

November 2017

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#### www.breakawayresearch.com

#### **Company Information**

ASX Code	RLE
Share Price (A\$)	A\$0.08
Ord Shares/ Perf rights (M)	255
Market Cap	A\$20m
Market Cap (fully diluted)	A\$20m
Cash (~Oct 2017)	A\$9m
Total Debt	A\$0m
Enterprise Value	A\$11m

#### **Directors**

Non-Executive	Lan Nguyen
Chairman	Lair Nguyen
Managing Director	Scott Brown
Director (Non-exec)	Norman Zillman

# Significant Shareholders (18/10/17)

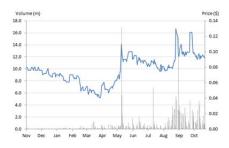
Managing Director	10.3%
Chairman	8.0%
BNP Paribas	6.6%
Sino Portfolio International	6.8%

Source: Company

#### **Company Details**

Address	L3, 32 Walker Street North Sydney NSW 2087
Phone	+61 2 9955 4008
Web	www.realenergy.com.au

#### 1 Year Price Chart



Source: Commsec

# **Real Energy Corporation (RLE)**

Cheap option on large gas resource, massive upside if commercial

Recommendation: BUY

# **Key Points**

Real Energy has a very large gas accumulation in the Cooper Basin, where appraisal in 2018 aims to establish commercial reserves. There are MoU's with Santos to process gas, and with Weston Energy to buy up to 18 PJ over 5 years. None of this is receiving attention in the equity market and RLE is a very cheap option on the upside from reserve bookings and future development. Drilling and testing in 2018 could drive a multi-fold re-rating.

- RLE's flagship gas project in the northern Cooper Basin targets gas
  in tight sandstones in the Windorah trough. This is a "basin
  centered gas" concept (BCG) and presents challenges, but two wells
  drilled since 2014, Tamarama#1 and Queenscliff#1 encountered
  gas and flowed it to surface, confirming the geological model.
- 2C and 3C contingent gas resources are 276 Bcf and 672 Bcf respectively, but the BCG play is laterally extensive and the prospective recoverable resource is assessed at 5483 Bcf.
- Testing continues and Tamarama & RLE reports increases in gas flow rates building up as water production eases, as expected.
- Planning is underway for two appraisal wells starting in early 2018.
   The costs are not onerous and RLE is funded through this campaign.
- The acreage is 100% owned giving RLE operational control.
- In the 2017 June quarter, RLE signed a MoU with Santos to toll-process the gas through nearby facilities, thus opening up a route to markets. Subsequently, a non-binding MoU was signed with gas consumer Weston Energy for up to 15 PJ of gas over 5 years, including provision for a \$6m pre-payment.
- We think news during the next drilling phase will drive investor interest. Booking of reserves would justify a multi-fold re-rating.
- The share price discounts any success, we think due to the failure of "shale gas" campaigns conducted by others in the Cooper Basin and the BCG play is erroneously labeled as a shale play. It isn't.
- Based on peer relativities for EV/2C and EV/3C we generate a valuation range of 32-40c and set our price target at 32c

RLE has an interesting project in a great location, with encouraging exploration results and a funded appraisal program commencing early 2018. A short gas market, gas processing MoU with Santos, and a gas sale MoU with a foundation customer support a development if RLE can establish commercial flow rates and book reserves. The 2018 work program is designed to achieve this and if so, a multi-fold re-rating would follow. Breakaway Research has a buy recommendation on Real Energy and price target of 32c.



# Strategy: Further Appraise The "Windorah Trough", Book Reserves And Sell Gas.

RLE have a great address in the Cooper basin Real Energy Corporation (RLE) is a very cheap option on potential commercial development of a very large contingent gas resource in the northern Cooper Basin. It has two large permits, 100% owned which are prospective for gas trapped stratigraphically in the basin's trough, a so called "Basin centred gas play" (BCG) Since listing in 2013, RLE has targeted this acreage to test its geological thesis and drilled two wells, Tamarama and Queenscliff, both of which flowed gas to surface without fraccing, thus validating the BCG model. The location of these wells relative to nearby commercial, conventional gas fields are shown schematically in figure 1

BCG plays are often laterally extensive and can hold vast resources. In RLE's ATP927 permit, the estimate of gas-in-place is 13.7 Tcf, with a prospective recoverable resource of 5.5 Tcf. These are very large figures. The flow rates recorded have enable RLE to book contingent gas resources of 276 Bcf (2C) and 672 Bcf (3c). The question to resolve is how much gas, if any, 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.

