

## REAL ENERGY CORPORATION LTD

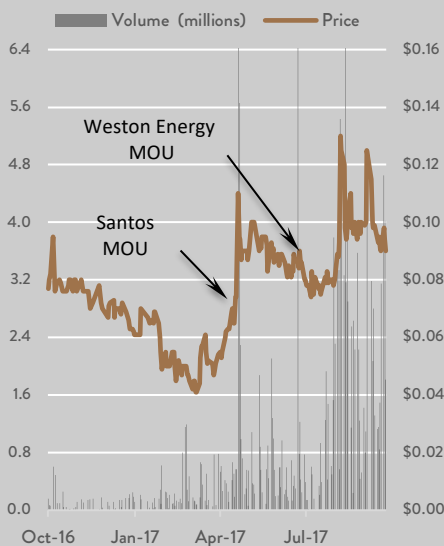
### Equity Research

19<sup>th</sup> October 2017

#### SPECULATIVE BUY

Price Target **\$0.220**  
Share Price **\$0.090**

52-Week Range	\$0.041 - \$0.145
Market Capitalisation	\$23.0m
Shares Outstanding	255.4m
Options	None
Cash (post October placement)	~\$9.0m
Enterprise Value	\$14.0m
Major Shareholders:	
Scott Brown	8.71%
Lan Nguyen	7.01%
Sino Portfolio	6.78%
Top 20 Shareholders	50.46%



Real Energy is an oil and gas exploration and development company with a focus on the Cooper Basin, Australia's most prolific conventional onshore petroleum producing basin.

Research Analyst: J-François Bertincourt

#### Reserve Definition to Lead to Tremendous Value Uplift

**Recent news:** Since our initiation coverage report (10 May, RLE @ \$0.07), key announcements include: signature of a Memorandum of Understanding (MOU) with Santos Ltd for gas processing (15 May) and signature of a MOU with Weston Energy Pty Ltd to sell up to 3 PJ gas per year for a period of five years, including a pre-payment of \$6m (17 July).

**Recent placement and additional wells:** With about \$9m in the bank (post-placement) Real Energy has the required funding to drill Tamarama-2 & 3 wells which should lead to reserve definition and the finalisation of commercial agreements related to gas sales.

**Discoveries:** Real Energy made two tight gas discoveries in the Windorah Trough within its ATP 927 permit drilling two exploration wells: Tamarama and Queenscliff. In recent years, advances in the development of tight gas reservoirs have led to commercialisation of these resources.

**Significant gas resources:** Independently Estimated Total Mean Gas in place amount to 13.76 TCF and maiden 3C gas resource of 672BCF from two discoveries Tamarama-1 and Queenscliff-1.

**Appraisal of first well progressing:** the well has been flowing at variable rates up to 1 mmcf/d. Higher flow rates are expected with continuing coal seams dewatering.

**Excellent location:** RLE controls 2,762km<sup>2</sup> in the Cooper Basin, which is Australia's most prolific onshore hydrocarbon region and has been recognised as the most likely source of gas to supply the looming eastern Australia gas shortfall. RLE is focused on the rapid appraisal and commercialisation of its gas resource contained within its ATP 927 permit to meet this demand.

**Infrastructure:** RLE's existing wells are located next to existing infrastructure and provide access to the eastern Australia gas markets through the extensive gas pipeline network which connect the Cooper Basin to the east coast gas markets providing a quick path to monetisation.

**Favorable gas market:** Higher price forecasts and current spot pricing illustrate market need for new gas projects and future increases in gas prices.

**Board and management** has extensive gas industry experience, a track record of successful commercialisations and substantial shareholding in the Company.

**Tight register:** The top three shareholders including RLE director & management represent about 33% of the share register. Moreover, all options have expired recently.

**Valuation:** With RLE now confirmed to drill the Tamarama-2 & 3 wells we have increased our valuation to \$0.22/share based on a slightly increased possibility of success (from 15 to 25%) considered for 2C contingent gas resources of 276 Bcf. As the company matures its 2C resource into reserves we believe the stock will re-rate with the valuation increasing to \$0.42/share on a 50% risk weighting. Significant further upside is available to the company should it mature its current 3C resource (672 Bcf, which we currently value at \$0.49/share) to reserves. RLE has \$9m cash and nil debt.

**Risk and Upside:** We believe the Basin Centered Gas Play in the Permian Toolachee and Patchawarra formations is low risk with significant material upside.

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# 1. RLE Valuation

## Permit Summary

The table below highlights the key details of each permit owned by RLE.

Permit	Size km <sup>2</sup>	Seismic coverage	Previous wells drilled	Geological formation	Prospectivity	Discoveries	Indicative flow rates	Leads mapped	Propetivity of leads
ATP 927P	1,718	Sparse	0	Eromanga Basin: Jurassic to Cretaceous Cooper Basin: Permian to Triassic	Eromanga Basin: Oil Cooper Basin: Tight Gas	Gas discoveries at Tamarama 1 and Queenscliff 1. Gas-condensate fields and discoveries occur in the Cooper Basin section in proximity to ATP 927P (e.g., Wareena, Mt Howitt, Cocos, Solitaire, Marama, Clinton, Whanto and Vernon) with gas trapped in both Triassic and Permian reservoirs	Average porosities typically less than 15% and DST flow rates of up to 11.35 MMscfd (Wareena-1 Toolachee Fm)	A technical evaluation of ATP 927P carried for Drillsearch, has mapped five Eromanga Basin oil leads and two Cooper Basin gas leads.	The five oil leads are reported to have a total prospective resource of 3.54 MMBO  The two gas leads have a total prospective resource of 105.45 BCF
ATP 1194PA	1,043	Fair but variable	1	Eromanga Basin: Jurassic and earliest Cretaceous sandstones Cooper Basin: Permian to Triassic	Eromanga Basin: Oil Cooper Basin: Tight Gas and Oil	Eromanga Basin oil fields and discoveries occur in proximity (e.g. Bodalla South, Black Stump, etc.). Tight oil and gas discoveries and recoveries occur in the Cooper Basin section in proximity (e.g. Byrock, Cumbroo)		Attractive Eromanga and Cooper plays	

## Contingent Gas Resources Valuation

In our view the main value driver for Real Energy will be the conversion of its contingent and prospective gas resources located in ATP 927P. We view there is a very high probability for the company to convert its current 2C (276 Bcf) and 3C (672 Bcf) resources into 2P and 3P gas reserves within the next 12 to 18 months. This view is further strengthened by the proximity of the permit to extensive gas transmission pipelines and the current economic and political climate for gas demand. RLE's recent MOU with Santos, Australia's largest onshore gas producer, for gas processing and MOU with Weston Energy for gas distribution, provides further credentials to the Windorah gas project.

The tables below highlights the value to RLE as it converts contingent resources to reserves. On the back of the recent positive announcements and the upcoming drilling program we have increased our probability of success (POS) factor to 25% from our initial 15% in our initiation. Whilst we believe there is a high probability of success, we still maintain a very conservative POS.

