Real Energy Corporation Ltd (RLE)

Delivering results and readying for production

March 2019

Oil & Gas Team
Stephen Bartrop, Research Manager

www.breakawayresearch.com

Recommendation: *BUY*

Key Points

- ***Real Energy has made further progress towards its goal of commercial gas production from its very large gas resource in the Windorah Trough, Cooper Basin. This report updates for results from RLE's latest wells Tamarama #2 & #3 which were successfully drilled late 2018 and being evaluated with highly encouraging results to date. Next steps are reserve bookings, gas sale agreements and determination of funding options for a scaled-up project all of which, if delivered, would create substantial value.***
- ***RLE has achieved many pre-development objectives:***
  - ***Four wells drilled to date all encountered gas reservoir and three flowed gas to surface when tested, with the most recent wells T2 & T3 flowing at 2 and 2.5 mmcfd respectively in February 2019.***
  - ***DeGolyer & MacNaugton assign contingent resources of 276 Bcf of 2C and 672 Bcf of 3C. This is a very large resource but the equity market ascribes low value to resources and RLE needs 2P and 3P reserves for a market re-rating.***
- ***The elements are in place to book commercial reserves. These are***
  - ***Reservoir data from four wells relatively closely spaced and gas flow rates from three wells, which have been broadly in line with pre-drill modeling and there are no apparent negative geological or drilling surprises to date.***
  - ***A binding agreement with the Santos JV for gas processing and transportation enabling RLE's connection to the eastern gas market, via a short spur-line to the Santos-operated gathering network 14 km to the south.***
  - ***Gas sale agreements. RLE reports "strong buyer interest" from its expression of interest to sell, 5PJ over three years. If so, it would establish revenue from the existing wells and provide data for scale-up to a larger project in time.***
- ***There is a gas shortage in eastern Australia and prices remain very high despite efforts by the E&P industry to introduce new supply. RLE is well placed geographically to access the market, and has achieved success to date in line with stated goals.***
- ***RLE is undervalued compared to some peers on EV/resource multiples and our updated DCF modeling of small scale production generates a valuation of 37c.***

RLE has delivered positive outcomes in line with its strategy of becoming a significant producer. Breakaway Research has a ***buy recommendation*** *on Real Energy and a revised price target of* ***37cps.***

Company Information

ASX Code	RLE
Share Price (A$-OET 8/3/19)	A$0.10
Ord Shares/ Perf rights (M)	349.2
Bonus options (M)	42.2
Placement options (M)	38.6
Market Cap	**A$35M**
Opts-RLEOA (12c,15/4/19)	A$ 0.015
Opts-RLEOB (14c,30/9/20)	A$0.034
Market Cap (fully diluted)	**A$37M**
Cash (Current estimate)	A$6m
Total Debt	A$0.0m
Enterprise Value	**A$31M**

Directors

Chairman	Lan Nguyen
Managing Director	Scott Brown
Director (Non-Exec)	John Wardman

Significant Shareholders

Managing Director	7.80%
Chairman	5.87%
Sino Portfolio International	5.00%

Source: Company

Company Details

Address	Level 3, 32 Walker St, North Sydney NSW
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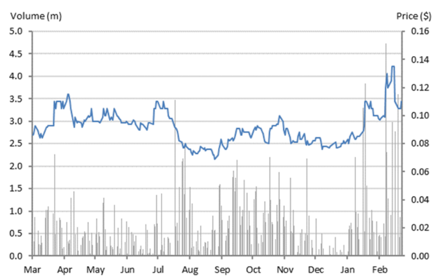
Web	www.realenergy.com.au

One Year Price Chart



Source: ASX

Investment case: Delivering results and readying for production

RLE is the smallest by way of market capitalisation of several companies trying to develop gas for supply to the gas-short eastern Australia market, but it appears that positive field results over the past 2 years have yet to be appreciated in the equity market. This may be a market factors as discussed later in this report, as RLE is not the only small company with an east coast gas strategy and while the theme is powerful, there are few successes to date and investors generally have not made money.

Yet RLE has delivered positive drilling and testing outcomes, in line with its expectations and for a cumulative investment that is not huge in an industry context. It has retained 100% ownership of its acreage, which we think is desirable from a shareholder perspective as in time, if the reserves become proven, the acreage will become much more valuable and could be a funding option for a larger project.

DeGolyer & McNaughton prospective and contingent gas resource estimates for the acreage are and shown in Figure 1. Migration of 2C and 3C resources to 2P and 3P reserves category is a critical value driver and requires the drilling and flow rate testing of wells. That has been RLE's principle strategic objective over the past 3 years.

	Prospective	2C	3C
Bcf	5,483	276	672

Figure 1. Prospective reserves and contingent gas resources. Source: Real Energy

The Windorah Trough gas project is favourably located in western Queensland acreage APT927 and forms part of the regionally extensive Cooper Basin. It is surrounded by gas fields and gas process infrastructure owned and operated by Santos and others. The location is shown in Figure 2.

