

28 September 2015

NAV:	\$mm
Core	2.3
Appraisal & Development	18.1
Exploration	11.1
Total	31.5
Per Share	0.84p
From Current Price	394%

Stock Data

Ticker	UJO LN
Share Price:	0.17p
Market Cap:	£4.00mm
EV:	£0.52mm

Price Chart



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ANGEL Oil & Gas Note **Union Jack Oil* UJO LN** 0.17p **Price Disconnect Excessive**

In Brief

The farmin to the producing Keddington field means that the Company's portfolio is becoming increasingly evenly balanced, and the pending development planning at Wressle bolsters the outlook, which is added to further by the appraisal of Biscathorpe, neither of which are adequately reflected in the current market valuation as a low cost UK onshore producer. We have adjusted our net asset value to \$31.5mm (un-risked \$313mm – 8.4p), and our target price rises to 0.84p.

Keddington Farmin – Cash Flow and Intent

The farmin to the producing Keddington field has provided the Company with its first production, and while modest, it will offset the running costs of the Company, albeit partially at the current oil price. While the impact on cash flow is minimal, the Keddington transaction also provides some measure of increased balance to the portfolio by introducing production to its base.

Furthermore, we believe that its impact on the perception of the Company, or more specifically its focus on lower risk assets and production, is significantly greater, as it supports management's objectives of creating shareholder value and reaching the point at which the Company is self-sustaining, guicker.

Wressle FDP Not Factored In

The value of the Company's portfolio is not being reflected in the current market valuation, even if you allow for the current oil price. The Company has created significant value at the drill bit at Wressle, whose appraisal programme has been completed and the field development plan ("FDP") is now being formulated.

Given the proximity of infrastructure, we believe the development of Wressle, once sanctioned, will be quick, and relatively low cost; we will await the final costing, development strategy and production rates before we upgrade our valuation further.

Further Asset Evaluation Reduced Risk

Continued evaluation in to Biscathorpe and North Kelsey have resulted in the risks associated with a successful commercial outcome being reduced. On Biscathorpe the key risk remains the selection of a suitable completion strategy to promote commercial flow rates, but study has increased the COS from ~ 29.2% to 40%; the appraisal programme is scheduled to start in 1H'16. On North Kelsey, while Trap continues to be the more significant risk, the continued 3D and well control study has improved the COS significantly, from 14.6% to 25%.

Funded & Flexible

The Company's work programme is fully funded, and it still retains sufficient cash with which to pursue further investment, or accelerate any development plans that flow from the Wressle and Biscathorpe appraisal programmes.

Valuation \$31.5mm (0.84p)

Ahead of the announcement on Wressle, we are adjusting out valuation and target price to reflect Keddington's contribution, which is offset by the weaker oil price outlook reflected in our 4Q'15 price forward deck. Our value is now \$31.5mm (un-risked \$313mm – 8.4p), and our target price rises to 0.84p.

See SP Angel Earnings Estimates (Page 20) for the earnings.

BUY 0.84p

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Valuation – \$31.5mm (0.84p)

We have valued UJO's assets at \$31.5mm (0.84p) using DCF valuation methodology; the un-risked valuation is \$313mm (8.4p); we are increasing our target price to 0.90p.

Summary

SPA has used discounted cash flow ("DCF") based net asset value ("NAV") as its primary valuation tool as it allows the study of a range of key influential valuation factors on a company's asset portfolio. However, market's assessment of a company's worth must also be considered. Consequently, we have valued UJO using not only NAV, but also assessed its market "worth" using market multiples for daily average production, 2P Reserves, 2C Contingent Resources and P₅₀ Prospective Resources; we summarise this in Table 1 and Figure 1.

Table 1 – UJO Valuation Summary

Male and a second and	Market	OLU	Implied Value	
Valuation Method	average	Multiplier	(\$mm)	(p/share)
Valuation				
NAV _(D) (Page 3)	-	\$31.5mm	31.5	0.84
Market Worth				
Sum of Parts Valuation (Page 6)	-	-	6.18	0.17
NAV multiple (Page 10)	0.39x	\$31.5mm	12.3	0.33
Source: Bloomberg and SPA data				

Figure 1 – Tornado Valuation Summary



UJO's valuation across all methodologies (\$mm)

Source: SPA Data

NAV Valuation

In valuing UJO we have adopted a discounted cash flow ("DCF") valuation methodology, the principal valuation technique used by the Oil & Gas industry to value production and appraisal assets. Subsequent to this, where applicable, expected monetary value ("EMV")

was then applied to arrive at a risk adjusted value. The valuation of the Company's assets is summarised in Figure 2 and Table 2.