As shown, based on 2C resources, assuming conversion to 2P with a 25% POS, the value to RLE is A\$0.203/share. Using conversion of 3C to 3P, based on the same conservative assumptions we see the risked valuation to RLE increase to \$0.493share.

The valuation of RLE is summarised in the tables below using successively 2C and 3C gas resources.

Permit	Contingent Gas Resource 2C	Indicative NPV per BCF	Unrisked NPV A\$m	Unrisked NPV per share A\$	Possibility of Success	Risked NPV A\$m	Risked NPV per share A\$
ATP 927P	276	0.75	207.0	0.81	25%	51.8	0.203
Corporate Costs & Overheads						n/a	(\$0.017)
Cash			9.0		n/a	9.0	\$0.035
<b>Total</b>						<b>56.5.9</b>	<b>\$0.221</b>

Source: Terra Studio estimates

Permit	Contingent Gas Resource 3C	Indicative NPV per BCF	Unrisked NPV A\$m	Unrisked NPV per share A\$	Possibility of Success	Risked NPV A\$m	Risked NPV per share A\$
ATP 927P	672	0.75	504.0	1.97	25%	126.0	0.493
Corporate Costs & Overheads						n/a	(\$0.017)
Cash			9.0		n/a	9.0	\$0.035
<b>Total</b>						<b>130.8</b>	<b>\$0.512</b>

Source: Terra Studio estimates

As the understanding of the basin and plays mature we would expect to see the valuation and POS % to increase significantly.

### Gross Permit Valuation

The gross permit valuation of RLE acreage is summarised in the table below.

Due the early exploration nature of the prospects, we have applied conservative EUR assumptions, valuation metrics and Possibility of Success (POS %) factors to the gross volume estimates in place.

Permit or Asset	Product	100% gross volume estimate BCF	Expected EUR %	Indicative NPV per BCF /bbl A\$m	Unrisked NPV A\$m	Unrisked NPV ps A\$	Possibility of Success %	Risked NPV A\$m	Risked NPV ps A\$
ATP 927P	Tight Gas	13,761	10%	0.75	1,032.1	4.04	15%	154.8	\$0.606
Corporate Costs & Overheads								(4.2)	(0.017)
Cash								9.0	0.035
<b>Total</b>									<b>\$0.625</b>

Source: Terra Studio estimates

The demonstration of economic viability of the Toolachee-Patchawarra formation is the key value driver for RLE going forward. The company is working towards an optimal drilling design and fracture stimulation program to enable the wells to flow at economic rates.

Once a successful well demonstration is performed we anticipate there will be renewed interest in the stock as the results will be significant, the independent geologist De Golyer and Mac Naughton estimates that on a mean case scenario up to 13.761 TCF net prospective resource is attributable to the ATP 927P permit alone.

*To put into context Woodside's Pluto LNG project, which cost them US\$14.9b to build was ~ 4.8 TCF.*

### Peer Comparison

The table below provides a comparison of RLE against its peers listed on the Australian Securities Exchange. The ratio Enterprise Value (in A\$m) vs. 2C Contingent Resources (in petajoules) has been calculated. While such ratio is generally indicative due to the differing certifiers of the contingent resources, it indicates that Real Energy is significantly undervalued compared to its closest peer: Strike Energy. All three have delineated gas resources with access to pipeline infrastructure for delivering gas to markets.

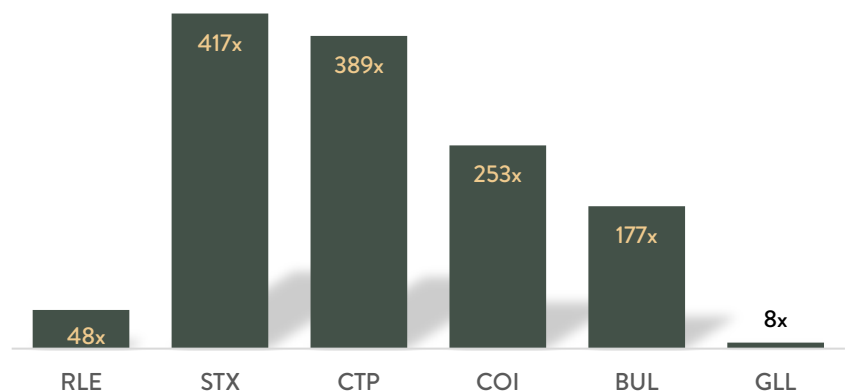
#### Peer Comparison – Enterprise Value / 2C Contingent Resource

Company	Code	SP	MC	Cash	EV	EV/2C	2C	3C	2P	3P	Notes
Real Energy	RLE	0.090	23	9.0	14	48x	291	709	-	-	Access to processing and distribution infrastructure
Strike Energy	STX	0.073	77	14.0	68	417x	164	238	-	-	Direct access to infrastructure and gas markets
Central Petroleum	CTP	0.093	61	5.5	56	389x	144	-	-	-	Access to pipeline for Amadeus and Wiso Basins
Comet Ridge	COI	0.205	120	6.0	114	253x	452	3,221	30	219	Access for Mahalo permit , but not for Galilee permits
Blue Energy	BUL	0.150	177	2.5	174	177x	984	3,942	71	298	Needs access to pipeline network
Galilee Energy	GLL	0.150	25	6.1	19	8x	2,508	5,314	-	-	Needs access to pipeline network

Source: company announcements, Terra Studio. SP = Share Price, MC = Market Capitalisation, EV = Enterprise Value. All resources converted into petajoules (PJ)

For Comet Ridge and Blue Energy, the 2C Contingent Resources are significant but the market value of those appears discounted considering the lack of immediate access to infrastructure.

#### Peer Comparison – Enterprise Value / 2C Contingent Resource



Source: company announcements, Terra Studio

The outlier in the below group is Galilee Energy which has a reported 2.5 TCF of 2C resources. Whilst this appears to be large we view that its distance from accessible pipeline and its later drilling campaign make RLE a better short term choice.

## Operations

In 2016 RLE commenced production testing at the Tamarama-1 well with gas recovered to surface. Facing some testing difficulties, RLE adopted a conservative (and in our opinion prudent) approach to the well testing to prevent well bore degradation.

The Tamarama-1 well produced volumes sufficient to commission a separator and ignite a flare. The company has adopted a conservative approach by shutting the well in to allow well pressure to build. This ensures integrity of the well and maximised EUR's. Results are expected in Q2.

The demonstration of gas to surface is promising, however we view a sustained production test remains key to providing insight into each wells and zones potential and ultimately field profitability.

## Flow Testing – Different Zones

Flow testing of individual reservoir zones remains important as the data gathered will enable the quantification of commerciality and provide an early stage understanding of field value.

## Findings to Date

To date RLE has delivered a number of key appraisal observations, these include:

- Variable flow rates between up to 1 mmcf/d.
- Identification of reservoir (tight sands) presence; >80m of net tight gas pay observed.
- Identification of gas; saturation levels range 70-90%.
- Log derived porosity: 10-12%.

## Financial

Cash stands \$9.0m post the October placement of \$2.34 million and the company has no debt.