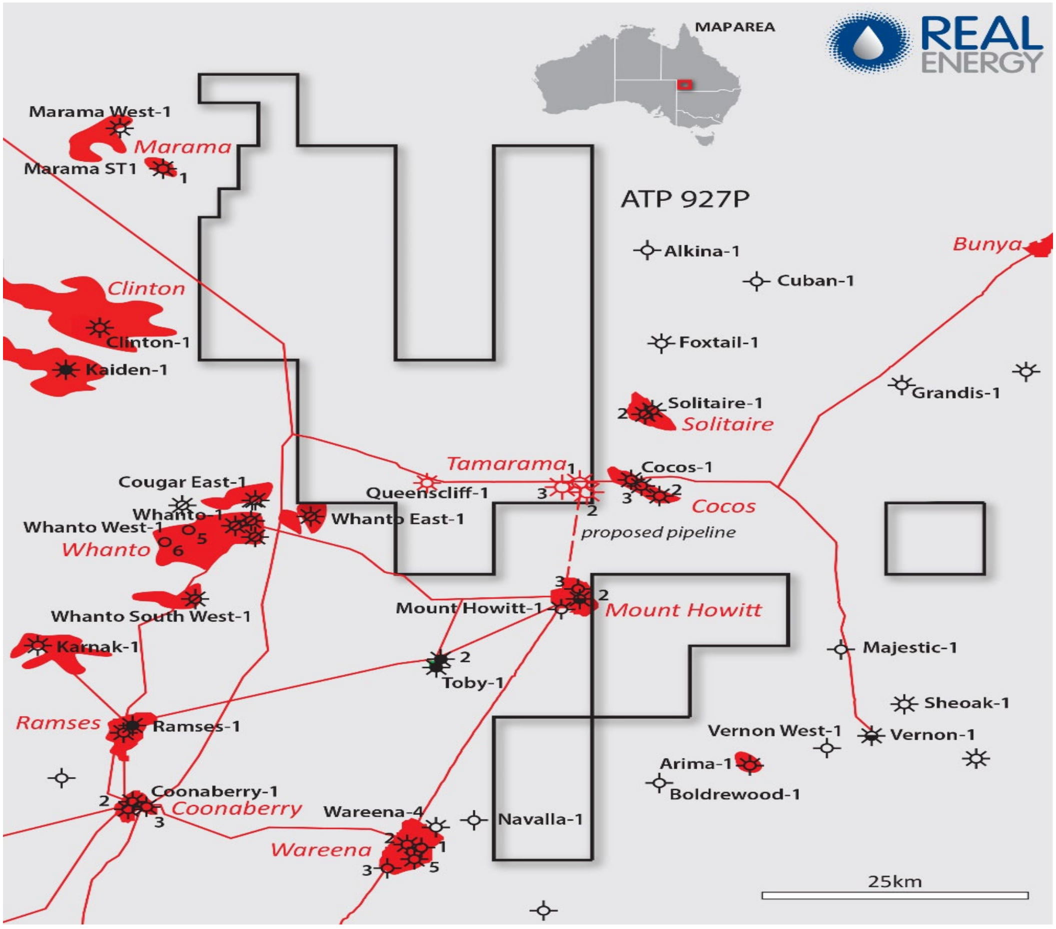


Figure 2. Location of Windorah Trough project. Source: Real Energy Investor presentation February 2019

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Since establishing the Windorah Gas project in 2014, RLE have invested ~$30M into understanding what is required to commercialise gas, by drilling 4 wells, confirming the geology, flow-rate testing three wells, and putting in place gas processing and land-owner access agreements. Thus, there is a lot of de-risking to date, both geologically and also commercially.

The project advanced considerably during late 2018 with the drilling of two more exploration / development wells, Tamarama #2 and #3. Flow rate tests of 2 and 2.5 mmcfd were achieved in February 2019, after successful fraccing of both. Evaluation is ongoing, with downhole pressure and other data being assessed and these are all inputs to reserve determination. RLE states it is seeking a maiden reserve booking, and we anticipate a reasonable time-frame to complete such sometime in 2Q this year.

Valuation: 37c, with upside depending on the size of future development.

We have revised our valuation, and the result is change from 41cps to 37cps. Refer to later sections for details, but in summary, while the project has moved forward and been partially de-risked since the last report, assumptions we have made regarding flow rates and costs have not changed and we show the figures on an un-risked basis. However, key changes we have made have been to (1) capital structure, to reflect an increased share count and (2) revised higher ex-field gas price.

Domestic gas markets have continued to strengthen since mid-2018 despite significant LNG volumes being diverted south. In 2019 YTD, hub gas prices have averaged $10/GJ, up from the A$9-10/GJ range we noted in our previous report.

Due to the progress toward delivering production, we have retained our DCF valuation methodology. We reference peer-group related resource multiples for completeness, but for a number of reasons the EV/GJ relativities are less relevant today, as RLE contemplates production, while some peers are no closer and are still trying to resolve geological and drilling impediments.

Testing at Tamarama #2 and #3 complete and results being evaluated.

RLE has been developing the Windorah gas project since 2014 and has drilled 4 wells and tested 3.

- Following the encouraging gas intersections and test results achieved in 2017 at Tamarama 1, and the previous well Queenscliff 1, RLE drilled Tamarama 2 and Tamarama 3 in 3Q 2018. These wells were drilled on time and budget and without incident. T2 was located ~800m SW of T1, and T3 was located 500m NW of T1.
- These wells incorporated learnings from T1 and were specifically designed to intersect the prospective gas sands in an orientation more favourable to achieving higher flow rates. Both wells intersected the targeted reservoir as planned.
- In late 2018, both wells were successfully stimulated using Halliburton services. T2 was fracced with three stages, and T3 was fracced with 4 stages.
- After recovery of fracc fluids, RLE reported initial gas flow rates of 2 mmcfd from T2, and 2.5mmcfd from T3, the latter figure being higher due to more fraccs.
- At the time of this report, RLE reports both wells are shut-in for pressure build-up surveys, which is key data along with flow rates for reserve calculations.

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Next step to commerciality: Phase 1 Pilot production from existing wells.

RLE is now focused on the engineering and commercial work to complete the existing three wells for sustained production, as well as executing gas sale agreements. This is a small project, essentially a pilot phase, but importantly the additional incremental capex is low, mostly just for a short pipeline to connect to the Santos production system. Initial revenues are likely to be modest, but in addition to revenue, the wells will provide data from sustained production which will be important in designing a future, scaled-up project.

- The Tamarama#1, #2 and #3 wells have been completed as producer wells, and after the current testing phase, could be fast tracked into production as soon as all the necessary surface facilities and regulatory approvals are in place, including small gas pipeline to transport the raw gas to the nearest tie-in point on the Santos operated gathering network.
- On October 15 2018, RLE signed a binding processing agreement with Santos Cooper Basin JV to process the gas. RLE need to construct a flow-line to tie-in to the Santos-operated Mount Howitt gas line, which is located 14 km to the south. From there, gas flows to the Santos plant at Ballera for processing to sales quality and compression to enter high pressure pipelines. From Ballera, gas can be directed into SA and NSW via Moomba, or directed east to the LNG hub at Wallumbilla or Brisbane.
- The processing agreement is for RLE to supply “raw” gas which is not of sales quality but avoids the capex that RLE would otherwise require to process the gas.
- In 2017, RLE entered a Memorandum of Understanding (MoU) with Weston Energy for 15PJ of gas over 5 years, equating to 3PJ p.a. The status of this MoU is unclear at this time. In its most recent market reports, RLE indicates it has issued Expression of Interest to gas customers for the supply of 5PJ of gas over 3 years. To achieve this, each well would need to deliver >1.5mmcfd. Test rates from the existing wells exceed this.

We have developed a financial model for three phases of various sizes as outlined in RLE investor material, as shown in figure 3. Key assumptions for Phase 1 are:

- Pilot Stage incremental capex of $10M including ~$5m for the tie-in pipeline. This is not a big undertaking and could be completed within 6 months following plans and approvals. It would like require an additional small amount of funding, with options discussed later.
- Gas production of 1.5 TJ/dwell, from 3 wells for an annual total of ~1.6 PJ p.a. We assume a higher rate of 2.5mmcfd from larger phases, on the assumption that future wells would be optimized for production, in contrast to T 1, 2 &3 wells which are quasi-exploration wells.
- Delivered gas price of $9.5/GJ. In our previous forecasts, we had assumed $9/GJ.
- Santos tolls and gas transmission charges to get the gas to east coast hub total $4.5/GJ.
- Cash operating costs of $2m p.a. to run the field. We would expect significant economies of scale in the event of large developments.

