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Research
Company Update

Date:	**12 February 2018**
Recommendation:	**BUY**
Price Target:	**$0.31**

Company Information

Code	TEG.ASX
Last Price	A$0.10
Shares on Issue	218.1m
Market Capitalisation	$21.3m
Daily Volume	0.18m

Financial Summary

	FY17a	FY18e	FY19e	FY20e
Revenue ($m)	16.8	20.7	22.1	37.7
Operating Costs($m)	(12.7)	(13.7)	(14.7)	(25.2)
EBITDA ($m)	**0.2**	**4.5**	**4.8**	**9.8**
D&A ($m)	(2.0)	(1.4)	(1.1)	(1.1)
EBIT ($m)	**(1.7)**	**3.1**	**3.6**	**8.6**
Net Interest ($m)	(0.2)	(0.2)	(1.4)	(1.1)
Profit Before Tax ($m)	**(3.5)**	**2.9**	**2.8**	**7.3**
Income Tax ($m)	(1.1)	(0.9)	(0.8)	(2.2)
Underlying NPAT ($m)	**(4.6)**	**2.0**	**1.9**	**5.1**
Non-recurrent ($m)	0.0	0.0	0.0	0.0
Reported NPAT ($m)	**(4.6)**	**2.0**	**1.9**	**5.1**
EPS Reported (¢)	(0.03)	0.01	0.01	0.02
EPS growth (%)	n/a	n/a	(3%)	162%
DPS (¢)	0.0	0.0	0.0	1.0
Cash ($m)	2.2	2.3	5.1	9.5
Net debt ($m)	(2.2)	0.0	(2.9)	(9.5)
Net debt / equity (%)	270%	0%	(92%)	(115%)
Interest Cover (x)	(11.2)	13.7	2.6	8.0
ROE (%)	na	168%	62%	62%
ROA (%)	na	6%	4%	10%
NTA per share (¢)	(0.01)	0.01	0.01	0.04
PE (x)	na	10.7	11.0	4.2
EV/EBITDA (x)	na	6.2	5.3	2.2

Note: All financials presented in this report reflect an aggregate of TEG project interests and will differ from the consolidated reported financials.

Share Price Performance

Analyst Details

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Triangle Energy (ASX: TEG): Company Update

Key Points

Cliff Head production at 75,327 bbls at an average production rate of 819 bopd: Cliff Head production fell due to field downtime as a result of the program to replace a section of the onshore water injection and crude oil pipeline. The average received oil price for the quarter was US$60.26 per barrel and lifting costs increased to US$38.21 from US$30.56 compared to the previous quarter which was mainly due to the lower production number.

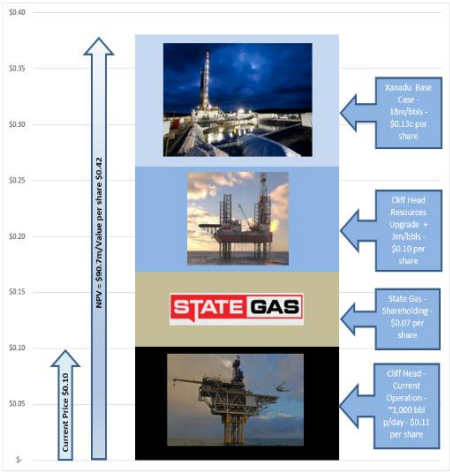
Comprehensive Forward Program

Project	Description	Timing
Arrowsmith/Asset Integrity	Ongoing routine maintenance	Ongoing
Production optimisation	Optimise field management	Ongoing
New subsurface reservoir model	Remapping the subsurface reservoir model	May 2018
Renew reservoir management plan	Optimise production to add incremental production changes	May 2018
Operations restructuring	Restructure operations to reduce operating costs	May 2018
Revised reserves statement	Upgrade the Cliff Head reserves	July 2018
Workovers	Execute the workovers of existing wells to increase production	Late 2018

Xanadu program is finally moving forward: We have been disappointed with the progress that has been made in appraising the Xanadu discovery considering the material value uplift that Xanadu represents for each of the JV partners. The planned shallow water seismic program is close to being finalised, and the operator has announced that they intend to re-enter the well in the fourth quarter of this calendar year.

