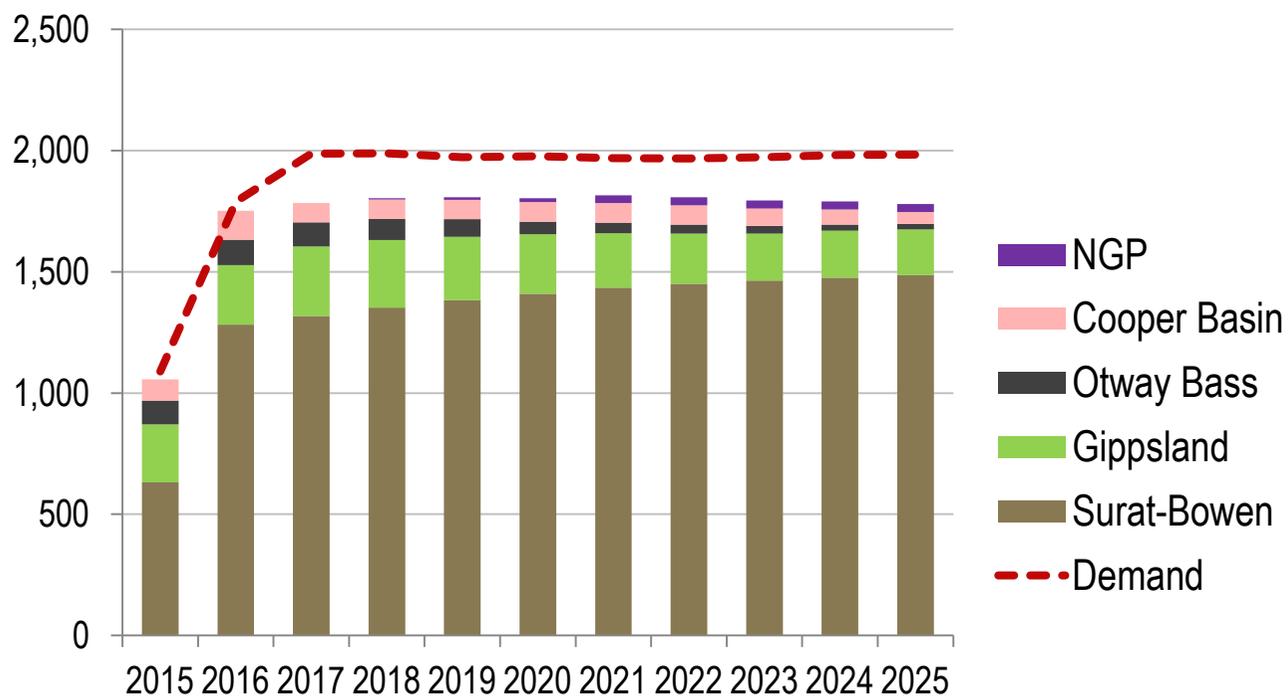


# Gas demand & supply outlook for eastern Australia<sup>1</sup>

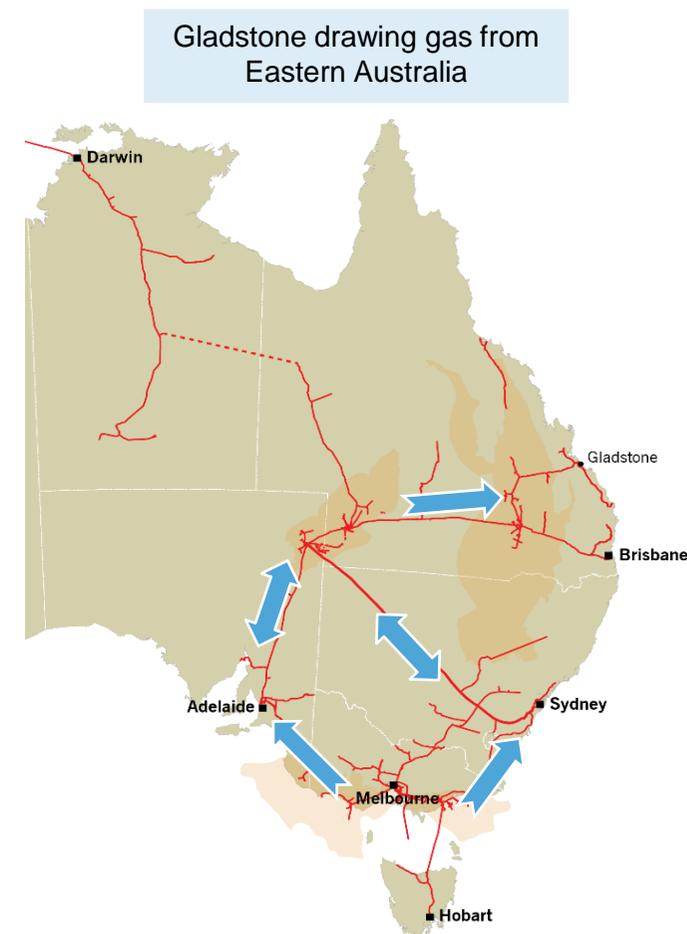
LNG demand is impacting gas flows and contributing to looming gas supply issues

## Domestic demand and contracted supply

PJ



Source: EnergyQuest EnergyQuarterly May 2016

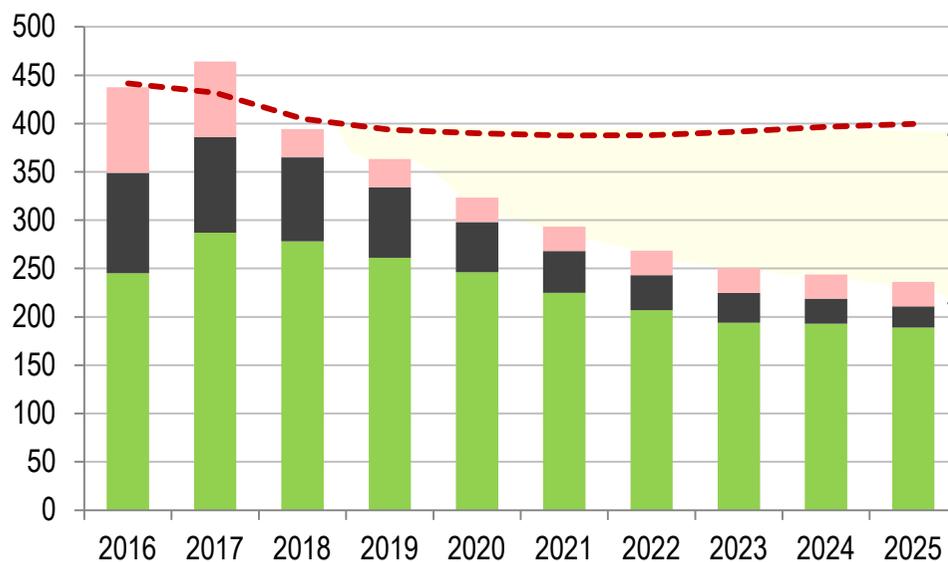


# The opportunity in gas supply to south east Australia\*

## Declining supply from main basins and growing shortfall from 2018

Gas demand vs production/contract from existing suppliers for south east Australia

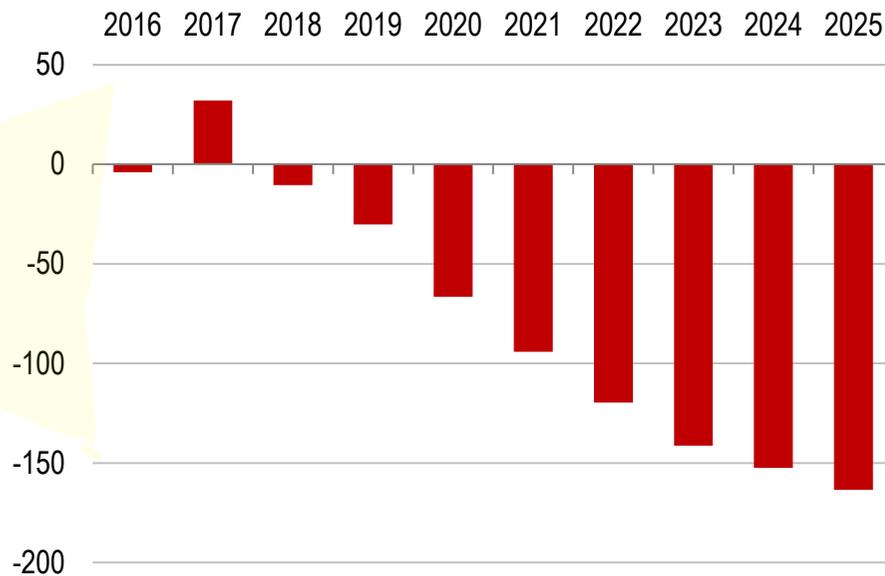
PJ pa



- S E Australia demand<sup>1</sup>
- Cooper Basin contract<sup>1</sup>
- Otway, Bass Basins' production<sup>2</sup>
- Gippsland JV production<sup>2</sup>

Forecast south east Australia gas demand and supply balance

PJ pa



\* South east Australia comprises NSW, VIC, SA and Tas.

