

# GALILEE ENERGY LIMITED (GLL)

KEY STEPS TOWARDS THE MAIN PRIZE

**Analyst** Garry Marsden  
**Email** garrymarsden@boeq.com.au  
**Phone** +61 2 8072 2919  
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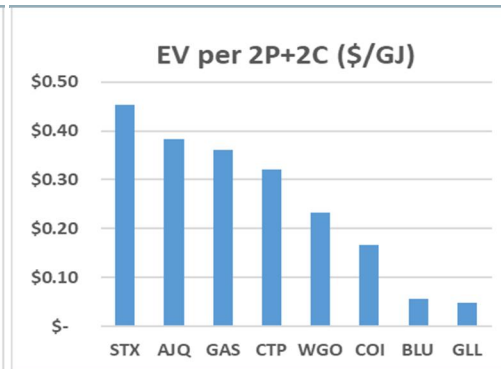
We say	Price	Target	Strategic Target
<b>SPEC BUY</b>	<b>0.58</b>	<b>1.20</b>	<b>1.50</b>

Galilee Energy Limited (ASX: GLL) is appraising the large Glenaras gas project in Central Queensland. Recent work by external consultants has reinforced the forward plan with the next phase of drilling expected to unlock substantially higher gas flows. The remainder of 2020 will provide numerous catalysts to indicate the positive steps towards commercialisation of the resource. The Company is undervalued against peers. We maintain our Spec Buy rating, a \$1.20 Target with an implied return of over 100%.

GALILEE SHARE PRICE CHART



GAS COMPANY PEER GROUP VALUATIONS



Source: Company Data, BOEQ estimates

COMPANY DATA & RATIOS

Enterprise value	\$144 million
Market cap	\$162 million
Issued capital (fd)	281 million shares
Free float	100%
12-month price range	\$0.32 – \$1.31
GICS sector	Energy
<b>IMPLIED RETURN</b>	
Implied all in return	107%

## UPCOMING ACTIVITY

- Added wells at Glenaras
- Increase water flows to reduce reservoir pressure further
- Lower reservoir pressure will enhance the gas flows and help define the path to success
- Conversion of resources to reserves in early 2021
- Advancement of MOU's

## TRANSFORMATIONAL RESOURCE

The Glenaras contingent resource is large at approximately 1,000 PJ, with other defined targets in the GLL acreage bringing the total to over 2,500 PJ (100% GLL)

Glenaras is one of the largest contingent resources in the East Coast market

Confirmation of a commercial reserve would be a transformational event for GLL.

## VALUATIONS ARE COMPELLING

At 5 cents per GJ, Galilee represents compelling value

Peer group companies currently trade on an average of \$0.25 per GJ

Historic projects have traded at prices of \$1.00 per GJ (2P+2C) and higher

## INTRODUCTION

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Galilee Energy Limited is currently appraising the large, 100% owned, Glenaras Gas Project in the Galilee Basin, Central Queensland. Glenaras is a CSM project, with an independently assessed 2C prospective gas resources of 2,504 PJ.

GLL engaged Schlumberger, a global expert in reservoir simulation work, to assist in designing a reservoir model for the project and opine on the forward plan for the development. Third-party validation of the project is a positive step, in our view, and we have reviewed the process and the forward plans for the appraisal. These details were released to the market on August 11.

## INVESTMENT THESIS

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Schlumberger has completed the reservoir modelling, including a history match of the recent water production and associated pressure decline. In our view, the defined forward plan has increased the likelihood of a commercial development, which is being poorly priced in current market conditions.

East coast gas prices are supportive of the economics of the potential Glenaras development. Contract price expectations have continued in the order of \$8/GJ (at the Wallumbilla hub). This view is also supported by recent commentary from the industry.

Gas commercialisation options remain in place in the success case. Preliminary deals with Jemena (gas pipeline) and Clarke Energy (local power generation) are in place and can be accelerated when the timing is right.

GLL represents an option on the forward drilling campaign and subsequent testing and the pricing strength of domestic gas market post-COVID-19.

**GLL is trading on a 2P+2C multiple of only 5 cents per GJ. There is substantial upside to the peer group comparatives if this development advances as expected.**

**Our current valuation has jumped by 20% to 120 cents, but this external work has amplified the upside case. On an unrisks basis, our Glenaras valuation alone is \$800 to \$1,000 million or 285 to 350 cents per GLL share.**

We maintain our Spec Buy rating, a \$1.20 Target with an implied return of over 100%.

