



Australian Domestic Gas Outlook – March 2019



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Statements in this presentation as to gas and mineral resources has been compiled from data provided by Armour's Chief Geologist, Mr Luke Titus. Mr Titus' qualifications include a Bachelor of Science from Fort Lewis College, Durango, Colorado, USA and he is an active member of AAPG and SPE. Mr Titus' has over 20 years of relevant experience in both conventional and unconventional petroleum exploration in various international hydrocarbon basins. Mr Titus has sufficient experience that is relevant to Armour's reserves and resources to qualify as a Reserves and Resources Evaluator as defined in the ASX Listing Rules 5.11. Mr Titus consented to the inclusion in this report of the matters based on his information in the form and context in which it appears.



## About Armour Energy



Producer of Gas, LPG, Condensate and Oil

Long Life Production Assets

Operating Facility in Strong Commercial Environment

Current and Future Drilling Programs

Commanding Acreage Position and Portfolio

Vast Under-explored Opportunities



## About Armour Energy



- Armour Energy Limited is an Australian Company, headquartered in Queensland, and listed on the Australian Stock Exchange in 2012 (**ASX:AJQ**)
- Key exploration and production assets, connected to the Eastern Australian Gas Market at Wallumbilla via 100% Armour Owned Assets – current 105PJ of uncontracted 2P reserves
- 5 year Gas Sales Agreement (3.6PJ/a) with Australia Pacific LNG
- Extensive Northern Australian exploration acreage, with future access to gas pipe infrastructure and market.
- Armour has direct employment of 50 full time staff, split between Brisbane and Surat = supports up to 500 indirect jobs within the Australian Economy<sup>(i)</sup>

(i) National Energy Resources Australia – 2016  
<https://www.nera.org.au/AustraliasEnergyResourcesSector/AustraliasFutureEnergyWorkforce>

# Armour Energy - Onshore Projects Summary

## Premier Assets and Proven Operational Execution



### Kincora Project

- Natural gas, LPG, Oil & Condensate production and development

### North QLD & Northern Territory

- Conventional & unconventional exploration and future production

### Victoria Onshore Conventional

- Possible exploration & appraisal

### Uganda – Albertine Graben

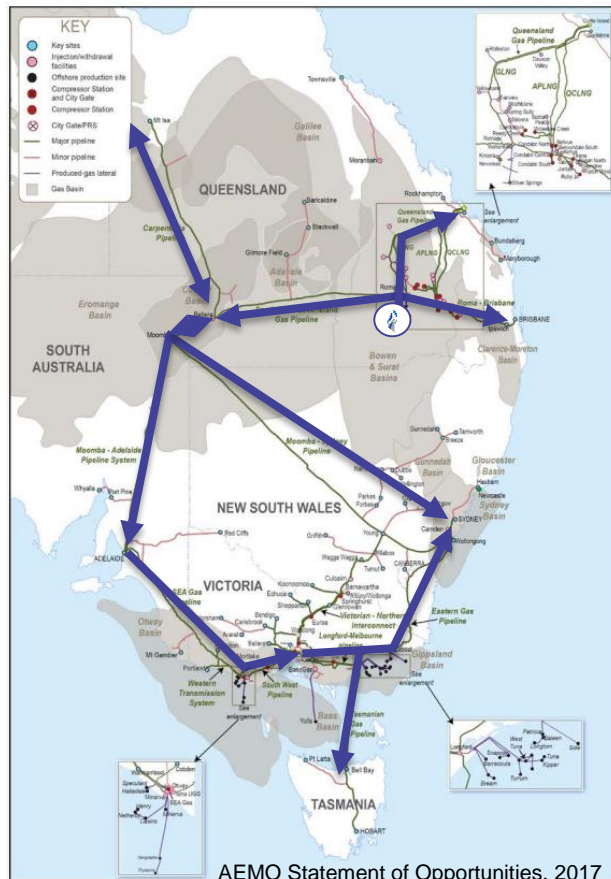
- Oil exploration



# Kincora Gas Project



# Armour's Access to East Coast Markets



- Armour's Kincora Project infrastructure is strategically located – adjacent to the Wallumbilla Gas Hub
- Field Development Planning is underway to support a multi-TCF project associated with the Roma Shelf Assets
- Northern Australian exploration assets
- Armour's gas is available to the East Coast via existing pipeline infrastructure.
- Access to long term gas contracts and spot gas market

**Right Infrastructure, Right Location**

Armour has a 5 year development plan to maintain production profile and reserve replacement ratio.

Total Reserves – Kincora Project <sup>(1)</sup>	1P	2P (1P+2P)	3P (1P+2P+3P)
Estimated Net Total Gas (PJ)	39.6	123.6	294.0
LPG Yield (Tonne)	81,770	255,303	607,019
Condensate Yield (BBL)	393,524	1,228,670	2,921,336