The financial results for a successful Phase 1 are modest. Our DCF model returns a valuation of A$24M at a discount rate of 10% after tax, if all the RLE did was connect up the three wells and cease all further activity for any reason. However, this is not RLE’s strategy. The Phase 1 / pilot cash-flows will probably be re-deployed into drilling more wells as required for Phase 2 (6 more wells) and ultimately Phase 3. Phase 3 envisages a full field development to deliver 100Tj/d and would be a major financial and engineering undertaking.

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Field model		Phase 1	Phase 2	Phase 3
Number of wells		3	9	50
Production per well	TJ/day	2	2.5	2.5
Total field production	TJ/day	6	22.5	125
Annual production	**PJ p.a**	**2.2**	**8.2**	**45.6**
Hub gas prices	A$/GJ	9.5	9.5	9.5
Process & pipeline charges	A$/GJ	4.5	4.5	4.5
Field price-netback	A$/GJ	5	5	5
Field revenue	**A$M**	**11.0**	**41.1**	**228.1**
Opex	A$M	2	5	50
Royalty	A$M	0.7	2.5	13.7
Field EBITDAX	**A$M**	**8.3**	**33.6**	**164.4**
Incremental capex	A$M	10	50	450

Figure 3. Indicate project economics for phase 1 and larger *Breakaway estimates of costs and revenues*

What is more valuable from a pilot phase, is the geological and reservoir data that extended production and well monitoring brings. Large-scale, long term production would require multiple wells and optimal well design and location would be critical drivers of capex and project returns.

RLE retains 100% control and operatorship

There are benefits in RLE's 100% ownership and operatorship, and there is a locational advantage in the western Queensland location. RLE can adapt the project to what-ever scale best suits the gas market, and best suits its own financial capacity, in contrast to say, an offshore project, where the capex may be very large and up front. It does not have JV partners which may have different agendas or conflicts.

In addition, the development location in western Queensland imposes fewer constraints compared to other parts of the country where various drilling bans or moratoria exist. Queensland is open for business and even though the location is quite remote, the terrain is flat and open and equipment can be mobilised using public roads. Service providers and contractors can be mobilised from Moomba to the west, or Roma to the east.

After Phase1 production: Phase 2 and 3.

If the Phase 1 pilot project succeeds, then RLE conceive two further phases, Phase 2 and Phase 3.

- Phase 2 would require another 6 Tamarama development wells.
- Production target 20 TJ/d from 9 wells in total or ~2.5TJ/d from each well, delivering ~70PJ of raw gas over 12 years from 2020.
- The additional wells and surface facilities capex are estimated by Breakaway to be $50M. We assume the field architecture is to produce and gather raw gas and twin the existing pipe to Mt Howitt.
- We assume RLE continues to pay process tolls as per the pilot phase.

Phase 2 is still a small project and would deliver approximately 8 PJ p.a but if high gas prices can be captured then the revenue and field cash-flows start to look quite attractive in context to RLE's low market value. The additional capital costs are likely to be relatively modest, for additional wells, in-field gathering and higher capacity pipe to Mt Howitt.

RLE would need additional funds but there options which are outlined later, which we think RLE could deploy to enable a phase 2 development without resort to a large and dilutive equity issue. We do assume a further expansion in the capital base that would occur if all existing options were exercised netting RLE an additional $10M of equity capital. For additional funds, we assume debt-like instruments of $35M

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We adopt Phase 2 as our base case for the purpose of establishing a DCF value.

Our DCF is $193M, equating to 37cps on an assumed capital base of 426M shares. It equates to ~A$2.6/GJ of developed 2P gas molecule. We note peers Beach Energy and Cooper Energy which both have developed 2P are trading in the equity market on implied EV/GJ> $3.

Larger scale: Phase 3.

Phase three conceives a much larger project, which would require more than 50 wells delivering ~400PJ over +12 years. This would require a conversion of 83% of 3C reserves to 2C, not assuming that the 3C figure expands with move appraisal, and represents the limit of what is achievable based on current data.

A large scale plant would require additional large capex for a full scale gas processing and compression plant, to enable RLE to deliver sales quality gas straight into the high pressure network. This would be necessary for economic and practical reason.

The economic benefit would be to reduce Santos JV process tolls. The practical limit is that a development of this scale would produce volumes beyond the capacity of Santos' nearby gathering system, triggering development of more pipeline infrastructure. Key assumptions for phase 3 are:

- Full field development of ATP927 as a tier one gas project targeting >100TJ/d.
- 50 wells, gross capex >$450M
- NPV ~$500M

As to be expected, the value outcome is quite large, but at this time any large scale project is speculative and is necessarily preceded by successful Pilot and Phase 2 projects.

It would also require the booking of substantial proven and probable reserves, and many more wells than those required to support the pilot of phase 2. We do not assume a phase 3 at this time in our valuation analysis as it is dependent on precedent phases.

Base case DCF valuation: 37 cps for a Phase 2 (9 well) project

The field net cash flow profiles for each development phase are shown in figure 4 on an un-risked basis and are gross, assuming that RLE retain 100% of the acreage.

We assume all capex is upfront, where-as in reality, it's likely that wells will be drilled as and when production needs to ramp up, thus potentially staging the capex out over a number of years. After field development the ongoing cash requirement is modest, for field operations, and royalties.

This is quite unlike peers producing gas from coal seams, which require ongoing capex for drilling year-in, year out. If RLE perfect the well engineering design then we should not expect to see ongoing field work to keep wells flowing. A key geological risk is how long production wells remain on plateau, and when depletion sets in, the rate of depletion.

Once depletion begins then production rates will drop and further wells may be required to maintain output. A key variable is the requirement, if any, for additional wells as the field ages, but in any event this is likely to be some years from now and production history over time will inform this.