## IMMEDIATE FORWARD PLANS

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Below we highlight our expected forward plans for GLL. Anticipated news flow from the Company will be high during this next phase.

Drill five added wells at Glenaras	starting mid-September
Convert existing well (G17A) to producer	Est October or November
Complete wells and install pumps	Est early November
Workover of existing horizontal wells	Est November (if required)
Extended production tests	from early November
Improved gas flows	Pending, but expected by early 2021
Potential for Glenaras reserve reporting	Q1 2021

The immediate campaign of further drilling and testing is aimed at improving gas flows from the Betts Creek Coal sequence. The added support by highly regarded independent engineers adds to our confidence in the activity and provides a lower risk path towards higher gas flows.

## BACKGROUND SUMMARY

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Following the detailed assessment of the project by Schlumberger, GLL plans to step up for a further phase of drilling to accelerate water production. This campaign will start in mid-September, and comprise drilling of an additional five wells, and incorporate the conversion of an existing pressure monitoring well to become a producer. Also, further well workovers are under active consideration.

The key aim of this plan is to gain further water output from the coal sequence, which will further reduce reservoir pressures and liberate higher gas flows. Gas deliverability is the key to commercialisation at Glenaras.

The wells will be drilled and completed with downhole pumps, which will allow for an intense testing process and hopefully, some positive results before Christmas.

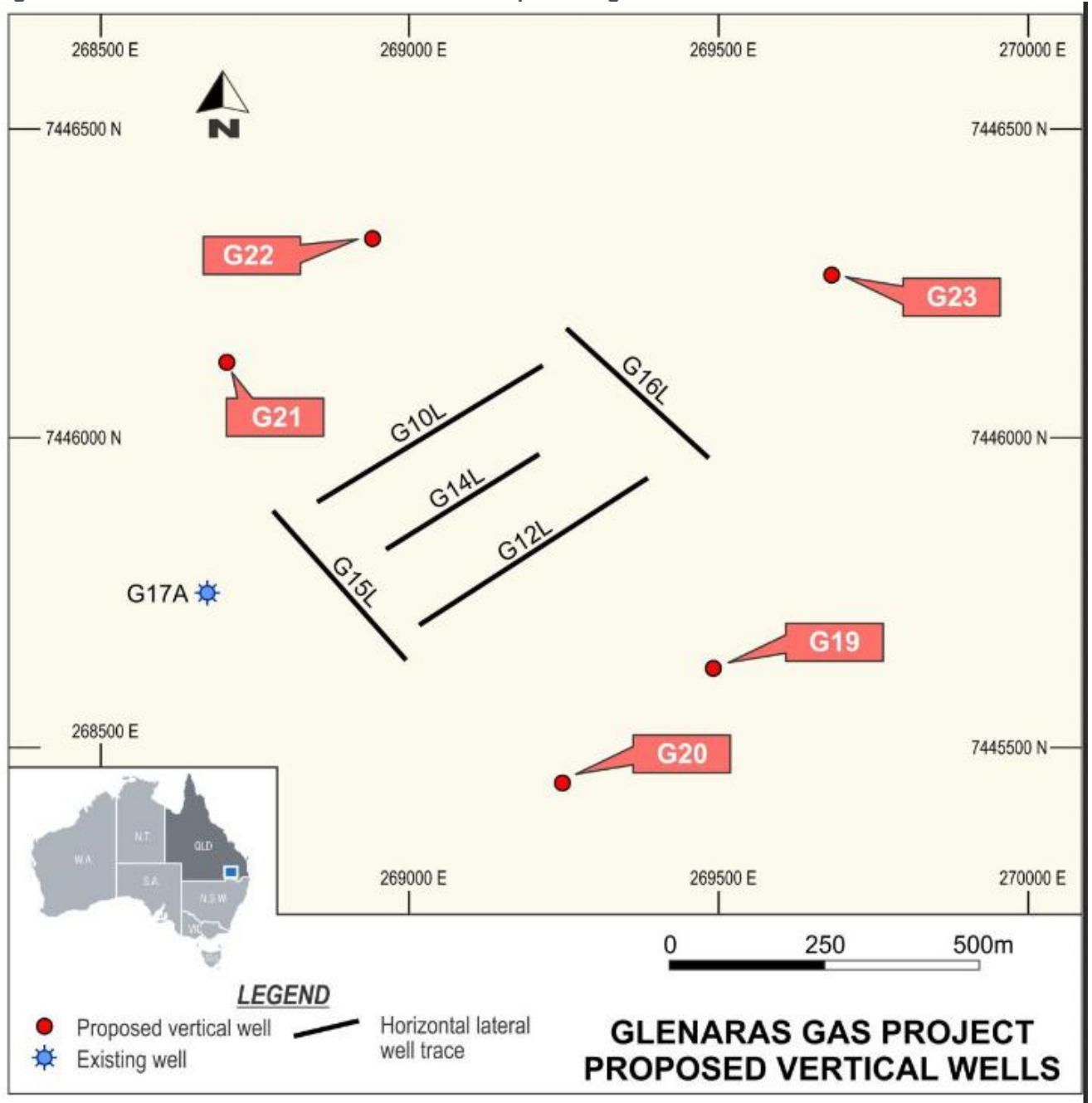
**This minor shift in focus also has some upside to the commercialisation plans.**