The Basin centred gas geological model has been validated Basin-centred gas is conventional in the sense that the gas is trapped stratigraphically in tight sandstones. The success to date validates RLE's geological model and demonstrated gas flows to surface. The keys to reserve bookings, and future development success are identification of permeability sweet spots, use of optimal drilling, completion, and fraccing in order to maximise gas flow rates, dealing with associated water production if any, and keeping well costs contained.

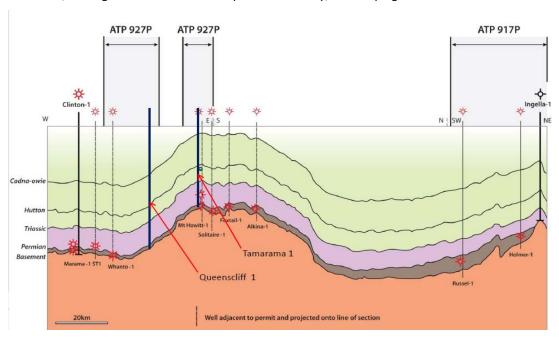


Figure 1. Source: RLE Investor presentations

#### **RLE's BCG Play Is Poorly Understood**

We think the equity market understanding of this type of geology is very poor. During 2011-14, several local companies in JV with majors spent several hundred million dollars pursuing shale gas. The effort turned out to be unsuccessful and we think RLE is tainted by the history. However, BCG is geologically quite different. The results from 2 wells drilled and tested since 2014, Queenscliff and Tamarama, have proved the concept, and flowed gas to surface on tests, without the need for fraccing. Recompletion, Fraccing and re-testing at Tamarama#1 since 2016 has resulted in higher gas flow rates up to 2 mmcfd and while not enough to be commercial yet, it looks promising

In 2018, RLE plan to drill Tamarama #2 & 3, and apply different completion and testing techniques with the objective of booking reserves. The objective of this program is to establish commercial rates, migrate resources to reserves and increase the 1C contingent resource.

Also in RLE's favour, is location. RLE's permits ATP927P and ATP1194PA are in the northern Cooper Basin. 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.

But it's a model the market does not understand and confuses with shale gas



In the June quarter 2017, RLE agreed a non-binding MoU with Santos to toll treat the raw gas for processing into sales quality gas. Santos has extensive gas gathering systems and fields to the west feeding gas to gas plants at Moomba and Ballera.

Customers have shown interest too. An MoU to sell gas to Incitec Pivot Ltd in 2015 was not consummated, but more recently RLE agreed a non-binding MoU with gas customer, Weston Energy, to sell up to 15 PJ in total over 5 years, or 3 PJ p.a. At current gas prices this would generate revenues around \$25m p.a. and are significant in context with RLE's current market value. The agreement provides for Weston making a \$6m pre-payment thus adding to RLE's financing options in the event of a move to development.

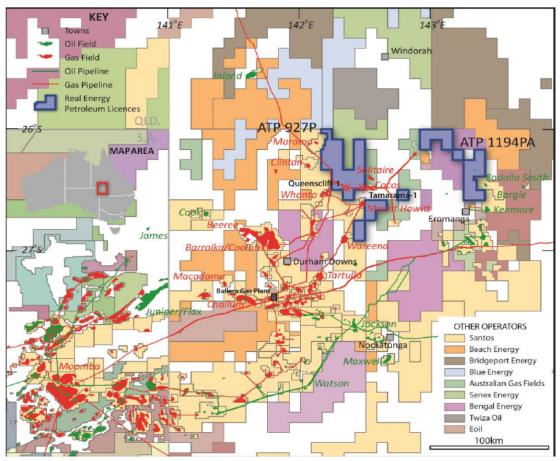
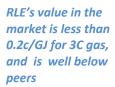


Figure 2: Location map of Cooper Basin. Source: RLE Investor presentations.

RLE is significantly undervalued compared to peers. Refer to figure 3. The closest Cooper Basin peer is Strike Energy which is 6X more expensive on an EV/2C multiple, for a project that mirrors RLE's in some aspects. CSG development companies with acreage in Qld and NSW are also significantly more expensive and we detail in this in the valuation section of this report.



