



AEMC Strategic Priorities for Energy Market Development 2015

30 September 2015

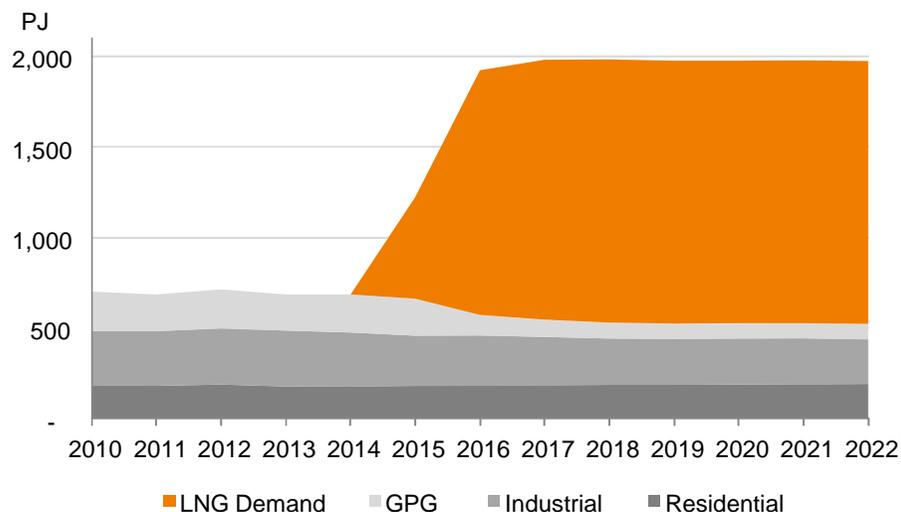
The east coast gas market is undergoing significant change



