

# Windorah Gas Project

Developing a Significant Gas Field in the Cooper Basin



Real Energy Corporation Limited (ASX: RLE)  
Energy Investor Day – Blue Ocean - March 2019



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## **Geological Information**

The geological information in this presentation relating to geological information and resources is based on information compiled by Mr Lan Nguyen, who is a Member of Petroleum Exploration Society of Australia, the American Association of Petroleum Geologist, and the Society of the Petroleum Engineers and has sufficient experience to qualify as a Competent Person. Mr Nguyen consents to the inclusion of the matters based on his information in the form and context in which they appear. The information related to the results of drilled petroleum wells has been sourced from the publicly available well completion reports.

# Windorah Gas Project – Achievements to date

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01

**4 wells drilled in 927P – all gas discoveries** - Close to existing major developments and easy access to major gas pipelines connecting Australian domestic market and LNG hubs

02

**Gas Flow Rates** – Initial flow of 2 mmcf/d and 2.5 mmcf/d recently completed Tamarama 2 and 3 wells.

03

**Agreement for gas processing and Transporting executed with Santos Limited and Beach Energy Limited** – Well placed to supply gas to the Eastern Australian gas markets which are short gas and dependent on undeveloped resources

04

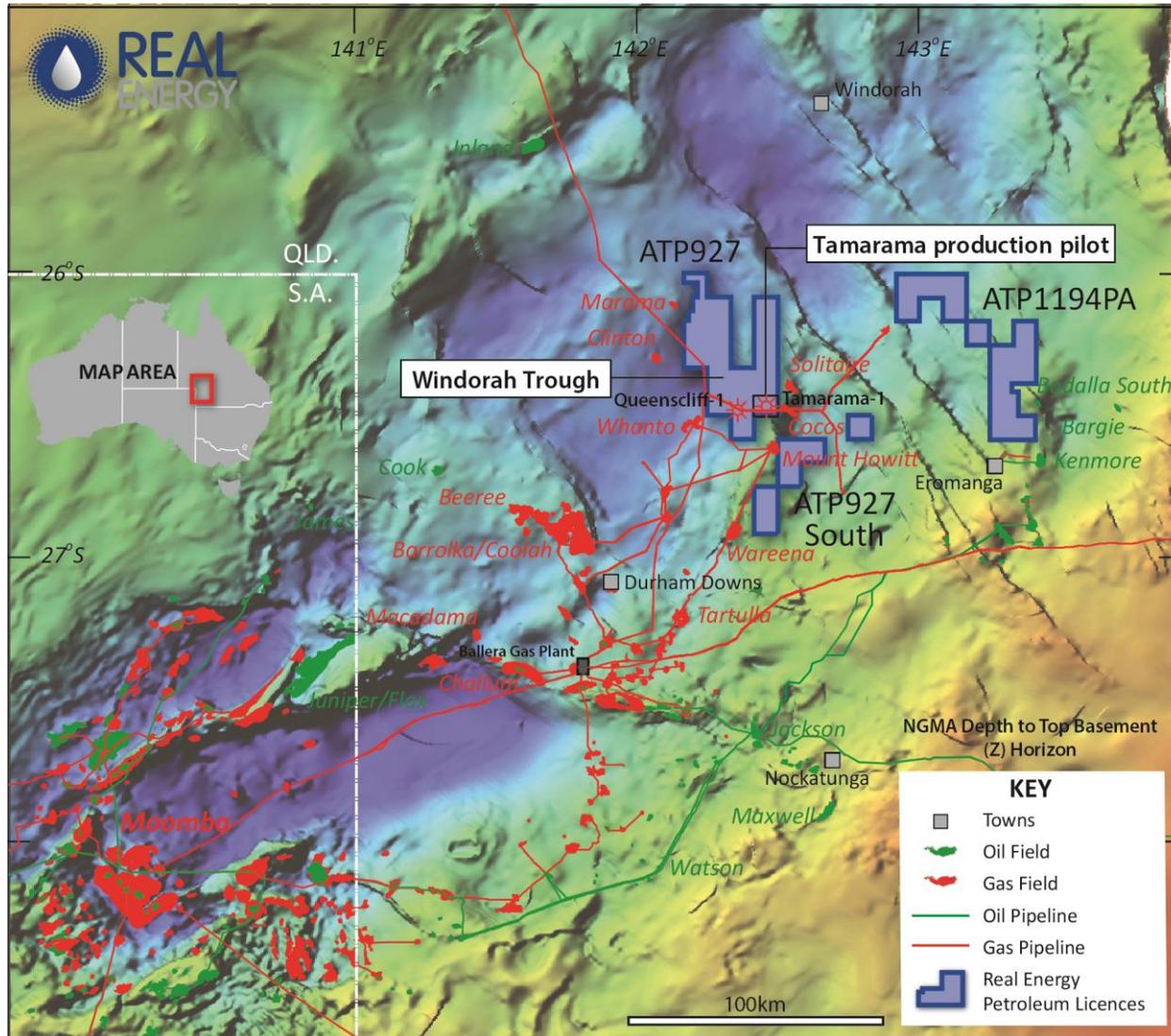
**Application for Pipeline Licence lodged with Queensland Government Significant Gas Resource** – Real Energy's acreage has a certified Estimated Total Mean Gas-In-Place of 13.76 TCF and a Maiden 3C gas resource of 672 BCF