## Commercial

East coast gas purchasers (off-takers) have already expressed interest in the gas that RLE is attempting to unlock and RLE has signed a Memorandum of Understanding with Weston Energy Pty Ltd (17 July 2017 ASX announcement) to sell up to 3 PJ gas per year for a period of five years, including a pre-payment of \$6m.

## Valuation

Underpinned by positive early stage results we have determined a possibility of success of 25%. As such our valuation of RLE Cooper Basin assets stands at \$57m or \$0.22/share.

If RLE can further build on the positive results seen to-date, the value attributable to the assets (and in-turn the company) should increase dramatically. On a 100% success basis RLE's net share could be worth as much as \$207m or about \$0.81/share, we do however highlight that these numbers are highly speculative requiring multiple appraisal successes and development capital.

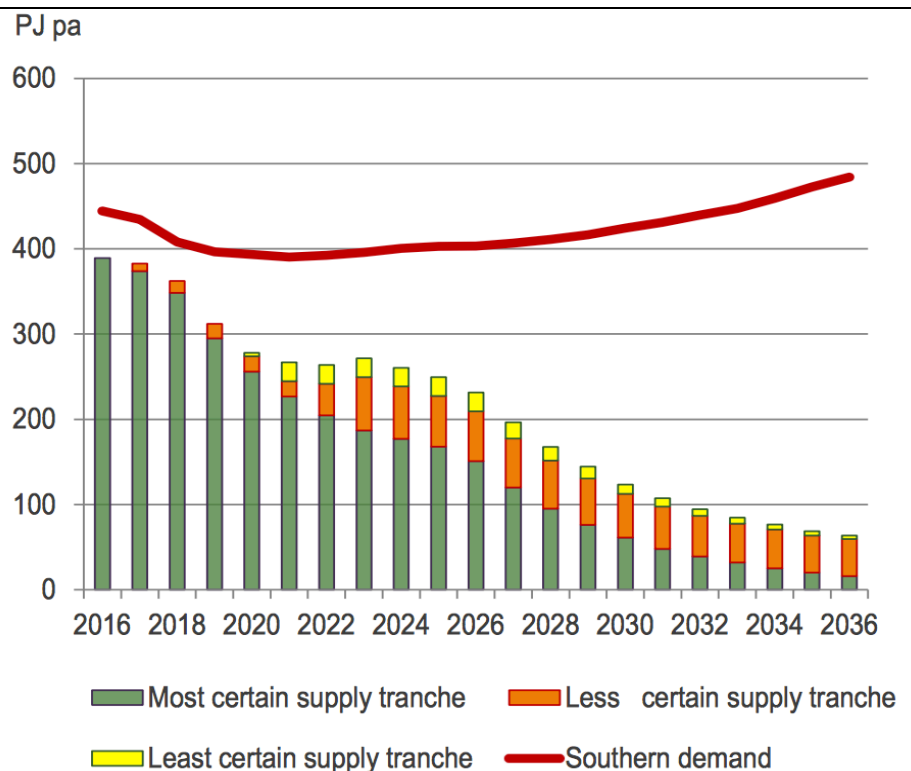
## 2. South-East Australia Gas Market

### Supply & Demand

Gas-powered generation (GPG) is vital to continued security of electricity supply as the National Electricity Market (NEM) transitions to lower emission targets. A reliable supply of gas for GPG is critical, at a time when withdrawal of coal-fired generation in the NEM is increasing reliance on GPG to maintain reliable and secure electricity supply and meet emissions target reductions.

To meet electricity supply needs, the NEM requires either increases in gas production to fuel GPG, or a rapid implementation of alternative non-gas electricity generation sources. If neither occurs, the Australian Energy Market Operator (AEMO) projects that declining gas supplies could result in electricity supply shortfalls between 2019 and 2021 of approximately 80 gigawatt hours (GWh) to 363 GWh across South Australia, New South Wales, and Victoria.

#### Forecast South-East Australia Gas Demand and Production



Real Energy is expected to become a supplier and developer of gas for south east Australia at a time of great market need.

Source: EnergyQuest Energy Quarterly March 2017. South-east Australia comprises NSW, Victoria, SA and Tasmania

### Prices

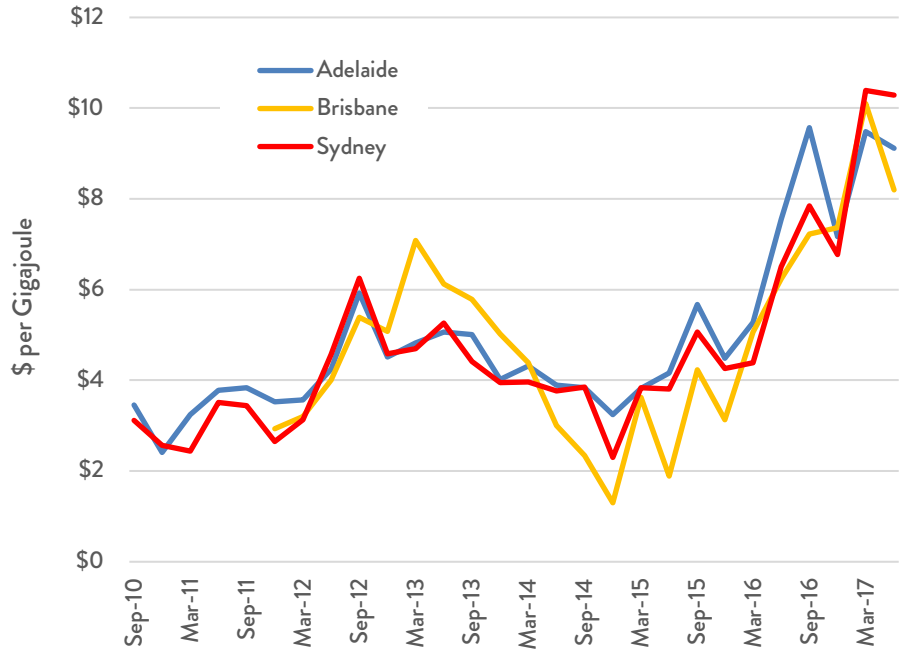
A combination of factors is likely to mean continued upward pressure on gas prices:

Forecasts and spot pricing illustrate market need for new gas projects and increasing prices

- A market finely balanced between supply and demand is expected to maintain this pressure.
- Geological challenges in accessing and releasing gas are increasing production costs at a time when low cost reserves in eastern Australia are in decline. As the cost of sourcing new gas supply is higher, additional gas in the market may not translate to lower gas prices.

The recent wholesale gas prices are summarised in the chart below.

**STTM Quarterly Average Wholesale Gas Price**



Source: Australian Energy Regulator, Terra Studio. This figure shows average daily ex ante gas prices by quarter for each STTM hub. The Short Term Trading Market (STTM) for natural gas commenced operation in New South Wales and South Australia on 1 September 2010. The STTM operates at hubs between gas transmission pipelines and distribution networks at Sydney and Adelaide. The STTM rules allow for the establishment of another hub at Brisbane. In Victoria, the existing Victorian Wholesale Gas Market will continue to operate.