Demand for gas is increasing

Market in transition

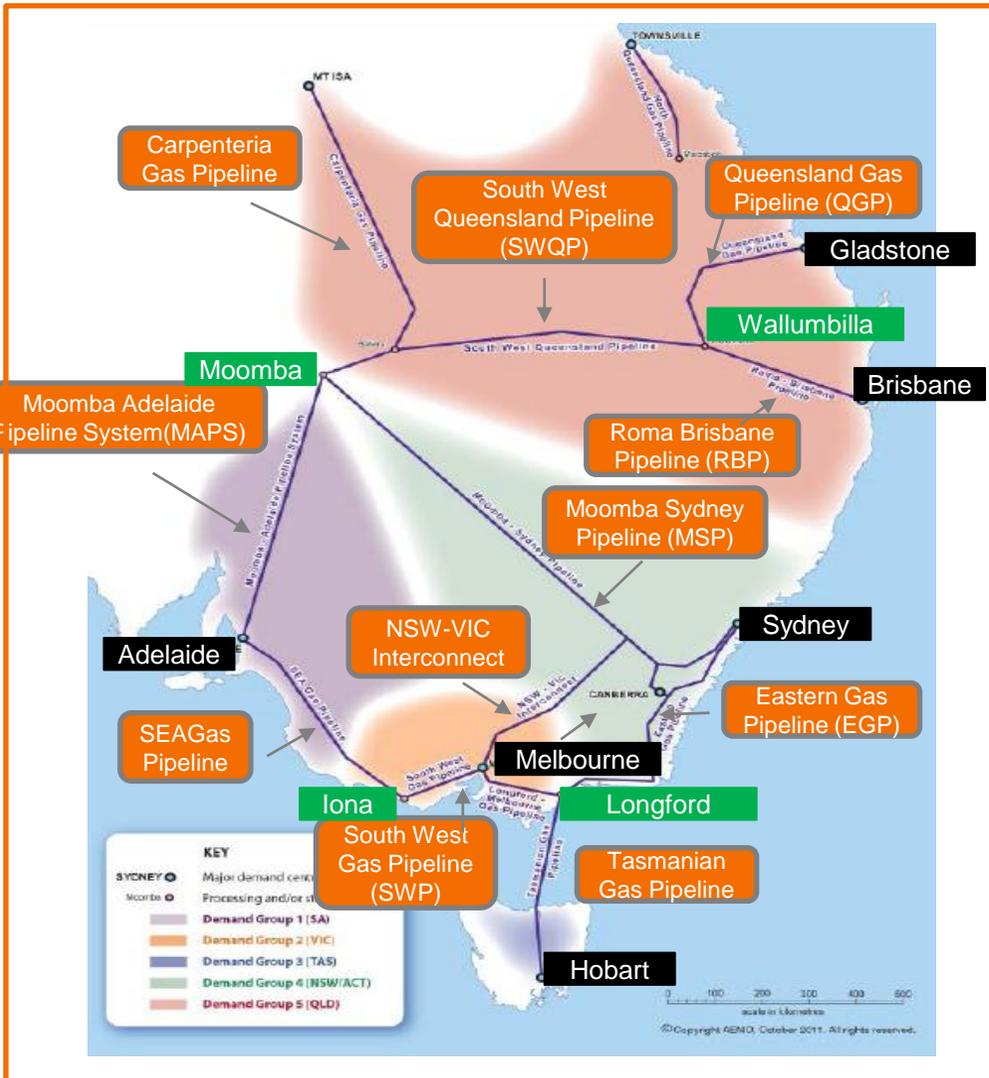
East coast gas demand



- Emergence of the LNG industry
- Expected tripling in demand
- Tighter supply/demand balance
- Increasing cost of production
- Development constraints in some jurisdictions
- Prices higher than historic norms
- Renegotiation of some long term legacy contracts

Source: AEMO data and Origin modelling

Gas flows across the east coast have changed as gas flows north to meet LNG demand



Source: AEMO, Gas Statement of Opportunities 2012, Figure A-2

- Historically Queensland gas has flowed to the southern states, however this will reverse once LNG trains are operational
- During ramp phase, participants managed swings in gas flow between Wallumbilla and Moomba of up to 300 TJ/d
- Flexibility delivered through a combination of:
 - Power stations, including tolling agreements
 - Gas storage
 - Locational swaps
 - Pipeline capacity swaps
 - Time swaps
 - Utilisation of contract flexibility i.e. banking
 - Field turn down
 - STTM & Wallumbilla Gas Supply Hub

Enhancements in gas infrastructure will further increase interconnection and gas flows.



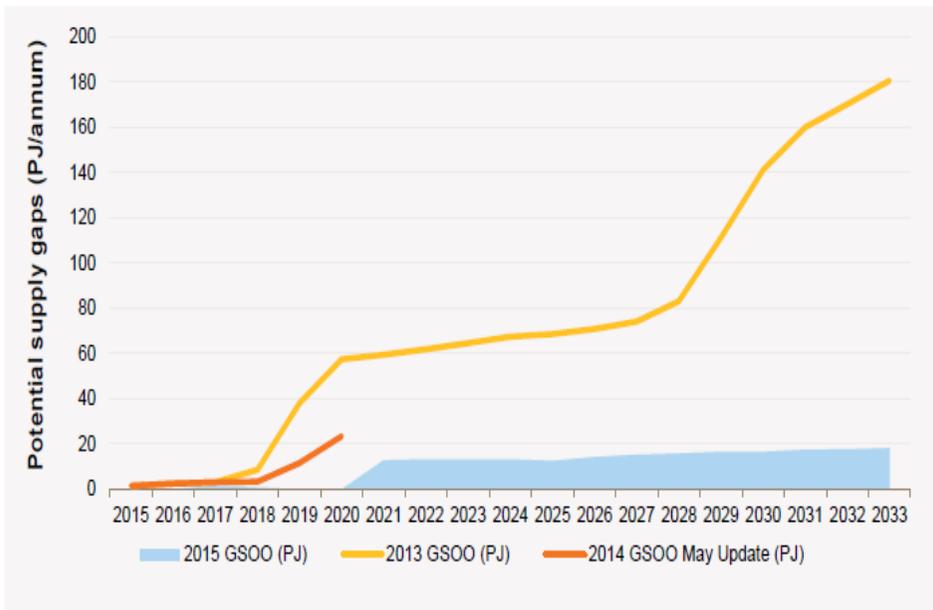
Infrastructure	Upgrade
VIC-NSW interconnect	Expansion to be completed in 2015, flows into NSW increase from 57 TJ to 118 TJ/day.
Moomba to Sydney Pipeline (MSP)	Recent augmentation allows bi-directional flows
Moomba Adelaide Pipeline (MAP)	MAP connected to SEA Gas Pipeline
South West Queensland Pipeline (SWQP)	SWQP is now fully bi-directional
Roma to Brisbane Pipeline (RBP)	RBP now has bi-directional capability
Tasmania Gas Pipeline Storage	Enhance storage facility from 2016 will allow increased injections into the Victorian DTS
Newcastle LNG storage	1.5 PJ facility commissioned

Source: AEMO 2015: GSOO, pg 6 and Energy Quest 2015: Energy Quarterly Report

Significant new developments are required post ~2020 to meet both domestic and LNG demand