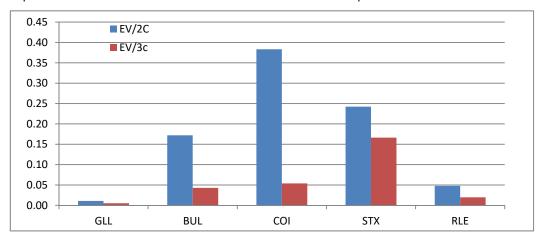


Figure 3. EV per 2C and 3C. Source: Breakaway Research and company reports

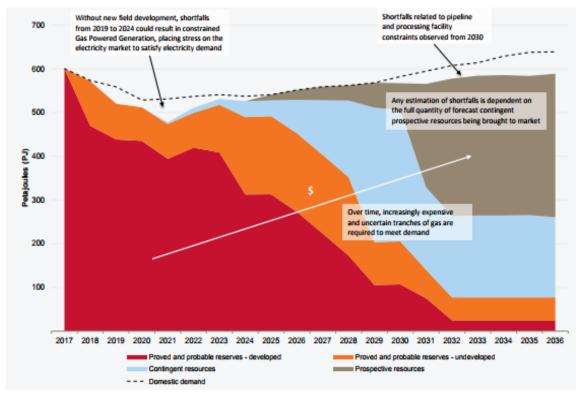


# Industry Back-Drop: The Gas Crisis Is Not Going To Go Away Any Time Soon

Conventional gas reserves offshore Victoria, and onshore the Cooper Basin total 5300 PJ, which is just enough to supply the Eastern Australian Gas market, with current demand of 600 PJ p.a, for approximately 9 years.

All the conventional fields in production were developed long ago, and depletion in the next decade is unavoidable. The Australian Energy Regulator, in its regular "Statement of Opportunities" show that depletion from these fields will result in a supply-demand gap emerging from 2018 and widening very rapidly there-after. Figure 4. As that gap grows, gas prices will continue to rise. They have already risen three-fold in the few years since LNG exports commenced in mid-2014.

There are very large developed gas reserves and in Qld, predominantly committed to export markets. Higher domestic gas prices may incentivise some of this to be diverted to the domestic market. In addition there is the threat of Federal Government intervention to limit export volumes. However the LNG resource owners are somewhat anxious about re-directing gas to the domestic market just yet, as many face longer term reserve uncertainty. The fact that these companies have undertaken to increase gas supplies to the southern market, to avoid export limits, is obviously an action made under duress.



This graphic clearly show a critical need to develop contingent resources

Figure 4: AER perspective on supply & demand in Eastern Australia, from SOO, June 2017

Diversion of LNG to southern markets is a short term fix and will under-write high prices Diversion of gas committed for LNG customers will only serve to underpin the already high eastern states gas prices. We are now in a market where gas prices are in the A\$8-10/GJ range. Prices higher than \$8/GJ are required for the LNG exporters to make an economic investment on the future capex required to maintain exports and domestic supply for the next 20 years, on top of the \$100B invested to date.

There is a price incentive for incumbent producers to buy, explore and sell gas into the southern market's, however unlike a decade ago, there is not much gas remaining that is not already committed for future sale.

In our opinion it's only a matter of time before there is a scramble by industry participants, and consumers to buy-up what-ever gas is remaining and in such an event, RLE's large contingent resource will be revalued upward.



# Key Assets: A Very Large Contingent Resource, Well Located & Wholly Owned

RLE has only two permits in the northern Cooper Basin, but they are large and 100% owned.

Key permits are:

- 1. ATP 927P, gross area 1718 square km
- 2. ATP1194PA, gross area 1043 square km.

ATP927 was previously held by Drillsearch and both permits were not considered prospective due to lack of conventional traps, although seismic coverage is generally sparse, and many years ago the key objectives were oil in Jurassic and Cretaceous rocks of the Eromanga basin. Gas prospects were ranked as low, due to the gas being deeper in tight rocks of Permian and Triassic age. This perception has shifted over time, as the industry moves into the fringes of the Cooper Basin, into tighter rocks and smaller targets in general, incentivised by price.

The Cooper Basin is mature for conventional oil and gas, having been in production since 1969. It's still Australia's most heavily developed oil and gas region with over 3000 wells and is uniquely placed to serve eastern Australia. Santos-operated gas processing centres are at Moomba (SA) and Ballera (Qld) and high-pressure, bi-directional gas pipelines carry gas in either direction to and from Brisbane, Sydney, Adelaide and Gladstone

Resource- Bcf	<b>1C</b>	2C	3C	Prospective Recoverable.
ATP 927P	77	276	672	5483

Figure 5: Resources. Source: RLE September quarter report 2017.

RLE's contingent resources are shown in figure 5. These are independently certified by De Golyer & McNaughton, based in Dallas. Resources and reserves for peers are shown in figure 6.