05

**Sales Pathway** – MOU with Weston Energy for gas sales and with strong buyer interest from other parties. On track for production in 2019/2020

# World Class Location

01

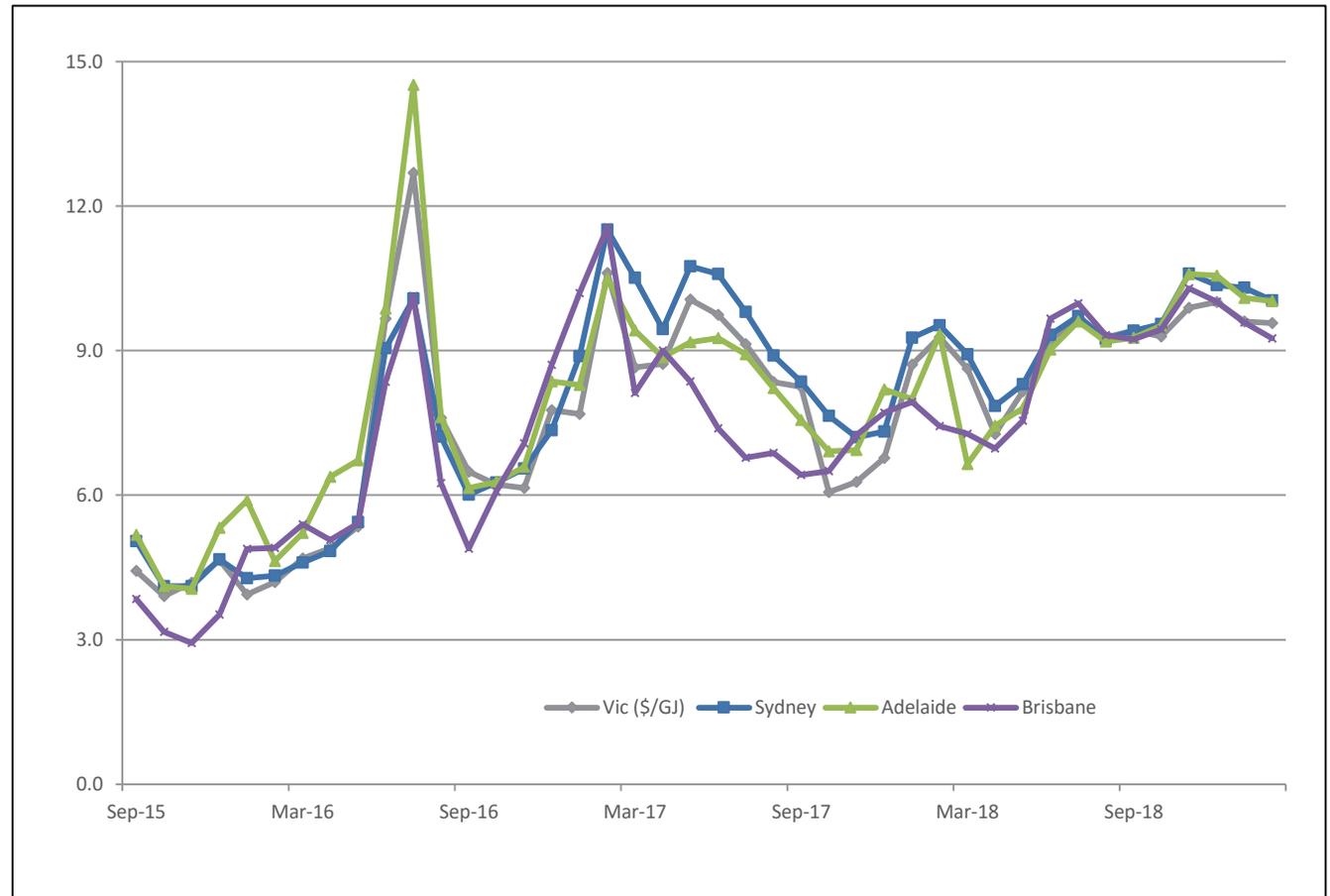


- The Cooper Basin is the premium onshore basin, a major producer of gas, NGLs, condensate and oil in SA & QLD
- Over 6 Tcf of gas and 300 Million BBLs of Oil produced;
- 100% ownership in Queensland permits ATP 927P & ATP 1194PA
- Permits are in close proximity to major energy players with easy access to domestic and export markets
- Close to existing major developments and easy access to gas plants and major gas pipelines connecting to domestic markets and LNG hub

# East Coast Gas Crisis

- East Coast gas market still in short supply for the next five years
- Strong and growing gas demand from LNG exporters via Gladstone. LNG spot prices have recently dropped but forecast to increase by end of the year.
- Sydney gas prices have recently been above \$11.00/Gj<sup>2</sup>
- General trend in gas prices is still up.