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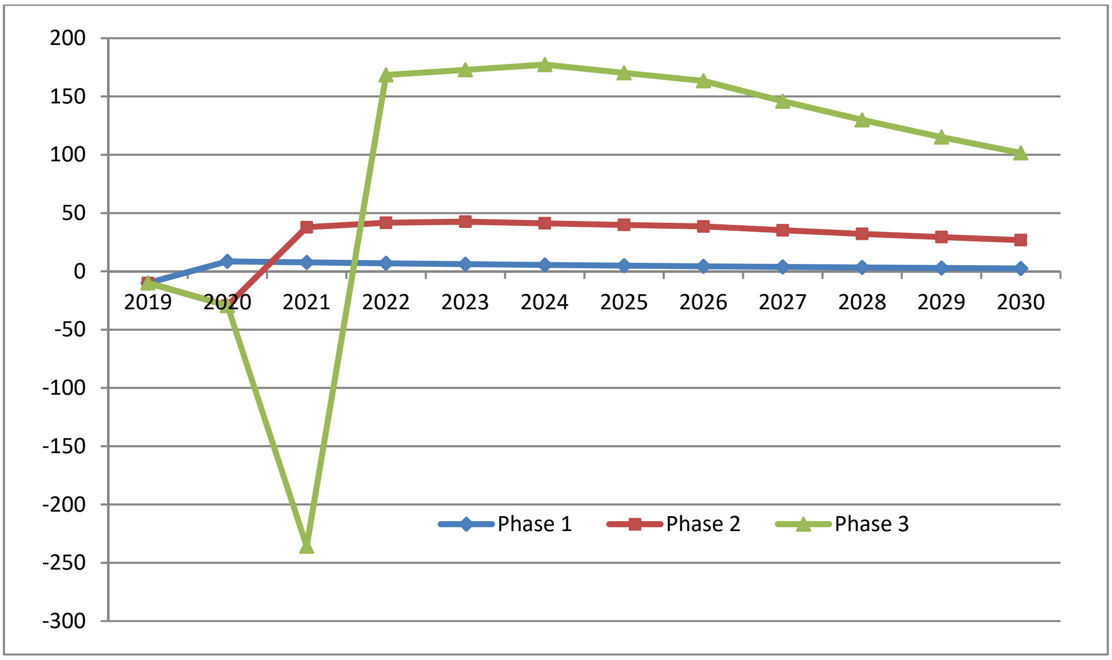

Figure 4.Breakaway financial models for a pilot, Phase 2 and Phase 3project.

Financials: RLE have relied on equity so far but other options are emerging

RLE have been very frugal in spending over the past few years, managing the drilling of four wells and testing and fraccing of 3 in a remote region, as well as paying for all overheads, for a cumulative investment of approximately $30M. All of this was funded from equity finance. In 2018, RLE raised $3.7M in the December quarter and in March 2019, an additional $5M was raised in a placement.

Real Energy financial results (A$M)						
Year to June	**2014**	**2015**	**2016**	**2017**	**2018**	**Cum Total**
Operating cash flow	-0.67	-0.46	5.86	0.54	-1.47	3.8
Capex	1.12	-13.3	-3.53	-3.59	-4.27	-23.6
Equity issue & other	8.81	4.7	2.41	1.86	2.2	20.0
Cash at year end	12.7	3.7	8.7	7.5	4.0	
Total assets	14.9	23.6	25.9	27	27.8	

Figure 5: Key annual financial statistics, from RLE annual reports.

We estimate that after the current testing phase and issuance, Real Energy's cash position will be $6M. This I just enough to construct the Mt Howitt gas pipeline connection, and install other surface facilities, but beyond that RLE will need additional funds

Funding options include:

- Conversion of outstanding options, which could provide up to $10M. However the 14c, September 2020 options are unlikely to be exercised before that time
- Monetisation of its 100% owned assets via a farm-out. We think at some point, RLE's assets may become attractive or strategic to other gas industry participants. In its December quarterly report, RLE stated it had received a "funding proposal to farm-in" but there are no other details
- Gas resource / resource pre-payment. Prepayments from major industrial consumers trying to diversify supply are becoming more common.

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- Bank debt. Should RLE put in place all the necessary agreements to underwrite the sale of its gas then it's possible the future that conventional bank debt, or quasi debt from mezzanine providers could become available.

There are risks

There are geological and engineering risks which will be better informed following the testing phase.

It's possible that test rates are below that needed for commerciality, or that when production commences, depletion rates are steep requiring additional wells. A period of sustained performance is required in order to RLE's engineers to fully understand the reservoir behaviour.

Water production in tandem with the gas is possible, and this happened at T1. It is theorised that this water is from coal seams, which were unintentionally stimulated. If so, then in time, the coal could be de-watered, or sealed off, but all this would require costly well intervention. Dealing with the water is either an engineering issue, which is fixable, or a consequence of the geology, which would be harder to address. It usually takes a number of wells to get the engineering right.

The reservoirs that RLE is targeting are thick, but low permeability and interbedded with coals and other fine grained clastics. Flow rates from unstimulated vertical wells will never be high enough for commercial production. Sophisticated drilling, stimulation and production techniques are necessary, and are being applied, but this comes at a cost. There is a flow rate and capex trade off in all of this, and it may require more knowledge, more wells and more time to achieve the predicted outcomes.

There are commercial risks in committing to future gas sale agreements. Customers require certainty and reserves and production contain uncertainties. Its possible RLE could over-sell what can be reliably produced leaving it exposed to make-good its supply agreements.

Valuation and size in context with peers. RLE is the smallest

Figure 6 shows RLE enterprise value to other companies which are considered by equity investors as focused or "pure-play" east coast domestic gas market participants. There are many reasons for the large disparity in values and the larger companies in this figure, Senex and Cooper Energy have proven gas reserves and production and RLE lacks both at this time.

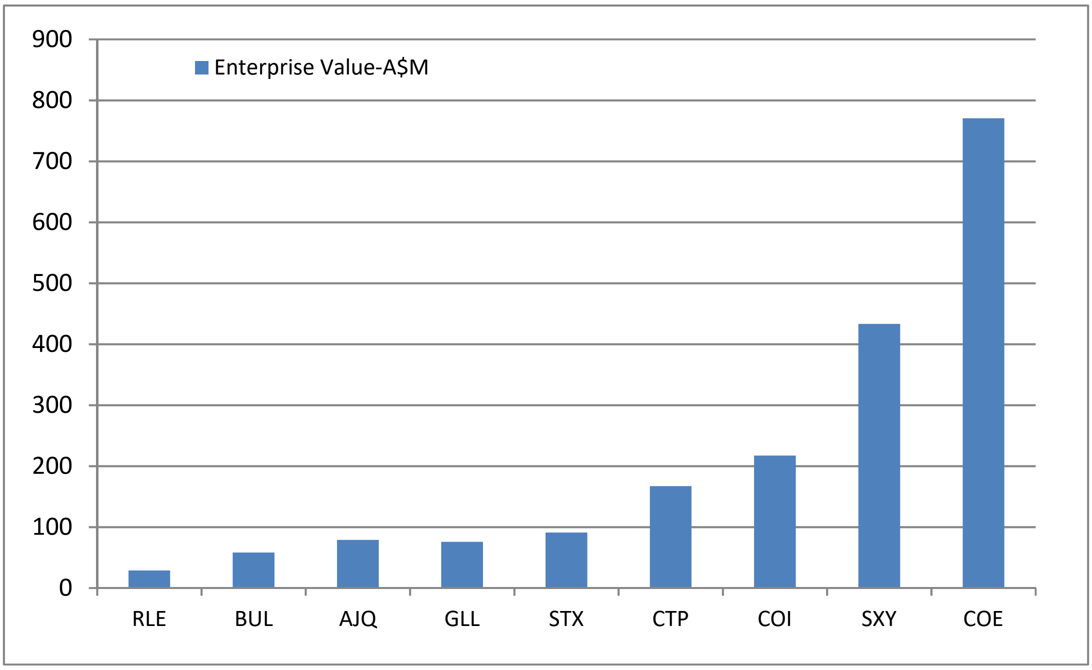

Figure 6: Enterprise values for comparable domestic gas market E&P participants. Based on financial data as of 31/12/2018.