The resource base is larger than Cooper Basin peers but smaller than Qld CSG peers

This is a huge resource but there

are no reserves, vet

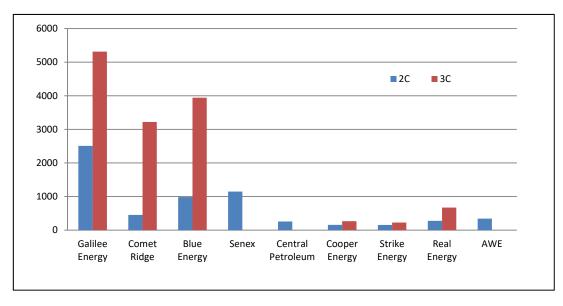


Figure 6: 3P and 3C reserves & resources for ASX-listed independent companies active in gas in Eastern Australia

Timeline: significant achievements in a short time, despite oil crash

Real Energy Corporation is a relatively new corporate entity, established by management previously at Mosaic after that company's acquisition by AGL. It has achieved much, in a short space of time, in that it has drilled and tested 2 wells successfully and safely, post the oil-crash environment without a lot of capital invested. We estimate the two-well drilling and testing program cost less than \$10m.

2011: Real Energy Corporation commences as a public, un-listed company.

2012: Acquires Cooper Basin permits ATP917P and ATP927P from Drillsearch.

2013: Lists on ASX on December 12, through IPO raising \$10m.



2014: Drills Tamarama#1 and Queenscliff#1 in ATP927P. Gas discovered in both wells in Permian Toolachee and Patchawarra formations. Raises \$5m in placements.

2015: Awarded ATP1194 in Qld by way of tender (February). Raises \$2.6m via placement (October).

2016 and TD: focus on re-completion at Tamarama, and ongoing production testing.

2018 onwards: planning for multi-well appraisal drilling, firstly at Tamarama 2 &3.

#### **Current State of Play In The Cooper Basin**

There is no low hanging fruit left in the Cooper Basin and all operators now target smaller fields, fields farther distant from existing infrastructure, lower quality reservoirs, even shales. Santos and Beach Energy continue to drill over 100 wells p.a. to maintain output of around 100PJ p.a, and individual targets are now very small, down to the 1-5 Bcf range. Fraccing is routine, as tighter rocks costing more to develop become commercial at higher gas prices. This is where the industry is at today and in that context, RLE's strategy is consistent with peers.

The Toolachee & Patchawarra formations that RLE target's are not particularly deep, by basin standards and well costs are not high. In 2015, in adjacent acreage, Beach drilled 3 wells into the Toolachee at Whanto East, Whanto West and Cougar and all 3 were completed for production. Whanto flowed at 3.8 mmcfd. To the east, Santos drilled the Cocos field and completed it for production with rates around 3 mmcfd. RLE's key permit ATP927P is surrounded by an approximate 25 wells, many declared commercial. Refer to Figure 7.

We believe that for RLE to achieve commercial success, it will need to deliver rates around 2 mmcfd. It is not at that level yet, as both the Queenscliff and Tamaram1 wells were "proof of concept". Even so, results are encouraging. Queenscliff flowed gas on test at 0.2 mmcfd, and Tamarama a combined 0.5 mmcfd from 2 zones. These test rates are not commercial but are high enough justify further appraisal.

### Queenscliff And Tamarama: Validated The BCG Play

Tamarama and Queenscliff well results are important tests of the Basin Centred Gas play.

**Tamarama#1** was drilled in August- September 2014. It intersected gas saturated formations in the Patchawarra and Toolachee. RLE reported a net pay of 21m in the Toolachee sandstone, and 66m of net pay in the Patchawarra sandstone. The porosity cut-off is 8% which is conservative. The well is 51 down dip of the Cocos-1 gas well in adjacent acreage, and outside of seismically defined structural closure. The well was drilled to a total depth of 2754 and took 6 weeks to drill. On test, in 2014 Tamarama flowed 0.3 mmcfd from the upper Patchawarra and the well flowed gas at 0.2 mmcfd from the Toolachee, without fraccing.

**Queenscliff#1** was drilled in October-November 2014 to a TD of 3219m. It encountered 33m of net sandstone pay in the Toolachee formation and 35m of net gas pay in the Patchawarra sandstone. In addition it encountered 10 of net pay in the Paning member of the Nappamerri formation. This well was drilled 668 m down dip of Tamarama in a structural low, and on test in 2014, flowed gas to surface at 0.2 mmcfd through a quarter inch choke, without stimulation. The rate is not commercially significant but proves the BCG concept.

The importance of these results is not appreciated

During 2016, RLE re-completed Tamarama 1 and fracced 5 zones in order to increase flow rates.

In September 2017, RLE reported test rates averaging 1.2 mmcfd and as high as 2 mmcfd through a 1 inch choke. This a significant improvement, but with more than expected water and it is theorised that one of the frac stages spread to the interbedded coal seams, resulting in the coal seams delivering water into the well and attenuating gas rates. Going forward, RLE expects the coal seam to de-water and gas flows to rise, and will avoid going near the coals in the future. These are important learnings and to put all this in context, from only 2 wells costing less than \$10m.