The Schlumberger work has confirmed that the historical and existing wells have been draining fluid from a thicker sequence than previously envisaged. The thicker coal section has increased the gas drainage potential and lifted the potential reserve from 500 PJ to a range of 800 to 1,000 PJ.

Furthermore, the Schlumberger modelling has provided good news on the water drainage front, where it has modelled more significant lateral impact from the producing wells which will allow for wider spaced drilling in the development phase. Fewer wells result in a lower capital cost for the project and therefore, higher commercial returns.

Net on net, higher gas reserve potential and lower drilling costs are both highly beneficial to forward project economics, in the success case.

**Figure 1: Location of Glenaras Pilot with upcoming wells**



Source: Company data

## THE PATH TO COMMERCIALISATION

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Assuming success from the current appraisal and testing programme, GLL is well placed to move into an initial commercialisation phase for the Glenaras Gas project.

Maximum flexibility would allow for a two or three-phase development of the area. The initial production phase could incorporate both internal gas usage for on-site power generation and the sale to local operations via short pipelines or nearby mid-scale power generation. To facilitate the local power options, GLL is working with Clarke Energy, an expert in this field, at Glenaras. The MOU with Clarke Energy was executed in February 2019.

The larger-scale development of the Glenaras gas will require access to market through a pipeline agreement (MOU with Jemena), and an extensive gas marketing process (preliminary discussions underway at present) for the project to proceed.