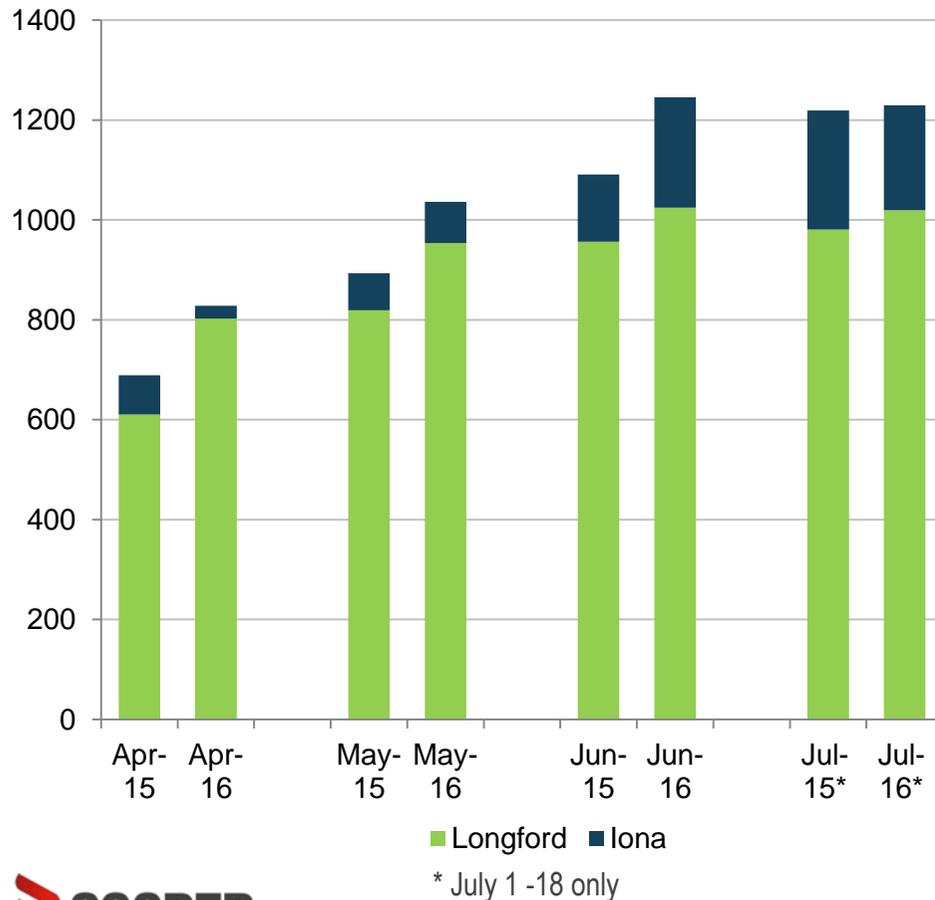
<sup>1</sup> AEMO GSOO March 2016

<sup>2</sup> EnergyQuest EnergyQuarterly May 2016 (includes Sole)

# South-east gas supply and prices

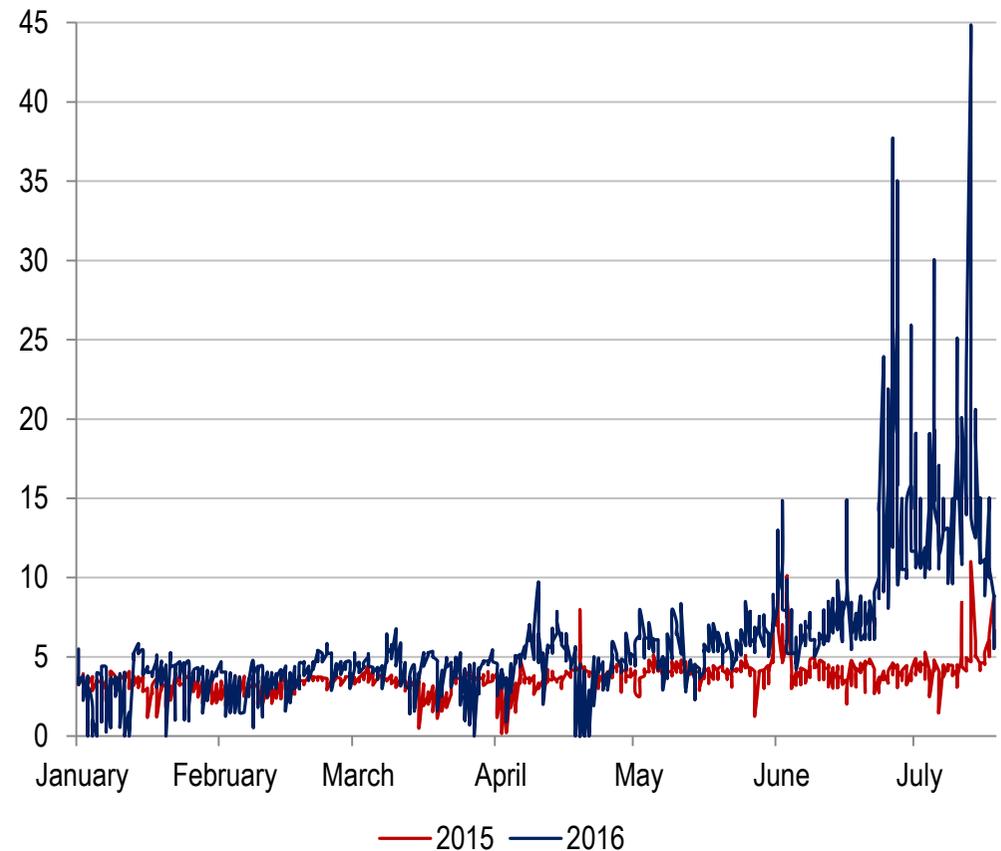
## Increased demand being made on Gippsland production and storage draw-downs

Gippsland basin gas supply 2016 vs 2015  
average daily flows TJ, by month April to July