Recommendation and Valuation

We value TEG on our base case assumptions at $0.31 a share and maintain our Buy recommendation. This assumes a low case outcome for Xanadu but does assume an upgrade to current the Cliff Head infield reserves of 3m bbls of oil. It is clear from the accompanying chart that the market is undervaluing TEG and in effect ignoring the value of State Gas, the current Cliff Head upgrade program and any value for the Xanadu discovery. The current market pricing seems to assume that these programs will not deliver any value to the business which in our view is an unlikely outcome given the state of the oil market and the quality of the underlying assets.



Cliff Head production at 75,327 bbls at an average production rate of 819 bopd.

Cliff Head production fell due to field downtime because of the program to replace a section of the onshore water injection and crude oil pipeline. The average received oil price for the quarter was US$60.26 per barrel and lifting costs increased to US$38.21 from US$30.56 compared to the previous quarter, mainly due to the lower production number. The average Brent oil price for the quarter was US$57.51, and up until early February, the price has averaged US$68. If Cliff Head can maintain its normalised average run rate of 1,195 barrels per day of production, we could see a material uplift in Cliff Head operational cash flow from AU$1.5m to over AU$4m.

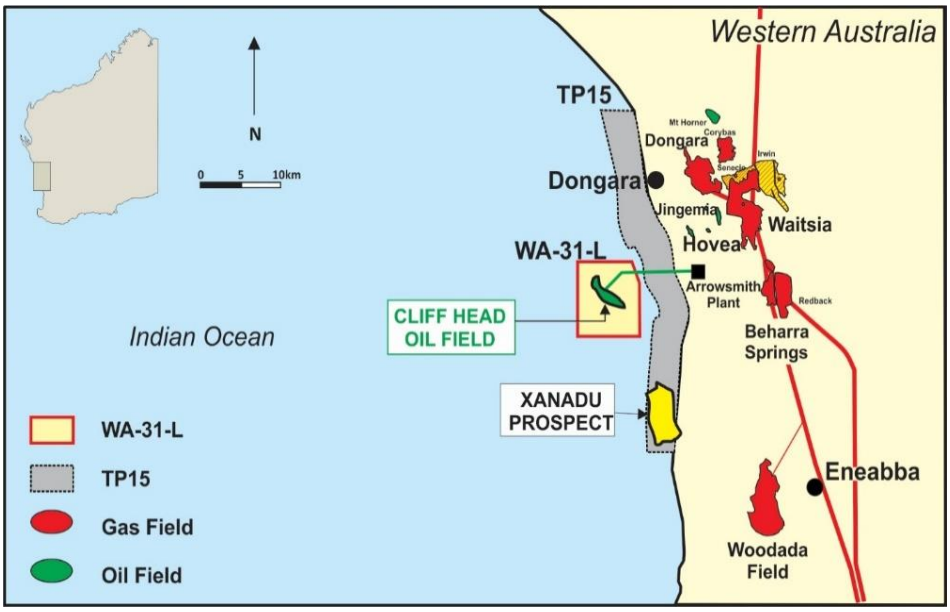


Figure 1: The location of TEG assets in the Perth Basin Source: TEG

Cliff Head redevelopment underway

TEG has a comprehensive program on foot to upgrade the resources in the Cliff Head field. Since the commissioning of the field in 2006 not much work had been done by the previous owners to increase the reserves in the field. Increasing the available oil reserves in a mature field has become an important source of new producible crude oil in many oil-producing regions. Exploration is expensive and risky and expanding the resource base of an already developed oil field can result in a better return on invested capital.

Globally as more fields reach maturity, the options and processes for extending field life are becoming more mature as the technology evolves. Originally Cliff Head was thought to hold 100 million barrels of oil in place, and ultimately this number was downgraded to the development option that was ultimately chosen. However only a relatively low percentage of the oil in place has been produced compared with other oil fields. In our opinion, it is likely that there is oil that can be produced from the field and when TEG confirms this, the value of the business will be materially impacted.