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Real Energy does not have reserves at present, and its resources are contingent on demonstration that they are commercial. We expect testing to resolve commerciality and there are risks, but we note that all of the peers are also pursuing gas exploration, appraisal and commercialisation in unconventional geologies, some very remote from infrastructure. Comet Ridge, Strike Energy and Galilee Energy are all active in CSM appraisal and only one has reserves (Comet Ridge) but all have been materially re-rated this year. Blue Energy has reserves which are remote and requires infrastructure to access. It seems appears that the market better understands the steps leading up to successful production from CSG, in contrast to RLE's "basin centred gas geology". The inclusion of Senex and Cooper Energy in comparison shows the uplift that is possible if commercial production can be achieved. Figure 7 shows a ranking smaller peer 2C and 3C contingent resources.

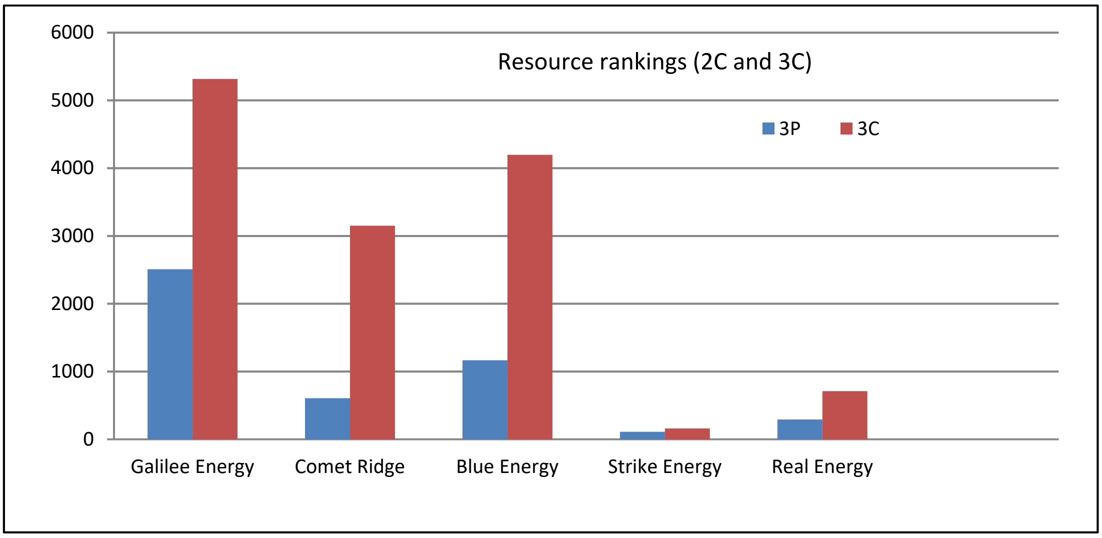

Figure 7: Resource rankings. Source: Breakaway Research.

Of the peers, Real Energy is most similar to Strike Energy, which also has no reserves. Strike is trading at EV/2C of A$ 84c/GJ and EV/3C of A$0.57/GJ, and has a market cap of $91M. These figures are approximately 10-fold higher than the implied market value of RLE's 2C and 3C resource.

We have moved away from using peer group metrics for valuation purposes, for a number of reasons, including the very wide range of figures that could be generated depending on how the data is filtered, but more importantly that we think once RLE established production, market analysts will adopt cash-flow modelling which is the case today evident in consensus valuation for Cooper Energy and Senex. For the sake of completeness, we include a table of the reserve and resource figures for companies mentioned in this report in figure 9.

Peer Group: it has gone backwards!

Figure 8 shows EV and reserves and resources for companies which we think are relevant peers and has been published in our previous reports if only to re-iterate two points. The first is that the EV of this group of companies has fallen by 8% since our previous report and second, only one of the nine companies show here has been able to grow its reserves or contingent resource base in the past year.

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Company	Price	EV	2P	3P	2C	3C	EV/2P	EV/3P	EV/2C	EV/3C
Comet Ridge (COI)										
Total	0.33	**217**	172	374	605	3150	**1.26**	**0.58**	**0.36**	**0.069**
Blue Energy (BUL)										
Total	0.052	**58**	71	298	1166	4197	**0.82**	**0.19**	**0.05**	**0.01**
Galilee Energy (GLL)	0.415	**76**	0	0	2508	5314			**0.03**	**0.01**
Senex (SXY)										
Total- Pje	0.325	**433**	666	0	31	0	**0.65**		**13.9**	
Central Petroleum (CTP)										
Amadeus Basin	0.14	**167**	132		144		**1.27**		**1.16**	
Cooper Energy (COE)										
Total	0.48	**771**	305	383	158	266	**2.53**	**2.01**	**4.88**	**2.90**
Strike Energy (STX)										
Southern Cooper Basin	0.069	**91**			109	159			**0.84**	**0.57**
Real Energy (RLE)										
Qld- Eromanga basin	0.1	**31**			291	709			**0.099**	**0.041**
Armour Energy (AJQ)										
Kincora Gas field	0.08	**79**	71	196	0	0	**1.11**	**0.40**		
Total		**1921**			**5012**	**13795**			**0.383**	**0.139**

Figure 8. Australian gas exploration and production companies considered to be peers of Real Energy (Source: Company 3B statements, most recent reserve and resource reports (converted into PJ Gas equivalent at 1.055PJ per Bcf, 6PJ per BOE). Share prices at EOT March 8, 2019

Why has the stock not been re-rated given success in the field?