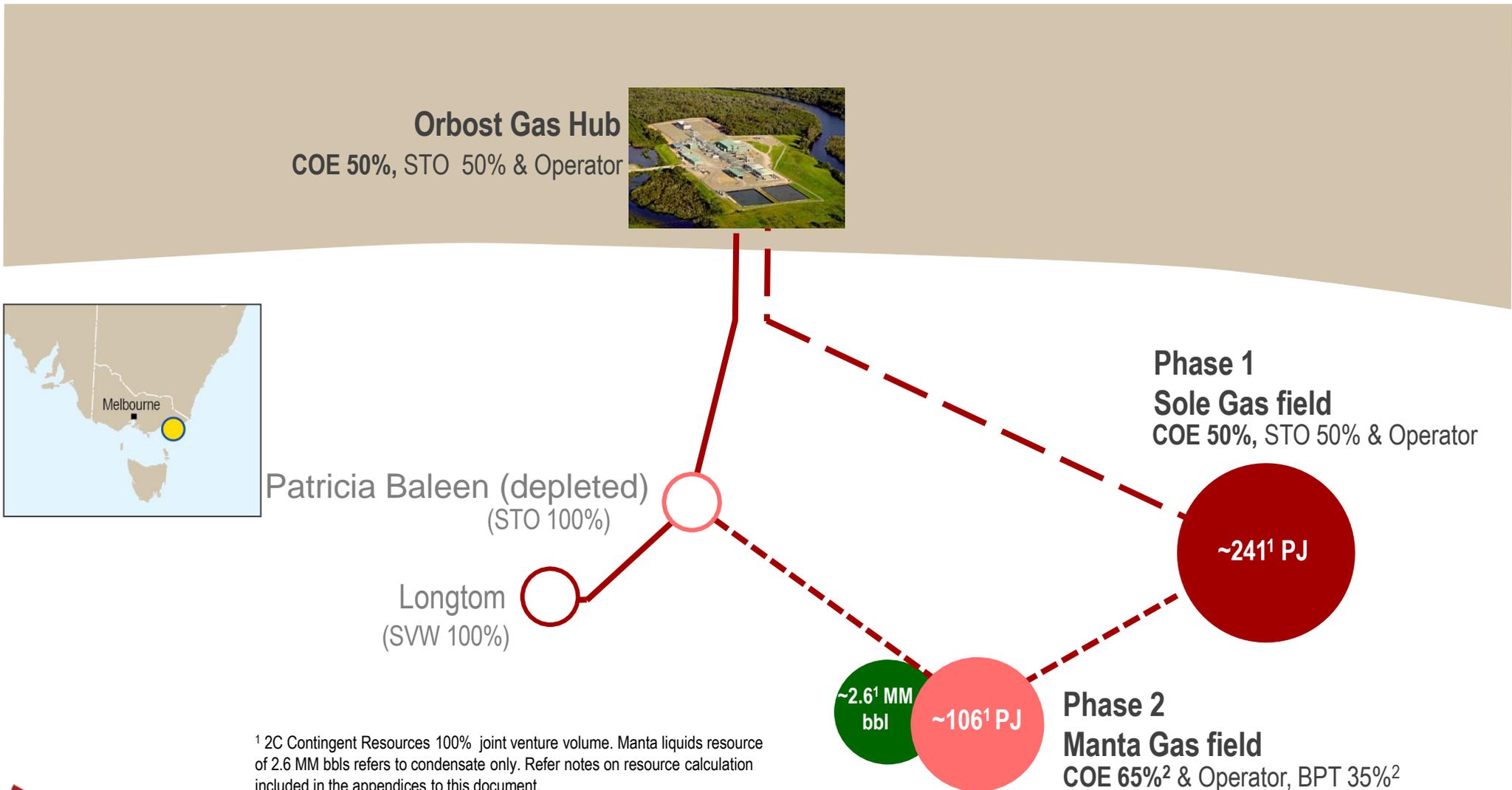
## Tightening supply evident in 2016 gas price and increased volatility

Victorian wholesale gas price 2015 vs 2016  
\$/GJ



# Gippsland gas projects and Orbost Gas Hub

Conventional resources at the low end of the cost curve in proximity to existing plant and pipeline and with upside in exploration and other resources



<sup>1</sup> 2C Contingent Resources 100% joint venture volume. Manta liquids resource of 2.6 MM bbls refers to condensate only. Refer notes on resource calculation included in the appendices to this document.  
<sup>2</sup> BPT have advised of intention to withdraw from the joint venture, effective from 27 October 2016. COE share to increase to 100% on BPT withdrawal; this equity is expected to be sold down in due course.

# Indicative Cooper Energy production from existing assets<sup>1</sup>

Current projects have potential to lift production<sup>1</sup> from 0.5 million to exceed 5 million boe pa

**Current**

0.5 million boe



Oil production 0.5 MMbbls

**FY20:**

**Phase 1: Sole gas project**  
over 2 million boe pa

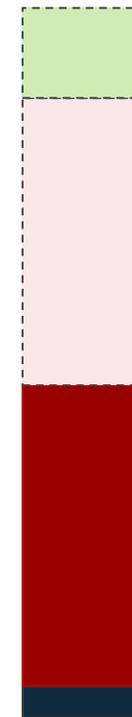


Gas production 12.4 PJ

Oil production: 0.24 MMbbls

**FY22:**

**Phase 2: Sole + Manta gas and liquids (subject to appraisal)**  
~ 5 million boe pa



Gas production 27.8 PJ

Liquids production: 0.6 MMbbls

Oil production: 0.2 MMbbls

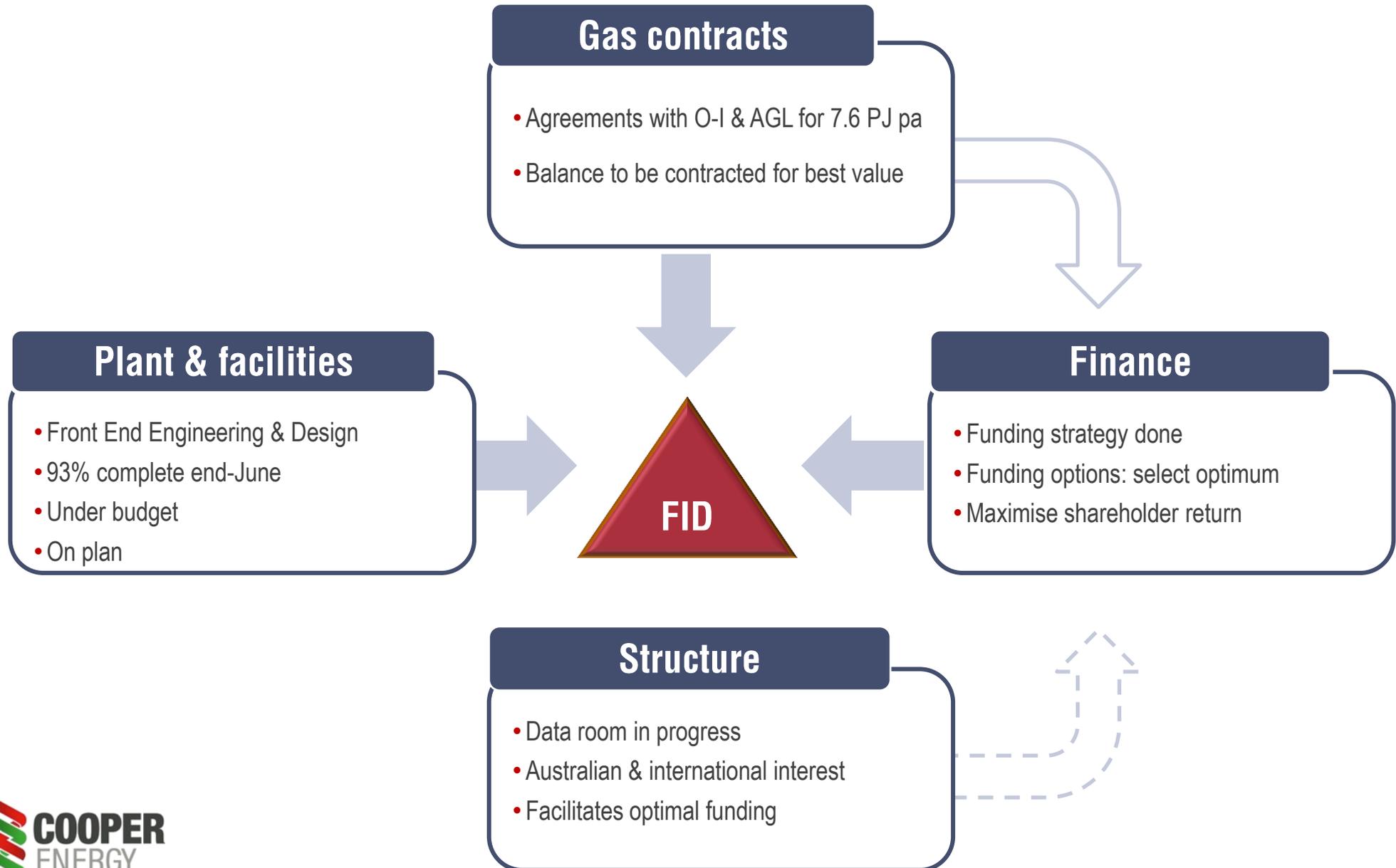
- Manta liquids
- Manta gas
- Sole gas
- Existing oil with development drilling