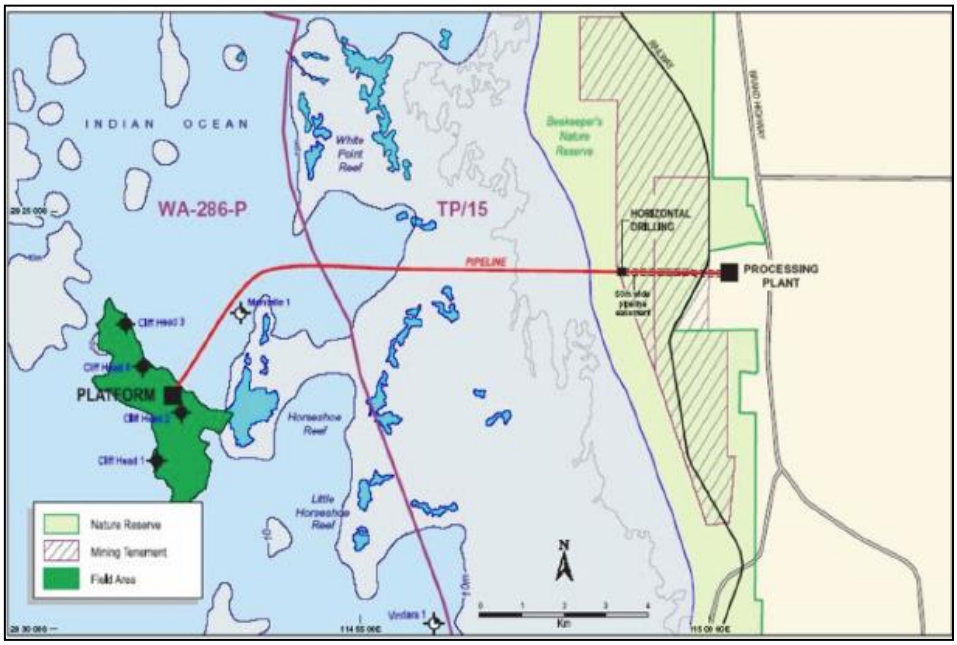


Figure 2: Map of the Cliff Head field Source: TEG

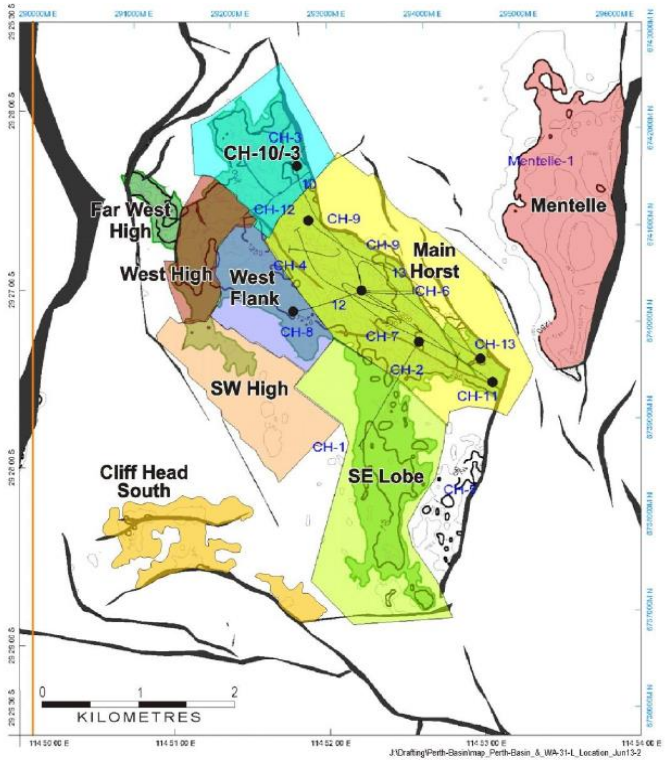


Figure 3: Map showing main Cliff Head wells and prospect Source: TEG

TEG has announced a comprehensive forward program that will result in lots of material news flow over the coming year:

- ***Arrowsmith – maintenance and repairs on the field/Asset Integrity – Timing: Ongoing***

  The Arrowsmith plant is in reasonable condition but does need routine maintenance so that it can manage the expected increase in production from the infield reserves upgrade and the additional production from the Xanadu field when it is commercialised.

  The potential for increased production from both Cliff Head upgrades and the processing of Xanadu production will result in the Arrowsmith facility continuing operating well beyond the original Cliff Head field life. Therefore, it is important to make sure the plant is maintained to a high standard so that it can operate optimally and be ready to accept greater volumes of product. As we observed when we visited the plant in late 2016, as with many contractor managed facilities, there was room for improvement. Over the time that TEG has been in control, it has worked on improving the situation and moving to a proactive maintenance regime. The largest project is the Injection Water Pipeline Integrity Project in which a critical section of the onshore section of the water injection and crude oil pipe was replaced.