Source: SPA Data

	Hydrocar	bons			NAV	/		
Field	mm bo	be	(\$mn	n)	(\$/bo	e)	(p/sha	re)
	Unrisked	Risked	Unrisked	Risked	Unrisked	Risked	Unrisked	Risked
Core								
Existing Production	-	-	0.1	0.1	-	-	0.00	0.00
Balance Sheet Items	-	-	2.2	2.2	-	-	0.06	0.06
Core NAV	-	-	2.3	2.3	-	-	0.06	0.06
Appraisal & Development								
Biscathorpe	3.53	0.53	94.9	14.1	26.9	4.0	2.53	0.38
Wressle	0.16	0.12	5.3	3.9	32.3	24.1	0.14	0.10
Appraisal & Development NAV	3.69	0.65	100.1	18.1	27.1	4.9	2.67	0.48
Exploration								
North Kelsey	1.98	0.19	50.2	4.5	25.4	2.3	1.34	0.12
Louth	0.2	0.03	5.0	0.8	32.7	5.5	0.13	0.02
North Somercotes	0.2	0.04	0.5	-	2.4	-	0.01	-
Shale	22.81	0.89	155.1	5.8	6.8	0.3	4.14	0.15
Exploration NAV	25.13	1.14	210.8	11.1	8.4	0.4	5.62	0.30
Total NAV	28.83	1.79	313.3	31.5	10.9	1.1	8.36	0.84

Table 2 – NAV_(D) Valuation Summary

Source: SPA Data

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Traditional CoS Range	Comment
0 – 25%	The Company has an active exploration programme which has been bolstered by the addition of Louth, a prospect within the Keddington licence.
	Elsewhere in its portfolio, North Kelsey has benefitted from further study, such that the COS has increased to 25%; see Table 4 for more details.
25 – 55%	Wressle has recently successfully completed its appraisal programme (see below), meaning that focus now turns to the appraisal of the Biscathorpe discovery.
	More recently, work on derisking Biscathorpe has resulted in a greater COS, which is now ~40% (versus) and firmly in the appraisal category for risk; see Table 4.
55 – 85%	Given the proximity of infrastructure, we believe the development of Wressle, once sanctioned, will be quick, and relatively low cost. Once the Biscathorpe appraisal programme has been completed, the proximity of infrastructure will mean that the field is quickly brought in to full production.
85 – 100%	The addition of Keddington provides an offset to ongoing expenses, but also provides further confirmation as to the Company's intent.
	CoS Range 0 - 25% 25 - 55% 55 - 85%

Table 3 – Summary of Risking Factors used to Determine NAV

Source: SPA data

Changes to Estimates

Our revised estimates reflect the latest understanding of the risks associated with the Company's exploration, appraisal and development programmes. The impact that this has on the overall valuation of the company is summarised in Table 4.

Table 4 – Significant Changes to Valuation Estimates

Asset	Parameter		Value			NAV impact (\$mm) Comment	
			Old	New	Old	New	
Biscathorpe	COS Oil Price	¥	29.2%	40.0%	11.1	14.1	Continued analysis of the Biscathorpe asset has resulted in an increased COS for the asset, which is now 40%.
							The key risk remains the selection of a suitable completion strategy to promote commercial flow rates.
North Kelsey	COS Oil Price	¥	14.6%	25.0%	2.7	4.5	While Trap continues to be the more significant risk, the continued 3D and well control study has improved the COS significantly.
Wressle	COS Oil Price	¥	65.0%	75.0%	3.6	3.9	The successful conclusion to the appraisal programme means that the risks associated with a commerciality have been significantly reduced. We believe that further news flow will support commercialisation of the asset.

Source: SP Angel data & estimates

Peer Group Market Worth

SPA has conducted a review of E&P companies worldwide, limiting its comparison to those with similar profile to UJO. In conducting peer group valuation, SPA has looked at the most appropriate methods, whether on a namely per daily flowing barrel, per barrel of Reserves, or Resources. Using these methods implies an average valuation of \$8.36mm (0.23p), 35% ahead of the current market value. We summarise the valuation methods in (Table 5).

Table 5 – UJO Peer Group Summary

Valuation Metric	Market	UJO multiplier	Implied Value		
	average	000 multiplier	(\$mm)	(p/share)	
Sum of Parts Valuation (Page 6)	-	-	6.18	0.17	
Per Daily Flowing Barrel (Page 6)	\$44,354/bpd	3.5bpd	0.15	0.01	
2P Reserves (Page 7)	\$7.8/bbl	0.08mm bbl⁵	0.63	0.02	
$2C/P_{50}$ Contingent/Prospective Resources (Page 8)	\$0.19/bbl	28.83mm bbl	5.40	0.14	
NAV multiple (Page 10)	0.39x	\$31.5mm	12.3	0.33	
Average	-	-	9.24	0.25	

Source: SPA data

Sum of Parts

With a portfolio that has a combination of contributory elements, it is difficult to say with certainty how much of the valuation contribution is provided by each individual category (flowing barrels, Reserves, Resources, etc.). However, given the number of companies in the market that have operations at various stages of operation alone, it is possible to imply a market value. We summarise this is in Table 6.