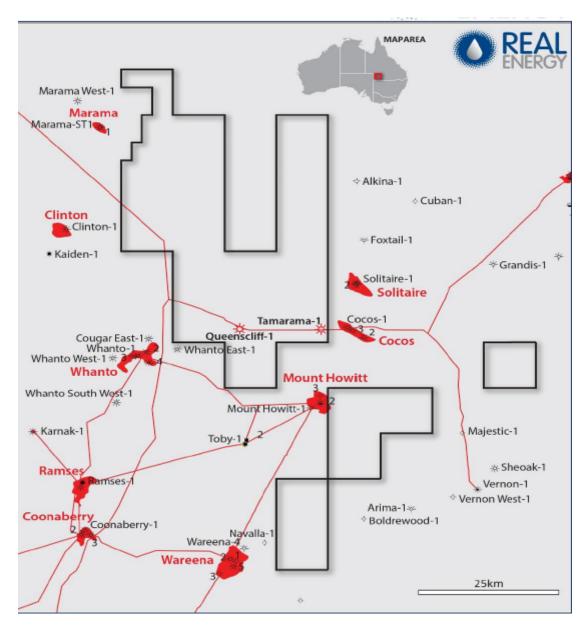


Figure 7: Tamarama and Queenscliff well Locations. Source: Real Energy investor presentations

# The Upcoming Program: 2 Tamarama Appraisal Wells.

2018 promises a lot more excitement for investors. Initial planning is underway for Tamarama 2 & 3. The objective of these two wells is to optimize well design, completion and fraccing methods. In addition, RLE plan Tamarama 4 to 9, on an 80 acre spacing, with the objective of booking 1P reserves.

We think that for the program to lead to commercial production, that wells need to achieve stable production up into the 2-3 mmcfd range, as these are the sort of rates that surrounding conventional gas fields achieved. Given the encouragement from Tamarama so far, this does not appear to be a big step up, as long as the wells are completed and fracced and perform as predicted.

### Significance Of MOU With Santos

In the June quarter 2017 RLE agreed a non-binding MoU with Santos, for the processing of raw gas ex-field into sales quality gas. As can be seen from Figure 7, there are fields and gathering systems to the west and south and east of ATP927 operated by Santos. Tolls and tariffs are not disclosed, but in any event it's a logical way for RLE to move forward and minimise field development costs.



# Finances & Capital Adequacy.

RLE has been relatively frugal and achieved a lot of development in an area which has historically been relatively high cost. The cost structures of companies targeting shale gas in the depths of the Nappamerri trough have tainted investor perceptions that any such attempt to commercialise tight gas is financially stressful, but this is not the case here. RLE target depths are half those of the Nappamerri trough, so the wells are faster and cheaper to drill, require less equipment to complete and require less fraccing.

RLE have adequate funds to complete field activity in 2018.

Since its inception, RLE has raised \$20m, and invested \$19m into exploration and appraisal, and running the company and paying staff. RLE drilled, completed and flow tested the two ATP927 wells, then and re-completed with fracs and re-tested over 2 years all for around \$15. It appears to be money well spent given the knowledge gained.

A capital raising in October realised \$2.3m, and when added to the \$6.8m at the end of September takes the total cash to around \$9.1m. This should be adequate to fund the next 2 wells however it is not enough for RLE to pay for another planned 7 wells to get to 1C and into development, and for that additional funds will be required.

RLE has three funding levers in our view. The most obvious is equity issuance, however the existing capital base is small and that would limit how much equity capital RLE could raise at any one time. However, there are other tools at RLE's disposal.

Additional funds could be sought by:

- 1. Seeking an industry participant to join the project by way of a farm-in. RLE's acreage is 100% owned so has equity to offer to a developer.
- 2. Negotiating a pre-payment from a large industry or power consumer. Other small companies such as Strike Energy, Cooper Energy and Buru Energy have successfully found customers to back projects. In 2015, RLE negotiated a MoU with Incitec Pivot Ltd, but it was too early in the company's development cycle, and more recently, an MoU was negotiated with Weston Energy. The MoU is for 15 PJ of gas, at the rate of 3 PJ p.a. for 5 years, and includes the potential for a \$6m prepayment for gas. At current gas prices, this contract could realise ~\$25m p.a to RLE and is meaningful in context with the company's market value.

We do not present in this report financial accounts as they are not meaningful to the investment thesis at this time, and with no near term production or revenue, we are unable to make any projections of revenue, earnings and cash flow. Figure 8 shows key financial parameters since IPO.