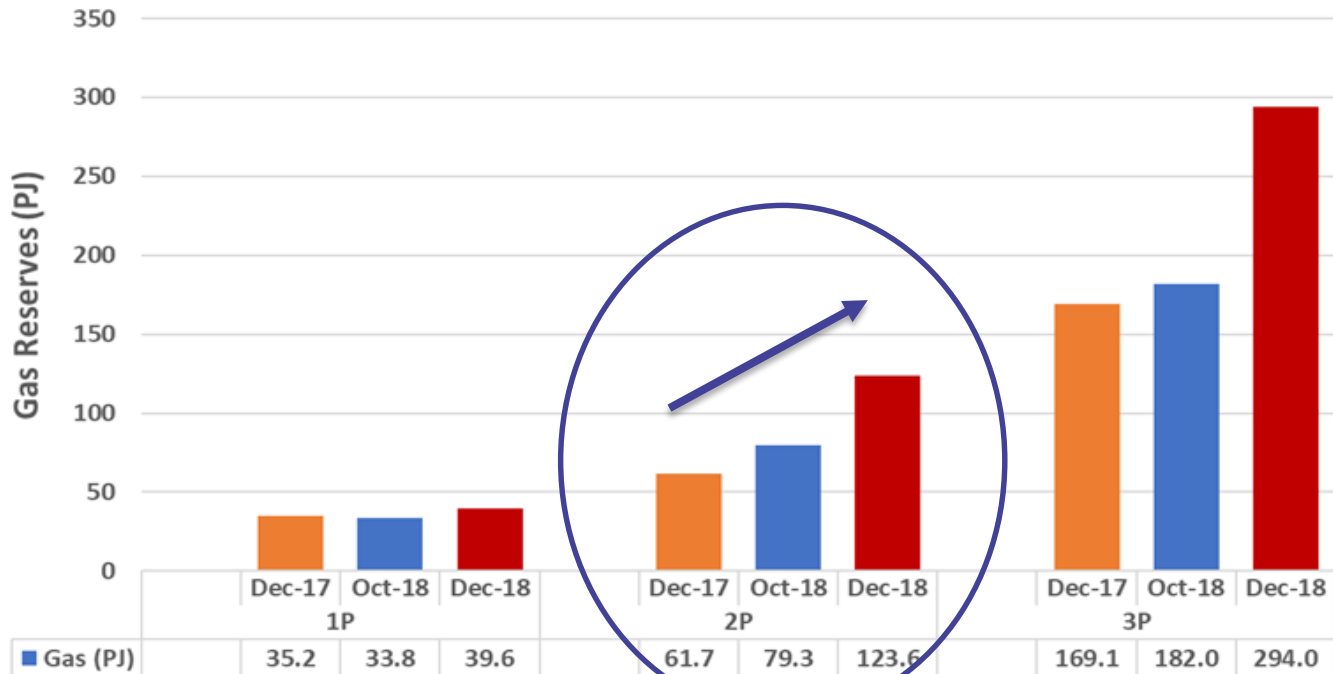
Notes:

- Petroleum reserves are classified according to SPE-PRMS.
- Petroleum reserves are stated on a risked net basis with historical production removed.
- All reserves are listed 100% Armour (reserves exclude Waldgrave JV area)
- Petroleum Reserves have no deduction applied for gas used to run the process plant estimated at 7%.
- BSCF = billion cubic feet, PJ = petajoules, bbls = barrels, gas conversion 1.137 PJ/BCF.
- 1P = Total Proved; 2P = Total Proved + Probable; 3P = Total Proved + Probable + Possible.
- LPG Yield 2065 tonnes/petajoule, Condensate Yield 9938 barrels/petajoule.

