



In the home



Fuelling industry



Powering the state

# Importance of NSW's Natural Gas:

## Time to separate fact from fiction

Eastern Australia's Energy Markets Outlook 2013  
James Baulderstone – Vice President Eastern Australia  
25 October 2013

**Santos**  
We have the energy.

# The gas debate

Natural gas is essential to economic prosperity



Export is unlocking gas resources, not denying domestic supply



Essential that gas remains available and affordable



NSW has a problem, and a solution



**Santos**  
We have the energy.

# FACT: Gas is fundamental to our standard of living

## Why natural gas is important in Australia...

### Heating & Cooking

- More than 5.4 million homes use natural gas (over 61%)

### Supplying Local Industries

- Manufacturing & construction contribute ~ \$210 billion to Australia's economy, with gas supplying 45% of their energy needs

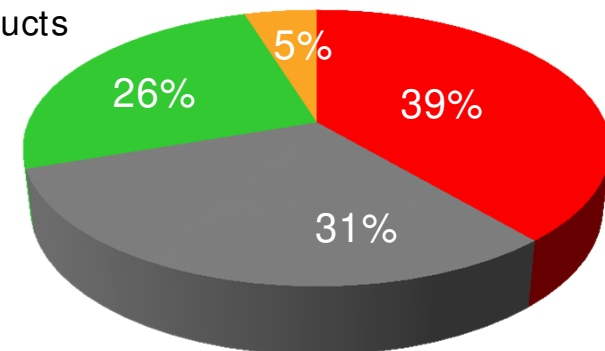
### Power Generation

- Over 32 gas-fired power stations, providing 21% of generation capacity in the NEM

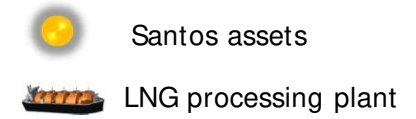
Natural gas expected to increase its share of Australia's energy consumption from 26% to 31% by 2035<sup>1</sup>

### Australian Primary Energy Consumption<sup>1</sup>

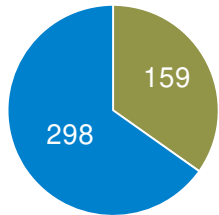
- Petroleum Products
- Coal
- Gas
- Renewables