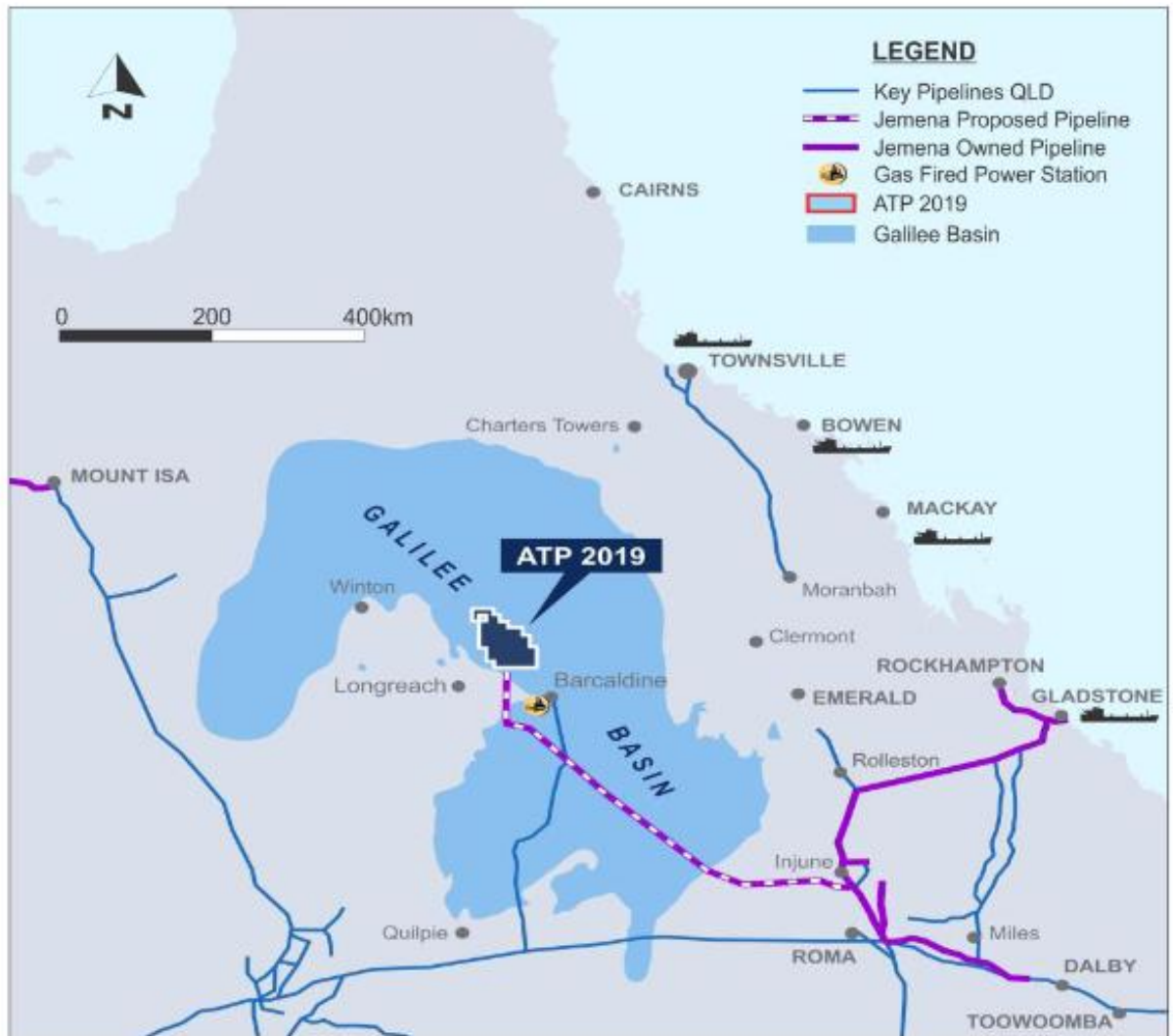
Jemena signed an MOU with GLL in 2017 and has actively pursued the planning process despite the slow progress on the initial pilot testing. The Galilee pipeline is part of an extensive gas transport play for Jemena, which will ultimately link the existing Northern Gas Pipeline (Tennant Creek to Mount Isa) with its existing network of gas infrastructure in the Eastern portion of Queensland.

Jemena has passed several preliminary milestones on the development of the Galilee Pipeline, which shows a strong commitment to the development of the project. This work includes the initial assessment of pipeline corridors, initial survey activities and the lodgement of an Environmental Impact Statement Application. This pre-emptive activity is a considerable advantage for GLL in the pursuit of the Glenaras development.

Initial scoping of the Galilee gas pipeline indicates a similar scale of project that was undertaken to develop Jemena's Northern Gas Pipeline. Jemena plans a 585 km gas pipeline, with initial capacity of 200 TJ/day at an expected cost of approximately \$600 million. (Source Jemena Press Release; July 2019)

The initial phase of East Coast development for Glenaras would utilise approximately half of this expected initial capacity although the substantial nature of the Galilee Basin opportunity could see this extra capacity required in the upside case.