<sup>1</sup> Based on existing equities and asset base including Sole 50% and Manta 65% and no exploration success

# Sole commercialisation

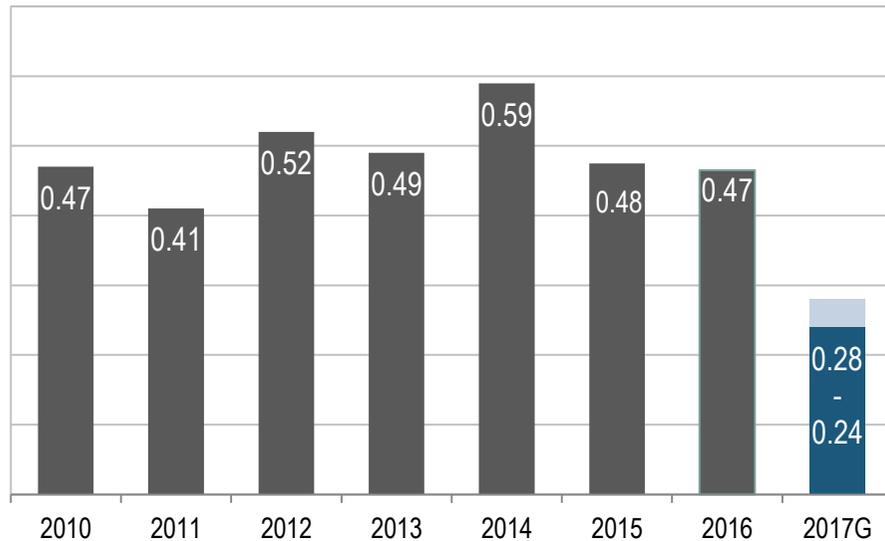
## 4 workstreams being concluded for FID recommendation



# Oil production

## Cash generation from low cost oil production

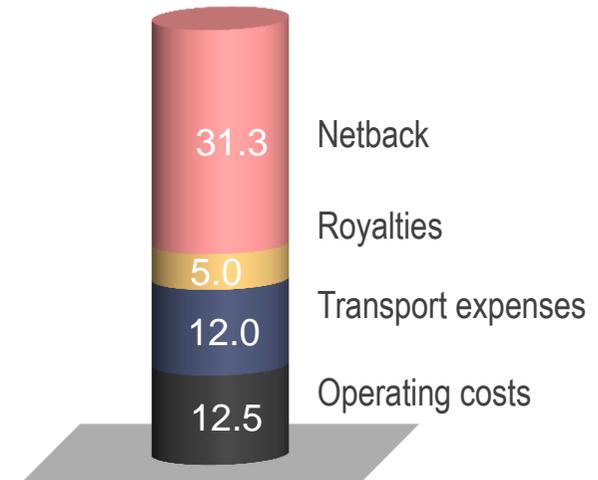
**Cooper Energy oil production**  
million barrels



- FY17 Production guidance 240 kbbl – 280 kbbl
  - Cooper Basin only due to sale of Indonesian assets
- FY17 expectation reflects suspension of Cooper Basin exploration and development drilling in FY16
- Cooper Basin drilling to resume in August 16 with Callawonga-12

### Production costs

Direct cost A\$ per barrel  
FY16



- FY16 direct costs A\$29.53/bbl
- FY16 average oil price A\$60.80/bbl (includes hedge benefit of A\$5.11/bbl)
- FY17 costs to be Cooper Basin only

# On schedule

The next four months are expected to see intense activity as Sole project approaches FID

## June quarter 2016

- Oversubscribed institutional placement raises \$18.4 million
- Share purchase plan (SPP) raises \$3.9 million
- Completed sale of Indonesian exploration assets, proceeds \$12 million
- Indonesian production assets contracted for sale
- Sole Project FEED 93% complete end June
- Sole funding strategy in place

## July - October 2016

- Completion of Indonesian production asset sale
- Sole FEED costings completed (July)
- Preparation of Sole FID proposal
- Gippsland data room outcome
- Funding in place
- Sole gas project FID
- Sole reserves booking
- Sole project construction phase commences
- Phase-2/Manta plan determined

# Near term and medium catalysts

Existing assets & firm plans present catalysts for transformation in market leverage, revenue and cash flow

## Coming six months:

- Ongoing low cost Cooper Basin oil production
- Gippsland gas data room outcome
- Sole project construction underway
- Manta project pathway determined
- Operations focussed on Australia

## 2017 - 2019

- Sole gas project completed
- Portfolio of long and short term gas sales contracts
- Manta exploration upside addressed
- Manta project to FID
- Ongoing asset portfolio development consistent with strategy

- ✓ High exposure & leverage to east coast gas markets & increasing gas prices
- ✓ Strong revenue growth profile
- ✓ Strong cash flow underpinned by long term sales contracts





Appendices

# Company snapshot

## ASX listed, strong balance sheet and stable share register

**Cooper Energy is an independent Australian exploration and production company**

- Cash generating Cooper Basin oil production
- Strong balance sheet, zero debt
- 190 PJ of 2C Contingent Resources<sup>1</sup> (net to COE) being developed for gas opportunity in eastern Australia
- Management team and board experienced in growing resource companies
- Listed in 2002, history of profitable operations and successful exploration and development

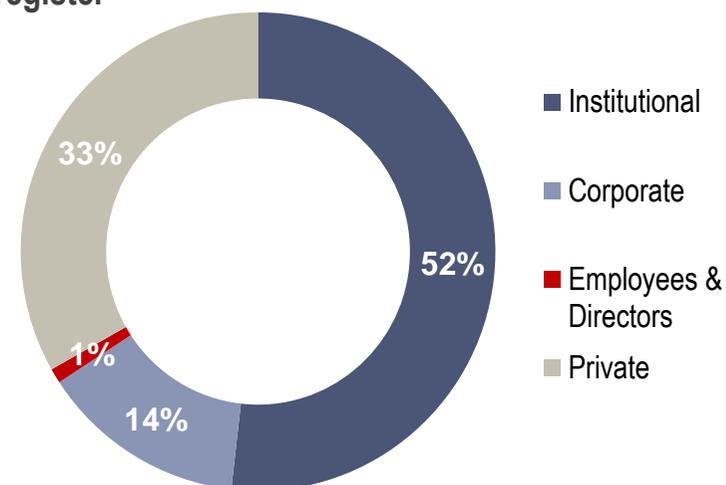
<sup>1</sup> Refer notes on Contingent Resources included in Appendices to this document

<sup>2</sup> As at 20 July 2016

### Key figures

Shares on issue <sup>2</sup>	435.2 mill
Shareholders <sup>2</sup>	4,911
Market capitalisation <sup>2</sup>	\$102 mill
Cash & investments at 30 June	\$51 mill
Debt	Nil
Employees (FTE Australia)	21

### Share register



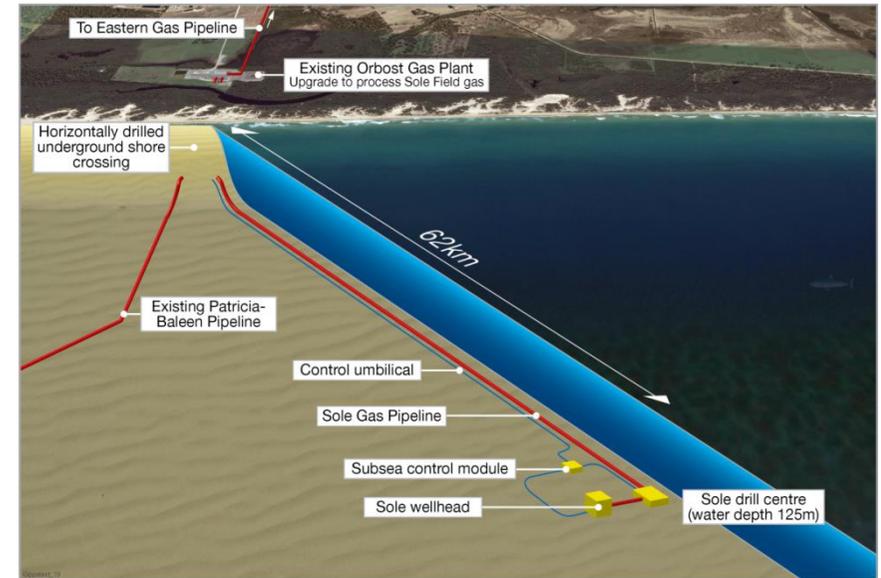
# Sole Gas Project

## Simple stand alone field development utilising existing plant

- 241 PJ<sup>1</sup> (100% basis) over 9 -10 years
- COE share 50% ~12.5 PJ pa or 121 PJ over 9 -10 years
- Pricing within market forecast range; typically \$7/GJ - \$8/GJ
- In FEED for development to supply gas from Jan quarter 2019
- Simple development plan