AEMO's Total Forecast supply gaps



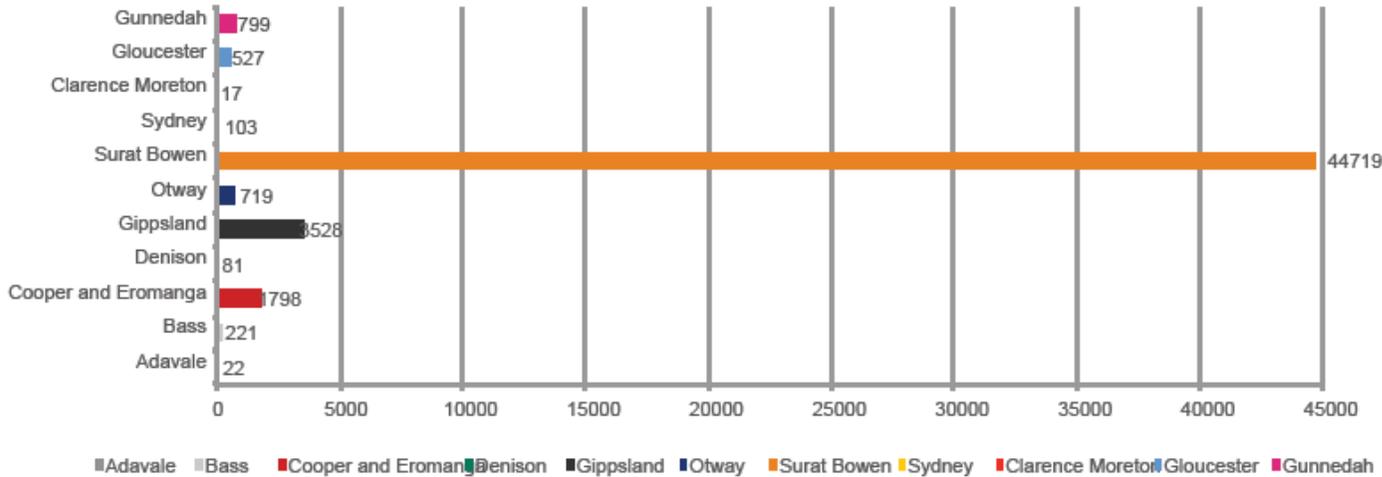
- Varying views as to whether there will be a supply shortfall – Energy Quest, AEMO
- Current indicators are that the market will be tight
- Significant development required post 2020

Source: AEMO GS00 2015, Figure 1.

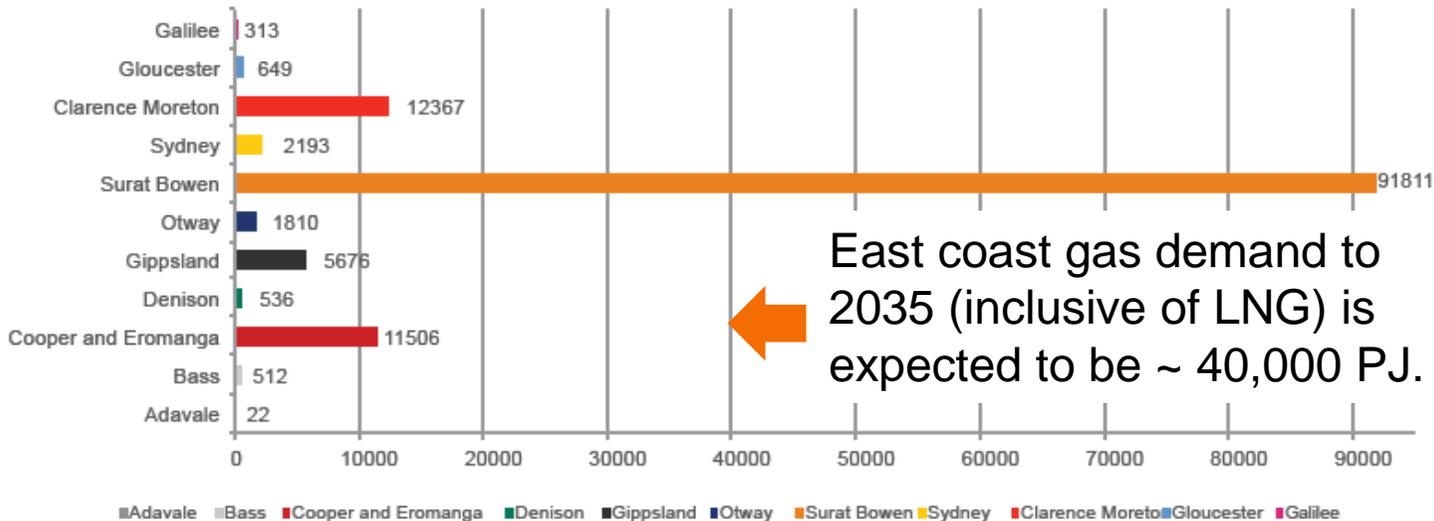
The east coast has an abundance of gas reserves and resources