Figure 2: Planned Galilee Gas Pipeline route



Source: Company data

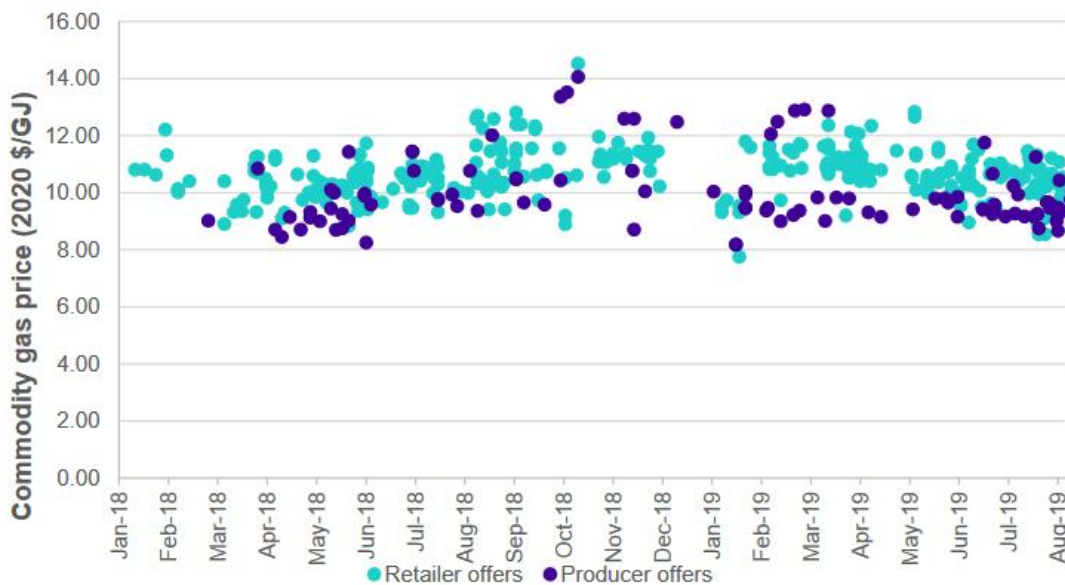
## EAST COAST GAS PRICES LOOK ROBUST OVER LONGER TERM

Contracted East coast gas prices remain firm despite the weakness on spot prices via the STTM markets.

Our industry contacts confirm that contract price expectations have continued in the order of \$8/GJ - \$10/GJ (at the Wallumbilla hub). This view is also supported by recent commentary from the ACCC and public announcements by other major gas players.

These current contract prices are supportive of the economics of the potential Glenaras development as low-cost drilling, and high gas volumes will keep unit operating costs relatively low.

**Figure 3: ACCC Summary of gas contract offers in 2018 and 2019**



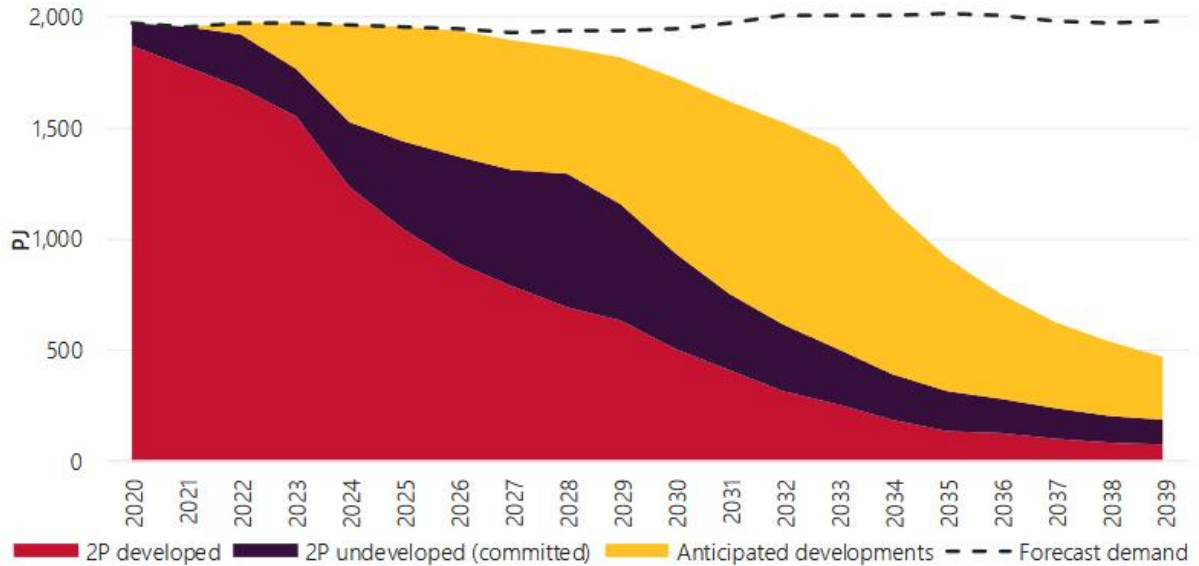
**Source: ACCC Gas Inquiry; 2017 to 2025**

Furthermore, the ACCC has highlighted that “The long-term security of supply in the east coast is becoming increasingly dependent on more speculative sources of supply”. (Source ACCC Gas Inquiry, 2017-2025)

This observation is supported by the ongoing decline in gas from traditional sources in the East Coast, specifically the Gippsland and Cooper Basins, and the increased reliance on CSM for current production and future developments from known resources.