# FACT: Australia has enormous natural gas potential



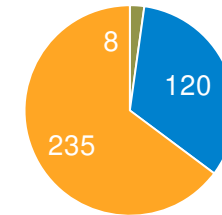
## Western Australia<sup>1</sup>



■ Conventional  
■ Unconventional

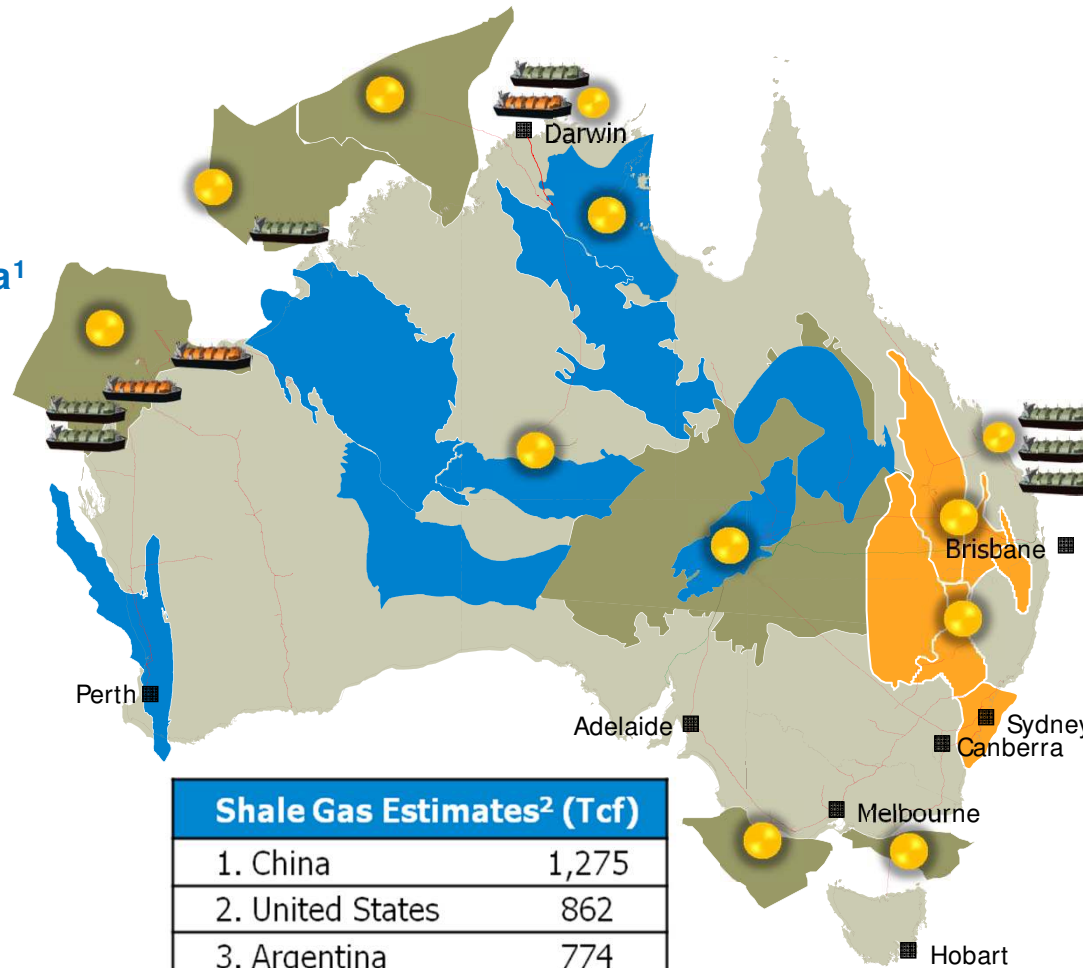
**457**  
tcf

## Eastern Australia<sup>1</sup>



■ Conventional  
■ Unconventional  
■ Coal bed methane

**363**  
tcf



Shale Gas Estimates <sup>2</sup> (Tcf)	
1. China	1,275
2. United States	862
3. Argentina	774
4. Mexico	681
5. South Africa	485
<b>6. Australia</b>	<b>396</b>

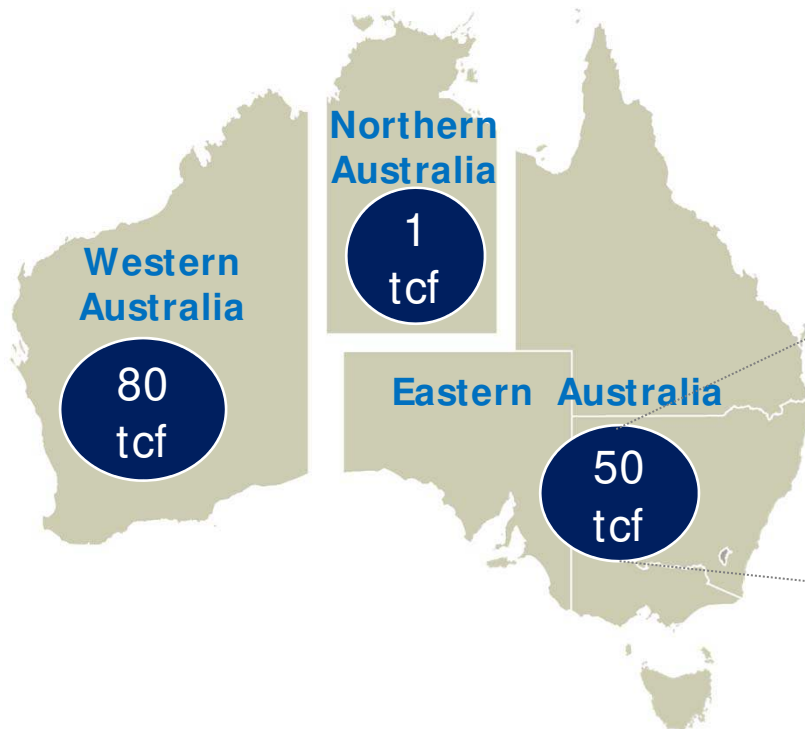
1. Total demonstrated resources  
2. Technically recoverable resources  
Source: BREE 2012 Gas Resource Assessment & EIA World Shale Gas Resources 2011



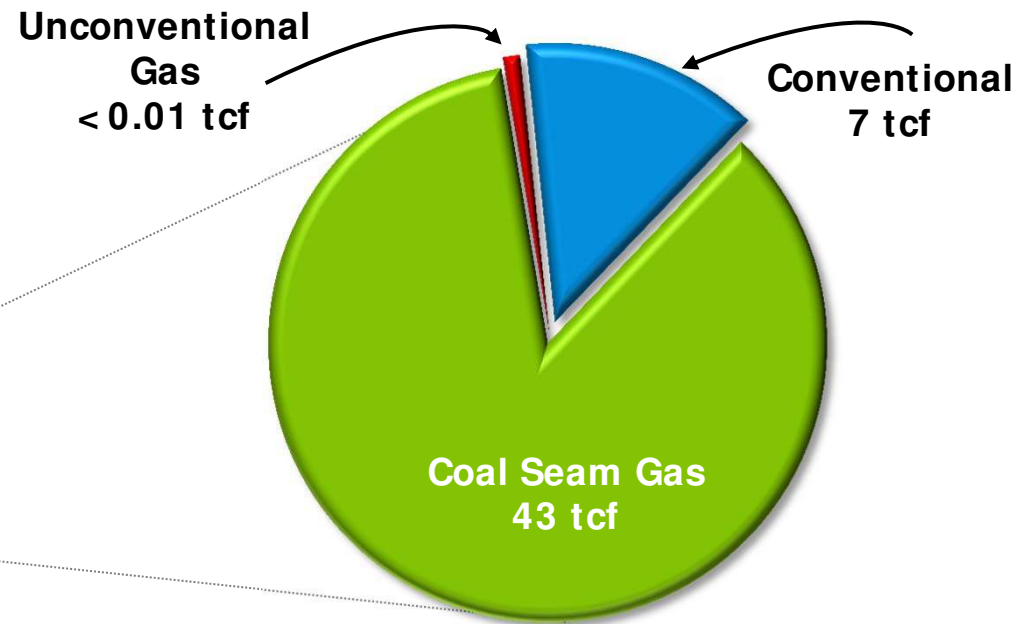
# FACT: East Coast conventional gas in short supply