As can be seen in Table 6, the sum of parts valuation is broadly in line with the market valuation. However, this does not take in to account the pending development of Wressle, following the completion of the appraisal programme.

	atria Commont		UJO Multiplier	Implied Value		
Metric	Comment	Average	UJO Multiplier	(\$mm)	(p/share)	
Production (Page 6)	The consolidation of Keddington will provide sufficient free cash flow to partially offset the running costs.	\$44,354/bpd	3.5bpd	0.15	0.01	
2P Reserves (Page 7)	While the Company has limited 2P Reserves, we believe that the sanction of the new drilling programme will be all that is required to precipitate the reclassification of the current 2C Contingent Resources to 2P Reserves.	\$7.8/bbl	0.08mm bbl [§]	0.63	0.02	
2C/P ₅₀ Contingent/ Prospective Resources (Page 8)	We assume that the production accounts for those reserves that are considered to be Proved Developed Producing, and that the 2C Contingent Resources are in addition to the current production levels.	\$0.19/bbl	28.83mm bbl	5.40	0.14	
Total	-	-	-	6.18	0.17	

Table 6 – Sum of Parts Valuation

Source: SPA Data

[§] - SPA Estimate from OGA data historic production and reserves

Per Daily Flowing Barrel

SP Angel's review of global E&P company valuations provides a useful guide as to the market worth of production (Figure 3). We have averaged the data for those companies with production by the key international exchanges, and while this data suggests that each barrel of production can trade in excess of \$100,000/bpd, eliminating valuations above \$70,000/bpd results in a value of \$44,354/bpd, which we believe to be more representative of a fair market valuation.

Figure 3 – EV per Daily Flowing Barrel





Source: Bloomberg & SP Angel data

On this basis, and using UJO's production of 37bpd, implies a valuation of \$1.64mm (Figure 4).



Figure 4 – EV per Daily Flowing Barrel (UJO)

Source: Bloomberg & SP Angel data

2P Reserves

SP Angel's review of global E&P company valuations worldwide provides a useful guide as to the market worth of each barrel of Reserves, whether P1 or 2P, limiting our sample to those companies that have reported Reserves according to SPE PRMS guidelines.

We have averaged the data for those companies with 2P Reserves (Figure 5), by exchange, and while this data suggests that in London 2P barrels trade at value in excess of \$15.0/2P bbl, excessively high or low valuations (1.25/2P bbl > 25.0/2P bbl), results in a value of \$7.8/P₅₀ bbl, which we believe to be more representative of a fair market valuation.



Source: Bloomberg & SP Angel data

On this basis, and using UJO's 2P Reserves of 0.08mm bbl, implies a valuation of \$0.63mm (Figure 6). We believe that once the appraisal programme has been successfully completed on Wressle and Biscathorpe, that there will be a significant reclassification of what we currently classify as P_{50} Prospective Resources in to 2P Reserves.

Figure 6 – EV per 2P Barrel of Reserves (UJO)



Variation in EV (\$mm – Vertical Axis) with P1/2P Barrel of Reserves (mm boe – Horizontal Axis) – UJO Highlighted

Source: Bloomberg & SP Angel data

2C/P₅₀ Contingent/Prospective Resources

SP Angel has conducted a review of E&P companies worldwide, limiting its comparison to companies that have reported their respective Contingent and Prospective Resources according to SPE PRMS guidelines.

We have averaged the data for those companies (Figure 7) by exchange, and while this data suggests that 2C Contingent Resources and P_{50} Prospective Resources barrels trade at value

in excess of \$4.0/2C & P_{50} bbl, eliminating valuations above \$0.50/2C & P_{50} bbl and those below \$0.03/2C & P_{50} bbl results in a value of \$0.19/2C & P_{50} bbl, which we believe to be more representative of a fair market valuation.

Figure 7 – EV per Barrel of Prospective Resources



Source: Bloomberg & SP Angel data

On this basis, and using UJO's 2C Contingent Resources and P_{50} Prospective Resources of 28.8mm bbl, implies a valuation of \$5.40mm (Figure 8). While we accept the exploration programme carries risks, and there is a need to fund the Company's next stage of development, we believe this to be a fair reflection of the risks in the portfolio, especially as the Prospective Resources that UJO consolidates has a greater weighting towards appraisal type risk.

Figure 8 – EV per Barrel of Prospective Resources (UJO)



Variation in EV (\$mm – Vertical Axis) with P50 Barrel of Prospective Resources (mm boe – Horizontal Axis) – UJO highlighted

NAV Multiple

All Oil & Gas companies trade at a discount to the DCF derived net asset value ("NAV"). Per the basis of this comparison SPA utilises the total NAV, which includes the risk adjusted NAV is for exploration and appraisal assets. If we look at the average NAV trading multiple for companies that SP Angel Maintains NAV valuations on, the average NAV multiple is 0.39x (Figure 9).