**Figure 4: Projected East Coast Gas Supply and Demand**



**Source: AEMO Gas Statement of Opportunities, March 2020**

AEMO observations on the need for added gas into the system has not diminished, but the requirement for additional gas supplies from Anticipated Developments has increased from previous observations. Whilst these projects may be developed in time to meet the demand for gas, increasing uncertainty must be placed on the market ability to achieve these outcomes in time.

This increase uncertainty continues to reinforce a stronger gas price in the East Coast over the longer term.

In summary, we continue to assume that contract gas prices for substantial volumes will see adequate future demand and maintain our price assumptions in the range of \$8-10/GJ. For valuation work, the lower end of this range is assumed.



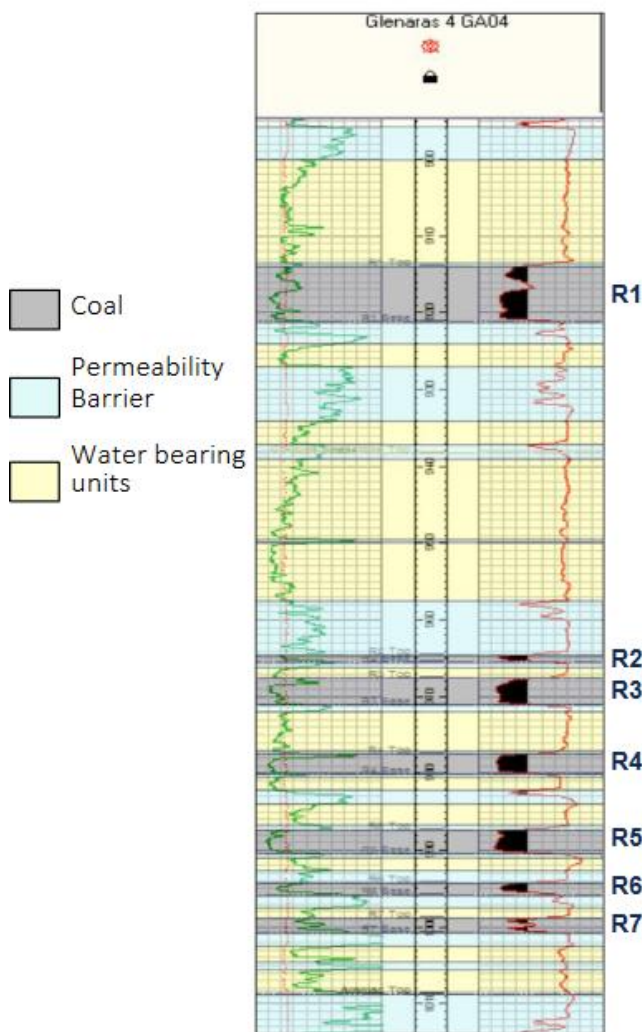
## WATER FLOWS ARE THE KEY TO THE DEVELOPMENT

Pressure monitoring in the G17A well has provided substantial insight into the flow of fluids, water and gas, from the reservoir sequence. The monitoring also confirms the previous surveys completed in 2009 at the nearby Gowing-1 well, which is located around 2 kilometres south-west of the current activity.

The recent pressure work has confirmed that the Betts Creek Coal sequence, as shown below, is acting as a single interconnected reservoir. The extensive drainage has resulted in a slower pressure drawdown than previously expected, and a longer-term dewatering phase.

However, the pressure survey also confirms that the overlying Hutton Sandstone is not contributing to the water flows, which confines the impact of a more extended pressure drawdown phase.

**Figure 5: Betts Creek Geology**



Source: Company data

Water management has also been at the forefront of thinking for GLL, given the high initial rates from the project. Produced water from Glenaras is relatively fresh (1,100 ppm TDS), which requires limited processing for numerous on-site agricultural applications. The Company has been pro-active with local farmers, providing water and has also now instigated a series of pastoral trials which can also be utilised by local landowners.

The added benefit of the water management plans will be to reduce costs of water handling and potentially access different sources of revenue.