More than 86% of Eastern Australian gas reserves are in coal seams...

## Australia's 2P Reserves



## Eastern Australia 2P Reserves



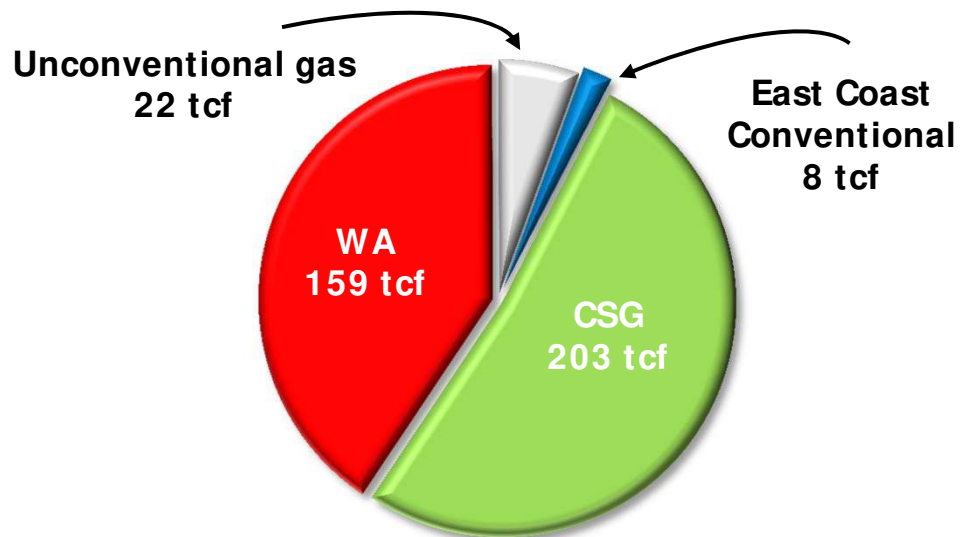
...supplying 30% of Eastern Australia's gas market



# FICTION: '184 years' of gas supply without CSG

“Australia’s combined identified gas resource is of the order of 392 tcf, equal to around 184 years at current production rates”

*Australian Gas Resource Assessment 2012, BREE p. 19*



- 40% located in WA
- 6% unconventional gas (tight and shale)
- 52% coal seam gas
- 2% conventional gas on the east coast

Less than than 15 years of conventional gas supply in eastern Australia

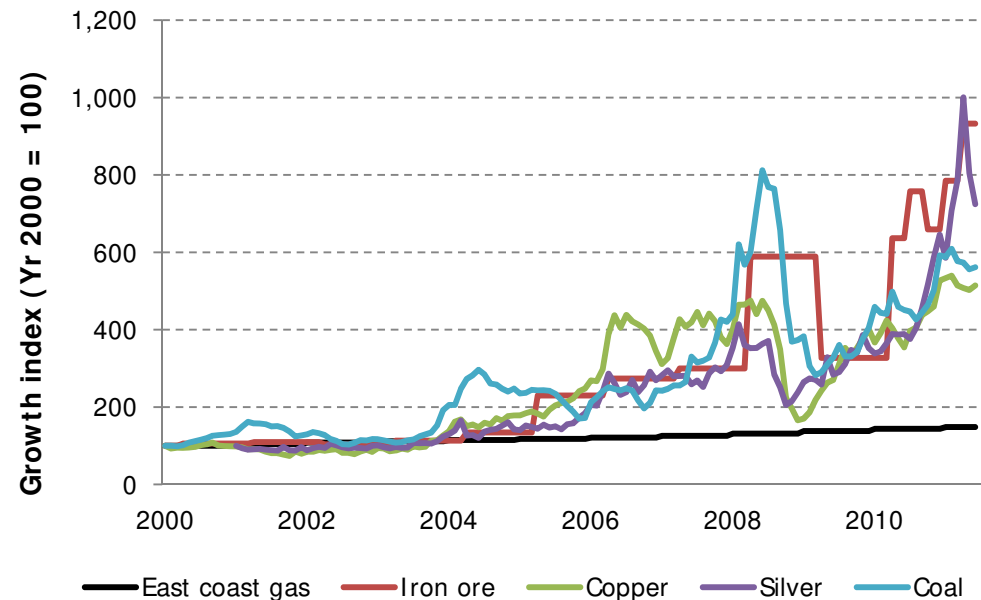
# FACT: All Australian industries rely on exports