Figure 9 – EV to NAV(D)





We believe that given that the Company is sufficiently funded for its work programme for the next 18 months, UJO, given the high proportion of relatively lower risk appraisal and development risk in its portfolio, deserves a multiple between the 0.39x observed by the market and the market worth derived by the sum of Parts analysis.

Source: Bloomberg & SP Angel data

Valuation Sensitivity Analysis

UJO's valuation is impacted by a number of factors, not least the oil price. We have also looked at a number of other factors, such as SPE PRMS category and CoS.

In assessing the value of the Company using DCF valuation, we have recognised all of the key parameters that we believe impact the valuation, not only the oil price but others such as: (i) discount rate; (ii) SPE PRMS Assessment Category; and (iii) the Technical to Commercial Success Rate; the results are summarised in Table 7.

Sensitivity Analysis	Comment	Base Case	Page
SPE PRMS Assessment Category	As would be expected there is an increasing value with increasing volumetrics.	P ₅₀	11
Oil & Gas Prices	Given the high proportion of oil in the portfolio, it is not surprising that the variation in oil price has a more profound effect on the overall valuation than gas prices.	SPA Curve	12
Discount Rate	Given the fact that the assets are based in stable countries and the Company's management is well able to effectively deliver its development programme, we consider the base discount rate of 10% to be a fair reflection of the business.	10%	15
Technical to Commercial Success Rate	Valuation increases proportionally with higher technical to commercial success rates.	37.5%	17
	Given the fact that the assets are primarily UK onshore (ample infrastructure in close proximity) the average technical to commercial success rate is modestly higher than the global average (37.5% vs 32.5%).		

Table 7 – Summary of Sensitivity Analysis

Source: SPA Data

SPE PRMS Assessment Category

Given the probabilistic nature of assessing potentially recoverable hydrocarbons from an undrilled prospect, there will always be a range of uncertainty. The SPE PRMS system provides guidance as how best to address this range of uncertainty.

We have assessed the Company's value over the range ascribed by the SPE PRMS system, namely (i) P1, 2P and 3P Reserves; (ii) 1C, 2C and 3C Contingent Resources; and (iii) P_{90} , P_{50} and P_{10} , Prospective Resources. This is in addition to the "BEST" categorisation, which is a measure of the skewness of the standard SPE PRMS probability distribution. We summarise our estimates in Table 8.

It is no surprise that there is an increase in value with increasing Prospective Resources. This is attributable to 2 main factors: (i) that the ultimate Reserve base that will be produced from is larger, which in turn precipitates a higher NPV in dollar terms; and (ii) the proportion of investment that is required, on a per barrel basis, to bring an asset into production falls significantly with increasing size, i.e. there are economies of scale to be had with larger projects.

	Hydroca	bons			NAV	/		
Scenario	mm b	oe	(\$mr	n)	(\$/bo	e)	(p/sha	re)
	Unrisked	Risked	Unrisked	Risked	Unrisked	Risked (Unrisked	Risked
P ₉₀	2.76	0.18	24.2	3.5	8.8	1.3	0.65	0.09
P ₅₀	11.09	0.71	119.7	14.0	10.8	1.3	3.19	0.37
PBEST	28.83	1.79	313.3	31.5	10.9	1.1	8.36	0.84
P ₁₀	78.54	4.84	871.2	81.6	11.1	1.0	23.25	2.18

Table 8 – Variation in NAV(D) with SPE PRMS Assessment Category

Source: SP Angel Data

NOTE: Base Case Assumptions used for all other parameters

Oil & Gas Prices

The current oil price is being buffeted by competing and often contradictory pressures currently, with a stronger price supported tight supply/demand balance, increased risk in the system, from the ongoing tensions in the Middle East and North Africa, specifically Libya, and the rising geopolitical tension with Russia. However, this is counterbalanced to some extent by the continued weakness in the outlook for economic growth in the Eurozone, and uncertainty as to where growth will go in Asia, specifically China.

There is also the impact that US' energy self-sufficiency has not only on the demand side, but the supply side too. Recent rig figures indicate that the decline in production is likely, due to the need for constant intervention to maintain production, coupled with the aggressive decline rates in unconventional fields.

The longer term prognosis, however, suggests that there may well be a situation where there is an oversupply in the US market and that the Federal Energy Regulatory Commission ("FERC"), will license this excess production.

Despite this, and the fact that the current price is at ~\$48/bbl, we continue to believe that our outlook for the oil price (long run average ~\$80/bbl) is a fair reflection of the relative balance of the oil price drivers. As well as analysing the impact of a number of price decks (flat nominal prices), we also provide five representative price profiles; these are described in Table 9.

As well as analysing the impact of a number of price decks (flat nominal prices), we also provide 4 representative price profiles; these are described in Table 9 and illustrated in Figure 10 and Figure 11.