**Figure 6: Irrigation pilot plans are underway producing cash crops**



Source: Company data

## SCHLUMBERGER WORK UPGRADES GLL VALUATION

An updated assessment of value has been undertaken using a sum-of-the-parts methodology, rolling forward from our February 2020 Initiation Report on GLL.

The Glenaras Project value was upgraded following the Schlumberger work and the expansion of the reserve target to between 800 and 1,000PJ. For value purposes, we have used the bottom end of this range, risked at a 25% COS. Our assessment of value at Glenaras will rise substantially in the positive appraisal case.

We have reduced the value of the Kumbarilla exploration permit following the disappointing drilling results. The deeper sequence still has some substantial attraction and will be reviewed by seismic in 2021. The Company may elect to introduce a partner for the next phase of activity.

Cash levels have reduced slightly following ongoing expenditures at Kumbarilla and Glenaras.

We have assessed a risked valuation of \$338 million on the business, or \$1.20 per share, fully diluted. On an unrisked basis, Glenaras alone would be valued at \$800 million or \$2.85 per share.

Applying average 2P+2C valuations to the GLL numbers would imply a value in excess of \$2 per share (fully diluted). This could be viewed as an upside case following success in the upcoming drilling and testing phase.

Asset	Basis	A\$ million	CPS
Glenaras Project	800 PJ at \$1/GJ, risked at 25%*	200	71
Remaining ATP 2019	1.000 PJ at \$1/GJ risked at 10%	100	36
Kumbarilla	300PJ at \$1/GJ risked at 5%	15	5
Springsure	Nominal	5	2
Cash	(as at June 2020)	18	6
Debt	(as at June 2020)	0	0
<b>Total Assets</b>		<b>338</b>	<b>120</b>

*Totals may not add due to rounding*

\*Our COS remains unchanged despite the improved appraisal plan. An increase in the COS would result in a higher valuation on GLL.

## INDUSTRY COMPARISONS

We have updated values of the peer group companies in the CSG and conventional gas space and summarised some key valuation metrics below.

Galilee Energy trades at discounted pricing relative to its peer group, based on its extensive 2C gas resources.

GLL holds the largest 2C Contingent Resource position amongst its peer group, with the 2,500PJ resource in the ATP 2019 area. The Target Glenaras resource equates to around 40% of the total defined 2C resource in the permit.

Company	Enterprise Value	2P Gas Reserves	2C Gas Resources	EV/2P Reserves	EV/2C+2P
	(A\$million)	(PJ)	(PJ)	(\$/GJ)	(\$/GJ)
Armour Energy (AJQ)	69	150	181	0.46	0.38
Blue Energy (BLU)	62	71	1,129	0.88	0.09
Comet Ridge (COI)	69	106	415	0.65	0.17
Central Pet. (CTP)	125	150	390	0.84	0.32
Empire Energy (EEG)	76	-	-	n/a	n/a
State Gas (GAS)*	78	-	217	n/a	0.36
<b>Galilee Energy (GLL)</b>	<b>144</b>	<b>-</b>	<b>3,012</b>	<b>n/a</b>	<b>0.05</b>
Strike Energy (STX)	401	-	885	n/a	0.45
Warrego Energy (WGO)	169	-	730	n/a	0.23
Average pricing				0.71	0.25

Pricing as at September 11, 2020

\* GAS resource numbers from the prospectus. Numbers reported to be updated in September 2020.

## FUNDING

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Galilee has sufficient funds to complete the upcoming drilling phase, following the exercise of options in late 2019. As at June 2020, the Company held a cash balance of \$18.1 million.

Drilling and completion costs for the upcoming campaign are estimated at approximately \$1.5 million per well (5 wells). This expenditure includes drilling, completion and the tie into the existing pilot facilities.

## CURRENT SHARES ON ISSUE

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The performance rights were granted to Directors and eligible employees. They vest following the booking of the first 500PJ or more of 2P reserves for Galilee Energy Limited or its wholly owned subsidiaries.

Shareholders approved the rights issued to Directors in November 2018. The rights terminate in November 2020 if not vested.

Our valuation work incorporates the added dilution of the Performance Rights, although it is looking less likely that they will be vested.