Australia's small economy requires international scale to enable efficient production

- Gas prices artificially low last 15 years
- Gas extraction costs are increasing
- Sustained production requires higher prices

Industry	Domestic	Export <sup>1</sup>
Wool	6%	94%
Cotton	17%	83%
Wheat	18%	82%
Coal	20%	80%
Beef	34%	66%
East coast gas <sup>2</sup>	100%	0%

Commodity price indices



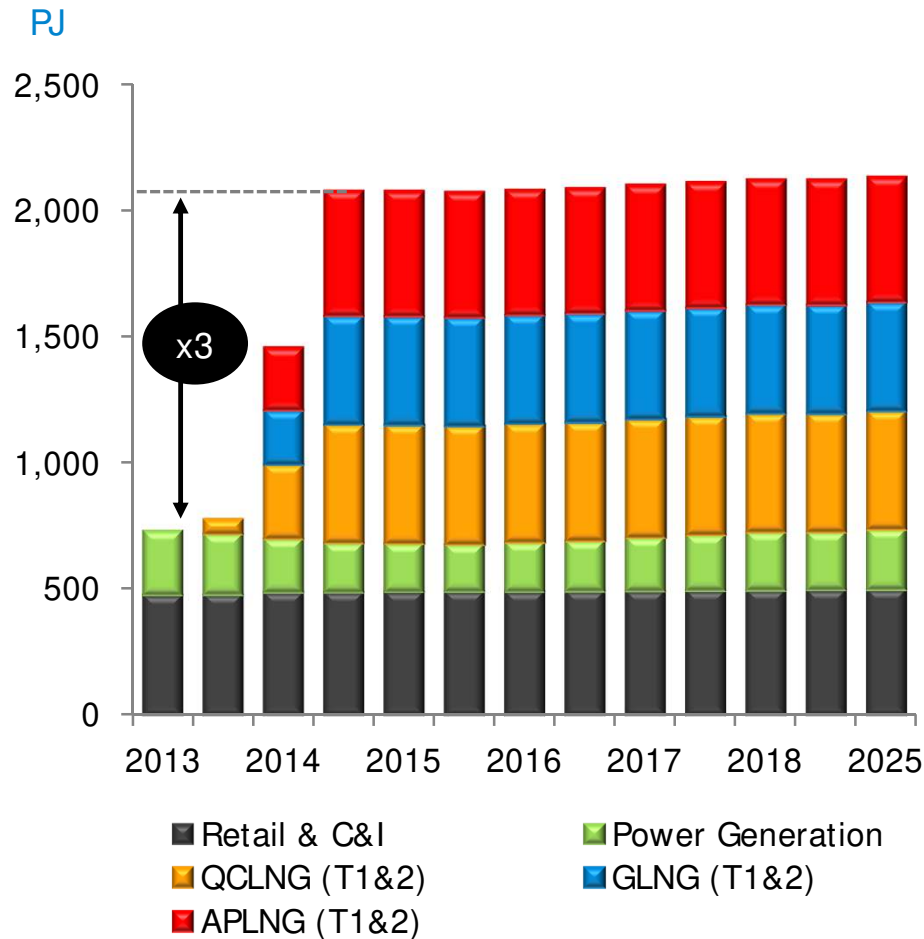
1. Source: RET, ABARES Agricultural commodity statistics 2012

2. Current gas production in eastern Australia

# FACT: The gas industry is not viable without export

## Export scale has reinvigorated investment in the Cooper Basin

### Eastern Australia Gas Demand<sup>1</sup>



- Extending 40+ years of operating in the basin
- Underpinned \$800m upgrade of Moomba facility and ongoing field development expenditure
- Safeguarded over 3,000 direct jobs
- Investment by international majors (Chevron & BG Group)



# FACT: The gas industry is not viable without export

Export scale has reinvigorated investment in the Cooper Basin



Moomba 191: SA Premier Jay Weatherill opens Australia's first producing shale well