Scenario	Oil Price (Figure 10)	Gas Price [§] (Figure 11)			
Low Curve	Under this scenario we believe that there is a muted recovery in demand, and rather than waiting for wholesale improvements in the supply/demand balance, producers initiate projects as soon as there is any sustained strengthening in price from these levels. This has the effect of dampening the oil price recovery (in comparison to our base case), reducing the peak oil price (to \$105/bbl), pushing it further out (from 2019 to 2028) and more importantly, substantially reducing the long term oil price (\$55/bbl versus \$90/bbl).	With the gas price, however, we believe that there is a divergence from Europear and US gas pricing. Under this scenario we believe that US gas pricing will face similar patterns to the oil price, given the relatively low reliance on imports. The Europear market will trade higher than the US gas price, but that as the proportion of imports grows, the pricing power will cede from lower cost domestic production and trade upwards. Consequently, we believe that the stagnation in European gas prices will be shorter lived, recovering immediately and peaking at \$10.25/mcf in 2024, and a more modest decline from the long term price from the Base Case (\$8.25/mcf versus			
SPA Curve (or Base Case):	The current oil price environment will persist for the near term, but that beyond	\$9.41/mcf). Our estimate for the Henry Hub ("HH") price			
(Of Dase Case).	the summer it will start to improve, ending the year in the region of \$60/bbl, before	to \$3.6/mcf in 2016 then rising to \$5.5/mc			
	responding to the prevailing supply side environment. In the medium to longer term, and	Our estimate for the Europe's National Balance Point ("NBP") price is expected to trade at \$7.8/mcf in 2015 rising in line with			
	depending on GDP, we believe that the supply side of the equation will become more acute, and continue to drive prices up, peaking in 2020 at ~120/bbl	the oil price to \$11.6/mcf in 2020, before falling to \$8.9/mcf in 2022. Our curve assumes it remains flat from this point on.			
High Curve	Under this scenario, not only does demand grows significantly, but supply is limited by producers who do not sanction "world scale" projects until futures prices demonstrate a sustained recovery in pricing.	For both the US and European prices, we assume that the principal of therma equivalency is maintained with the oi price, in that the price profile observed under this scenario for oil, is reflected in the gas price profiles for the differing			
	Under this scenario we believe that there will be a sustained strengthening in prices, led by supply side limitations. Under this scenario oil prices will peak at ~\$160/bbl in 2022 before settling at a higher long term price (\$105/bbl versus \$90/bbl).	regions, albeit from a different base.			
Forward Curve Nominal:	Forward oil prices provided by Bloomberg from the International Commodity Exchange ("ICE"), London, as of September 2015, which rises from a current level of \$48.9/bbl to \$60.1/bbl in 2018. This oil price sensitivity then assumes flat nominal oil prices thereafter.	Forward gas prices were provided by Bloomberg, with NBP pricing by the IPE (a: at March 2015) trading at between 43p and 52p (per therm) over the period to December 2017 dependent on season.			
EIA Reference Case (Annual Energy Outlook 2015)	The Brent spot oil price averages \$56 per barrel in 2015. After 2015, the Brent price increases, reaching \$79 per barrel in 2020 and onwards to \$141/bbl in 2040.	The Henry Hub spot gas price averages \$3.7/mcf 2015. After 2015, the price increases, reaching \$4.9/mcf in 2020 and onwards to \$7.9/mcf in 2040.			
		For non-US prices we assume that the premium that European prices at in comparison to Henry Hub to be the proxy for international markets which have a significantly higher reliance on imports.			
		We have averaged the five-year historic premium and applied it to the EIA Reference Case throughout the forecast period.			

Source: Bloomberg & SP Angel Data [§] - In the course of the valuation, SP Angel has utilised the NBP solely due to the fact that the Company has no assets outside of the UK

Figure 10 – Oil Price Profiles



Source: Bloomberg EIA & SP Angel Data



Figure 11 – Gas Price Profiles

Source: Bloomberg EIA & SP Angel Data

The impact that variations in both the gas price and oil price have on Risked $NAV_{(D)}$ is summarised in Table 10 (in \$mm) and Table 11 (in p/share). Table 10 and Table 11 highlight that the value of the Company is more sensitive to changes in the oil price than the gas price. This is to be expected, given that the production portfolio is dominated by future oil production, opposed to gas.