**Victorian Average Daily Wholesale Gas Price**



Source: Australian Energy Regulator, Terra Studio. Average daily weighted price by quarter.



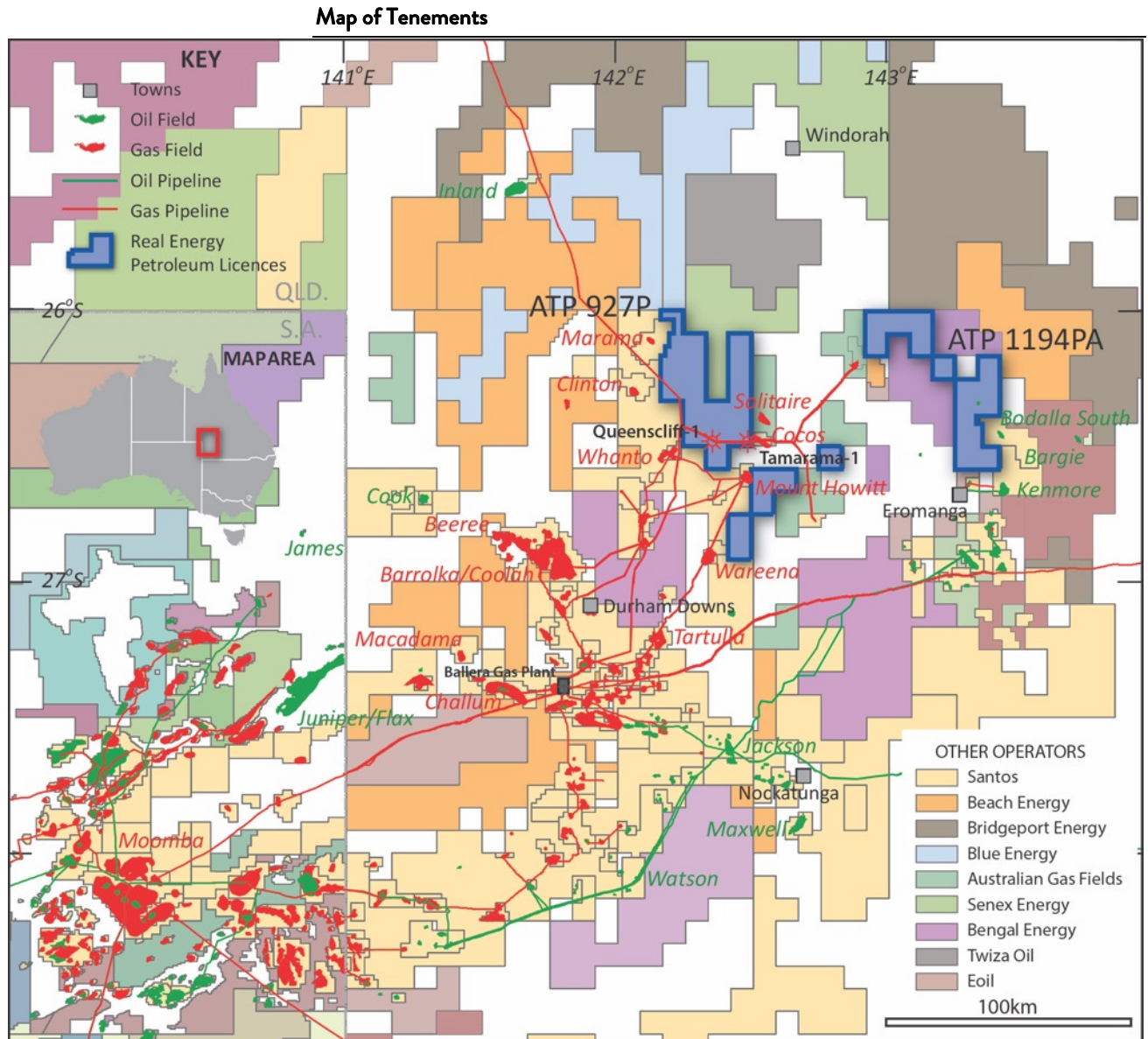
### 3. RLE Strategy

Real Energy is seeking to develop its exploration assets and projects into cash-flow producing assets as quickly as possible with the long term view to build a successful and sustainable oil & gas exploration and development company.

Real Energy is focusing on exploration and development in the Cooper-Eromanga Basin, Australia's most prolific onshore producing petroleum basin. The Company has 100% ownership in 3 large permits in Queensland – ATP 917P, ATP 927P and ATP1194 PA which combines 4,932 km<sup>2</sup> and are prospective for conventional oil, and tight gas commercial developments.

### 4. RLE Acreage Overview

The location of RLE licences and the surrounding oil and gas fields is indicated in the map below.



Source: RLE

Real Energy is focusing initially on the Toolachee and Patchawarra formations. These formations are well-known throughout the basin for holding and producing gas. Seismic interpretation in conjunction with existing petroleum well data has determined that the Toolachee and Patchawarra formations are significant across much of the company acreage.

The main unconventional plays in Real Energy's current asset portfolio are gas interpreted to be trapped as a continuous gas play in the Permian sedimentary sequence within the area of ATP 917P and ATP 927P developed in all three permits. In addition, Real Energy will also pursue conventional oil and gas plays in the Eromanga and Cooper Basins within the Company's permits.

The table below summarises the potential of the plays.

Tenement Schedule and PIIP			
Permit	Area	Gross Estimated Petroleum Initially in Place (PIIP)	
		Toolachee-Patchawarra	
		Mean	P10
	km <sup>2</sup>	BCF	BCF
ATP 927P	1,718	13,761	21,480
ATP 1194PA	1,043	-	-
<b>TOTAL</b>	<b>2,762</b>	<b>13,761</b>	<b>21,480</b>

Real Energy's evaluations of ATP 927P indicate the likely development of a continuous gas play within the Permian section in these permits.

Gas trapped in sandstone reservoirs in the Permian sedimentary section in close association with the coals that provide the source of this gas, may form what is referred to as a continuous, or basin-centred, gas play. In this instance, gas is trapped outside the limits of conventional structural traps, potentially forming an extensive accumulation in the deeper parts of the basin (such as in the northwestern block of ATP 927P, for example). The reservoir sandstones holding this gas are typically of lower reservoir quality, referred to as tight gas sands.

Conventional evaluation of tight gas intervals intersected in wells previously drilled in and adjacent to ATP 927P resulted in these wells being deemed to be non-commercial, or show wells. In recent years, advances in the development of tight gas reservoirs have led to commercialisation of these resources.

The Total Petroleum Initially-in-Place estimate breakdown for ATP927 permit is shown below.

Permit	Total Gas In Place		
	P90	Mean	P10
	TCF	TCF	TCF
ATP 927P	7.5	13.761	21.480

*Source: certified by DeGolyer & MacNaughton*

100% ownership

## 5. RLE History

Established in 2009 the company covers a large acreage of over 2 million acres with 100% retained interests and the ability to farm down as a potential funding source in the future.