Financial history	Pre IPO	2013	2014	2015	2016	2017	YTD 18	Total
NPAT (A\$ M)		-1.3	-1	3.9	-0.03	-0.8		
Total assets		7	15.5	24.8	28.2	27.9		
Net assets		4.6	14.8	23.5	25.9	21		
Exploration capex		0.3	1.1	13.3	0.3	3.6	0.2	18.8
R&D refunds								
Equity raised	9.6	0	8.8	4.7	2.4	1.9	2.3	29.7

Figure 8. Key historical financial parameters. Source: RLE financial reports.



# Valuation Considerations

## Reserves Have Considerable Value, Contingent Resources Are Priced As An Option

RLE lacks 2P or 3P reserves unlike some peers, and it is these that drive peer valuation

There is considerable valuation uncertainty for a number of reasons.

First, is the non-production status of RLE's assets at this time, and given this, it's accepted practice to value reserves and resources on an EV/GJ basis, relative to a peer group or relevant industry transactions.

There is a clear commercial distinction between reserves, and resources-in-the-ground which are not yet commercially demonstrated. Reserves are proved (1P), prove+probable (2P) and proved+probable+possible (3P).

Contingent resources are those which are geologically identified, but may, or not, ever be commercial. For this reason contingent resources (1C, 2C, 3C) attract lower values in the equity market and the trade, compared to 1P, 2P or 3P reserves.

It is not unusual for reserves to have a unit value which is one or two orders of magnitude greater the contingent resources. This is apparent from looking at the resource metrics in Figure 10, where EV/3P averages around A\$1.20/ GJ, but EV/3C is one-tenth of this, at less than 10c /GJ. This makes comparing between companies an uncertain exercise, as some companies have reserves and some do not.

However RLE's EV/3C approximates 0.17c/GJ and this is well below peers with market valuations in the 3-5 c/GJ range, as shown in figure 9.

Companies such as Comet Ridge and Blue Energy have reserves and so command a higher valuation, but Strike Energy (STX) for example does not have reserves and is still 6x more expensive than RLE on an EV/2C basis. Further, we note that over the past 4 years STX has faced challenges at it's southern Cooper Basin gas project and has yet to establish commercial gas flows and book reserves. Compared to STX, RLE looks miss-priced.

Figure 9 shows EV/2C and EV/3C for relevant peers. We apply the average for 2C and 3C to generate our valuation range. Adopting the average EV/2C figure generates a target price of 40c, and applying the average EV/3C figure generates 32c.

We select the latter for our price target, and we will re-evaluate this as and when resource estimates are updated as the next phase of activity unfolds.

Company	GLL	BUL	COI	STX	RLE	Average
EV/2C- \$/GJ	0.011	0.189	0.36	0.237	0.041	0.20
EV/3C- \$/GJ	0.005	0.047	0.050	0.16	0.017	0.07

Figure 9. Peer group EV-per GJ metrics. Source; Breakaway Research

There is a very large upside potential if RLE can book 2P or 3P reserves. As can be seen from figure 10, an enlarged peer group including those with conventional gas, values 2P and 3P gas reserves in the \$1.90 and \$1.20 /GJ range, respectively. This is approximately an order of magnitude higher than contingent resources and demonstrates the potential value uplift, if RLE can migrate resources to reserves.



Company	Price	EV	2P	3P	2C	3C	EV/2P	EV/3P	EV/2C	EV/3C
Comet Ridge (COI)										
Mahalo Bowen basin			30	219	232	371	5.36	0.73	0.69	0.43
Galilee			0	0	220	2287			0.73	0.07
NSW Gunnedah Basin						562				0.29
Total	0.27	161	30	219	452	3220	5.36	0.73	0.36	0.050
Blue Energy (BUL)										
Bowen & Surat			71	298	923	3112	2.62	0.63	0.20	0.06
Galilee			0	0	61	830	0.00	0.63	3.05	0.22
Total	0.16 5	186	71	298	984	3942	2.62	0.63	0.19	0.047
Galilee Energy (GLL)	0.16	31	0	0	2508	5314			0.012	0.006
Senex (SXY)										
Western Surat			429				0.82			
Cooper basin tight gas					1148				0.31	
Total	0.33 5	351	429	0	1148	0	0.82		0.31	
Central Petroleum (CTP)			_							
Amadous Pasin	0.08 9	755	126		257		5.99		2.94	
Amadeus Basin  Cooper Energy (COE)	9	/55	120		257		5.99		2.94	
Sole			249	293	33	0	2.64	2.24	19.93	
Casino			56	90	19	27	11.74	7.31	34.61	24.35
Manta			0	30	106	239	22174	7.01	6.20	2.75
	0.31									
Total	2	658	305	383	158	266	2.16	1.72	4.16	2.47
Strike Energy (STX)	0.06									
Southern Cooper Basin	4	49			155	226			0.32	0.22
Real Energy (RLE)	0.08									
Qld- Eromanga basin	3	13			276	672			0.05	0.020
Armour Energy (AJQ)										
Kincora Gas field- Qld	0.07 5	19	56	157	0	0	0.34	0.12		
AWE 9AWE)										
Casino			35		7		8.86		44.30	
BassGas			30		112		10.34		2.77	
W aitsia			234		225		1.33		1.38	
Total	0.48 5	310	299	0	344	0	1.04		0.90	
Otway-ORG-Benaris deal	-	190	81	104	47	-	2.35	1.83	4.04	
Senex- Surat work prog.		200		·		120				1.67
BPT-Lattice		1650	824	1204	1084		2.00	1.37	1.52	
Volume average		4573	2221	2365	7413	13760	1.93	1.21	0.61	0.09