- ***Production optimisation – Timing: Ongoing***

  Now that TEG has taken over direct control of the field from the contractors and with the help of its technical partners, Tamarind, the company is reviewing the current field management practices and production data. Using this information TEG are expecting to add incremental production on an ongoing basis.

- ***Subsurface reservoir model – Timing: May 2018***

  TEG, along with its technical advisory partners, are in the process of remapping the subsurface reservoir model to identify previously undrained portions of the field. The current wells in the field were drilled over 15 years ago when directional drilling technology was not as sophisticated and accurate as it is today. Once these areas have been identified TEG can then access identified untapped pools of oil with new more accurate and cheaper drilling technology thereby increasing production and the life of the field. We can expect an announcement in May on the potential upgrades to the oil inventory.

- ***Renew reservoir management plan – Timing: May 2018***

  TEG has been analysing historical well and field performance and developing a new reservoir management plan to better optimise the production of identified crude oil in the field. We can expect that the adoption of a new reservoir management plan, before a larger scale re-completion and drilling program, will deliver incremental changes to the current production profile.

- ***Operations restructuring – Timing: May 2018***

  TEG reduced lifting costs from the end of December quarter in 2016 of circa US$58 per barrel to a low of $US30 in the September quarter 2017 by aggressively attacking costs. Before TEG took control, the field economics was a reflection of much higher priced oil environment.

  This process is ongoing with TEG having renegotiated a number contracts and de-manning the Arrowsmith facility by moving operations to Perth and managing the field via remote operations. This is a major cost out initiative in that operators can operate from

Perth in a far less expensive shift roster as opposed to a fly-in fly-out roster which drives up costs. Many resource companies such as Fortescue (FMG) and Woodside (WPL) have materially reduced costs by locating operations control in Perth as opposed to the mine site. Besides the obvious people cost savings there are operations efficiency gains as well because the engineers and the operators are situated in the same office improving communication which will ultimately improve production outcomes.

- ***Revised reserves statement - Timing: July 2018***

  One of the key outputs from the program will be an upgrade to the booked reserves in the field.

- ***Workovers – Field infrastructure redevelopment plan – Timing: Late 2018***

  To execute the workover of existing wells or sidetrack wells to access undrained parts of the field, TEG will have to contract a rig. The plan could involve either the use of a jack-up rig as the water is relatively shallow or the use of the platform as a base for more cost-effective workover options. TEG already has a dedicated coil tubing unit that is used for well intervention and maintenance, and it is possible to compete for certain workover activities using this unit or a more powerful version.

  The publication of the planned activities will be an important indicator of the timing and the potential reserve and production gains from the program. We would expect that this program will deliver step changes in production and reserves additions. It will also give investors an idea of the capital requirements for the program.

Xanadu program finally moving forward

We have been disappointed with the progress that has been made in appraising the Xanadu discovery considering the potential material value uplift that Xanadu represents for each of the JV partners. It has been several months since the discovery, and very little follow-on activity has taken place or been communicated to the market by the operator Norwest Energy (NWE).

However, despite the slow progress, the discovery remains very exciting, and thanks to the nearby proximity of the Arrowsmith plant can be rapidly commercialised. All the requirements for a working hydrocarbon system are present ie; source rock, reservoir and trap seal.

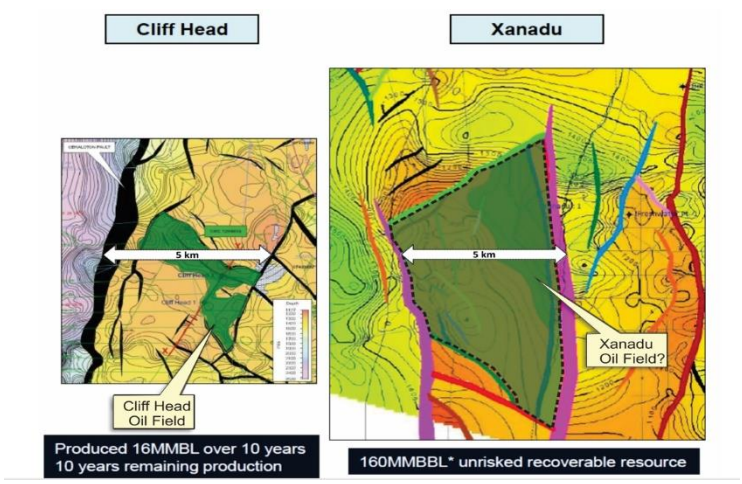


Figure 4: The Xanadu structure compared to the Cliff Head structure Source: TEG

The planned shallow water seismic program is close to being finalised, and the operator has announced that they intend to re-enter the well in the fourth quarter of this calendar year. Due to the shallow nature of the water over the field, it is not possible to acquire seismic using conventional towed arrays. The program is expected to be executed in April and May with results by the mid-year. This will give the JV detailed and comprehensive subsurface data that will be critical in the calculation of the potential resources in the field and the placement of future wells.