A brief history in summarised below:

- 2 October 2009 - Real Energy incorporation
- 5 August 2011 - changed from proprietary company to a public company
- 9 May 2012 - acquired ATP917P & ATP927P from Drillsearch Energy
- 12 December 2013- listed on ASX after raising \$10m through IPO
- September 2014 - drilling of RLE maiden exploration well (Tamarama-1) located in ATP 927P
- November 2014 - drilled an additional exploration well (Queenscliff-1)
- Gas discovered from both wells throughout the Permian Toolachee and Patchawarra formations
- October 2014 - raised \$5m through a private placement
- February 2015 - became preferred tenderer for ATP1194PA
- October 2015 - raised \$2.6m through a private placement
- Since August 2016, focus on Tamarama-1 well including re-completion, clean up, work over aiming for flow testing.

## 6. Tamarama-1 Well, ATP 927P, Cooper Basin

### Objective

The well's key objectives include evaluation of the gas potential of tight sandstones of the Toolachee and Patchawarra Formations and the appraisal of the permit's unconventional Basin Centred Gas prospectivity.

Tamarama-1 was drilled as a proof of concept well and is located approximately 51m down-dip from the Cocos-1 Permian gas well (Santos) and outside any seismically mapped structural closure.

Tamarama-1 success has provided RLE a very encouraging result as it proves the geological concept that gas saturated Permian Toolachee and Patchawarra formations section is present in the acreage outside any structural closure and most likely in the form of the unconventional continuous basin centred gas play.

### Drilling Results

Electric logs have been recorded and preliminary wireline log interpretation in integration with mudlog gas readings and drill cuttings have indicated the presence of gas saturated Permian Toolachee and Patchawarra formations section at the Tamarama-1 location. The petrophysical evaluation, using conservative 8% porosity cut-off for pay calculation, indicates the well has encountered 21m of net sandstone gas pay (from gross 44m) in the Toolachee Formation and 66m of net sandstone gas pay (from gross 121m) in the Patchawarra Formation.

### Fracking

Real Energy contracted the services of Halliburton Australia to undertake fracture stimulation. The five-stage program in the Toolachee-Patchawarra formation section at depth below 2,300m was completed in the second quarter 2016.

## Flow Back and Gas Flow Test

Tamarama-1 was drilled as an exploration well and has proved up the concept of Basin Centred Gas. The results are a key step in Real Energy's efforts to commercialise the Windorah Gas Project.

In August 2016, RLE successfully concluded the re-completion operations at Tamarama-1 well.

The well flowed back the frac fluids at an estimated fluid rate of approximately 300 barrels per day through a 3/8" choke with increasing gas influx.

During December 2016, the well continued to flow back gas and frac fluids with the total recovered fluids significantly exceeded the total injected frac fluid volume. Analysis of water samples indicated highly saline fluid, however the water chemistry did not match any known water produced from the Toolachee or Patchawarra formation sandstones indicating the additional water was most likely from the coal seams immediately above the uppermost sandstone unit.

Late last year, RLE completed a work over where the Toolachee zone was closed off and the Patchawarra zones left open with well performance improving since the work over. After careful analysis the source of the additional fluids is believed to come from the Toolachee zone (which was subsequently isolated on a temporary basis).

In March 2017, RLE reported that cumulated gas flows to date exceed 67 mmcf and 11,000 bbls of fluids.

In April 2017, RLE reported cumulated gas flow exceeding 70 mmcf and 12,000 bbls of fluids with the well showing significant improvement since the work over. The Company is reporting stronger and faster build -up of pressure and more gas flowing to surface from the well. RLE is continuing to flow the well to enable it to collect data to determine reservoir performance and consider the commercial feasibility of the project. The significant is that gas is present outside of structural closure hence it is likely to be laterally extensive. The estimated mean petroleum initially in place in ATP927P is 13,761 BCF, which is a lot of gas.

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### Gas flare and water flow during the flow-back at the Tamarama-1 well

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Source: RLE

## Forward Plan

Going forward, RLE will continue to flow the well to obtain reservoir performance data.

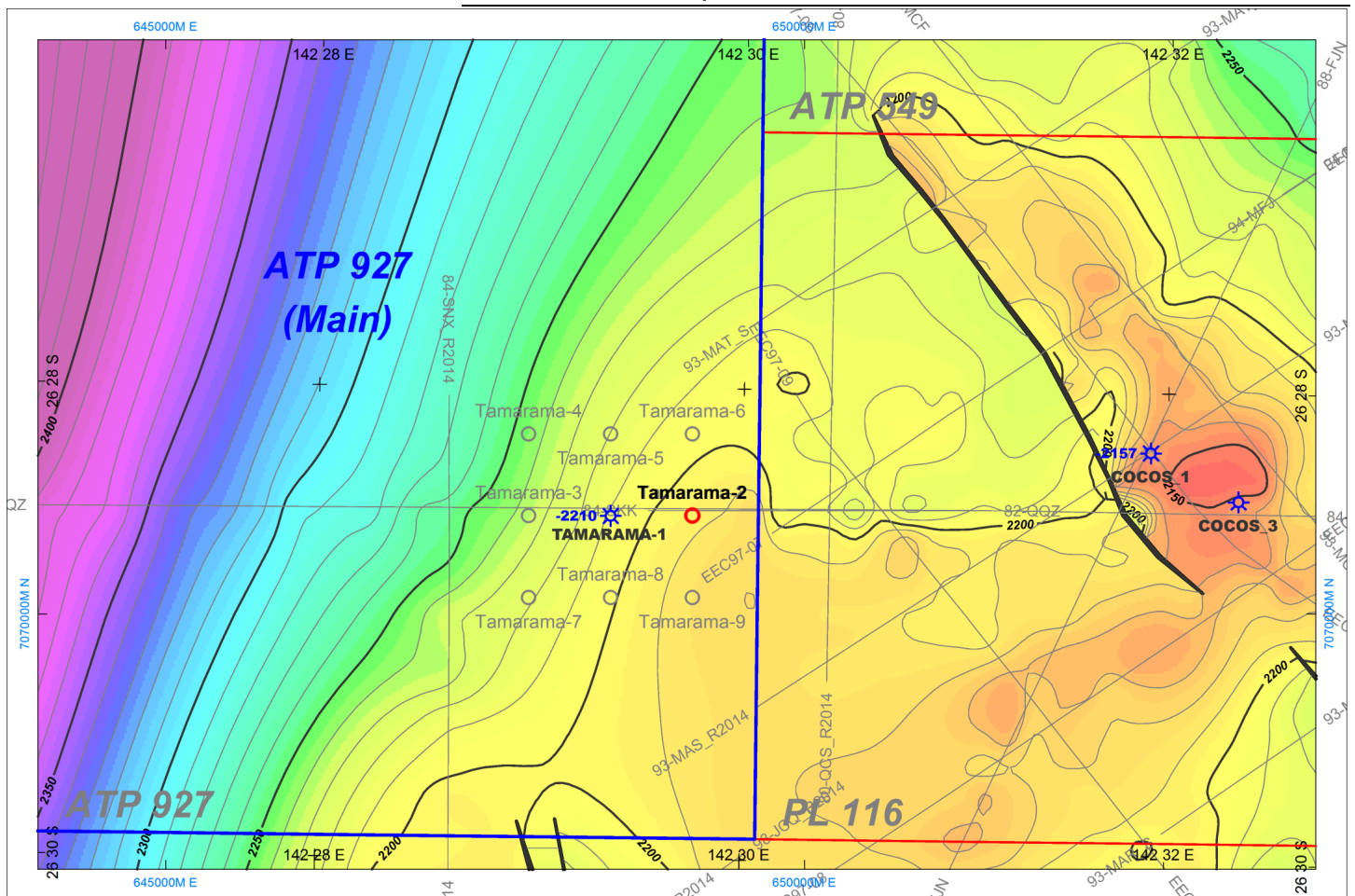
## 7. Tamarama-2 and -3 Wells, ATP 927P, Cooper Basin

### Objective

The well's key objectives include the evaluation of gas reserves for the Windorah project.