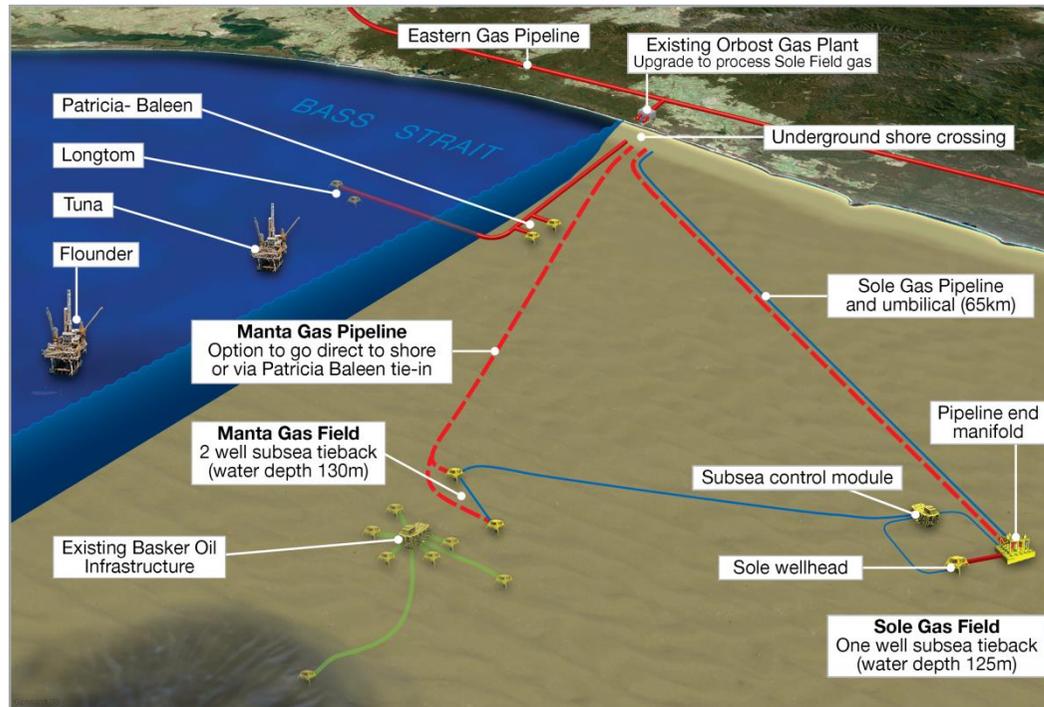
### Orbost Gas Plant

- Strategic location and expansion capacity for processing of additional 3rd party gas
- Replacement cost estimated \$200 - \$250 million



# Phase 2: Incorporation of Manta into a Gippsland Basin gas hub concept

## Manta development<sup>1</sup> offers value-add, synergies with Sole and exploration upside

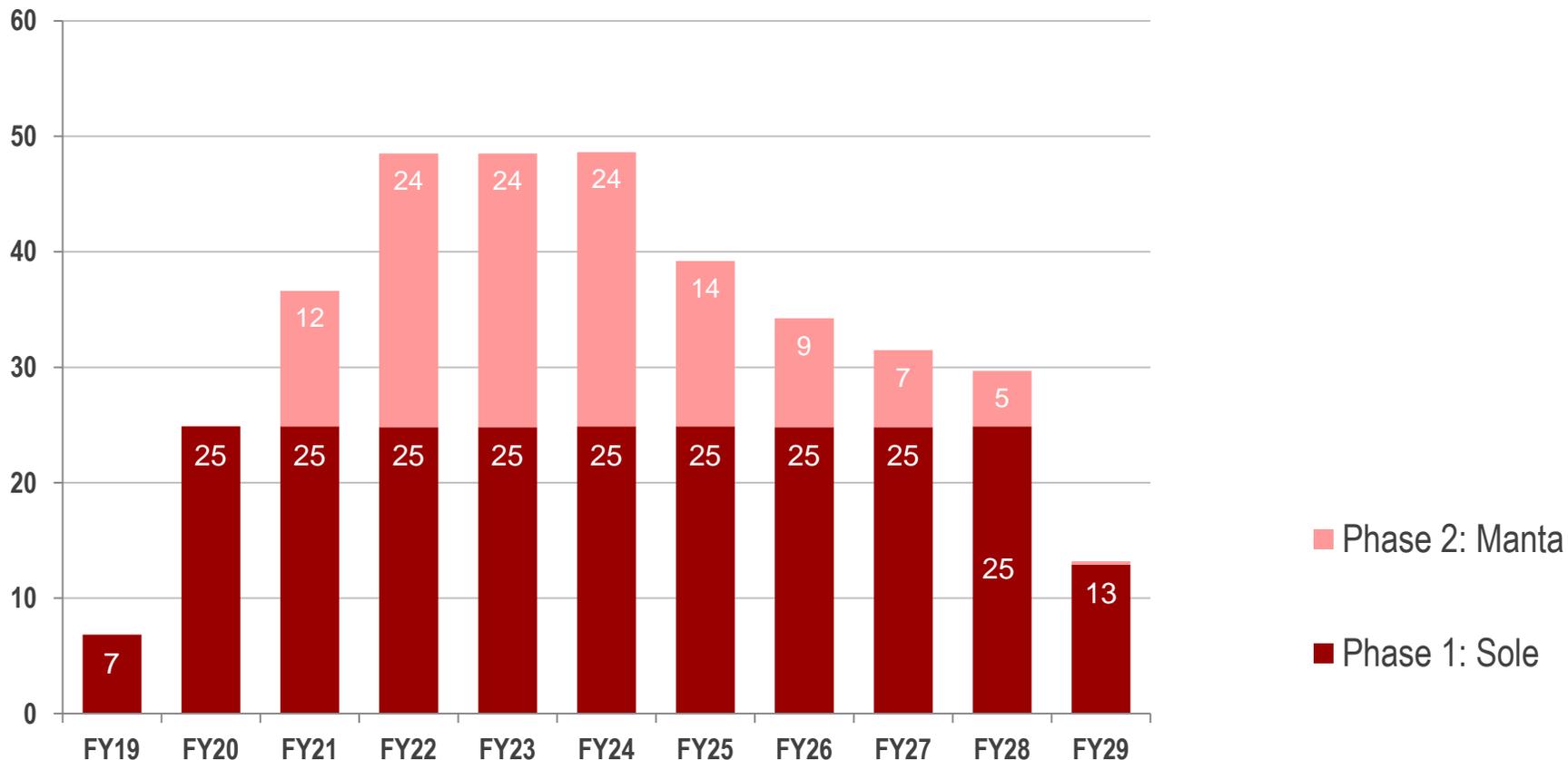


- Manta offers gross 106 PJ Contingent Resource<sup>2</sup> (2C) with significant exploration upside identified in deep reservoirs
- Opportunity for capital efficient development through use of existing infrastructure and coordinated development
- Gippsland Gas Hub centred around Orbest Gas Plant for Sole, Manta and other gas resources in the region
- Manta 3 appraisal well to explore potential, plan to drill in coordination with Sole development well late 2017

# Sole and Manta gas production profile<sup>1</sup>: 100% Joint Venture volume

Gas revenue of \$2.4 billion to \$2.8 billion and additional revenue from liquids