Funding

To cover the costs from the pipe replacement project TEG has increased its loan from Tamarind. Tamarind has also converted its US$776k convertible note thereby increasing its shareholding of TEG to circa 11.4%. The terms of the loan are at normal commercial rates and are due to be paid out at the end of the financial year.

Tamarind has, and will continue, to be supportive of TEG's short-term cash requirements as well continuing to supply technical resources to the ongoing management of the field and other key initiatives.

We calculate that if the oil price remains above US$60, a barrel and production stabilises at a more conservative than the current run rate 1,000 barrels a day, TEG should achieve operational cash flow of north of $3m. This cash can be used to pay down debt and invest in the ongoing Xanadu appraisal project and help fund the efforts to increase the Cliff Head infield reserves.

Regional Exploration picture

The recent discovery of Xanadu Oil Field and the Waitsia Gas Field along with several other regional discoveries made some years ago is increasing interest in the North Perth Basin as an exploration play. There are several other leads outboard and to the north and south of the Cliff Head and Xanadu discoveries and considering there is oil trapped in both Xanadu and Cliff Head, there is a good chance there are other structures in the vicinity trapping hydrocarbons. The permit WA-481-P outboard of Cliff Head and Xanadu is owned by Pilot Energy (60% and operator) and Key Petroleum (40%). According to releases by both companies, the Xanadu discovery has led to an increase in exploration activities starting with a large project to reprocess the seismic data that exists over the permit. It is important to note that any discovery on this permit would almost certainly be commercialised through the Arrowsmith plant.

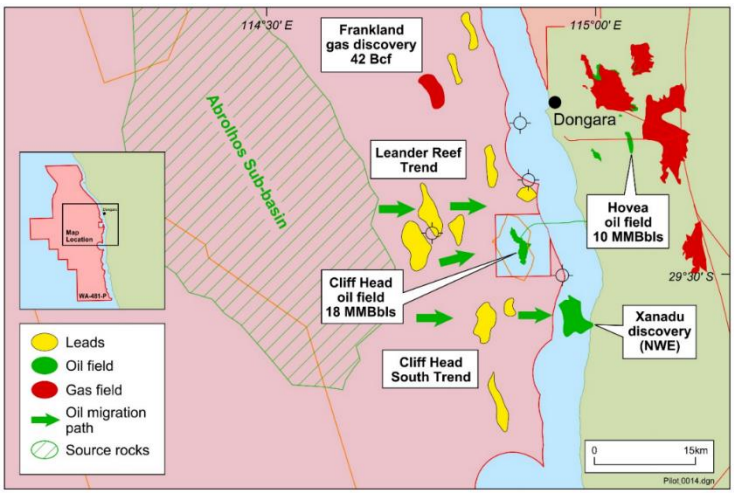


Figure 5: The regional exploration picture Source: Key Petroleum

Recommendation and Valuation

We maintain our **BUY** recommendation and a **$0.31** price target. Our price target is slightly lower due to the dilutionary impact of the conversion of the Tamarind loan.

The TEG share price has fallen back from the highs post the Xanadu discovery and the successful listing of GAS. We value TEG on our base case assumptions at $0.31 a share. This assumes a low case outcome for Xanadu but does assume an upgrade to current the Cliff Head infield reserves of 3m bbls of oil. It is clear from the accompanying chart that the market is undervaluing TEG and in effect ignoring the value of State Gas, the current Cliff Head upgrade program and any value for the Xanadu discovery. The current market pricing seems to assume that these programs will not deliver any value to the business which in our view is an unlikely outcome given the state of the oil market and the quality of the underlying assets.