The 2 well drilling campaign is estimated to cost around \$8-10m including fracking.

### Tamarama-2 to 9 development well locations



Source: RLE

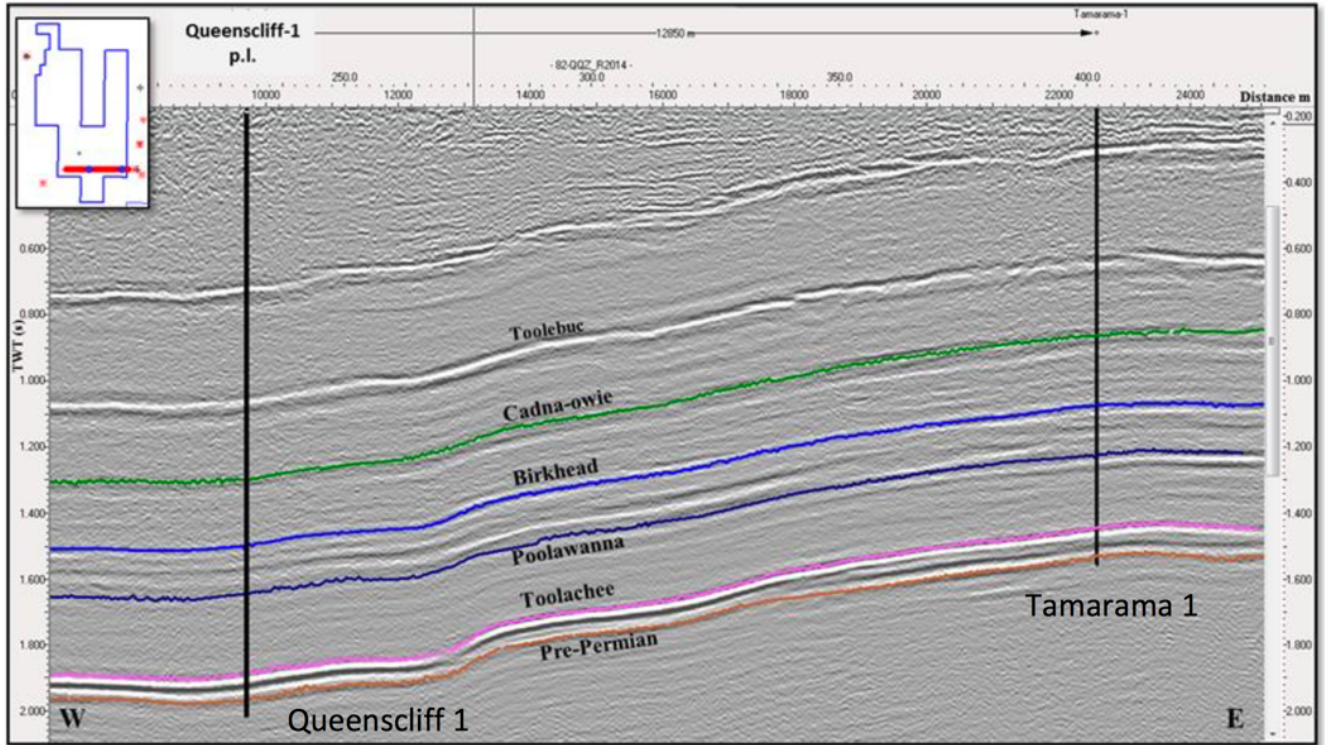
## 8. Queenscliff-1 Well, ATP 927P, Cooper Basin

This exploration well was completed in November 2014 to a total depth of 3,219m.

Queenscliff-1 is located approximately 668m down-dip from Tamarama-1 and outside any seismically mapped structural closure. It is also 31m down-dip from Whanto 1 to the west. Queenscliff-1 was drilled in the structurally low area of the Windorah Trough without any seismically mapped structural closure.

Electric logs have been recorded and preliminary wireline log interpretation in integration with mudlog gas readings and drill cuttings have indicated the presence of gas saturated Permian Toolachee and Patchawarra formations section.

**Seismic Section with Tamarama-1 and Queenscliff-1 Locations**



Source: RLE

The petrophysical evaluation, using standard 5% porosity cut-off for pay calculation of the basin centred gas play, indicates the well has encountered 32.5m of net sandstone gas pay (from gross 66.5m) in the Toolachee Formation and 34.8m of net sandstone gas pay (from gross 87.5m) in the Patchawarra Formation. In addition, the well also encountered 10m of net sandstone gas pay (from gross 30m) in the Triassic Paning Member of the Nappamerri Formation.

Queenscliff-1 has been cased and suspended for future flow testing.

Tamarama-1 and Queenscliff-1 successes have significantly advanced the play, and proved the continuous gas saturated Permian Toolachee and Patchawarra formations section is present in the RLE acreage outside any structural closure. This is in the form of the continuous Basin Centred Gas play. The presence of gas saturated sandstone units in the basal part of the Nappamerri Formation and gas charged siltstone unit immediately overlying the Toolachee Formation at Queenscliff-1 location where there is no mappable structural closure at the Nappamerri level, also provides affirmative evidence on the presence of the Basin Centred Gas play similar to many basin centred gas areas in other sedimentary basins.

## 9. ATP 927P, Cooper Basin

Around the permit ATP 927P there have been 25 wells drilled in proximity, with all having gas shows in the Toolachee and Patchawarra formations. Some have excellent flow rates of up to 11.35 MMscfd from an un-fracked vertical well. Santos has recently drilled numerous successful gas appraisal and nearfield exploration wells which have proved the basin centred gas play in the adjoining blocks: Mount Howitt and Whanto, Whanto East.