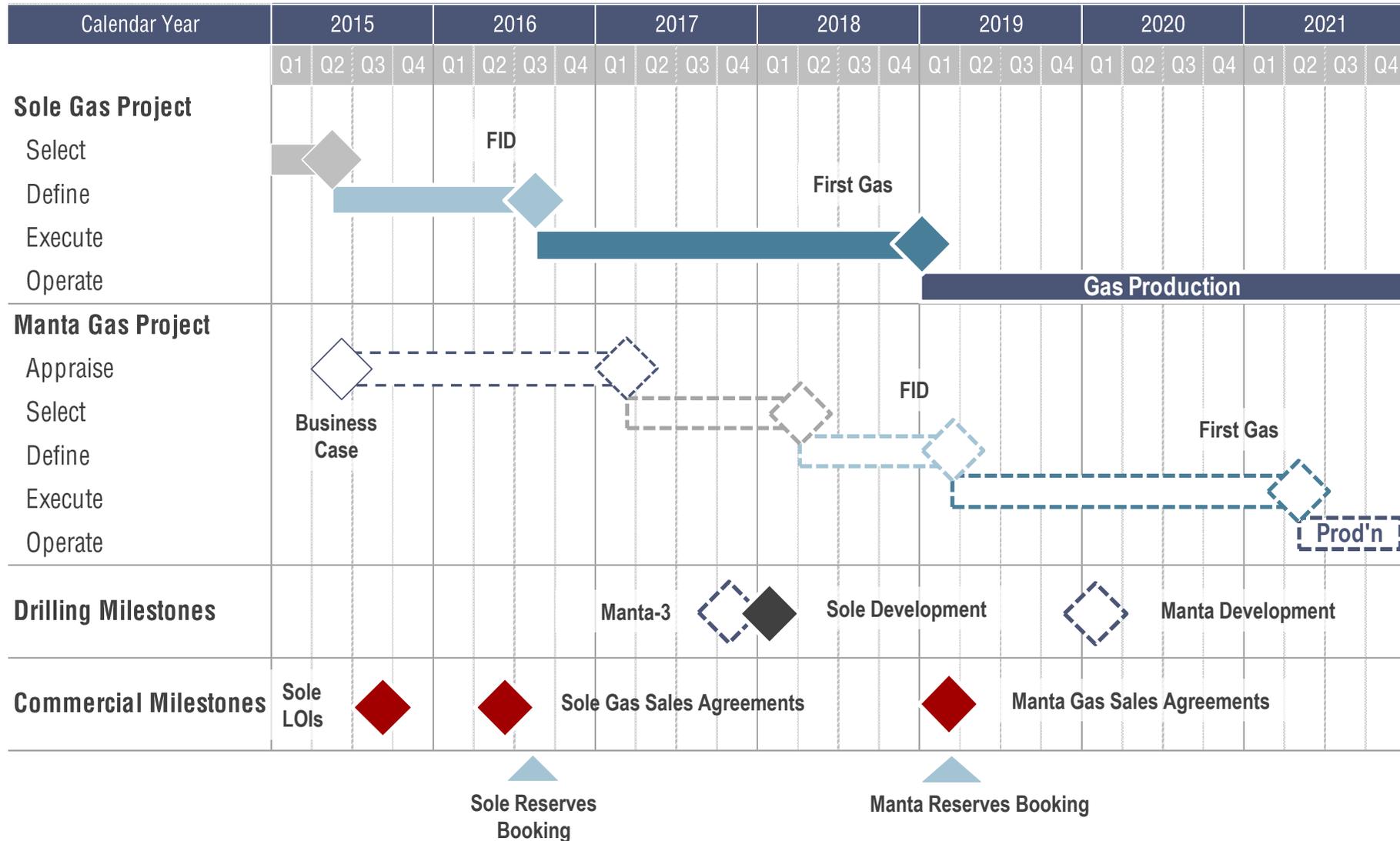
Indicative gross PJ



- Gippsland gas projects can produce approximately 350 PJ (gross) from current projects
- \$340 million - \$390 million revenue per annum in the plateau period
- Near field exploration and third party agreements will likely increase/extend the plateau

# Gippsland gas projects indicative<sup>1</sup> timeline

## Key commercial and project milestones for value accretion

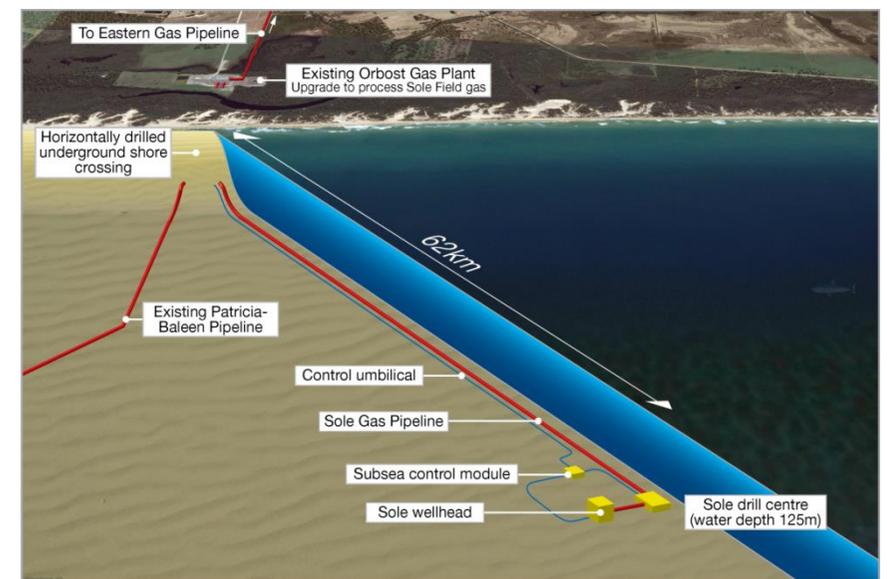
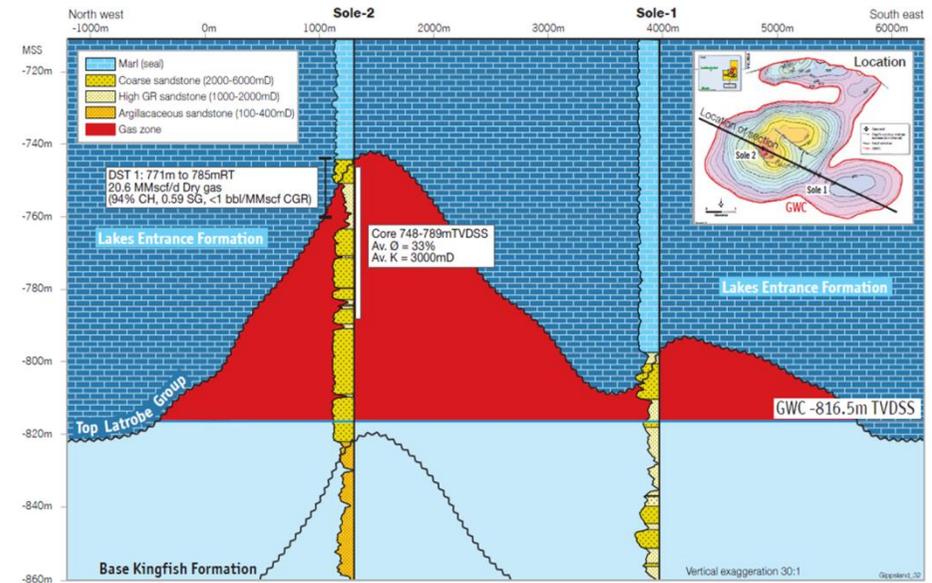


<sup>1</sup> Indicative only and subject to review at key milestones and joint venture decisions