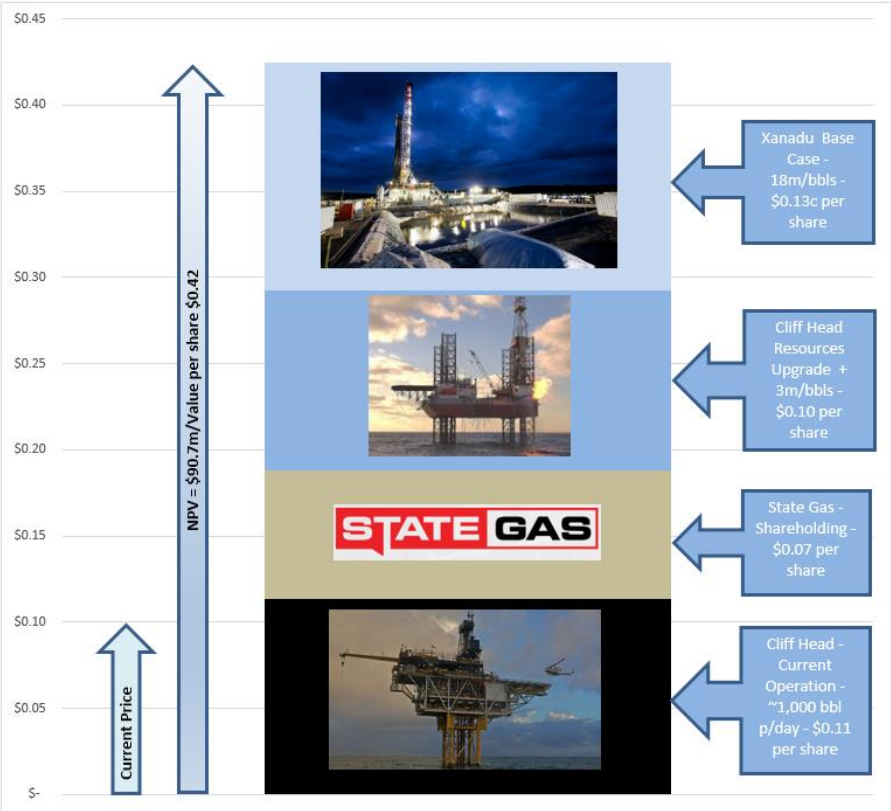


Figure 6: The value of TEG assets and project relative to the current share price using the DJC mid case valuation excluding current cash and corporate costs.

Source: DJC

If one strips out the see-through valuation on the GAS shares the market is attributing very little value to the Cliff Head field, the Arrowsmith Plant and the Xanadu discovery. TEG has some parts that are relatively independent of each other. The current operations and infield upgrades represent a near-term value driver that is relatively risk-free, it would be very unusual for there to be no oil behind the pipe beyond the initial reserves, especially when taking into the account a relatively small amount of work has been done on upgrading the recoverable resources. There are countless examples around the world of mature fields that have had their life extended thanks to technology.

The Xanadu discovery represents blue sky upside and considering the discovery has already been made very little discovery risk remains. There is still a commercial risk as the field could still prove to be sub-commercial. However thanks to the proximity of the Arrowsmith plant to

commercialise the field, the hurdle rate needed to commercialise the field will be much lower compared to a new standalone full development.

Another key positive is that any oil that is produced from Xanadu will have to be processed at the Arrowsmith plant allowing TEG to charge a processing fee on 100% of the oil extracted from the field even though its share of the project is only 30%.

If prices remain stable and production remains at these or similar levels, TEG could achieve ~$16m of operating cash flow from the field in FY19. This excludes any exploration capital expenditure on the field. Our forecast model assumes a much lower free cash flow number due our use of a $50 oil price and we also assume higher lifting costs. Even on our lower forecasts the business is very undervalued, even after excluding GAS, at essentially 1x operational cash flow.

Asset Valuation		Low Case		Base Case		High Case	
	Ownership %	AUD$m	A$/ps	AUD$m	A$/ps	AUD$m	A$/ps
Cliff Head	78.5%	24.7	0.11	47.6	0.22	71.7	0.33
Xanadu	30.0%	7.9	0.04	7.9	0.04	84.1	0.39
Total Operations NPV		**32.6**	**0.15**	**55.4**	**0.25**	**155.7**	**0.71**
		-	-				
State Gas (ASX:GAS)	47.8m shares	16.3	0.07	16.3	0.07	16.3	0.07
Cash		3.0	0.01	3.0	0.01	3.0	0.01
Corp		-6.0	-0.03	-6.0	-0.03	-6.0	-0.03
Total NPV		**45.8**	**0.21**	**68.7**	**0.31**	**169.0**	**0.77**