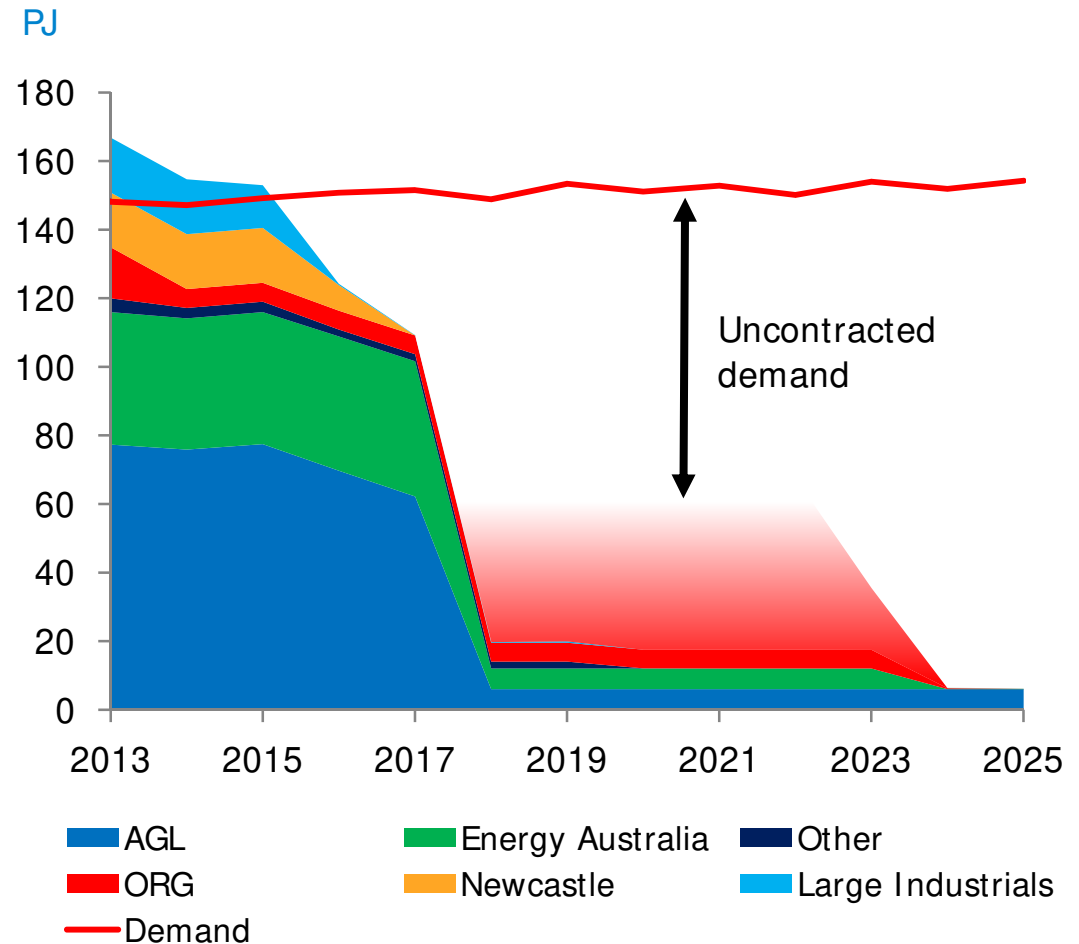
# FACT: NSW has a real energy security concern

## NSW gas supply tight from 2015

- NSW is the only state without significant gas production, importing 95%
- Reliance on interstate suppliers exposes NSW to significant price increases