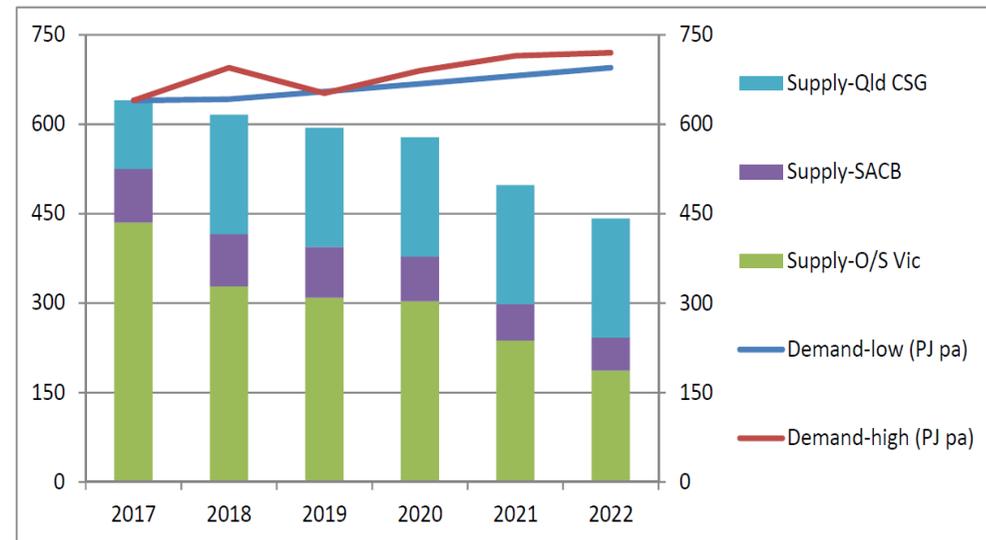
\* AEMO 30 January 2019



Source: ACCC  
2. Aemp

# East Coast Gas Crisis

- Three giant LNG plants on Curtis Island, Queensland with a combined annual production capacity of 25 million tonnes are draining gas from domestic market
- Viability of existing developments is in question and low oil prices are resulting in declining investment in gas exploration and lower production forecasts for both domestic and LNG projects
- Moratoria and regulatory restrictions affecting onshore gas exploration and development in New South Wales, Victoria, and Tasmania



East Coast gas supply and demand (Source: AEMO 29 March 2018)

*The large LNG export demand is changing the dynamics of the east coast gas markets. The smaller domestic gas sector is now linked to a more volatile world market for gas, and the size of LNG exports means small gas supply chain disruptions can have large impacts on domestic gas supply and demand in Eastern and south-eastern Australia.*

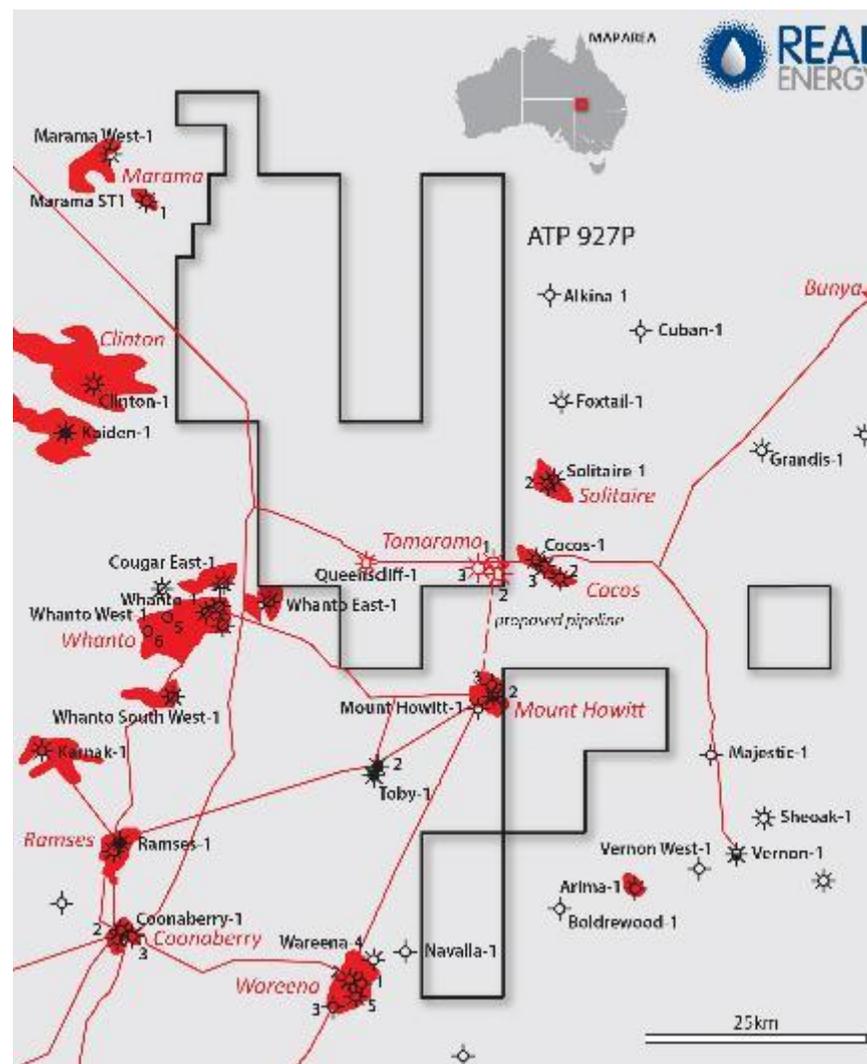
*Australian Energy Market Operator, 2017*