Figure~10.~Peer~group~reserve~and~resource~multiples.~Shares~prices~and~market~caps~at~EOT,~November~6,~2017~and~prices



# **Real Energy Director Backgrounds**

The Board includes members with depth of experience in the Australian gas and resources industry, and in particular have a strong track record in building small companies from the ground up.

Non-Executive Chairman *Mr Dang Lan Nguyen*.

Bsc (Mining Geology) from the Institute of Oil and Chemistry, Baku, Azerbaijan.

Msc (Petroleum Geology) from the University of New England, Australia. Member of the Petroleum Exploration Society of Australia (PESA), Member of the American Association of Petroleum Geologists (AAPG) and member 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 ASX-listed Mosaic Oil N.L. (ASX: MOS) transforming Mosaic Oil to a successful company as Managing Director growing production revenues, petroleum reserves/resources and profitability.

Lan is credited with 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 Holding Pty Ltd, which provide services to energy and resource companies in Australia and the Asia Pacific Region. He is also a Non-executive Director of ASX listed Ardent Resources Ltd.

Managing Director Mr Scott Brown

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

Member of the Institute of Chartered Accountants, and the Petroleum Exploration Society of Australia (PESA)

Scott is the Managing Director and co-founder of Real Energy Corporation Limited with an extensive background in finance and management of public companies. Scott is currently a non-executive director at Kairiki Energy Ltd (ASX: KIK), and Oriental Technologies Ltd (ASX: OTI).

Prior to this, he was the Chief Financial Officer of Mosaic Oil NL, a listed petroleum production and exploration company with oil and gas production and exploration permits in Queensland, New Zealand and offshore Western Australia. 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 was also formerly the Chief Financial Officer and Company Secretary and Chairman with a number of public companies including Objective Corporation Ltd, Turnbull & Partners Limited, Allegiance Mining NL, FTR Holdings Limited, Garratt's Limited and IOT Group Ltd. Scott also worked at accounting firms, Ernst & Young and KPMG.



Non-Executive Director Norman Zillman

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

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; Manager of the Petroleum Branch of the Queensland Department of Mines and Energy, and State Mining Engineer for Petroleum; Non-executive co-Chairman of Chinalco Copper Resources Ltd (CYU); Non-executive Chairman of Burleson 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 company resource floats on the ASX. He was the inaugural Managing Director and co-founder of Coal Bed Methane (CBM) company. At Queensland Gas Company Ltd (QGC), Norman was responsible for the initial acquisition of all of its areas, the successful floating on the ASX and the discovery of QGC's first coal seam gas field at 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).

### Breakaway's View

Real Energy is a cheap option on the potential commerciality of a large, wholly-owned contingent resource, in an excellent location and with fledgling commercial agreements to enter a development phase. The scale of the prospective resource is enormous, and we think would be very attractive to larger, gas-short LNG exporters if commerciality can be proved, and reserves booked. If so, then RLE's EV/3P of 0.2c/GL would expand significantly. Peers in Qld and SA with reserves, have EV/3C value is in the 3-4c /GJ range and that implies a 15-20X re-rating if RLE are successful in booking reserves.

RLE controls 100% of its acreage, so has the potential to monetise value, via a sell-down or farm-out in return for cash to reinvest into development. Compared to 10 years ago when there were more than 25 companies with gas projects, the consolidation phase that followed has reduced the opportunity set to 5 now so there are not many companies left with this monetisation option.