Table 10 – Impact of Variation in Oil & Gas Price on NAV(D) (\$mm)

			Gas Price (\$/mcf)						
		5.00	7.50	Low	SPA Curve	High	Forward Curve	EIA Reference Case	
	60	19.4	19.7	19.6	20.0	20.9	19.6	20.5	
_	70	23.3	23.6	23.6	23.9	24.8	23.5	24.4	
ldd/;	Low	18.3	18.6	18.6	18.9	19.8	18.5	19.4	
ice (\$	SPA Curve	31.0	31.3	31.2	31.5	32.4	31.2	32.0	
Oil Price (\$/bbl)	High	43.5	43.8	43.7	44.0	44.9	43.7	44.4	
	Forward Curve	18.3	18.6	18.6	18.9	19.8	18.5	19.4	
	EIA Reference Case	26.8	27.1	27.1	27.4	28.3	27.0	27.9	

Source: Bloomberg & SP Angel Data

NOTE: Base Case Assumptions used for all other parameters

Table 11 – Impact of Variation in Oil & Gas Price on NAV(D) (p/share)

		Gas Price (\$/mcf)						
		5.00	7.50	Low	SPA Curve	High	Forward Curve	EIA Reference Case
	60	0.52	0.53	0.52	0.53	0.56	0.52	0.55
~	70	0.62	0.63	0.63	0.64	0.66	0.63	0.65
qq/	Low	0.49	0.50	0.50	0.50	0.53	0.49	0.52
Oil Price (\$/bbl)	SPA Curve	0.83	0.84	0.83	0.84	0.86	0.83	0.85
oil Pr	High	1.16	1.17	1.17	1.17	1.20	1.17	1.19
0	Forward Curve	0.49	0.50	0.50	0.50	0.53	0.49	0.52
	EIA Reference Case	0.71	0.72	0.72	0.73	0.76	0.72	0.74

Source: Bloomberg & SP Angel Data

NOTE: Base Case Assumptions used for all other parameters

Discount Rate

In assessing the value of an oil company's asset we start with a basic discount rate of 10% which is the typical discount rate adopted by the O&G industry to determine the unrisked economic value of the Oil & Gas in the ground. In determining an overall risked NAV_(D), however, we also need to take account of two additional risk premia by adding to the basic discount rate an assessment of: (i) Geopolitical Risk; and (ii) Business Execution Risk.

The assessment of Geopolitical and Business Execution Risks are difficult to quantify as it is subjective and varies from person to person and at what point in time it is applied. It is a subjective assessment of a management's ability to execute its business plan effectively in the face of operational, political, environmental and other exogenous factors.

For example, an experienced management with a solid track record in benign onshore location near infrastructure will have a lower risk premia than an identical asset operated by a less experienced management, in a country with a hostile government in an offshore setting where there is no infrastructure. The overall discount rate is a product of the base discount rate, Geopolitical Risk and Business Execution Risk. Our estimate of these risks, and our comments, are provided in Table 12.

Risk Parameter	Value	Comment
Geopolitical Risk	0.25%	While the tax regime has been in flux for a number of years, and past changes have been regressive, recent changes to the fiscal terms have generally been supportive and promoted investment. However, this offset to some extent by the excessive interference from local planners and environmental activists.
		Nevertheless, we believe that the United Kingdom does not carry a significant geopolitical risk premium.
Business Risk	-	The Company is well positioned for the next stage,
Base Discount Rate	10.00%	Convention widely used by the O&G industry to determine the unrisked economic value of the Oil & Gas in the ground.
Overall Discount Rate	10.25%	-

Table 12 – Base Case Summary

Source: SPA estimates

Given the impact that discount rate has on value, we have provided a ready reckoner (Table 13 and Table 14) which details the impact of the variation in the contribution that the component risk premia or discounts have on the base case Risked NAV.

Table 13 – Impact of Variation in Risk Premium on NAV_(D) (\$mm)

			Business Risk Premium						
		(3.0%)	(2.0%)	(1.0%)	-	1.0%	2.0%	3.0%	
F	(3.0%)	45.6	42.6	39.9	37.5	35.3	33.3	31.5	
Risk Premium	(2.0%)	42.6	39.9	37.5	35.3	33.3	31.5	29.9	
k Pre	(1.0%)	39.9	37.5	35.3	33.3	31.5	29.9	28.3	
	-	37.5	35.3	33.3	31.5	29.9	28.3	26.9	
olitica	1.0%	35.3	33.3	31.5	29.9	28.3	26.9	25.7	
Geopolitical	2.0%	33.3	31.5	29.9	28.3	26.9	25.7	24.5	
G	3.0%	31.5	29.9	28.3	26.9	25.7	24.5	23.4	

Source: SP Angel estimates

NOTE: Base Case Assumptions used for all other parameters

			Business Risk Premium							
		(3.0%)	(2.0%)	(1.0%)	-	1.0%	2.0%	3.0%		
E	(3.0%)	1.22	1.14	1.07	1.00	0.94	0.89	0.84		
Risk Premium	(2.0%)	1.14	1.07	1.00	0.94	0.89	0.84	0.80		
k Pre	(1.0%)	1.07	1.00	0.94	0.89	0.84	0.80	0.76		
	-	1.00	0.94	0.89	0.84	0.80	0.76	0.72		
olitica	1.0%	0.94	0.89	0.84	0.80	0.76	0.72	0.68		
Geopolitical	2.0%	0.89	0.84	0.80	0.76	0.72	0.68	0.65		
G	3.0%	0.84	0.80	0.76	0.72	0.68	0.65	0.62		