## Historic supply sources are changing

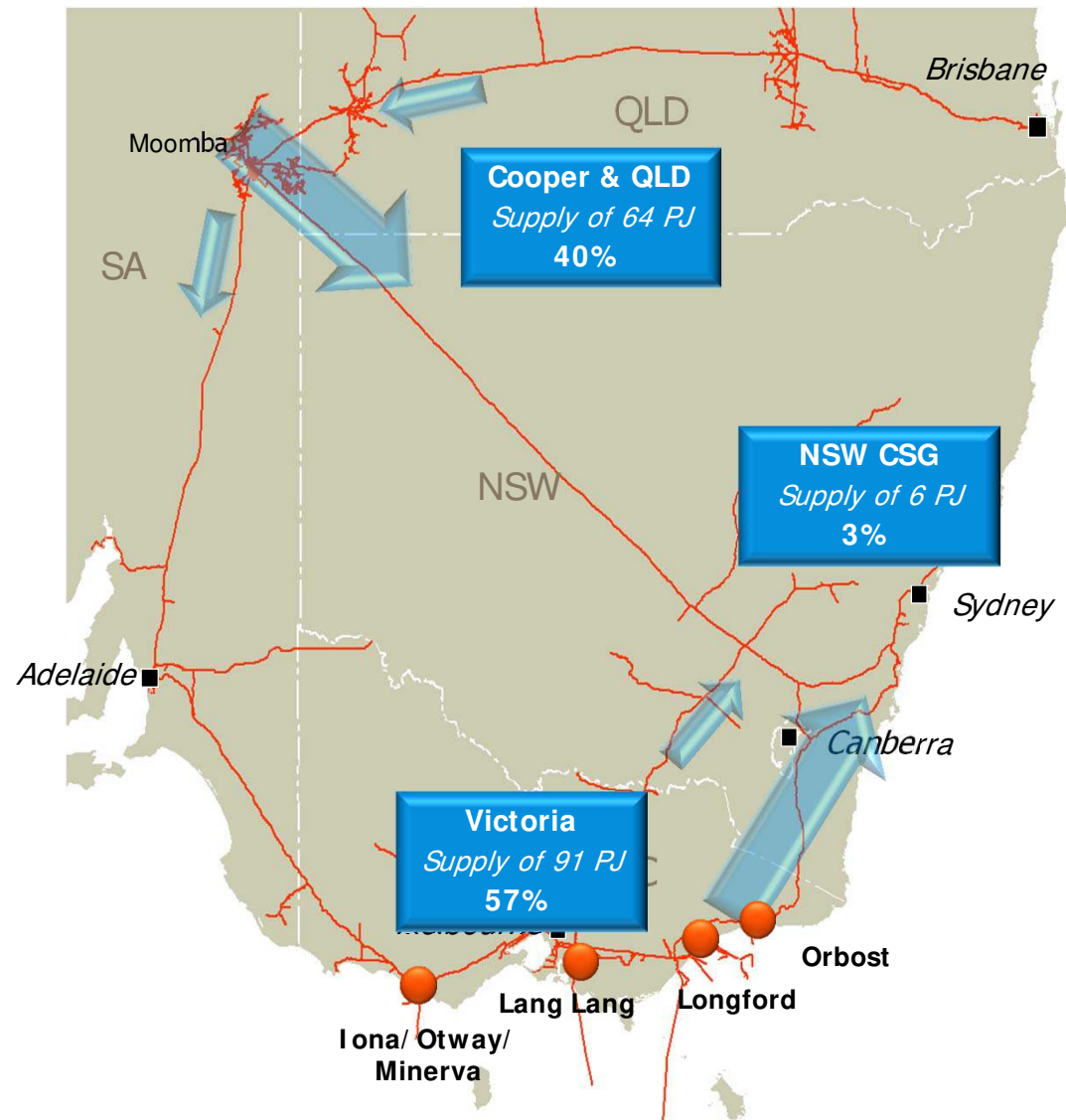
NSW & ACT Demand and Contracted Supply



# FICTION: Existing infrastructure solves NSW issues

East coast demand currently met by multiple transport options

- NSW currently imports 95% of its gas needs

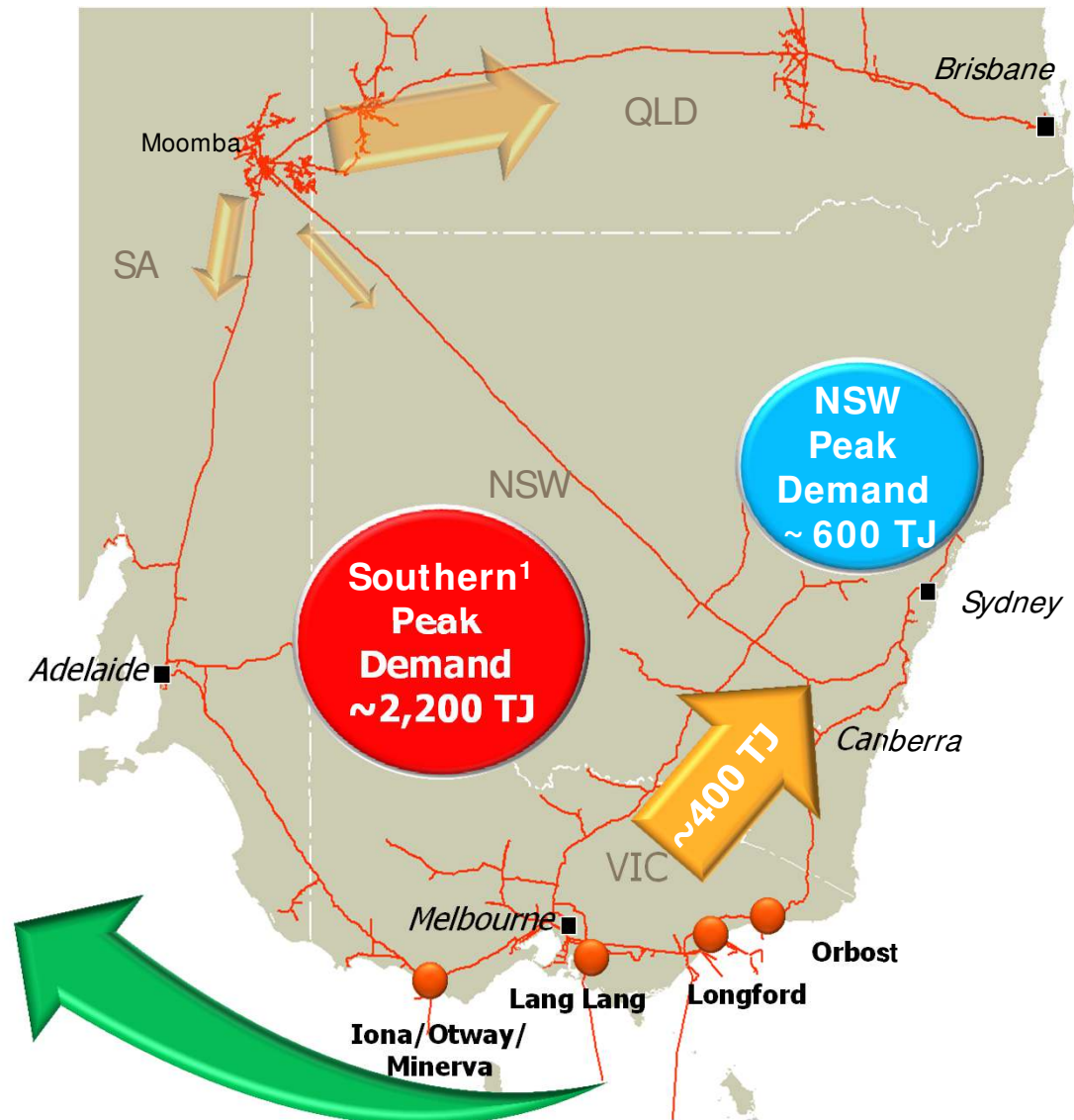


# FICTION: Existing infrastructure solves NSW issues

East coast demand currently met by multiple transport options