Our valuation range is 32-40c, and is generated by applying the peer group average of EV/2P = 20c/GJ, and EV/3P = 0.7c/GJ. The peers we reference are Comet Ridge, Blue Energy, Galilee Energy and Strike Energy

Hence Breakaway's recommendation for Real Energy is a Buy, with a price target set at 32c.



### Appendix 1. What Is Basin Centred Gas?

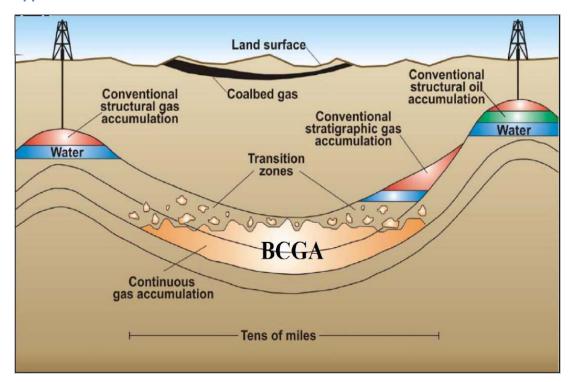


Figure 11. Pictorial of BCG play. Sourced from RLE investor material

RLE's resource is a "basin centred gas" play and this is diagrammed in figure 11. It is "unconventional" in the sense that it does not rely on structuring to create a trap as in conventional gas fields, but in many ways BCG is quite different to shale gas.

In BCG, the gas is trapped in low permeability sandstones but the nature of the trapping mechanism is such that the gas is usually held in place by water, and once the water is pumped out lacks a production drive, so gas flows at low pressure and low rates. Commonly, fraccing or some other form of stimulation is required to aid commercial flow rates. Unlike the significant effort into shale gas activity in recent years, the BCG plays have received far less capital.

The shale gas drilling campaign from 2011 to 2014 conducted by Beach Energy and partner Chevron and Drillsearch and partner BG Group, was an attempt to replicate the success of similar activity in the USA. Collectively, around \$700 million was invested to drill 30 wells into various parts of the Cooper Basin. Initially, these ventures targeted deep but over-pressured shales at the bottom of the Nappamerri trough. Many wells were tested and flowed gas at >1mmcfd.

Santos too, achieved good rates from some deep Moomba wells. The challenge these industry pioneers faced was cost. The Nappamerri trough wells cost typically \$15m to drill and test. Depth and temperature imposed technical limits and added to cost, and gas prices were not high enough at the time to make the economics work.

Then the oil price crashed in 2014 and all high-cost gas exploration activity ceased.

### **Geology Of The Windorah Trough**

Stratigraphy of the Windorah trough contains numerous thick Jurassic, Cretaceous, Permian and Triassic sandstones, interbedded by gas-rich coals, finer grained sediments and sealing shales.

These sequences are well understood 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, in contrast, the shale rocks in the centre of the Nappamerri trough, were between 4,000m and 5,200m.



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. All 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 quality. The highest flow rate recorded from the Toolachee is 11.4 mmcfd from Wareena#1, 25 km to the south. Several other wells have recorded rates in the 3-7 mmcfd range. There are numerous coal measures and finer grained sediments which are water bearing and are sources of water influx of not avoided during the completion and fraccing processes. Co2 levels for gas in all these reservoirs is high, generally in the 10-15% range and estimated ay 12-14% at Tamarama and Queenscliff.

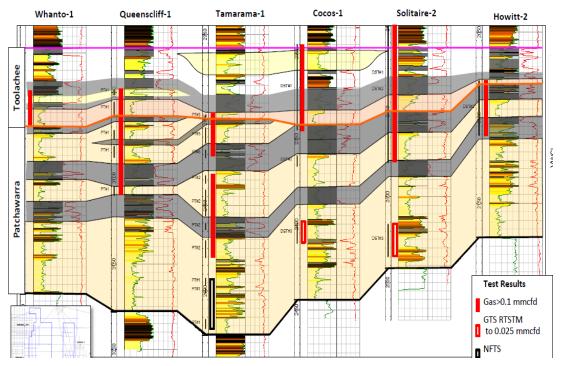


Figure 12: Stratigraphic sections of key wells in the Windorah Trough. Source: RLE investor material



#### **Analyst Verification**

I, Stuart Baker and Stephen Bartrop, as the Research Analysts, 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.

#### Disclosure

Breakaway Research Pty Ltd and the Breakaway Investment Group (AFSL 290093) may receive corporate advisory fees, consultancy fees and commissions on sale and purchase of the shares of Real Energy Corporation and may hold direct and indirect shares in the company. It has also received a commission on the preparation of this research note.

We acknowledge that Senior Resource Analyst, Stuart Baker, holds shares in Blue Energy, Galilee Energy, and Real Energy.

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