## Basin Centred Gas - Significant Gas Resource

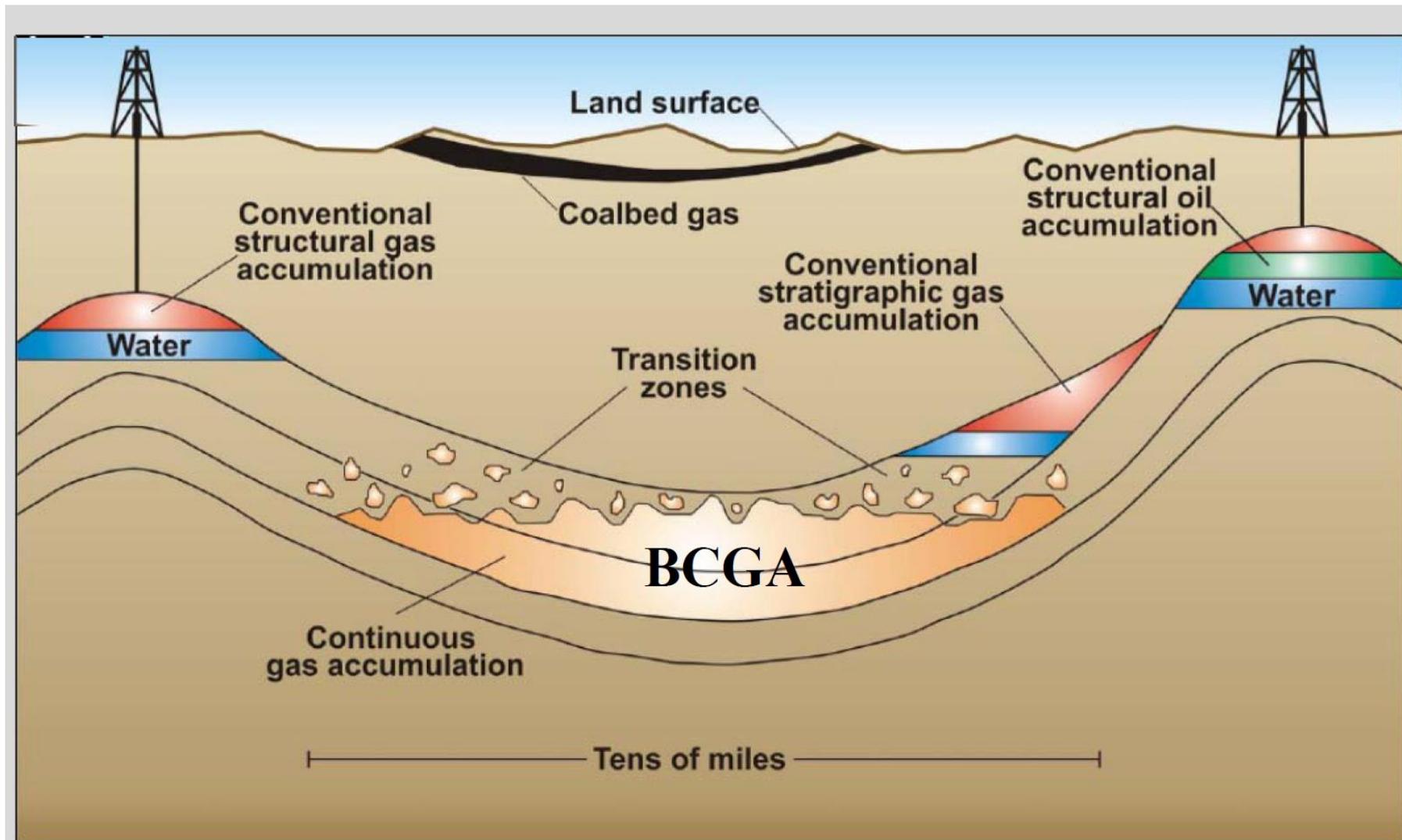
- 2 rounds of drilling – first round – Tamarama 1 & Queenscliff 1 – second round Tamarama 2 and Tamarama 3
- Maiden 3C gas resource of 672 BCF from two discoveries – Tamarama 1 & Queenscliff 1
- Multi-stage frac in Tamarama 2 (3 stages) and Tamarama 3 (4 stages) completed early October
- Tamarama 2 had initial flow rates of 2 mmcf/d – Jan 19
- Tamarama 3 had initial flow rates of 2.5 mmcf/d – Jan 19
- Considerable improvements in Tamarama 2 and Tamarama 3-both conservative and further improvements expected through improved technology