Eastern & Southern 2P reserves by Basin, PJ



Eastern & Southern 3P/2C Resources by Basin, PJ



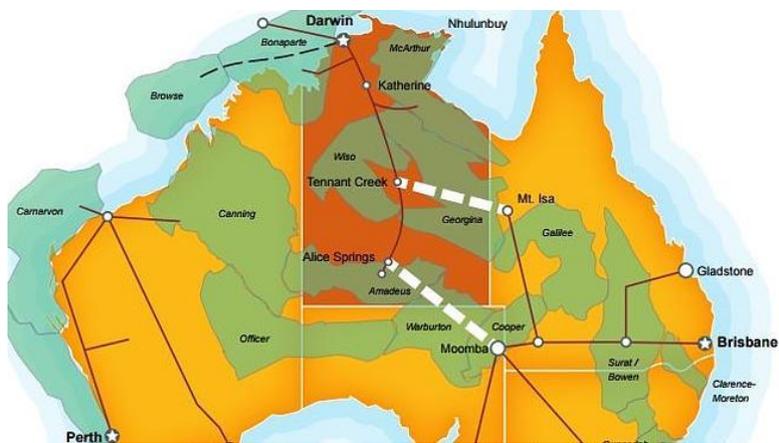
- There are substantial uncontracted reserves and resources
- Opposition to NSW CSG continue to delay development, increasing reliance on Gippsland, other QLD CSG and Cooper
- Contingent resources in Gippsland will need to be converted to reserves to maintain deliverability beyond 2020 when majority of contracts expire
- Lower oil prices and (and related capital constraints) pose challenges to development
- The cost of producing gas for delivery to the domestic market will increase over the next decade

Market design will need to be robust to respond to continued shifts in assumed supply patterns



North East Gas Interconnect

- 4 parties shortlisted
 - APA Group
 - DDG Operations Pty Ltd (DUET)
 - Pipeline Consortia Partners Australia Pty Limited (China National Petroleum Corporation)
 - SGSP (Australia) Assets Pty Ltd (Jemena)



New Development Models Emerging

- Strike's Southern Cooper Basin Gas Project
 - Conditional gas off-take agreements with substantial domestic gas consumers
 - Direct access to infrastructure and Eastern Australian gas markets. Much of the resource is directly under the MAPS pipeline
 - Option fee accelerating resources development
 - Targeting 2P reserves certification in 2015
 - Gas deals, aggregate contracted off-take of 307.5 PJ
 - Gas deals struck prior to 2C resources certification

COAG vision

The COAG Energy Council's vision is for the establishment of a liquid wholesale gas market that provides market signals for investment and supply, where responses to those signals are facilitated by a supportive investment and regulatory environment, where trade is focused at a point that best serves the needs of participants, where an efficient reference price is established, and producers, consumers and trading markets are connected to infrastructure that enables participants the opportunity to readily trade between locations and arbitrage trading opportunities.

Characteristics of a well functioning market (AEMC)

1. A credible reference price reflective of underlying supply and demand
2. Timely and efficient investment in infrastructure.
3. Readily available market information
4. Price and volume risks can be managed and are appropriately allocated: participants
5. Minimised barriers to entry:
6. Minimised transaction costs: efficient transaction costs support timely and efficient investments in infrastructure and encourage competition.

AEMC Design Concepts



		Promotes Liquidity & Transparency	Promotes Efficient Investment in Infrastructure & Development	Proportionate Response / Ease of Transition
Wholesale Design	Multiple Physical Hubs	x	✓	✓
	Northern & Southern Virtual Hubs (balance at Adelaide & Sydney)	✓	✓	✓
	Two Large Virtual Hubs Covering East Coast	✓	x	x
Pipeline Regulation & Capacity Trading	Approach A – Facilitate trading between parties	✓	✓	✓
	Approach B – Improve the incentives of capacity holders in the provision of capacity	✓	x	x
	Approach C – Improve the incentives of pipeline owners in facilitating access to capacity	✓	x	x

Hub & Balancing at Wallumbilla, - Exclude RBP from hub

Challenge is to standardise without increasing shipper risk



Thank you