- NSW currently imports 95% of its gas needs
- From 2015 the Cooper Basin will predominately supply Queensland
- Pipeline and processing constraints result in gas supply shortfall

Processing Capacity in Victoria ~ 1,760 TJ



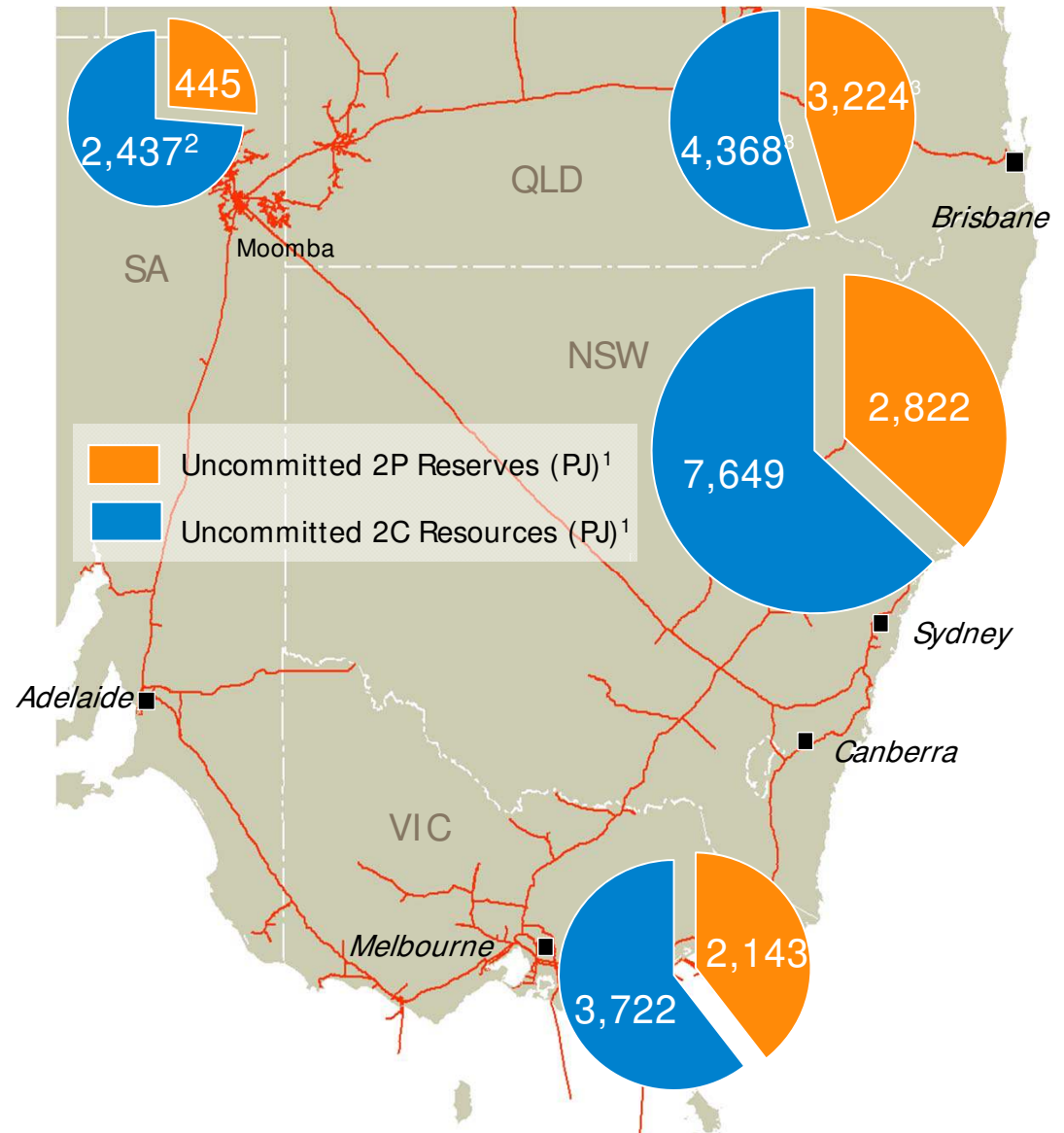
1. Includes SA, TAS, VIC, ACT and NSW gas demand  
Source: Energy Quest, Core Energy