Permit	Volume (BCF)	
	ATP 927P	ATP 1194PA
Prospective OGIP	13,761	-
2C Resources	276	-
3C Resources	672	-

- Estimated Prospective OGIP are Mean Original Gas-In-Place excluding 2C/3C Resources.
- Gas Volumes are expressed in billions of cubic feet (BCF) at standard temperature and pressure bases.
- Resource estimates independently certified by DeGolyer & MacNaughton.

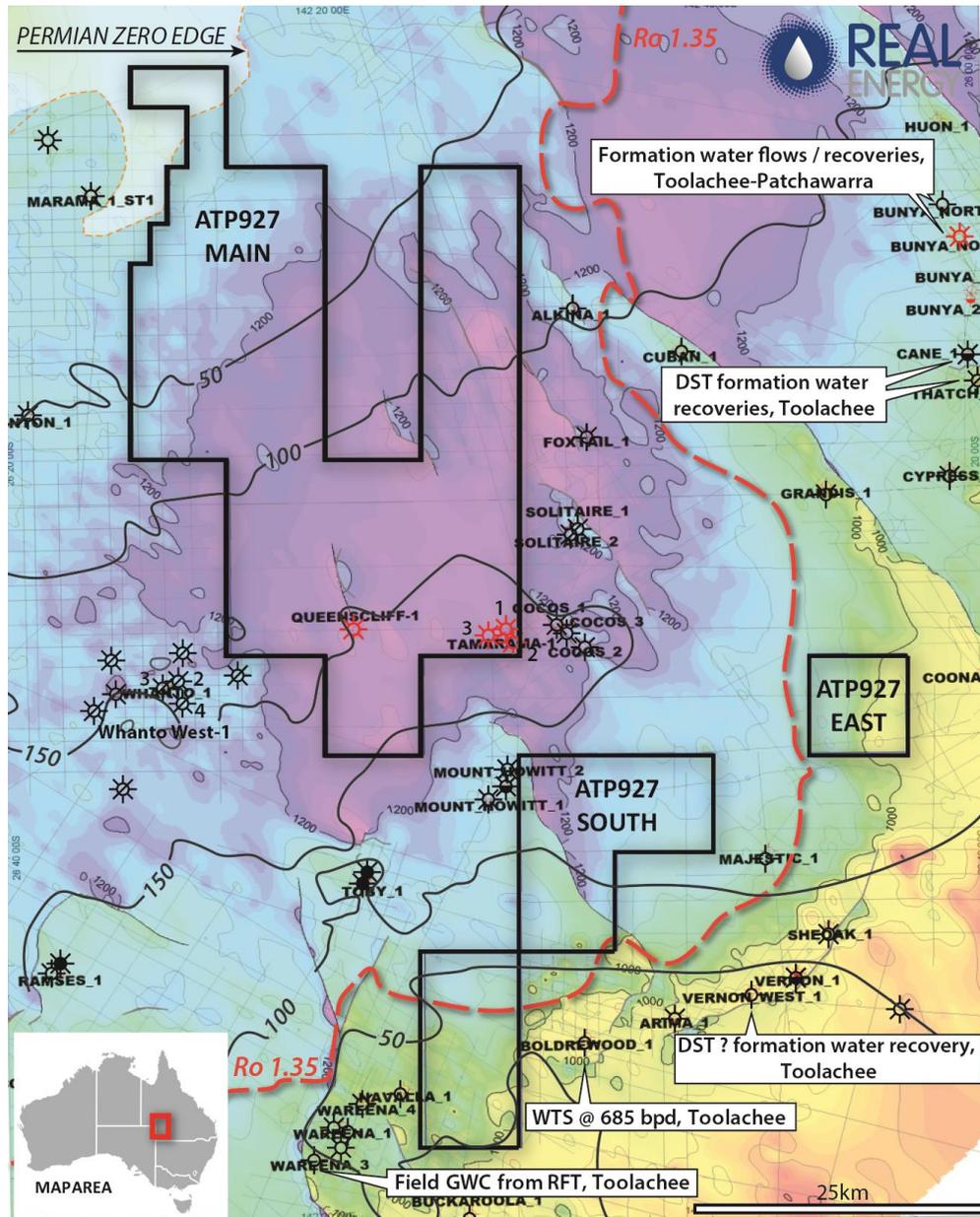


# What is Basin Centred Gas ?



From Schenk and Pollastro, 2002

# Where is the best part of the Basin Centred Gas play ?



The Windorah Trough is a very large prospective gas resource ( In Place OGIP >13.7 Tcf).