<sup>(1)</sup> Source: Armour Energy ASX Announcement on 18 February 2019



## Armour Gas Reserves

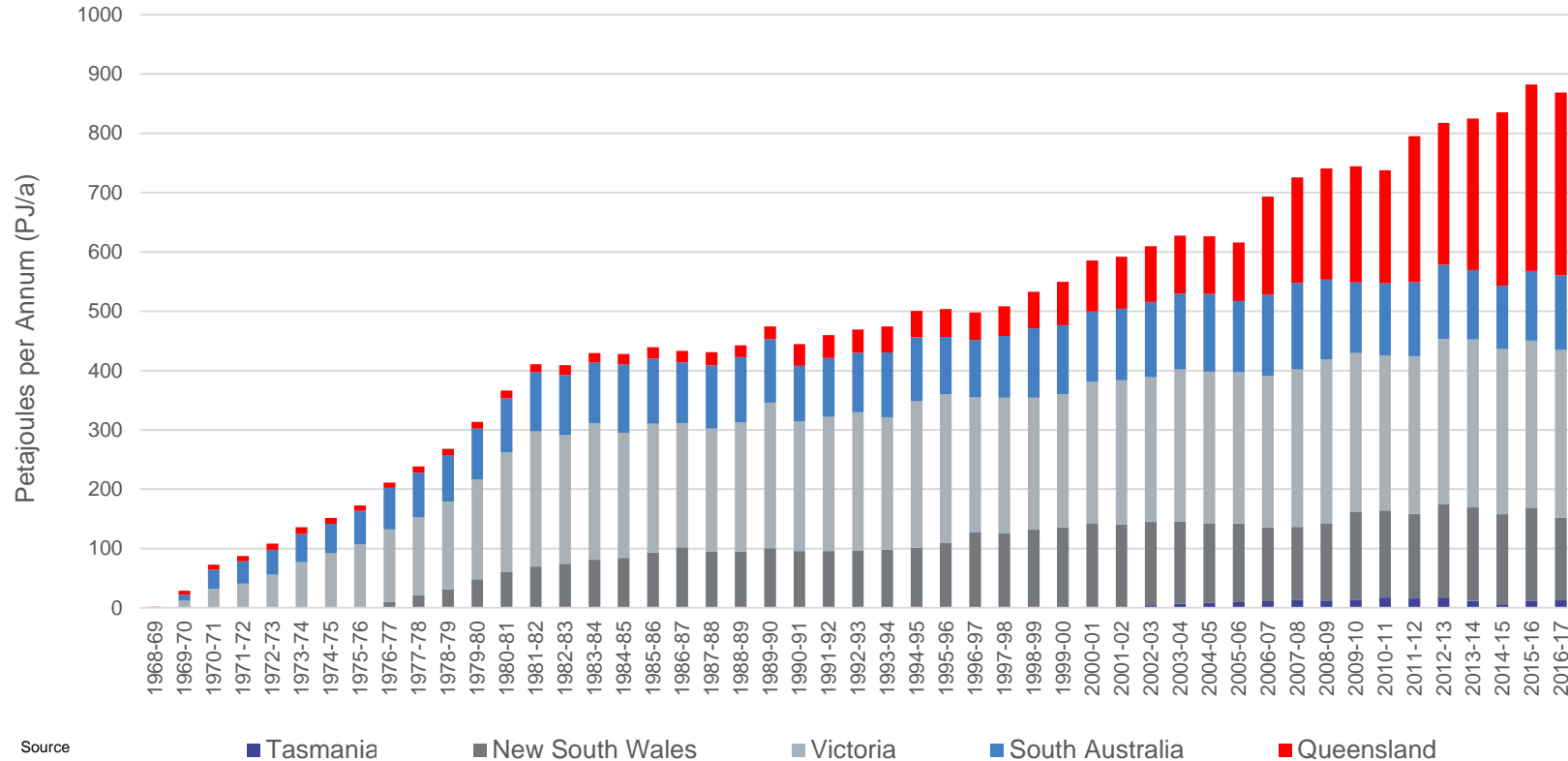


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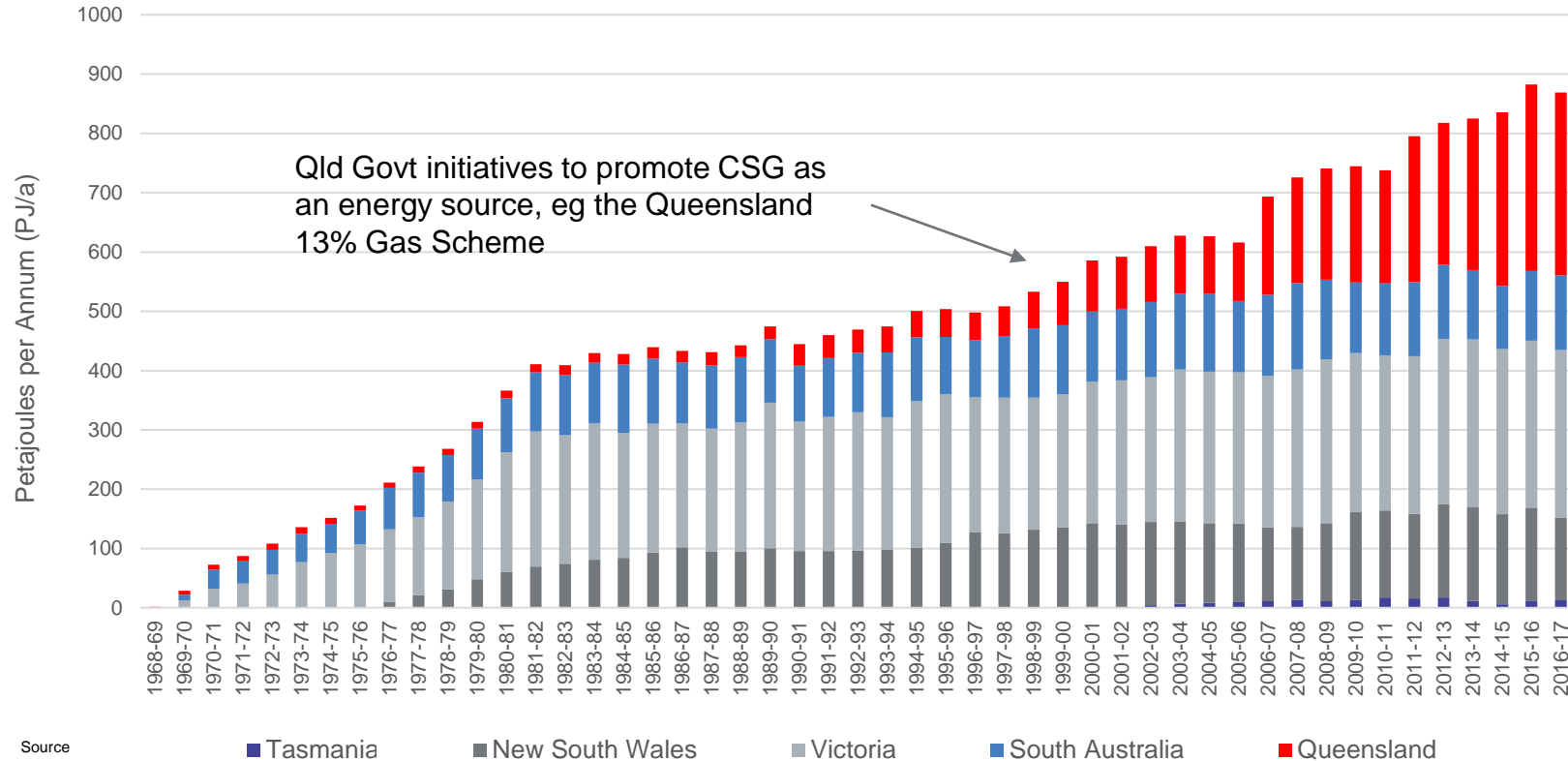
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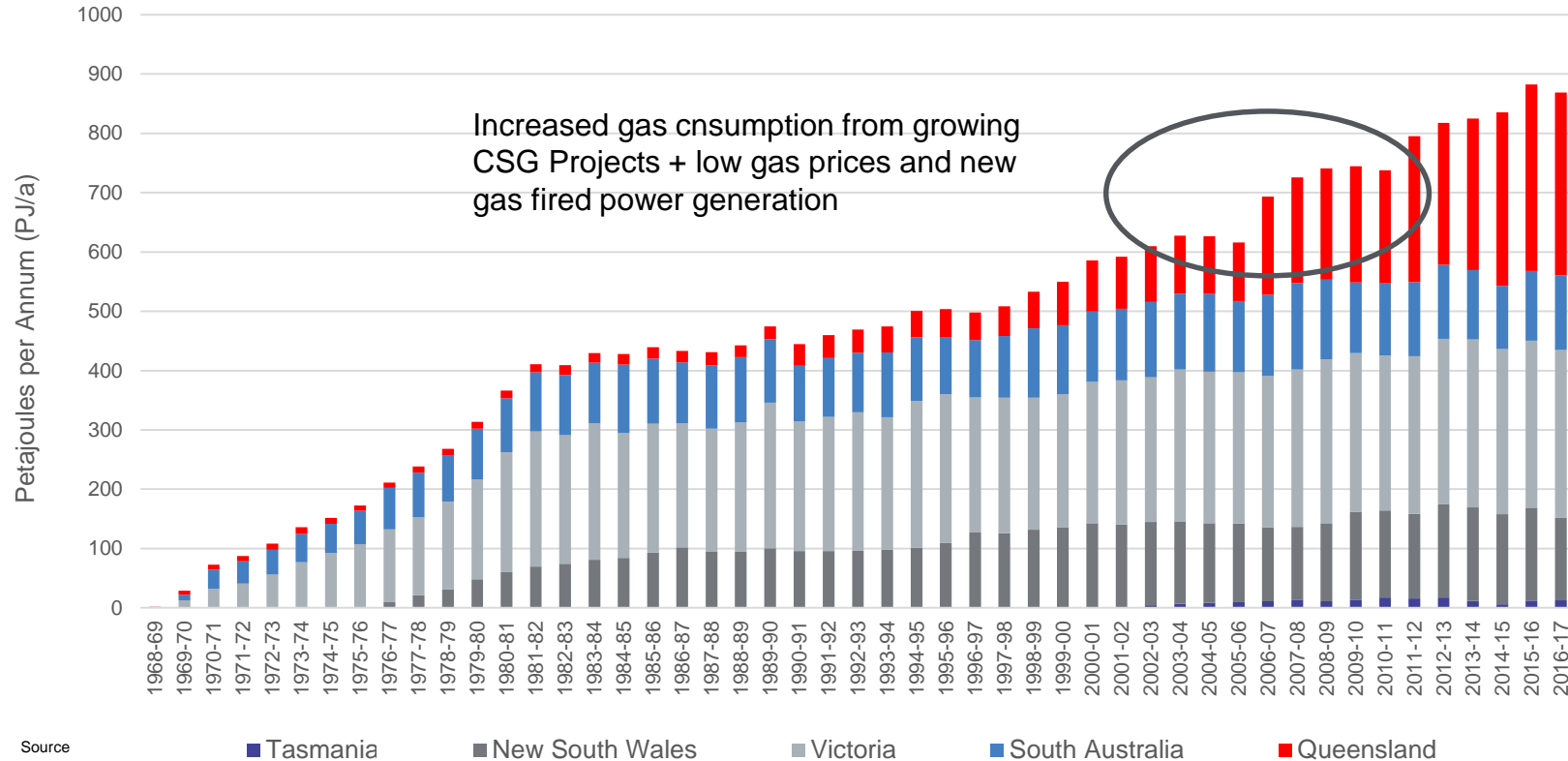
# Annual Increase in Gas Consumption by State