# Gippsland gas projects Phase 1: Sole field development

## Simple reservoir and development concept

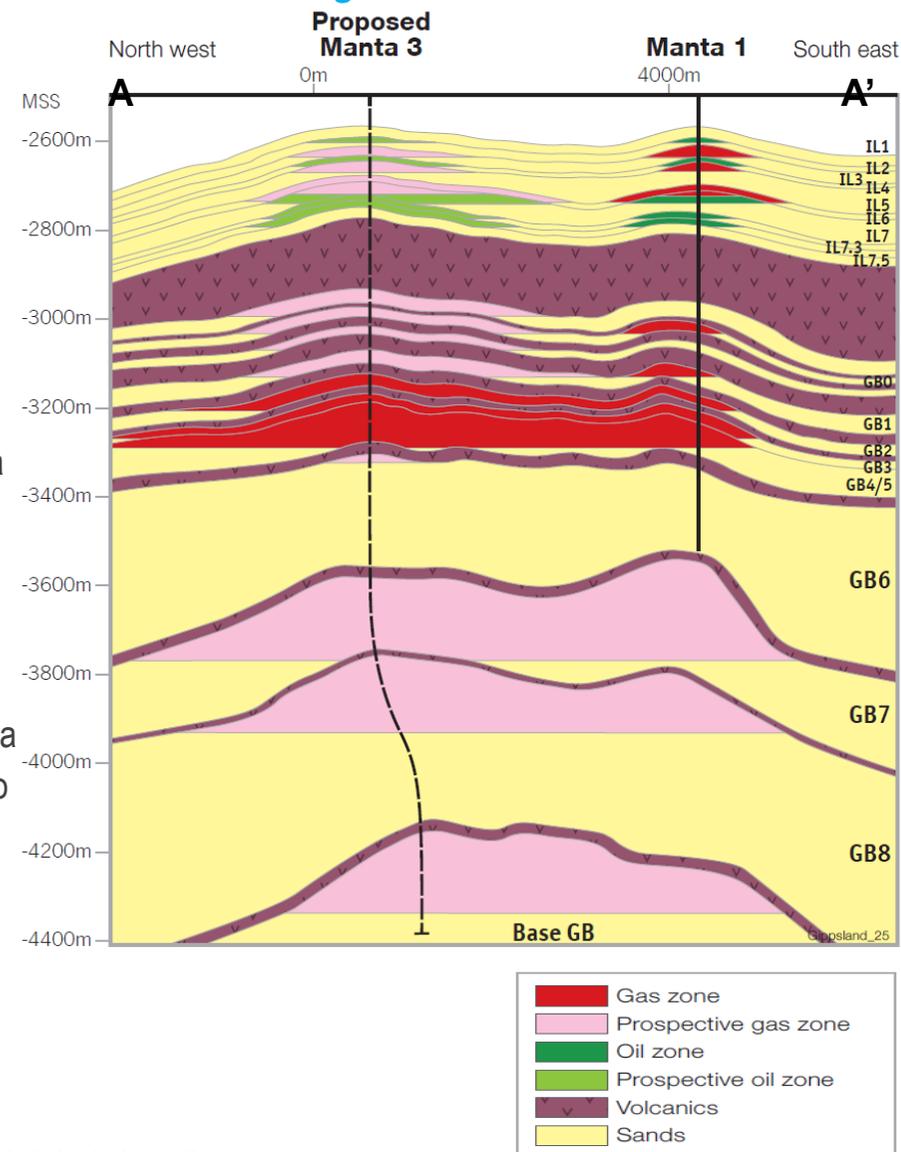
- Simple reservoir structure defined by two wells and seismic
- Excellent reservoir with porosity >30% and permeability >1 Darcy
- Dry gas, pipeline spec CO<sub>2</sub>
- Simple development concept planned
  - single near-horizontal subsea well for good reservoir access
  - dedicated pipeline and umbilicals to existing Orbost plant
  - modifications to existing Orbost plant, including H<sub>2</sub>S removal



# Manta gas

## Gas resource with substantial potential in exploration targets below Manta gas field

- COE business case identified economic opportunity for Manta development
- Manta gas attracting enquiries from gas buyers
- Untested Golden Beach reservoirs identified within the same structure below proven gas in the Manta field
- Gas resource of 106 PJ 2C Contingent and Risked Prospective Resource of 10 PJ<sup>1</sup> (Cooper Energy 65% & Operator)
- 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 65% 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.
- Opportunity to evaluate multiple additional reservoir sections by drilling Manta-3 another 1,000 metres deeper than Manta



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

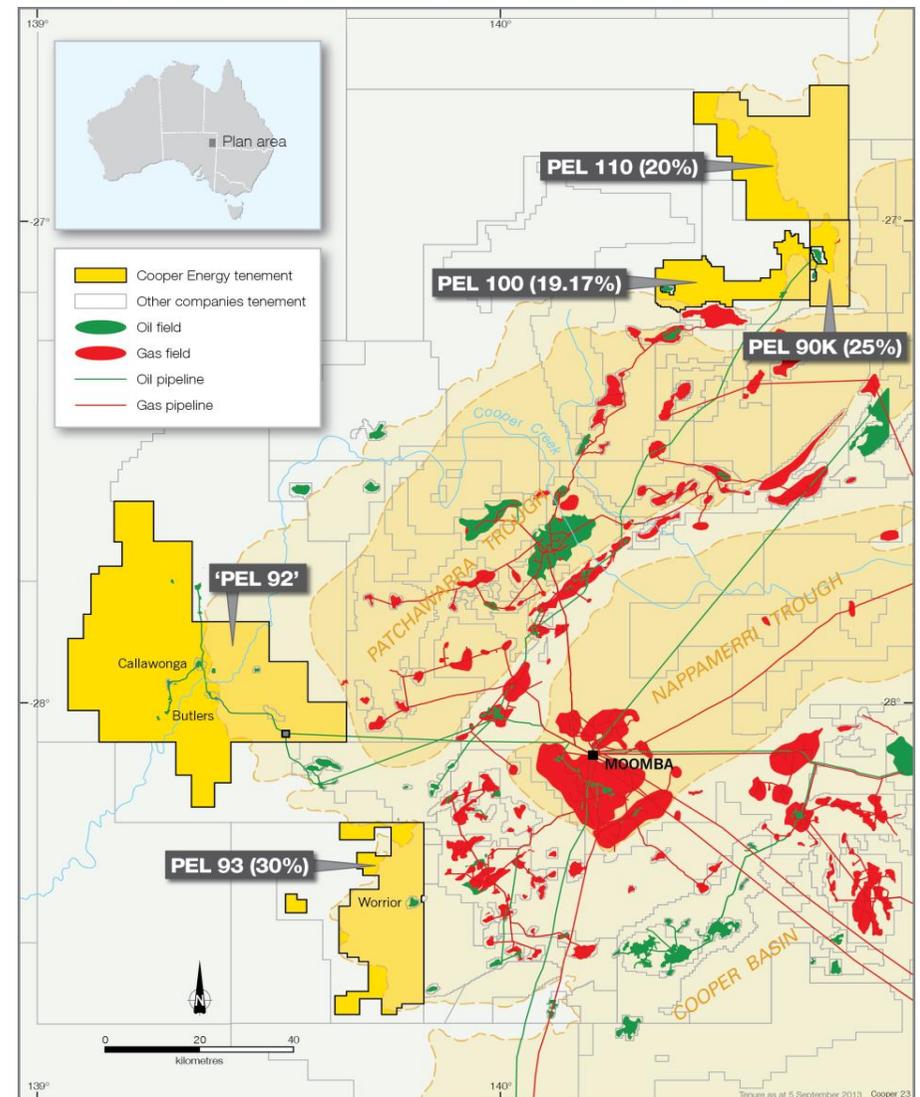
<sup>2</sup> As announced to ASX on 4 May 2016.

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.