The observations made in the last paragraph would suggest market factors have a lot to do with RLE trading materially below what we think its asset is worth. Unfortunately, very few companies have had commercial success (yet) and investors are becoming understandably frustrated. There are other reasons too, including:

- RLE is a "single asset" company, dependent on the success of the Windorah trough project. There are no other assets to support asset valuation, should flow rates be uneconomic.
- The BCG geological model is not well understood, perhaps analogous to coal seam gas in its formative days, which initially was shunned the market. If so, it will take time, positive test results and production history to remedy.
- Lack of financial headroom to move into a larger development. RLE will need funds to undertake development activity beyond the current phase and until such time as revenues can be established.

Australian East Coast gas market state-of-play: still broken

Industry conditions are positive for new entrant gas producers and RLE is well positioned given its strategic location near existing infrastructure. High prices brought on by LNG exports since early 2015, and depletion of key fields particularly those offshore Victoria, have been well documented in the financial and mainstream media.

There is now a very strong price signal coming from consumers to stimulate new supply. The production industry has responded both to price, and the threat of regulatory interference. Some of

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the Queensland LNG exporters have diverted volumes to the south, and many smaller participants have raised capital and are undertaking various projects, however what remains to be produced is from geology that is challenging, or in regions which are remote and will require large infrastructure investments. All of this demands more capital, and more time, and involves more risk.

The state of play is a market that remains tight, with some consumers reluctant to underwrite new but high cost supply, some producers struggling with difficult projects, and the pace of development slowed by regulatory burden. Investors generally, and particularly those providing risk equity, have generally not made money. So in a market that should be providing wind-fall returns, no one is delivering them. There is no magic bullet on the horizon and over the next few years, we expect prices to remain firm, and the gap between available production and demand continuing to widen. There is no easy solution.

LNG exports, and maybe imports will lock-in high prices

Before the advent of LNG exports, the domestic gas market was well supplied and contract gas prices were <$4/GJ. Two years ago, prices were in the $7-9/GJ range and these were considered high, in context to where the price had been a year prior. Now prices are routinely $9-11/GJ, (figure 9) and the previously pronounced winter peak has now become a summer peak too, with demand for gas-fired power to back-up intermittent renewable supply.

Rising oil prices pose an additional source of price volatility, with most domestic gas prices now related to LNG netbacks. The prospect of LNG imports, should they go ahead, will introduce new supply but at prices which are related to LNG plus the cost of import and regasification. These will be higher again than the next best alternative.

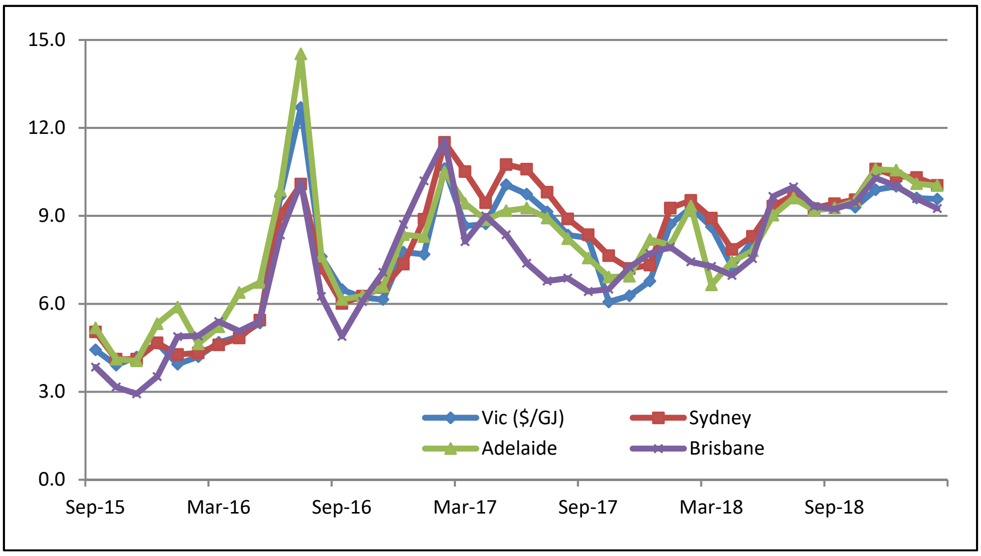

Figure 9. Monthly average gas price, in A$/GJ, delivered to "City gates" (i.e before entering low pressure distribution networks)

Geological backdrop: Basin Centred Gas (BCG)

RLE is a cheap option on potential commercial development of a very large contingent gas resource in the northern Cooper Basin. It has two large 100%-owned permits which are prospective for gas trapped stratigraphically in the basin's trough, a so called "basin centred gas play" (BCG).

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What is Basin Centred Gas (BCG)?

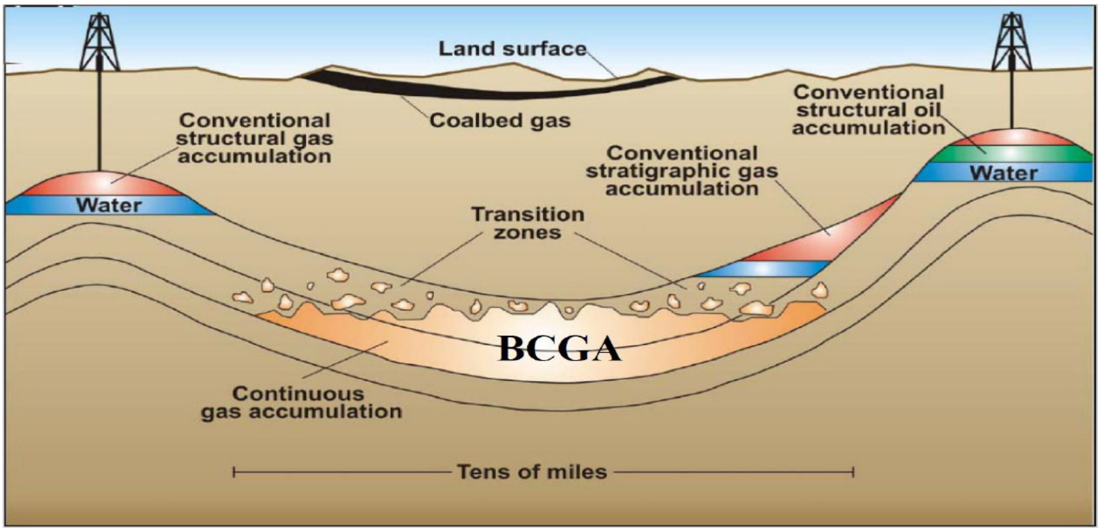

Figure 10. Schematic representation of basin centred gas (Source: RLE investor presentation)

BCG plays can be laterally extensive and can hold vast resources. Figure 10 shows a schematic. In RLE's ATP927 permit. DeGolyer & MacNaughton estimate gas-in-place is 13.7 Tcf, with a prospective recoverable resource of 5.5 Tcf. These are very large figures. The exploration RLE has undertaken has enabled it to book contingent gas resources of 276 Bcf (2C) and 672 Bcf (3C), but these figures do not include data from the recent test wells T2 and T3. The question to resolve is how much gas can be produced commercially. For this, RLE needs to establish flow rates high enough, and keep well costs low enough in order to book reserves.