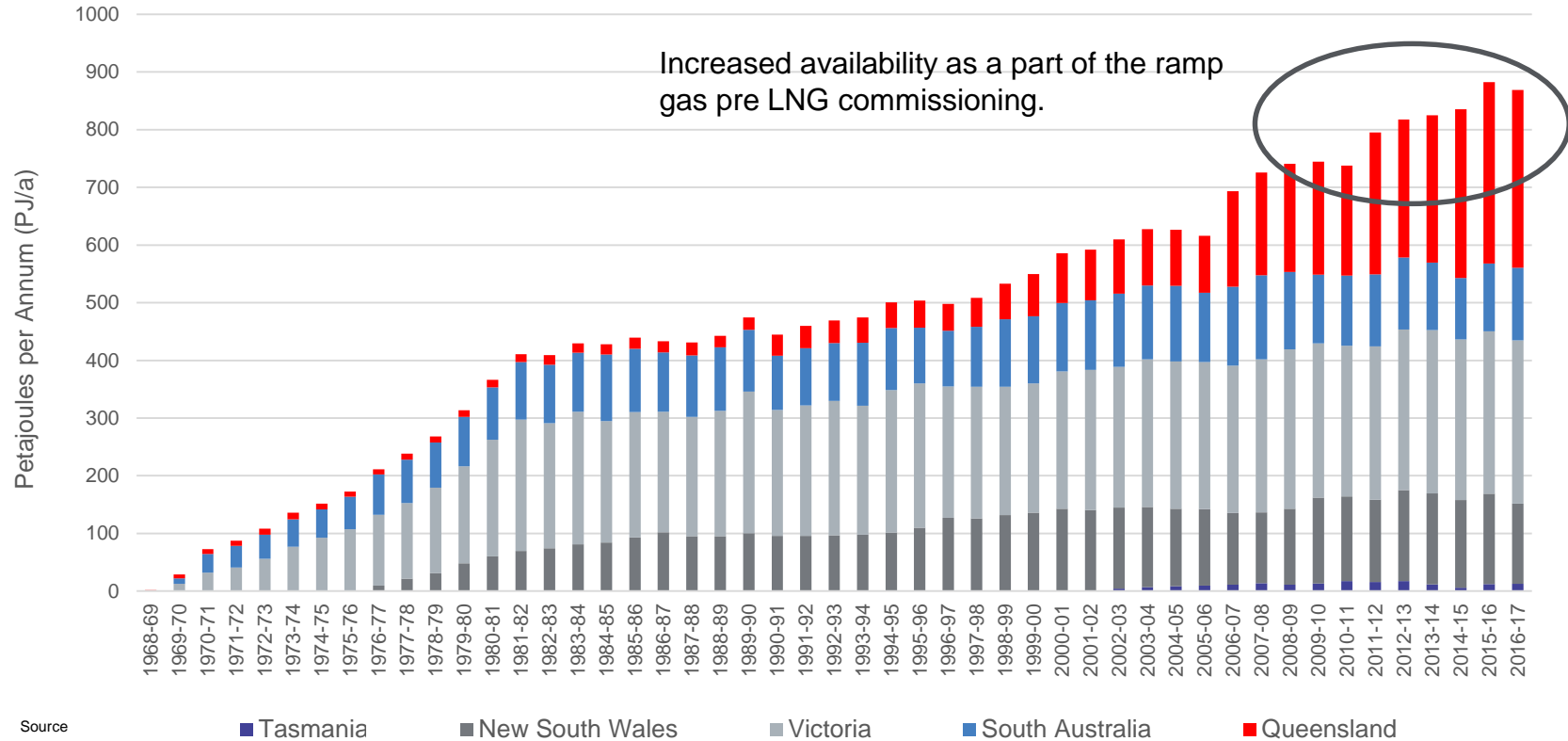
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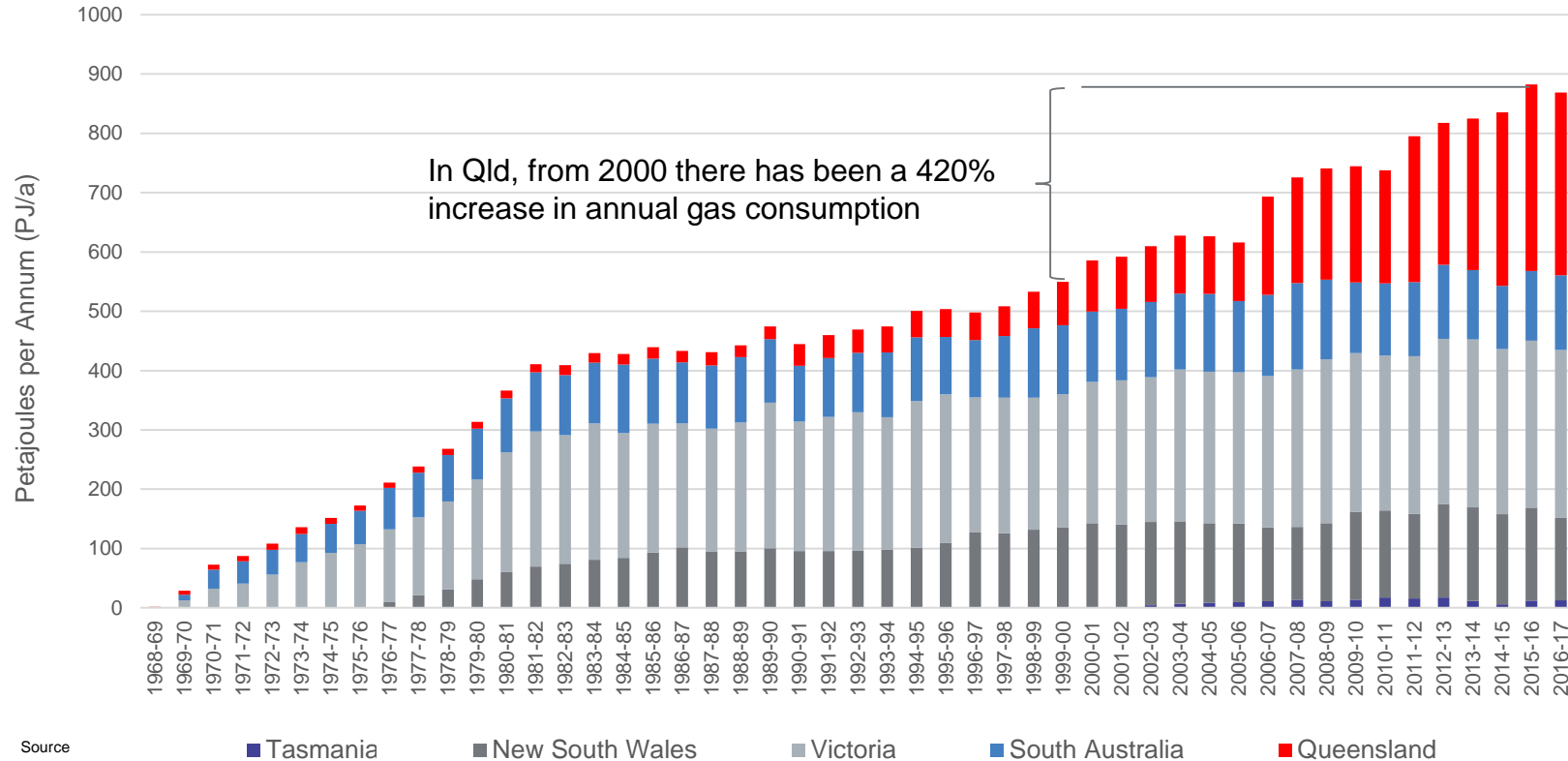