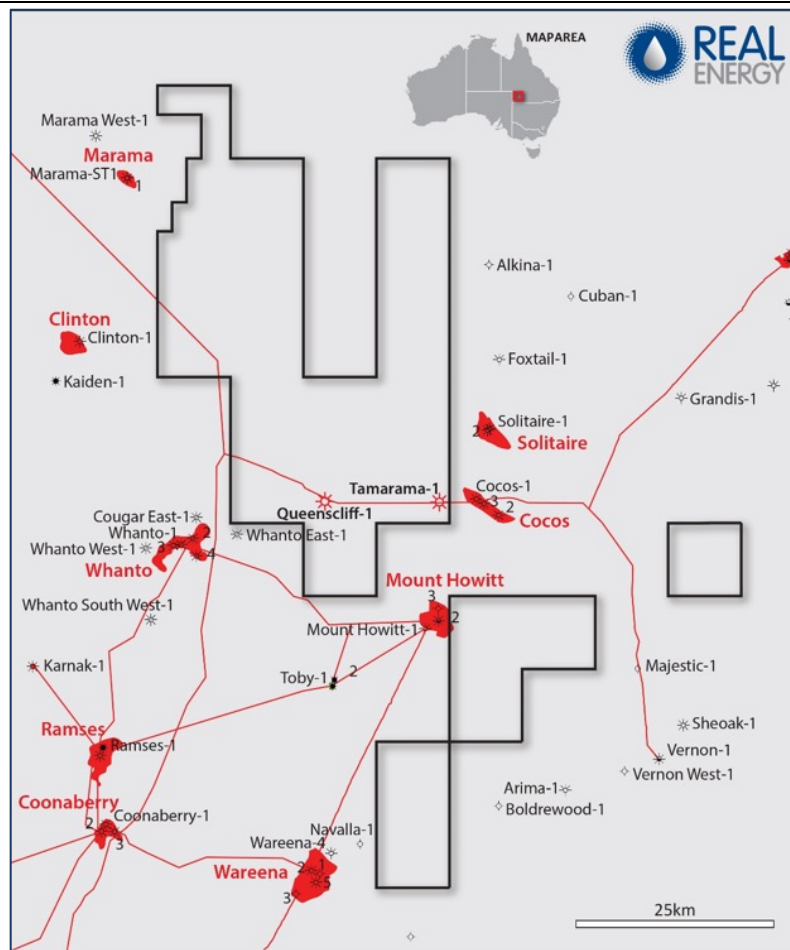
Seismic has identified that the Toolachee and Patchawarra formations are present across most of ATP927P . The independent geologist has assessed that Real Energy’s areas has 13.761Tcf of mean gas in place in the Toolachee and Patchawarra formations.

### Location

ATP 927P comprises four separate blocks with a total area of approximately 1,718 km<sup>2</sup>, located 100km north-west of Eromanga in southwest Queensland.

### Project Location

- Excellent location
- Easy access to markets
- Significant exploration upside



Source: RLE

### Previous exploration

Despite its location in the Cooper-Eromanga Basins, ATP 927P is very under-explored. A number of commercial fields and discoveries occur in proximity to this permit, however seismic coverage is sparse and there have been no wells

drilled within the permit area. The existing seismic grid comprises 435km of multi-vintage 2D regional seismic data of variable quality with line spacing in the order of 10km. The only part of the permit containing a more closely spaced seismic grid is the southernmost block, adjacent to the Wareena gas field.

## Geology

ATP 927P offers excellent coverage of the Jurassic to Cretaceous Eromanga Basin and the Permian to Triassic Cooper Basin. The larger, north-western block overlies the eastern part of the Windorah Trough and the adjacent, western flank of the prominent north-plunging Wareena – Mount Howitt anticlinal trend, along which occur a number of gas discoveries.

Several gas discoveries have also been made on low relief anticlines within the deeper Windorah Trough immediately west of the permit. The two smaller southern blocks of ATP 927P overlay the eastern flank and the southern, axial part of this anticlinal trend, adjacent to the Wareena, Mount Howitt and Vernon gas fields and the Toby oil discovery. The fourth and smallest block lies to the east, on the western flank of a major, northeast-plunging anticlinal trend.

## Source rocks and potential reservoirs

ATP 927P is considered prospective for gas in the Cooper Basin section and for oil in the Eromanga Basin section. A number of gas-condensate fields and discoveries occur in the Cooper Basin section in close proximity to ATP 927P (e.g., Wareena, Mt Howitt, Cocos, Solitaire, Marama, Clinton, Whanto and Vernon) with gas trapped in both Triassic and Permian reservoirs in conventional four-way dip and three-way dip, fault-closed structural traps.

These reservoirs exhibit variable reservoir quality, with average porosities typically less than 15% and DST flow rates of up to 11.35 MMscfd (Wareena-1 Toolachee Fm). Permian and Triassic reservoir sandstones within this area are sealed by intra-formational shales. The Cooper Basin reservoir section in this area is sealed by a well-developed shale unit within the Triassic Nappamerri Group.

Coals and carbonaceous shales of Permian and Triassic age are proven hydrocarbon source rocks in the Cooper Basin. The Windorah Trough is known to contain source rocks within the Permian Toolachee and Patchawarra Formations that are mature for hydrocarbon generation and are believed to have sourced the surrounding gas-condensate fields.

The western half of the large north-western block of ATP 927P is considered prospective for a deep Permian and Triassic gas play. Discoveries at the nearby Marama, Clinton and Whanto fields suggest that any valid structural trap, and, potentially, stratigraphic trap, in this area should be gas-charged. Reservoir quality in these deeper fields is typically lower, reflecting greater depths of burial, with average porosities up to 10%. However, flow rates of 7.1 MMscfd have been reported from Triassic reservoirs in Marama-1 and 3.8 MMscfd from the Permian Toolachee Formation in Whanto-1.

The Permian and Triassic section where drilled in a number of wells in the Windorah Trough and adjacent areas contains stacked, gas-charged sandstones of lower reservoir quality that provide a potential tight gas play in this area. The possibility exists that the entire western half of ATP 927P could



contain a gas-saturated Permian section in the deeper parts of the Windorah Trough, representing a basin-centered, or continuous gas play.

The potential also exists for gas to be trapped in structural traps developed on those parts of the Wareena – Mount Howitt structural trend underlying ATP 927P, particularly where the existing seismic coverage is sparse.

Oil has been recovered on test from the Cadna-owie, Hutton and Basal Jurassic (Poolowanna) Eromanga Basin reservoirs in Toby-1, located on the Wareena – Mount Howitt high adjacent to the southernmost blocks of ATP 927P. Oil shows have also been recorded from Eromanga Basin reservoirs in a number of wells drilled in close proximity to the permit. These shows highlight the potential for oil accumulations within the Eromanga Basin section in ATP 927P.

### **Unconventional reservoirs**

A number of Toolachee and/or Patchawarra gas-condensate discoveries have been made in close proximity to ATP 927P. These wells often also exhibit good gas shows in poorer quality Permian reservoir sands that were either not tested or flowed on test at non-commercial rates. A number of other exploration wells drilled adjacent to ATP 927P that were plugged and abandoned also encountered good gas shows in poorer quality reservoir sands that were either not tested or flowed on test at non-commercial rates.

Real Energy believes the results of these wells to be indicative of a potential continuous gas play and plans to confirm this interpretation by drilling at least one exploration well in ATP 927P to test this concept.