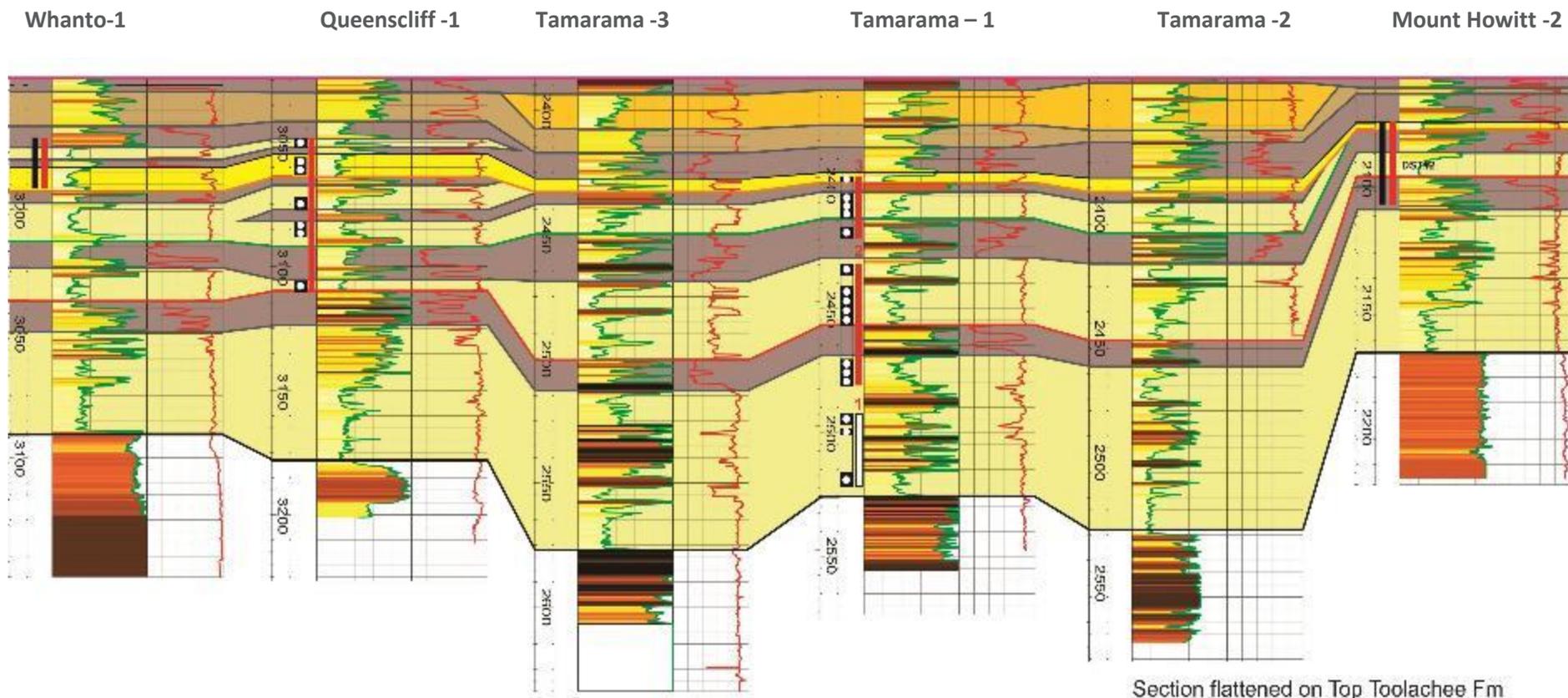
Colour fill shows structure at top Permian at the time of peak hydrocarbon generation and expulsion – purple is deep, yellows are shallow.

The contours represent thickness of the Permian section – thickest in central area, thinning to North and South

The Ro 1.35 contour line represents thermal maturity of the Permian coaly source rocks. The best part of the play lies within ATP927.

# ATP 927 Permian Stratigraphy - log correlation

Toolachee & Patchawarra formations contain significant sandstone reservoirs which are gas charged and laterally extensive