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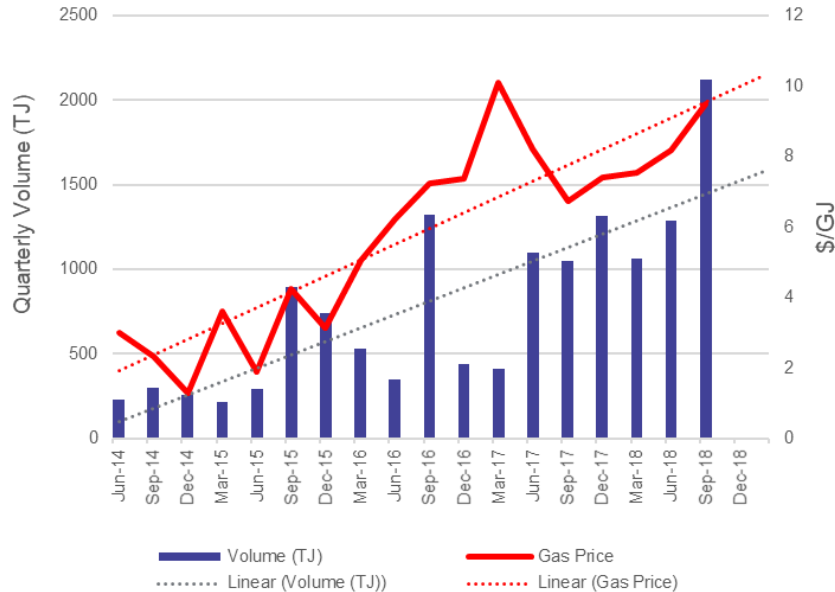