Basin-centred gas is unconventional in the sense that the gas is trapped stratigraphically in tight sandstones. It requires over-pressure to drive out the gas, and commonly, artificial stimulation is required to enhance permeability and aid commercial flow rates.

Basin centred gas is just another form of unconventional geology that was once considered too hard to exploit commercially, but Increasingly around the world and in particular the USA, production companies are successfully exploiting geologies that were once considered "too hard". Production from low permeability sandstones and shales has been successful in the USA. Attempts to migrate this success to Australia in the Cooper basin from 2011-2014 made some pioneering advances but high costs due to remote location, and a collapsing oil price stalled the activity after 2014. More recently, industry participants eagerly await the removal of fraccing bans in the NT to pave the way to exploiting large reserves of liquids rich shale rocks.

Since 2014 RLE has targeted permits ATP927P and ATP1194PA in the northern Cooper Basin to test its BCG geology. There are conventional gas fields in adjacent permits, gas-gathering systems, and major processing centres at Moomba and Ballera that can pipe gas to eastern markets, so the acreage is well located. Ballera has a capacity of 150TJ/d and has spare capacity. Since 2014 RLE has drilled 4 wells, Tamarama 1,2 &3 and Queenscliff, validating the BCG model. This is shown schematically in Figures 12 & 13. Drilling and testing results validate RLE's geological model. The key to reserve booking, and future development success are use of optimal drilling, completion, and stimulation to maximise gas flow rates, dealing with associated water production if any, and keeping well costs low.

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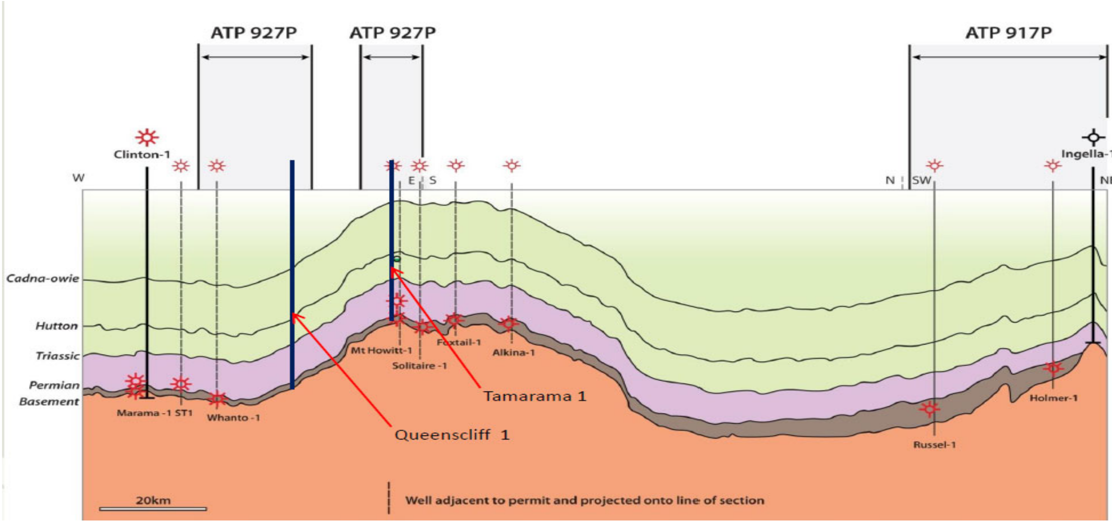

Figure 11: Real Energy permits and wells relative to other wells in region (Source: RLE investor presentation)

Geology of the Windorah trough

The Windorah trough contains several thick Jurassic, Cretaceous, Permian and Triassic sandstones, interbedded by gas-rich coals, finer grain sediments and sealing shales. These sequences are well known in the Cooper Basin, with over 3000 well penetrations. In RLE's permit, the target objectives are the Patchawarra and Toolachee sandstones which are 3,000m deep in the centre of the trough, and around 2,000m deep on the basin edge.

Figure 12 shows the stratigraphic sequence from west to east. Commercial gas discoveries are in conventional structural traps, at Wareena, Whanto, Cocos, Solitaire and Mount Howitt. These wells produced gas at commercial rates from sands in the Toolachee and Permian, from conventional 4-way dip closed or fault dependent traps.

Reservoir quality is variable with porosities typically 10-15% evidencing good reservoir. The highest flow rate recorded from the Toolachee is 11.4 mmcfd from Wareena #1, 25km to the south. Several other wells have recorded rates in the 3-7 mmcfd range. There are numerous coal seams and finer grained sediments which are water bearing and are sources of water influx if not avoided during the completion and fraccing processes. CO_2 levels in all these reservoirs is moderate, generally in the 10-12% range at Tamarama and Queenscliff

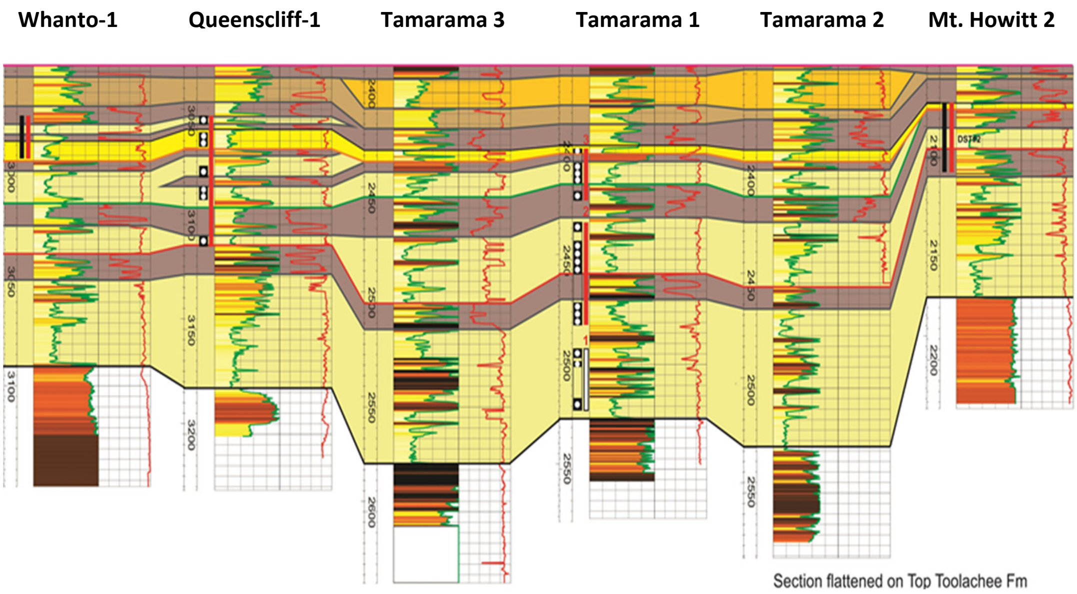

Figure 12 Well sections in the Windorah Trough (Source: RLE investor material)

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Recap of exploration results

Tamarama#1 was the first well drilled outside of any seismically defined closure, to test the basin centred gas concept, targeting the Permian aged Toolachee and Patchawarra sandstone reservoirs.