Figure 7: DJC Valuation cases for TEG. Please note we use our conservative low case valuation for Xanadu of 7m bbls for our price target. Source DJC

Triangle Energy (Global) Limited

DJ Carmichael

Shares on Issue (m)	218.1	**Date**	**9/02/2018**
Fully Diluted (m)	235.6	**Share Price:**	**$0.10/share**
Market Capitalisation ($m)	A$21.38	**Valuation:**	**$0.31/share**
Fiscal Year End	June	**Price Target:**	**$0.31/share**

Equity Valuation, Return		A$m	A$/share
Cliff Head	78%	47.55	0.20
Xanadu	30%	7.88	0.03
Total Operations NPV		**55.44**	**0.24**
State Gas (ASX:GAS)		16.26	0.07
Cash		3.00	0.01
Corporate Costs		(6.00)	(0.03)
Total		**68.69**	**0.31**
Capital Return			**224.7%**

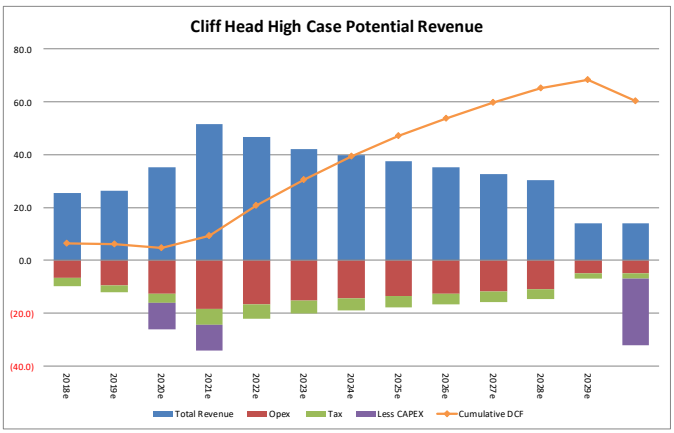
Financial Ratios

Key Metrics	FY17a	FY18e	FY19e	FY20e
Revenue Growth	0%	24%	7%	71%
EBIT Growth (Adj)	(569%)	(278%)	18%	137%
NPAT Growth (Adj)	(178%)	(144%)	(3%)	162%
EBITDA Margin (Adj)	1.3%	21.6%	21.8%	25.9%
EBIT Margin (Adj)	(10%)	15%	16%	23%
EPS - Reported	(0.03)	0.01	0.01	0.02
EPS - Fully Diluted Adjusted	(0.03)	0.01	0.01	0.02
EPS Growth	(171%)	(129%)	(3%)	162%
Effective Tax Rate	32%	(30%)	(30%)	(30%)
Earnings Multiples (A$)	**FY17a**	**FY18e**	**FY19e**	**FY20e**
EPS	(0.03)	0.01	0.01	0.02
EPS Growth	(171%)	(129%)	(3%)	162%
P/E	NM	10.68	11.05	4.21
EV/EBIT	(13.17)	6.22	5.28	2.22
EV/EBITDA	102.58	4.28	3.98	1.96
Balance Sheet	**FY17a**	**FY18e**	**FY19e**	**FY20e**
Gearing (Debt/Equity)	0%	189%	278%	51%
Gearing (Net Debt/Equity)	270%	0%	(92%)	(115%)
EBIT Interest Cover	-11.2x	13.7x	2.6x	8.0x
ROE	569%	168%	62%	62%
ROA	(15%)	6%	4%	10%
Book Value per share	(0.01)	0.00	0.00	0.00
Dividends	**FY17a**	**FY18e**	**FY19e**	**FY20e**
Dividend Per Share	0.0¢	0.0¢	0.0¢	0.0¢
Dividend Yield	0.0%	0.0%	0.0%	0.0%
Dividend Franking	0.0¢	0.0¢	0.0¢	0.0¢
Dividend Payout Ratio	0.0%	0.0%	0.0%	0.0%