Table 14 – Impact of Variation in Risk Premium on NAV_(D) (p/share[‡])

Source: SP Angel estimates

NOTE: Base Case Assumptions used for all other parameters

Technical to Commercial Success Rate

Once a hydrocarbon accumulation is discovered there is still a need to appraise it to ascertain individual reservoir and hydrocarbon production criteria. Whether a discovery ultimately becomes commercial is dependent on a number of key factors, notably (i) hydrocarbon (oil or gas, or combination of both); (ii) recoverable volume; (iii) drainage per well; (iv) drive (expansion, gas, for support, etc.); and (iii) production rate.

In addition to these subsurface specific factors, there is also a need to take into account certain topside factors, such as whether the asset is onshore or offshore, whether there is a readily available market for the hydrocarbon produced, distance to market and more importantly a means to get it there.

Nevertheless, we recognise that this is a judgement based on our experience and empirical data based on exploration worldwide, and as such may be too conservative. Consequently, we have assessed the impact that varying the technical to commercial chance of success ("COS_c") has on the overall valuation of the Company. Our analysis is provided in Table 15 (\$mm) and Table 16 (p/share).

Table 15 – Impact of Variation in SPE PRMS Category and CONV COS_c on NAV_(D) (\$mm)

			Oil Price (\$/bbl)/Price Scenario				
		P ₉₀	P ₅₀	PBEST	P ₁₀		
Technical to Commercial Success rate (CoS _c)	100.0%	5.3	26.5	73.3	200.8		
	75.0%	4.6	21.5	56.6	153.1		
e (CoS _c)	45.0%	3.7	15.5	36.5	95.9		
to Col s rate	37.5%	3.5	14.0	31.5	81.6		
chnical t Success	35.0%	3.4	13.5	29.8	76.9		
Techr Su	32.5%	3.4	13.0	28.2	72.1		
	30.0%	3.3	12.5	26.5	67.3		

Source: SPA Data

NOTE: Base Case Assumptions used for all other parameters

Table 16 - Impact of Variation in SPE PRMS Category and	d CONV COS _c on NAV _(D) (p/share)
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			Oil Price (\$/bbl)/Price Scenario				
		P ₉₀	P50	PBEST	P ₁₀		
_	100.0%	0.14	0.71	1.95	5.36		
Commercial ate (CoS _c)	75.0%	0.12	0.57	1.51	4.09		
ommerc e (CoS _c)	45.0%	0.10	0.41	0.97	2.56		
	37.5%	0.09	0.37	0.84	2.18		
Technical to Success ra	35.0%	0.09	0.36	0.80	2.05		
Techi Su	32.5%	0.09	0.35	0.75	1.92		
	30.0%	0.09	0.33	0.71	1.80		

Source: SPA Data

NOTE: Base Case Assumptions used for all other parameters

Production, Work Programme & Cash Flow

The Company has an active programme over the next 18 months, with the majority of their near term activity focused on development. Further prospectivity is offered by its funded exploration programme.

Work Programme

Figure 12 – Work Programme

The Company has an active work programme over the next 18 months, principally constituted of the continued appraisal of its Wressle field and the immediate next steps associated with the Keddington acquisition (workover and step out exploration well). Our outlook for the Company's work programme is illustrated in Figure 12.

	Period								
	2H'15	1H'16	2H'16	1H'17	2016	2017	2018	2019	2020
Biscathorpe			100	8	8	1000	000		8
Keddington	• •					I	I	I	
Louth			۲	$\sim 10^{\circ}$	⊙♦	8	8	8	8
Wressle	- A.	٥	8	8	8	000	8	8	1
Legend									
Corporate	 Seismi Study 	с		m Dr ⊙	illing	App Wor	oration raisal kover/ elopment	}	
Production First Oil	Note:	Fir Co	m ntingent						

Source: Company & SPA data

Production

The farmin to Keddington provides the Company with immediate cash flow, albeit at relatively low levels. However, what this does do is demonstrate intent, in that it is further evidence on the Company's plan moving forwards; our outlook for the Company's production is illustrated in Figure 13.

Cash Flow

Based on our outlook for the work programme and cost estimates, we believe that outside of its expenditure on its current programme, there will be some monies left over to seek new opportunities.

Should the Company wish to accelerate its development programme, further funding could then be required, depending on the extent to which it wants to accelerate its programme; our estimates for the free cash flow (operating cash flow less contractual costs) is illustrated in Figure 14.