# Annual Increase in Gas Consumption by State



# Gas prices and forecast

Wallumbilla Gas Hub - Trade Volume and Gas Price (i)



- Armour is contracted to supply gas to Australia Pacific LNG for up to 3.65PJ per year for 5 years
- For production volumes beyond this, Armour is able to take advantage of the strong east coast gas market
- Wallumbilla Gas Price has continued to increase in addition to quarterly volume increases
- In 2017, the average gas price delivered to Brisbane/South East Queensland large industrial customers was \$9.69/GJ<sup>(ii)</sup> of which:
  - \$9.00/GJ (93%) was the wholesale gas cost and <sup>(ii)</sup>
  - \$0.69/GJ (7%) was pipeline transportation costs <sup>(ii)</sup>
- Increasing reserves based on drilling new wells increases current uncontracted volumes

## Armour's uncontracted gas position<sup>(iii,iv)</sup>:

2P reserves: 105PJ

3P reserves: 275PJ

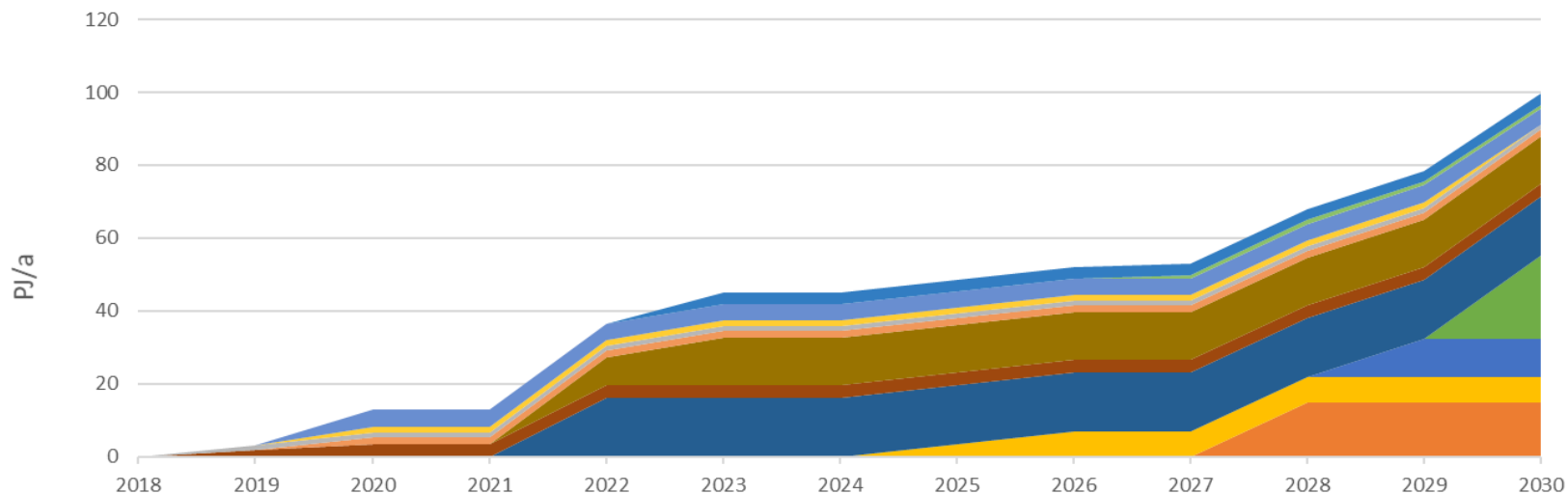
Source : (i) AER wholesale statistics; STTM quarterly prices average daily weighted prices by quarter

(ii) Oakley Greenwood, *Gas Price Trends Review 2017*

(iii) To be able to sell this gas Armour will have to spend additional capex on Facilities and Development Wells

(iv) Value based on \$9.0/GJ Wallumbilla Gas Price as per Oakley Greenwood *Gas Price Trends Review 2017*