Ordinary shares	271,451,032
Performance rights	9,650,000
<b>Total Capital</b>	
<b>(fully diluted)</b>	<b>281,100,670</b>

## PRICE TARGET & RATING

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The GLL price target has been upgraded 20% to \$1.20 per share, following the external validation of the current pilot work and the definition of a path forward towards higher gas flows. This external work has enhanced the potential economics of the project and lifted the reserve target being sought by the Company. Both are value accretive.

A sum of the parts valuation derives the GLL valuation and price target, using a risked multiple of the reserve target at Glenaras and some value for the remaining acreage, which would benefit from the Glenaras enhancements. Modest value has also been ascribed to the Surat and Bowen basin acreage holdings.

**GLL is trading on a 2P+2C multiple of only 5 cents per GJ. There is substantial upside to the peer group comparatives if this development advances as expected.**

**Our current valuation has jumped by 20% to 120 cents, but this work has amplified the upside case. On an unrisks basis, our Glenaras valuation alone is \$800 to \$1,000 million or 285 to 350 cents per GLL share.**

## STRATEGIC TARGET

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Our \$1.50 Strategic Target offers the upside case for the immediate drilling and completion success from the upcoming drilling campaign; and a lifting of the COS from 25% to 40%.

## KEY RISKS

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Galilee is exposed to all the normal risks associated with exploring and appraising CSM targets, including exploration, testing, funding and commercial risks. The gas industry has become an essential service in the Australian energy mix and can be subjected to some Government involvement.

The valuation of GLL involves the appraisal of the Glenaras gas project. The risk is partially mitigated through the presence of an experienced board and management team, who have extensive experience in the exploration and appraisal for gas in the East Coast of Australia, including the appraisal of the Narrabri CSM project. This project was sold to Santos in 2011 for in excess of \$900 million.

Assuming Galilee can delineate an economically viable project and make the transition into production, GLL's revenues will be derived from the sale of natural gas. These prices and volumes may be contracted and could vary from year to year, which could impact the Company's reported cash flow, profitability and share price.

## ABBREVIATIONS

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AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
COS	Chance of Success
CSM	Coal Seam Methane
GJ	Gigajoules
GLL	Galilee Energy Limited
LNG	Liquified Natural Gas
PJ	Petajoules (1,000 GJ)
STTM	Short Term Trading Market
2C	Proved and Probable (Contingent Resources)
2P	Proved and Probable (Reserves)



## CONTACTS

### ANALYST

#### Garry Marsden

Energy Analyst

P +61 2 8072 2919

E [garrymarsden@boeq.com.au](mailto:garrymarsden@boeq.com.au)

### AUTHORITY

#### David O'Halloran

Executive Director

P +61 2 8072 2904

E [doh@boeq.com.au](mailto:doh@boeq.com.au)

#### Philip Pepe

Senior Industrials Analyst

P +61 2 8072 2921

E [philpepe@boeq.com.au](mailto:philpepe@boeq.com.au)

#### Stuart Turner

Senior Industrials Analyst

P +61 2 8072 2923

E [stuartturner@boeq.com.au](mailto:stuartturner@boeq.com.au)

#### Steuart McIntyre

Senior Resources Analyst

P +61 2 8072 2909

E [steuartmcintyre@boeq.com.au](mailto:steuartmcintyre@boeq.com.au)

#### Michael Gerges

Investment Analyst

P +61 2 8072 2935

E [michaelgerges@boeq.com.au](mailto:michaelgerges@boeq.com.au)

#### Doc Cromme

Institutional Dealing

P +61 2 8072 2925

E [doccromme@boeq.com.au](mailto:doccromme@boeq.com.au)

#### Adam Stratton

Institutional Dealing

P +61 2 8072 2913

E [adamstratton@boeq.com.au](mailto:adamstratton@boeq.com.au)

#### Mathan Somasundaram

Market Portfolio Strategy

P +61 2 8072 2916

E [mathan@boeq.com.au](mailto:mathan@boeq.com.au)

#### Josie Nicol

Dealing Associate

P +61 2 8072 2031

E [josienicol@boeq.com.au](mailto:josienicol@boeq.com.au)

## HEAD OFFICE

### Blue Ocean Equities Pty. Ltd.

AFSL No. 412765

ABN 53 151186935

P +61 2 8072 2988

E [info@boeq.com.au](mailto:info@boeq.com.au)

W [blueoceanequities.com.au](http://blueoceanequities.com.au)

Level 29, 88 Phillip Street

Sydney NSW 2000

Australia

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