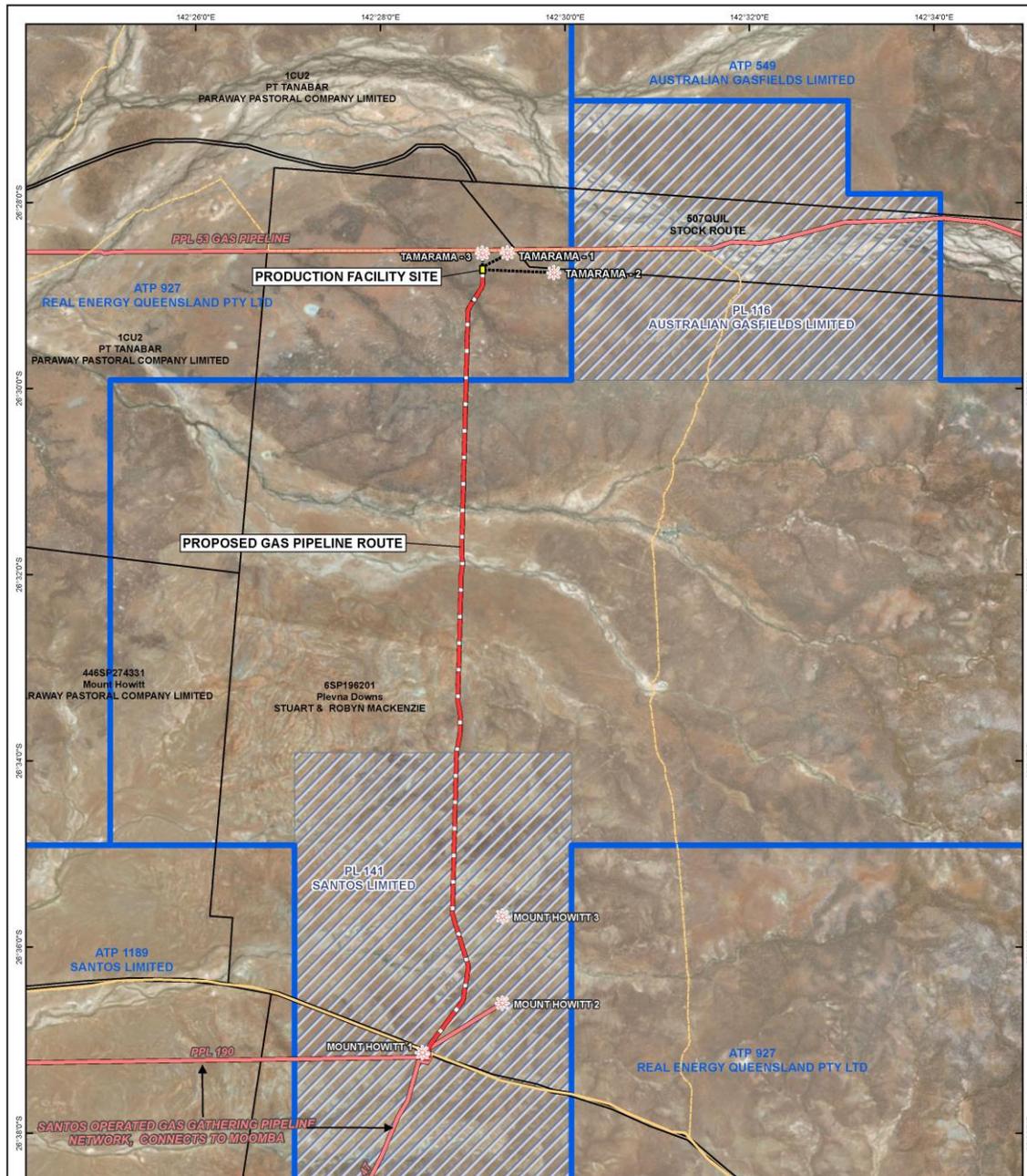
## Pathway to Production

- ◆ Real energy has significantly de-risked the play and are on track to become a producer
- ◆ Real Energy signed a Tie-in and Processing with Santos and Beach Energy so gas will be transported and processed at Moomba
- ◆ An application for pipeline licence has been lodged between the Tamarama area and Mt Howitt
- ◆ Alignment flow technology incorporating new well designs to enable enhanced productivity through better alignment between the hydraulic fracture and the wellbore
- ◆ Tamarama 2 & Tamarama 3 drilled as deviated wells at 30 degree slope



Tamarama 2 flaring from initial flow

# Pathway to Production



Proposed Pipeline Route between Tamarma area and Mt Howitt

PHASE	PHASE	PHASE
<h1>01</h1> <p><b>PILOT PRODUCTION</b></p> <ul style="list-style-type: none"><li>▪ 3 Tamarama wells drilled and completed</li><li>▪ Design and engineering of surface facilities and flow lines connecting Mt Howitt</li><li>▪ Initial pilot production from Tamarama 1, 2 &amp; 3</li></ul>	<h1>02</h1> <p><b>STAGE 1 DEVELOPMENT</b></p> <ul style="list-style-type: none"><li>▪ Drilling and development of six more wells near Tamarama</li><li>▪ Conservative production target of 20 TJ/d</li></ul>	<h1>03</h1> <p><b>STAGE 2 DEVELOPMENT</b></p> <ul style="list-style-type: none"><li>▪ Full field development of ATP 927 as a tier one gas project – project target of 100 TJ/d</li><li>▪ Real Energy’s objective is to certify 3P (Proven, Probable and Possible) reserves in excess of 2 TCF</li></ul>

## Windorah Gas Project

- Potential Gas Sale Agreements (GSA) – STRONG BUYER INTEREST!
- Award of gas pipeline licence by Queensland Government
- Potential Upgrade of Resources /Reserves
- Tie into existing gas gathering and processing system only 14km away, subject to funding and approvals