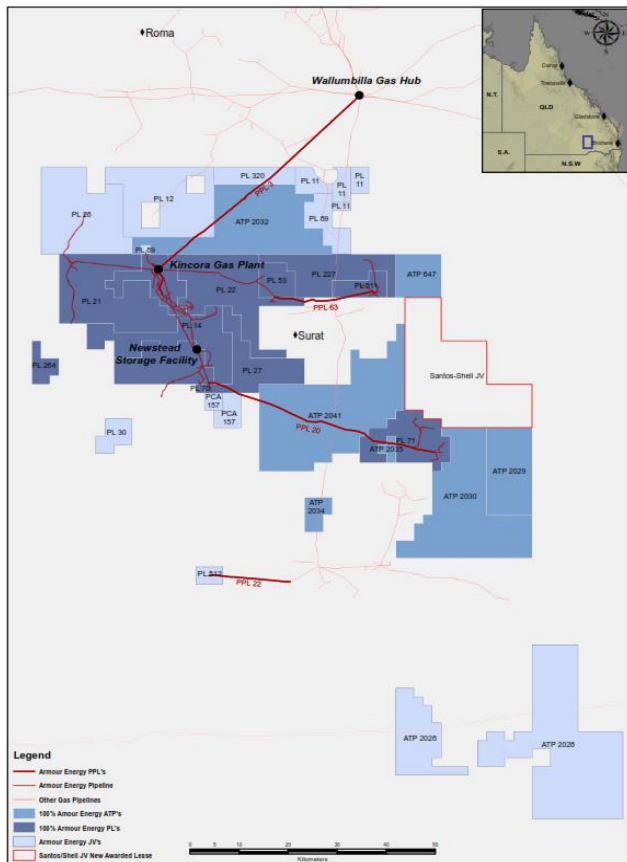
# Queensland Domestic Gas Demand – Volumes Yet To Be Contracted



- A number of long term gas contracts will expire between 2018 – 2030, for which replacement or new gas is required to be contracted
- As many observers note there appears to be an increase in demand from 2021
- *If predictions are correct and the resources / reserves of CSG will not fully sustain LNG projects from 2025 then it is conceivable that domestic contracts currently fulfilled with CSG will be need to be replaced with conventional gas as CSG production is diverted to meet LNG production*
- *Increased exploration leading to new discoveries and reserves replacement is essential*

Source : Department of Natural Resources Mines and Energy (2017), and private research conducted by Armour Energy using publicly available information.

# Armour's Roma Shelf Surat Acreage



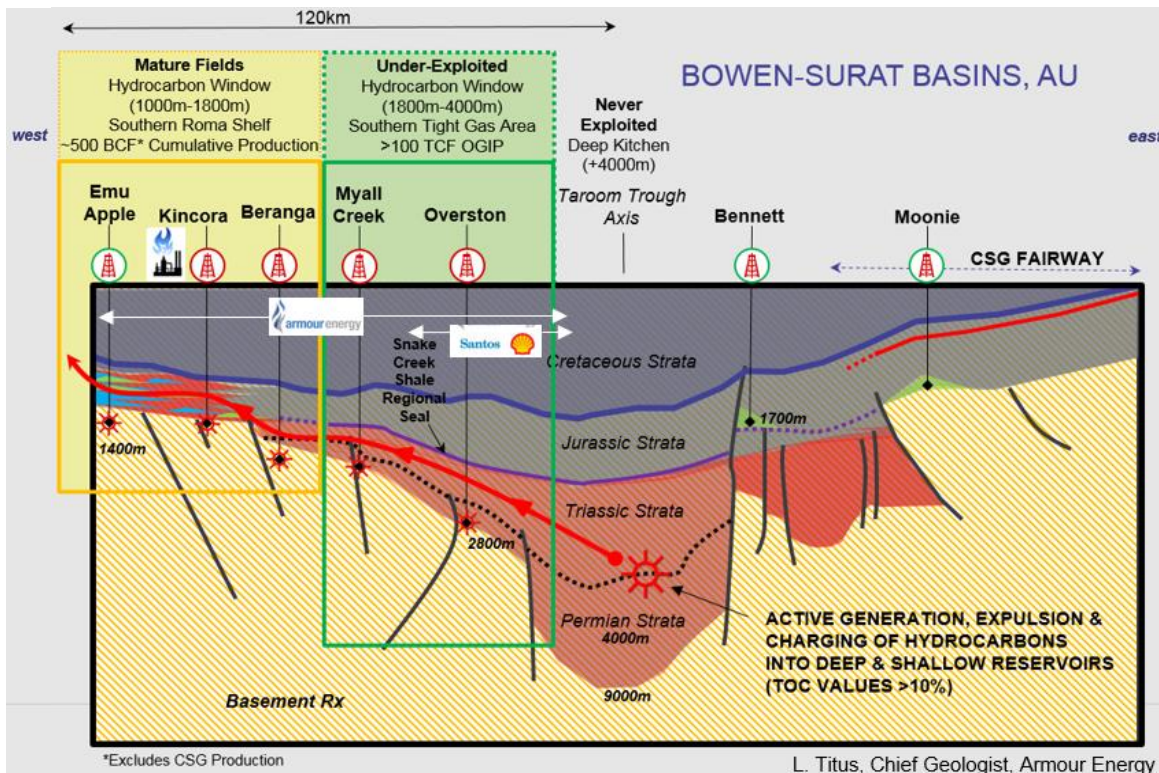
## Exploration is in Armour's DNA

Armour's Kincora Project includes:

- 100% Owned and Operated Petroleum Licences (PL) and Pipelines
- 100% Owned and Operated ATPs (Authority to Prospect)
- Significant number of prospects and leads in the inventory
- Granted two new domestic blocks by the Qld government in 2018
- Recently awarded ATP 2041, 2034 and 2035
- ATP 2041 adjacent to newly granted Santos & Shell 50:50 JV
- 2090km<sup>2</sup> of Exploration acreage
- Exploration acreage located near existing infrastructure with access to market

**Vast, prospective acreage  
in a known gas province**

# Multi TCF Gas-in-Place



- Armour's significant acreage position incorporates an immense volume of over-pressured, continuous hydrocarbon-saturated tight Triassic and Permian reservoir section
- Armour is preparing a Field Development Plan aiming to prove the potential multi-TCF Play
- According to the Santos-Shell JV ATP adjoining Armour's ATP 2041, Santos (as operator) confirms the resources potential:

*"If the play works then we believe there is multi-TCF potential across it"*

Santos chief executive Kevin Gallagher  
Australian Financial Review. 15 November 2018



# Armour's Growth Strategy: A Developing Portfolio for Domestic Supply

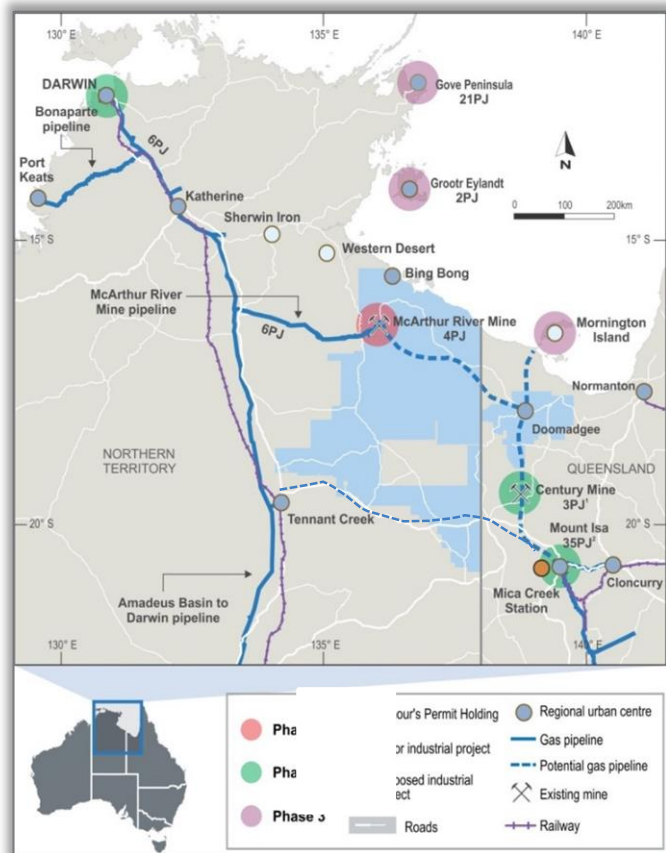


<u>Kincora Acquisition</u> 2015 – 2016	<u>Kincora Restart</u> 2016 – 2017	<u>Kincora Production Growth</u> 2018 – 2019	<u>Armour Growth</u> 2019 – 2020+
<ul style="list-style-type: none"> <li>Finalise Kincora Acquisition</li> <li>Planning &amp; Design for Kincora Recommissioning Works</li> <li>Exploration Program Planning</li> <li>Commence Oil Production</li> </ul>	<ul style="list-style-type: none"> <li>Restart Dry Gas Circuit</li> <li>Commission Newstead Gas Storage for Production</li> <li>Commence 5 TJ/day Sales</li> <li>Commission Wet Gas Circuit</li> <li>LPG, Condensate Sales</li> </ul>	<ul style="list-style-type: none"> <li>Commence 9TJ/ Day Sales</li> <li>Commission Field Compressors</li> <li>Drill New Production Gas Wells</li> <li>Exploit New 3D Over Surat PL's</li> <li>Secure Further Gas Sales Agreements</li> <li>Target 20 TJ/day Sales</li> </ul>	<ul style="list-style-type: none"> <li>Refinance Assets</li> <li>New Infrastructure</li> <li>Exploit Development Plans</li> <li>Target &gt;30 TJ/Day Production and Sales</li> <li>Exploit All Acreage Across The Broader Portfolio</li> </ul>

## Northern Australia Project



# Proven Near Term Production Northern Australia Project Area



- 100% Operated working interest
- 33 million contiguous acres
- Targeting gas and liquids
- Conventional Glyde Gas Field – 6 BCF 2C Resources
- Unconventional Egilabria Gas Field 154 BCF 2C Resources
- Combined NT/QLD Prospective Gas Resource of 57 TCF (Best Estimate)<sup>(1)</sup>
- Access to Multiple Markets; both Domestic and international
- QLD and NT Governments supportive of gas industry

(1) Source: Armour ASX Announcement Source: Armour ASX Announcement 21 September 2015

Cautionary statement: The estimated quantities of petroleum that may potentially be recovered by the application of a 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.



## Nth Qld Market Opportunities



- Modelling indicates 7.5 TCF recoverable gas within Armour's Northern Queensland project area
- Sufficient gas to supply a 6 Mt per annum LNG plant for 25 years, or even better, a combination of domestic and off-shore markets
- 35 PJ per annum + pipeline required to fill Mt Isa market
- 80 PJ per annum pipeline would:
  - Supply Mt Isa
  - Back feed Carpentaria pipeline to Ballera gas hub
- Ballera gas hub accesses East Coast market
- Armour is seeking to farmout a percentage of its interest in the Territory and nth Qld.

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## Highlights

- Australian company working to deliver gas to the East Coast Domestic Gas Market
- Independent oil and gas exploration & production company with positive operational cashflow and significant growth potential
- Portfolio of quality exploration and appraisal projects provides long term value drivers, with demonstrated ability to increase gas reserves
- 275PJ (3P) in currently uncontracted gas reserves associated with the Kincora Project
- Positive East Coast Australia gas market setting with strong demand and gas prices
- Experienced board and management with previous track record of significant shareholder value creation in the energy sector

## Armour's Project Targets

- Complete Phase 3 of Kincora Growth Strategy = 20TJ/d Gas Sales plus liquids and LPG in 2019
- Seek Farm-in partner for ongoing exploration and develop of Northern Australian Assets
- Continue Exploration strategy to target multiple TCF gas and liquids in the Surat Basin





For further information contact:

- Nick Mather – Executive Chairman
- Roger Cressey – CEO

ASX:AJQ

[www.armourenergy.com.au](http://www.armourenergy.com.au)