# FACT: NSW needs to develop its own gas resources

New gas production needed to meet demand post 2016

- Diminishing supply from Cooper Basin and QLD CSG
- QLD becomes the largest demand centre from 2015
- Victorian 2P reserve coverage<sup>1</sup> ~ 5 to 8 years

Discovered NSW gas resource could supply state for 20 years



1. For SA/VIC/ACT/NSW/TAS demand

2. Conventional resources

3. Assumes all sanctioned or announced LNG projects are committed



# FACT: Domestic gas reservation is not the solution

Further regulation will result in less gas and higher prices

## US Shale Gas Revolution<sup>1</sup>

- NSW currently has no significant gas production to 'reserve'
- Domestic reservation would limit new resource development
- Market scale attracts investment and development

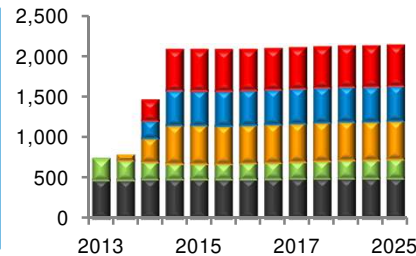


Additional supply (not regulation) results in lower prices



# FACT: NSW gas supply will mitigate price increases

**Export LNG projects do not create limitless demand**



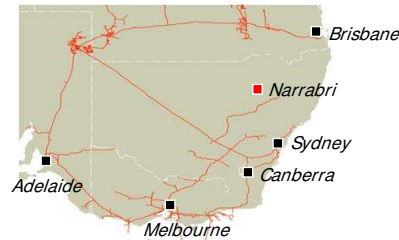
- New LNG requires:
  - Competitively priced customer contracts
  - Sizeable supply sources (eg 250 PJ/year)

**Reality is that new supply has reduced price**



- U.S. demand ~ 25 times Australian market
- Additional supply has halved U.S. gas price
- Prices will remain competitive despite LNG exports

**Gas production & transport costs driving gas prices**



- NSW gas would save ~ \$1-2 in transportation costs
- Customers benefit from proximity to gas development

**NSW project proponents have prioritised NSW gas supply**



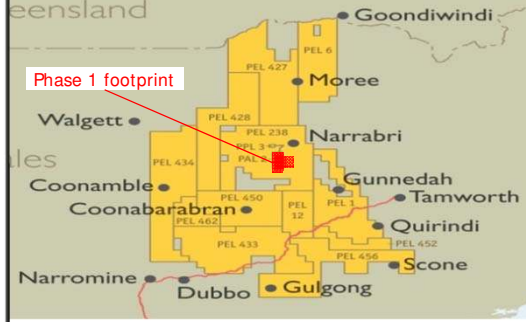


- Supplying homes, industries and power generation
- Providing > 50% of the states needs

**NSW gas supply = lower domestic gas prices**

# Santos' Narrabri development is part of NSW solution

Santos aiming to deliver gas to NSW customers by 2017

Targeting NSW customers	Minimal environmental impact	Agriculture coexistence
		
<ul style="list-style-type: none"><li>■ Potential to develop 2,500 PJ at ~200 TJ/d</li><li>■ Supplying ~50% of NSW gas demand</li><li>■ 1,200 jobs and \$1.6 billion of royalties</li></ul>	<ul style="list-style-type: none"><li>■ Minimal Pilliga impact (500 ha, &lt; 0.5%)</li><li>■ \$20m for Pilliga rehabilitation</li><li>■ Detailed biodiversity, water &amp; emission studies</li></ul>	<ul style="list-style-type: none"><li>■ Outside of prime agricultural land</li><li>■ Wells drilled with landholder consent</li><li>■ Connect to existing gas pipeline (Moomba - Sydney)</li></ul>

Contingent upon timely Government approvals, community support & customer commitment

# FACT: Real NSW and regional benefits

## Narrabri Gas Project will deliver:

- State royalties \$80 million per annum:
  - employ 800 teachers/nurses/police
  - educate > 6,000 students
- Skilled jobs in local communities, peaking at 1,200
- Long term regional economic benefits
- Community payments: \$160m
- Landholder payments: > \$80m



Providing decades of secure energy for NSW homes and businesses



# Depth of community concerns – time for balance

Energy security requires economic, social and environmental factors to be balanced ...



Poll conducted by Lock the Gate Alliance in April/May 2013



The Weekend Australian,  
28 September 2013

# Depth of community concerns – time for balance

Energy security requires economic, social and environmental factors to be balanced ...

“...gas supply is far more important, and fragile, than many people realise. Unless we take a calm and balanced approach we will face serious unintended consequences”

*Australian Industry Group, 4 April 2013*

# The gas debate

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Essential that gas remains available and affordable



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All references to dollars, cents or \$ in this document are to Australian currency, unless otherwise stated. All references to project completion percentages are on a value of work done basis, unless otherwise stated.