## **10. Directors & Management Team**

### **Lan Nguyen, Non-Executive Chairman**

BSc (Baku, Azerbaijan), MSc – Geology (University of New England, Australia)

Mr Lan Nguyen holds a Bachelor of Science (mining engineer-geologist) degree majoring in petroleum exploration from the Institute of Oil and Chemistry, Baku, Azerbaijan, and a Master of Science degree in petroleum geology from the University of New England, Australia. He is a member of the Petroleum Exploration Society of Australia (PESA), the American Association of Petroleum Geologists (AAPG) and the Society of Petroleum Engineers (SPE).

Lan is a professional petroleum geologist and engineer with over 20 years experience in petroleum exploration, development and production in Australia and internationally including 15 years at Mosaic Oil N.L. ('Mosaic'), an ASX listed petroleum exploration and production company, where he played a leading role, initially in technical and technical management positions and in the last four years, as Managing Director, in transforming Mosaic from a speculative petroleum explorer to a successful petroleum exploration and production company with growing production revenues, petroleum reserves/resources and profitability. Lan is credited with the discovery and development of many oil and gas fields in the Surat-Bowen Basins through his innovative introduction of various exploration, drilling and completion technologies to Australia.

Lan is currently a principal/director of Tanvinh Resources Pty Ltd and Latradanick Holdings Pty Limited which provide services to energy and resources companies in Australia and Asia-Pacific region.

### **Scott Brown, Executive Director, Managing Director**

B. Bus (University of Technology, Sydney, Australia) and M. Com (University of New South Wales, Australia)

Mr Scott Brown holds a Bachelor of Business and a Master of Commerce and is a member of the Institute of Chartered Accountants and the Petroleum Exploration Society of Australia (PESA).

Scott is the Chief Executive Officer and co-founder of Real Energy Corporation Limited. Prior to this, he was the Chief Financial Officer of Mosaic Oil NL (ASX: MOS), a listed petroleum production and exploration company with an extensive range of oil and gas production and exploration permits in Queensland, New Zealand and offshore WA. He is also Chairman of IOT Group Limited and Biofiba Limited.

During his time with Mosaic, he was involved in the acquisition of production properties and the growth of its business and profitability. He was instrumental in putting together a Scheme of Arrangement with AGL Energy Ltd to acquire Mosaic for consideration of \$142 million.

Scott has an extensive background in finance and the management of public companies including guiding numerous companies through the listing process. Prior to Mosaic Oil NL, Scott was Finance Director of Objective Corporation Limited ('Objective'), an enterprise content management (ECM) software company that established itself as one of the leaders in the ECM market. Scott was instrumental in the ASX listing of Objective.

Scott was also formerly the Chief Financial Officer and Company Secretary with a number of public companies including Turnbull & Partners Limited, Allegiance Mining NL, FTR Holdings Limited and Garratt's Limited. Scott also worked at accounting firms, Ernst Young and KPMG.

### **Norman Zillman, Non-Executive Director**

BSc Geology (University of Queensland, Brisbane, Australia) and BSc Hons. Botany (University of Queensland, Brisbane, Australia)

Mr Norman Zillman is a professional geologist and a member of Australasian Institute of Mining and Metallurgy (AusIMM) and the Petroleum Exploration Society of Australia (PESA).

Norm has over 45 years' experience in minerals, petroleum, coal, coal bed methane and geothermal exploration and production in Australia and internationally. His initial experience was as a petroleum geologist with international companies Aquitaine Petroleum in Australia and Papua New Guinea and Union Oil Company of California in Australia and Indonesia.

Norm has occupied the positions of Deputy CEO of Crusader Ltd, General Manager Exploration and Production with Beach Petroleum NL and Claremont Petroleum Ltd and Manager of the Petroleum Branch of the Queensland Department of Mines and Energy and State Mining Engineer for Petroleum and Non-executive co-Chairman of Chinalco Yunnan Copper Resources Ltd

(CYU), Non-executive Chairman of Bureson Energy Ltd (BUR) and Non-executive Director of Earth Heat Resources Ltd (EHR).

More recently, Norm has been responsible for a number of successful public resource floats on the ASX. He was the inaugural Managing Director and a co-founder of Coal Bed Methane (CBM) company Queensland Gas Company Ltd (QGC), being responsible for the initial acquisition of all of its areas, the successful floating on the ASX and the discovery of QGC's first CBM gas field, Argyle. He was also the inaugural Chairman and Founder of conventional oil and gas company Great Artesian Oil and Gas Ltd (GOG). He was also a founder of a number of other ASX listed companies including Blue Energy Ltd (BUL), Hot Rock Ltd (HRL), Planet Gas Ltd (PGS), Bandanna Energy Ltd (BND) and Red Gum Resources Ltd (RGX).

## 11. Investment Risks

RLE is exposed to a number of risks including:

- **Exploration risk:** Exploration is a speculative endeavour with an associated risk of discovery to find any oil and gas in commercial quantities and a risk of development. No assurances can be given that funds spent on exploration will result in discoveries that will be commercially viable. Future exploration activities, including drilling and seismic acquisition, may result in changes in current prospectivity perceptions of individual prospects, leads and permits. It may even lead to a relinquishment of the permit, or a portion of the permit
- **Reserve and Contingent Resource risk:** oil and gas reserves estimates are expressions of judgement based on knowledge, experience and industry practice. Estimates which were valid when originally calculated may alter significantly or become uncertain when new information becomes available on the oil and gas reservoirs through additional drilling or reservoir engineering tests over the life of a field. In addition, reserve and contingent resource estimates are necessarily imprecise and depend to some extent on interpretations, which may prove inaccurate. The actual Reserves or Contingent Resources may differ from those estimated which may result in RLE altering its plans which could have either a positive or negative effect on RLE's operations.
- **Commodity price risk:** RLE's future value, growth and financial condition are dependent upon the prevailing prices for oil and gas. Prices for oil and gas are subject to fluctuations and are affected by numerous factors beyond the control of RLE. These factors include global consumer demand, national and international financial market conditions, uncertainty in commodity markets, political and economic conditions in oil producing countries, actions of the Organisation of the Petroleum Exporting Countries (OPEC), government pricing regulations, taxation and availability of alternative and competing fuel sources.
- **Development and Production risks:** Development and production of oil and gas projects may be exposed to low side reserve outcomes, cost overruns, production decrease or stoppage, which may be the result of facility shut-downs, mechanical or technical failure and other unforeseen events. A significant poor development outcome or failure to maintain production could result in RLE lowering reserve and production forecasts, loss of revenue and additional operating costs to restore production.
- **Infrastructure risks:** It is common in the oil and gas sector for industry participants to share transportation and operating infrastructure (such as gas processing facilities and gas pipelines). RLE relies on access to properly maintained operating infrastructure and shared facilities in order to deliver its production to the market. Any delay or failure to access such infrastructure or shared facilities may have a material adverse effect on RLE.
- **Management and labour risk:** The ability of RLE to achieve its objectives depends on the engagement of key employees, directors and external contractors that provide management and technical expertise for the development of its oil and gas projects.

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