## Industry

- Ongoing gas supply shortfall in the Austrlian east coast gas market dramatically improves Windorah Gas Projects attractiveness
- Farm in and M & A opporunties in the gas market

Real Energy has multiple operational and industry catalysts in the coming months

# Investment Summary

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01

**World Class Location in Cooper Basin** - Close to existing major developments and easy access to major gas pipelines connecting Australian domestic market and LNG hubs

02

**'Stronger for Longer' East Coast Gas Crisis** – Well placed to supply gas to the Eastern Australian gas markets which are short gas and dependent on undeveloped resources

03

**Significant Gas Resource** – Real Energy's acreage has a certified Estimated Total Mean Gas-In-Place of 13.76 TCF and a Maiden 3C gas resource of 672 BCF – targeting reserves certification by 2<sup>nd</sup> Quarter CY2019

04

**Flow back - Gas Flow Rates** – Good initial flow backs of recently completed Tamarama 2 and 3 wells

05

**Sales Pathway** – Close to tie-in to major gas pipelines, strong buyer interest with GSA likely in the next few months - targeting production in 2019/2020

## Contact

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# Directors and Management



**Scott Brown, B. Bus, M. Com**  
**Managing Director**

Extensive background in finance and management of public companies and an experienced company director. Formerly CFO of **Mosaic Oil NL**, Director of Objective Corporation, Executive **with Allegiance Mining, Turnbull and Partners** and has also worked for **Ernst Young and KPMG**. Currently Scott is a Non Executive Director of Kairiki Energy Ltd and Shine Metals Ltd.



**Lan Nguyen, B. Sc M. Sc**  
**Non Executive Chairman**

A petroleum geologist & engineer with an extensive technical & commercial background in the oil & gas sector and the management of public companies. Lan currently provides consulting services to energy & resources companies in Australia & Asia-Pacific region. Formerly an Executive Director & Managing Director of **Mosaic Oil N.L.**, and has also worked for **PetroVietnam**.



**John Wardman B. Ec. (Macquarie University Sydney)**  
**Non Executive Director**

John is highly regarded and respected in the Australian stockbroking and wealth management sector and has 35 years' experience working in the small resources and energy sectors. He currently is a Senior Investment Advisor in the wealth management industry and previously spent 13 years with Macquarie Private Wealth, and prior to this Hartleys Limited. His contacts and network are extensive.

# Management & Technical Team



## **Terry Russell, B.Sc PhD - Exploration Manager**

Petroleum geologist with over 30 years industry experience that has included technical and management positions with successful operating and non-operating companies involved in petroleum exploration, development and production projects both within Australia and internationally. From May 2007 he held the position of Exploration Manager for Mosaic Oil NL, until the takeover by AGL in late 2010, during which period the company was actively involved in successful drilling and seismic acquisition projects in Queensland.



## **Ray Johnson Jr. BA Chen, MSc Eng. Phd Min Eng. - Reservoir Stimulation Consultant**

Dr Ray Johnson, Jr., Principal at Unconventional Reservoir Solutions ([www.unconreservoirs.com.au](http://www.unconreservoirs.com.au)), has been involved with design, execution, and evaluation of reservoir stimulation treatments since 1980 and has a PhD in Mining Engineering relating to pre-drainage of fluids (i.e., gas and water) for coal mining. Prior to moving to Australia in 1998, Ray had 17 years' experience in engineering and management positions throughout the Central US involving fracture stimulation design, execution and evaluation of coals, shales and other naturally fractured reservoirs and in areas encompassing most currently producing US unconventional basins.



## **James Dingle - Drilling Manager**

James has practical experience in both field operations and engineering design in a broad range of drilling, completion and production operations across conventional and unconventional (CBM/CSG & tight gas/oil reservoirs). He has extensive experience with coal seam gas drilling, completion and production operations, conventional and underbalanced drilling and completion operations, horizontal/multi-lateral drilling and completion operations and high pressure, high temperature drilling operations in many countries including Australia, Indonesia, UK, Ukraine, Turkmenistan, Russia and Romania.



## **Ron Hollands, B.Bus, MBA Company Secretary**

Ron is currently the Company Secretary of Ashley Services Group Limited (ASH) and formerly the CFO and Company Secretary of Wentworth Holding Limited (WWM), a listed investment company. He is a Chartered Accountant with over 25 years experience in accounting, corporate finance and company secretarial matters. His career includes working in professional accounting firms and acting as CFO and /or Company Secretary for a number of companies in a range of industries. He also holds a Certificate of Public Practice and is a registered tax agent.



## **Ying Ou, B. Arts, MBA Financial Controller**

Graduated in 2002 with a BA, Ying very quickly advanced to various administration, accounting then management position at hospitality in different counties including China, Switzerland, USA and Australia. She later achieved MBA in Accounting and Finance, and at present has 15 years experience of corporate accounting, joint ventures and finance in the Oil and Resources industry, including with public listed company of Mosaic Oil NL and AGL Energy Limited.