Tamarama#1 was drilled in September 2014 to a total depth of 2574m and encountered 87m of net pay in total, 21m in the Toolachee and 66m in the Permian. Based on this result, the well was cased and suspended for future testing and the company proceeded with drilling of the second well.

Queenscliff#1 was completed in the fourth quarter of 2014, and reached a total depth of 3129m. The well is 688m down-dip from Tamarama 1. It encountered 36m of gas bearing reservoir in the Permian-aged Toolache objective, and 37m in the Patchawarra. The schematic shows the structural setting of Queenscliff, outside of structural highs. A 27m interval of lower Toolachee-upper Patchawarra formation was perforated, and on test achieved a flow of 0.2 mmcfd to surface, through a small, 16/64 inch choke. While this rate is not high enough to be commercial, the result is significant in that the reservoirs were not stimulated. Following this result the test equipment was mobilised to Tamarama1 for flow rate testing.

Testing commenced in early 2015. Initially a 30m interval of the upper Patchawarra was perforated, and flowed gas to surface through a 12/64 inch choke at 0.3 mmcfd. A test of the lower Patchawarra did not flow, and it was theorised the reservoir was tight and would need stimulation. In the Toolachee, 16m was perforated and flowed at 0.46 mmcfd on test, through a 16/64 inch choke. Gas samples were analysed for Co2 and ranged 7-9%.

Based on the encouraging flow of gas to surface it was decided to proceed with a fracture stimulation program. In 2016 Halliburton services were engaged and a 5 stage fracture stimulation was carried out in late 2016. Flow testing the various zones took place during the first half of 2017, and delivered gas flow rates which were variable and peaked at 2 mmcfd. The rates were accompanied by water production which was not expected. From post-test analysis of the water and re-assessment of the completion and stimulation design, RLE theorises that the accompanying water is most likely coming from coal seams which were unintentionally stimulated.

Figure 13: Gas flare from testing of Tamarama1.

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Figure 14: Gas Flare from testing of Tamarama 2

Key learnings from the test results on Queenscliff 1 and Tamarama#1 are:

Following the encouragement from Queenscliff and Tamaram1, RLE committed to drilling at two more wells in close proximity to T1 in 2018. Tamarama 2&3 were designed to be deviated wells to intersect more reservoir and hence apply learnings from T1.

T2 was drilled 700m south east of T1 and was completed with a three stage frac T3 was drilled 800m west of T1 and was completed with a 4 stage frac. Initial flow rates from T2 were 2mmcfd and from T3, 2.5mmcfd. The latter rate slightly higher due to more fraccs and more exposure to reservoir rocks.

Water production is not desirable and avoidable with careful design and execution of the stimulation program, and in particular, limiting the fracture pattern to the sandstone reservoirs and staying well clear of the coal seams. It appears that water production inT1 ultimately killed the flow. It appears the fraccs in both T2 and T3 were optimally placed and water production has not been reported in results to date.

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The board and management team previously worked together at Mosaic Oil (MOS:ASX) which was taken over by AGL in 2011, following success in discovering and commercializing oil and gas discoveries in the Surat Basin, Qld. The Mosaic team included Lan Nguyen, Scott Brown & Terry Russell. More recently in its Windorah Trough project, RLE has sourced technical input from USA BCG experts and locally, the University Of Qld Chemical Engineering faculty.

Director and Executive Backgrounds

Lan Nguyen - Non-Executive Chairman, appointed

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 25 years of 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 middle management positions and in the last 4 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 Ltd, which provide services to energy and resources companies in Australia and Asia-Pacific region.

Scott Brown – Managing Director, appointed

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 a non-executive director of Kairiki Energy Limited (ASX:KIK) and Oriental Technologies Investment Limited (ASX:OTI).

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.

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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

John Wardman, Non-executive Director, appointed 6 September 2018

Mr Wardman holds a Bachelor of Economics (Macquarie University, Sydney) and is a Fellow of the Australian Institute of Company Directors (FAICD). He is highly regarded and respected in the Australian stockbroking and wealth management sector and has 35 years of experience working in the small resources and energy sectors

He currently is a Senior investment Advisor in the wealth management industry having previously spent 13 years with Macquarie Private Wealth, and prior to that Hartleys Ltd. John is also Chairman of the ASX-listed Shine Metals Ltd. His contacts and network.

Terry Russell, Consulting Exploration Manager

Terry Russell is a geologist with over 26 years of experience working in the oil and gas industry. He has a B.Sc. (Hons) from Victoria University of Wellington, and a PhD from University of New England. Terry was formerly the Exploration Manager of Mosaic Oil NL, with responsibility for the planning and execution of the company's exploration and development program. Prior to this, he was most recently employed as Manager Geoscience for Swift Energy New Zealand Ltd. As well as having extensive experience in onshore and offshore Australian basins, he has also worked on a range of international projects, principally in New Zealand, the United States, Argentina and Tunisia. He is a member of PESA and AAPG.

James Dingle, Drilling Supervisor

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 & production operations, conventional & underbalanced drilling & completion operations, horizontal/multi-lateral drilling & completion operations and high pressure-high temperature drilling operations in many countries including Australia, Indonesia, UK, Ukraine, Turkmenistan, Russia, and Romania.

Dr Ray Johnson, Reservoir Stimulation consultant

Dr Ray Johnson, Jr., Principal at Unconventional Reservoir Solutions (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. Ray holds an MSc in Petroleum Engineering from the University of Texas at Austin. Ray is currently an Adjunct Associate Professor at the ASP, University of Adelaide and Professor of Well Engineering & Production Technology at the University of Queensland, School of Chemical Engineering.

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Analyst Verification

I, **Stephen Bartrop**, as the Research Manager, hereby certify that the views expressed in this research accurately reflect our personal views about the subject securities or issuers and no part of analyst compensation is directly or indirectly related to the inclusion of specific recommendations or views in this research.

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