# Cooper Basin

## Low cost cash generating production; capex scaled back

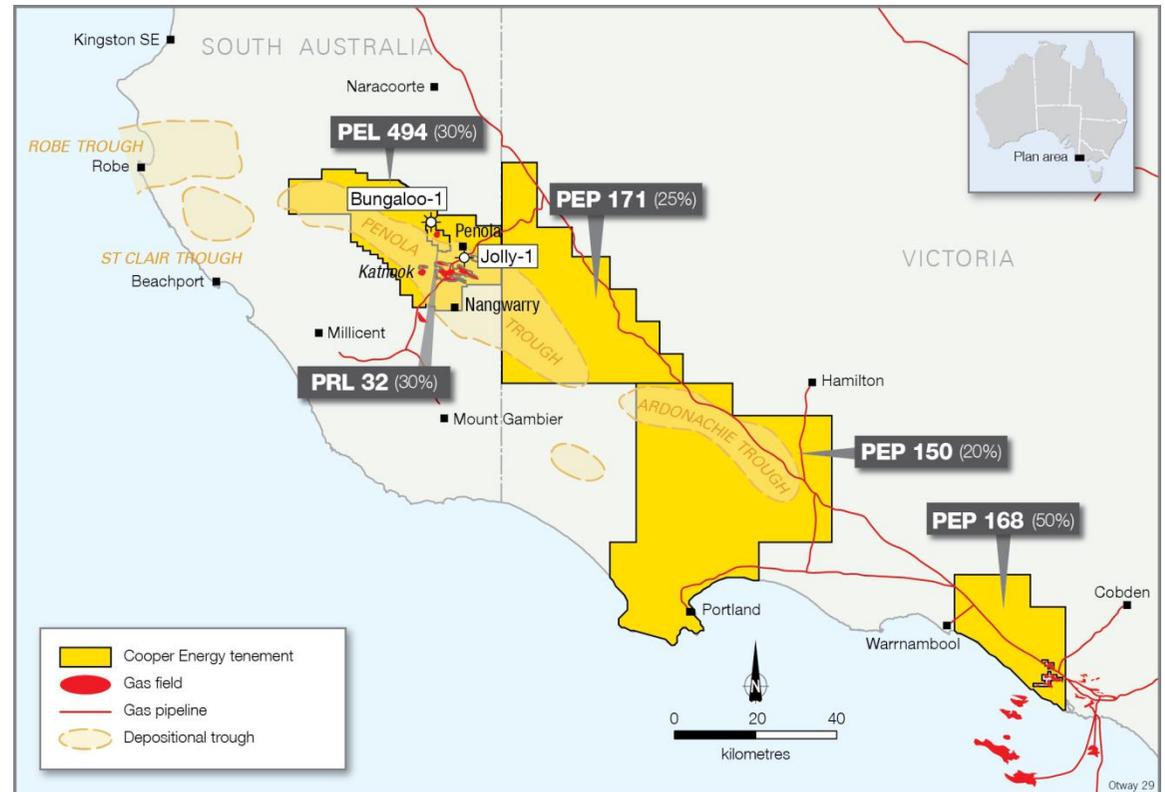
- FY16 YTD oil production of 317 kbbls; impacted by deferral of drilling to FY17
- FY16 direct operating cash cost of A\$29.65/bbl including transport and royalties
- Seismic inversion studies and prospect interpretation ongoing
- Drilling to resume in August 2016 at Callawonga



# Otway Basin

## Drilling results and analysis confirm prospectivity for conventional gas and shale potential

- Analysis of Jolly-1 and Bungaloo-1 well data in PEL 494 and PRL 32 has confirmed:
  - a deep conventional gas play in Lower Sawpit Formation
  - Casterton Formation unconventional shale gas play
- Victorian acreage subject of application to suspend and extend due to moratorium on onshore gas production
- Proposed activities
  - seismic reprocessing
  - rationalise portfolio and focus on key prospective areas



# Notes on calculation of Reserves and Resources

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The approach for all reserve and resource calculations is consistent with the definitions and guidelines in the Society of Petroleum Engineers (SPE) 2007 Petroleum Resources Management System (PRMS). The resource 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 and probabilistic summation. Aggregated 1P or 1C may be a conservative estimate and aggregated 3P and 3C may be an optimistic estimate due to the effects of arithmetic summation. Totals may not exactly reflect arithmetic addition due to rounding.

## Reserves

The Cooper Basin totals comprise the probabilistically aggregated PEL 92 project fields and the arithmetic summation of the Worrior project reserves. Total includes 0.05 MMbbl oil reserves used for field fuel. The Indonesia totals include removal of non-shareable oil (NSO) and comprise the probabilistically aggregated Tangai-Sukananti KSO project fields. Totals are derived by arithmetic summation.

## Notes on calculation of Contingent Resources

### *Sole gas field*

Contingent Resources have been assessed using probabilistic simulation modelling for the Kingfish Formation at the Sole Field. This methodology incorporates a range of uncertainty relating to each of the key reservoir input parameters to predict the likely range of outcomes. The conversion factor of 1PJ = 0.172MMboe has been used to convert from Sales Gas (PJ) to Oil Equivalent (MMboe). The date of the Sole Contingent Resource Assessment is 26 November 2015 and the assessment was announced to the ASX on 26 November 2015. Cooper Energy is not aware of any new information or data that materially affects the information provided in that release and all material assumptions and technical parameters underpinning the assessment provided in the announcement continues to apply.

### *Manta gas and oil field*

Contingent and Prospective Resources have been assessed using deterministic simulation modelling and probabilistic resource estimation for the Intra-Latrobe and Golden Beach Sub-Group in the Manta field. This methodology incorporates a range of uncertainty relating to each of the key reservoir input parameters to predict the likely range of outcomes. The conversion factor of 1PJ = 0.172MMboe has been used to convert from Sales Gas (PJ) to Oil Equivalent (MMboe). Contingent Resources for the Manta Field have been aggregated by arithmetic summation. The date of the Manta Contingent Resource assessment is 16 July 2015 and the assessment was announced to the ASX on 16 July 2015. Cooper Energy is not aware of any new information or data that materially affects the information provided in that release and all material assumptions and technical parameters underpinning the assessment provided in the announcement continues to apply.

### *Basker gas and oil field.*

Contingent and Resources have been assessed using deterministic simulation modelling and probabilistic resource estimation for the Intra-Latrobe Sub-Group in the Basker field. This methodology incorporates a range of uncertainty relating to each of the key reservoir input parameters to predict the likely range of outcomes. The conversion factor of 1PJ = 0.172MMboe has been used to convert from Sales Gas (PJ) to Oil Equivalent (MMboe). Contingent Resources for the Basker Field have been aggregated by arithmetic summation. The date of the Basker Contingent Resource assessment is 15 August 2014 and the assessment was announced to the ASX on 18 August 2014. Cooper Energy is not aware of any new information or data that materially affects the information provided in that release and all material assumptions and technical parameters underpinning the assessment provided in the announcement continues to apply.

## Cautionary Prospective Resource Statement

### *Manta and Chimaera East*

These estimated quantities of petroleum that may be potentially recovered by the application of future development projects relate to undiscovered accumulations. These estimates have both an associated risk of discovery and a risk of development. Further exploration, appraisal and evaluation are required to confirm the existence of a significant quantity of potentially movable hydrocarbons. Cooper Energy Limited (COE) has undertaken a Prospective Resources assessment using probabilistic resource estimation for the Intra-Latrobe and Golden Beach Sub-Group in the Manta Field and Chimaera East prospects. This methodology incorporates a range of uncertainty relating to each of the key reservoir input parameters to predict the likely range of outcomes. This approach is consistent with the definitions and guidelines in the Society of Petroleum Engineers (SPE) 2007 Petroleum Resources Management System (PRMS). Analytical procedures used to assess Prospective Resources were: interpretation of reprocessed 3D seismic data; detailed time/depth conversion; and wireline log correlation and petrophysical analysis from the wells drilled in the adjacent fields. This prospective resource assessment is dated 3 May 2016 and released to the ASX 4 May 2016.

# Abbreviations

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<b>\$, A\$</b>	Australian dollars unless specified otherwise
<b>Bbls</b>	barrels of oil
<b>boe</b>	barrel of oil equivalent
<b>bopd</b>	barrel of oil per day
<b>EBITDA</b>	earnings before interest, tax, depreciation and amortisation
<b>FEED</b>	Front end engineering and design
<b>FY</b>	Financial year; 12 months to 30 June
<b>H1</b>	Half year; 6 months ended 31 December
<b>kbbbls</b>	thousand barrels
<b>MMbbl</b>	million barrels of oil
<b>MMboe</b>	million barrels of oil equivalent
<b>NPAT</b>	net profit after tax
<b>PEL 92</b>	SA Cooper Basin acreage held by the PEL 92 joint venture now encompassed by Petroleum Retention Licences 85 – 104
<b>1P reserves</b>	Proved reserves
<b>2P reserves</b>	Proved and Probable reserves
<b>3P</b>	Proved, Probable and Possible reserves
<b>1C, 2C, 3C</b>	high, medium and low estimates of contingent resources