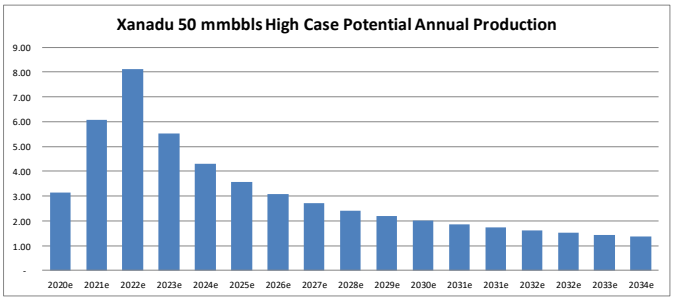
Income Statement ($m)	FY17a	FY18e	FY19e	FY20e
Sales Revenue	16.78	20.73	22.11	37.75
Operating Costs	(12.69)	(13.75)	(14.66)	(25.22)
Other	1.11	0.00	0.00	0.00
EBITDA	**0.22**	**4.48**	**4.82**	**9.77**
Depreciation & Amort.	(1.96)	(1.40)	(1.14)	(1.14)
EBIT	**(1.74)**	**3.08**	**3.63**	**8.63**
Finance costs	(0.16)	(0.23)	(1.38)	(1.08)
Profit Before Tax	**(3.49)**	**2.86**	**2.76**	**7.25**
Income Tax Expense	(1.10)	(0.86)	(0.83)	(2.18)
Underlying NPAT	**(4.59)**	**2.00**	**1.94**	**5.08**
Non-recurrent items	0.00	0.00	0.00	0.00
Reported NPAT	**(4.59)**	**2.00**	**1.94**	**5.08**

Cash Flow Statement (US$m)	FY17a	FY18e	FY19e	FY20e
Net operating cash flow	2.23	4.48	4.82	9.77
Net interest	(0.16)	(0.23)	(0.87)	(1.38)
Tax Paid	(1.10)	(0.86)	(0.83)	(2.18)
Operating Cash Flow	**(1.03)**	**3.40**	**3.12**	**6.22**
Capital Expenditure	(0.34)	(4.00)	(7.20)	(4.20)
Exploration & Eval	(0.33)	(3.00)	0.00	0.00
Investing Cash Flow	**(2.77)**	**(7.00)**	**(7.20)**	**(4.20)**
Free Cash Flow	**(1.70)**	**(3.60)**	**(4.08)**	**2.02**
Equity Raised	0.28	1.50	0.00	0.00
Inc/(Dec) in Borrowings	0.00	2.26	8.70	4.20
Dividends Paid	0.00	0.00	0.00	0.00
Financing Cash Flow	1.73	3.76	9.57	1.27
Effects of Exchange Rates	0.05	0.00	0.00	0.00
Movement in Net Cash	(1.70)	0.16	5.49	3.28

Balance Sheet (US$m)	FY17a	FY18e	FY19e	FY20e
Cash	2.18	2.26	5.08	9.47
Other	0.20	0.00	0.00	0.00
Current Assets	4.29	6.24	8.83	13.60
PP&E	13.40	16.59	22.61	25.67
Other Assets	11.38	11.38	11.38	11.38
Total Assets	31.17	36.31	44.91	52.74
Current Liabilities	6.38	7.26	9.61	12.05
Borrowings	0.00	2.26	6.58	6.88
Other Liabilities	25.60	25.60	25.60	25.60
Total Liabilities	31.97	35.11	41.78	44.53
Total Shareholders' Equity	(0.81)	1.19	3.13	8.21



Directors	Shareholders	
Edward Farrell - Non Executive Chairman	Tamarind Classic Resources	11.47%
Robert Towner - Managing Director/CEO	T7 Global Berhad	7.52%
Darren Bromley - Exec Director/CFO/Co Sec	HSBC Custody Nom (Aus)	6.42%
	Robert Towner	5.55%
	Darren Bromley	4.91%



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Disclosure and Disclaimer **RCAN1465**

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The Analyst owns shares in **Triangle Energy Limited.**

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The Author of this report made contact with **Triangle Energy Limited** for assistance with verification of facts, admittance to business sites, access to industry/company information. No inducements have been offered or accepted by the company.

Recommendation Definitions

SPECULATIVE BUY – Potential 10% or more outperformance, high risk
BUY – Potential 10% or more outperformance
HOLD – Potential 10% underperformance to 10% over performance
SELL – Potential 10% or more underperformance
Period: During the forthcoming 12 months, at any time during that period and not necessarily just at the end of those 12 months.

Stocks included in this report have their expected performance measured relative to the ASX All Ordinaries index. DJ Carmichael Pty Limited's recommendation is made on the basis of absolute performance. Recommendations are adjusted accordingly as and when the index changes.

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