Source: SPA estimates

SP Angel Earnings Estimates

Income Statement

YE Dec (\$mm unless stated)	2014	2015E	2016E	2017E
Gas (mm cfpd)	-	-	-	-
Oil (bpd)	-	3.35	11.17	10.80
Total Production (boepd)	-	3.35	11.17	10.80
Revenue	-	0.02	0.25	0.28
Operating Costs	(0.55)	(0.55)	(0.25)	(0.25)
Exploration Costs	-	-	-	-
EBITDA	(0.55)	(0.54)	(0.00)	0.03
DD&A	-	(0.03)	(0.00)	(0.00)
Exceptional Items	-	-	-	-
Other Items	-	(0.01)	(0.00)	(0.00)
EBIT	(0.55)	(0.57)	(0.01)	0.03
Net Interest	0.00	0.00	0.00	0.00
EBT	(0.55)	(0.57)	(0.00)	0.03
Тах	(0.00)	-	(0.04)	(0.08)
Net Income	(0.55)	(0.57)	(0.04)	(0.04)

Source: SP Angel

Statement of Financial Worth

YE Dec (\$mm unless stated)	2014	2015E	2016E	2017E
Intangible Assets	0.83	3.22	3.22	3.22
Tangible Assets	-	0.09	0.09	0.09
Other	-	-	-	-
Fixed Assets	0.83	3.31	3.31	3.31
Cash	3.47	1.60	1.64	1.71
Investments	0.02	0.02	0.02	0.02
Receivables	0.03	0.03	0.03	0.02
Other	-	-	-	-
Current Assets	3.53	1.65	1.68	1.75
Total Assets	4.36	4.96	5.00	5.07
Payables	(0.26)	(0.21)	(0.17)	(0.13)
Finance Debt	-	-	-	-
Provisions	-	-	-	-
Other	-	-	-	-
Liabilities	(0.26)	(0.21)	(0.17)	(0.13)
Net Book Value	4.10	4.75	4.83	4.93

Source: SP Angel

Cash Flow

YE Dec (\$mm unless stated)	2014	2015E	2016E	2017E
Operations	(0.55)	(0.57)	(0.01)	0.03
Working Cap	-	0.06	0.04	0.04
Other	0.20	0.03	0.00	0.00
Operating cash flow	(0.35)	(0.49)	0.04	0.07
Servicing of Finance	0.00	0.00	0.00	0.00
Net Cash Income	(0.35)	(0.49)	0.04	0.07
Net Cap Ex	(0.79)	(2.39)	-	-
Net Acquisitions	-	-	-	-
Net Divestments	-	-	-	-
Net Cash Flow	(0.79)	(2.39)	-	-
Issue of Shares	3.75	1.00	-	-
Net Movement in Debt	-	-	-	-
Other	-	-	-	-
Net financing	3.75	1.00	-	-
Net Cash Flow	2.61	(1.88)	0.04	0.07
Source: SP Angel				

Ownership

Top 5 Shareholders ()



Source: Vickers & SP Angel data

Research Disclosures

Zac Phillips

Zac has in excess of 17 years' experience in Oil & Gas and finance, working for companies such as BP, Chevron, Merrill Lynch and ING Barings, where he undertook finance or finance related roles. Given his Chemical Engineering degree and PhD, Zac's career has focused on the economics of investment, and its assessment, on a range of projects from process change implementation, to operating plants and companies.

Zac's extensive Oil & Gas financial and technical experience has ably lent itself to the valuation of exploration and producing Oil & Gas assets, especially where complex financial structures define companies' access to the economic benefits of ownership. Latterly, Zac was the CFO to Dubai World's Oil & Gas business (DB Petroleum), with responsibility for risk management, valuation and the authoring of investment proposals. During this time, Zac valued in excess of 152 transactions with a combined transaction value of in excess of \$40bn.

Zac has an Honours Degree in Chemical Engineering from Wales and a PhD in Chemical Engineering from Bath University. He is a member of the Society of Petroleum Engineers, Institute of Chemical Engineers, American Association of Petroleum Geologists, the Association of International Petroleum Negotiators and is an Approved Person under the Financial Conduct Authority in the United Kingdom.

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Table 17 – SP Angel Corporate Finance Research Recommendations

Recommendation	Coverage Universe		Investment Banking Clients		
	Number	% of total	Number	% of total	
Buy	26	67%	16	62%	
Hold	5	13%	2	8%	
Sell	-	-	-	-	
N/R	8	21%	8	31%	
Total	39	100%	26	100%	

Source: SP Angel

Table 18 – SP Angel Corporate Finance Research Breakdown – Investment Banking Clients

Category	Number	% of Total
Investment Banking Clients	26	67%
Non-Associated	13	33%
Total	39	100%

Source: SP Angel

Table 19 – SP Angel Corporate Finance Research Breakdown – Sector Recommendations

Sector	Buy	Hold	Sell	N/R	Total
Metals & Mining	15	2	-	1	18
Oil & Gas	6	2	-	-	8
Property	-	-	-	1	1
Technology	5	1	-	2	8
Other	-	-	-	4	4
Total	26	5	-	8	39

Source: SP Angel

SP Angel Corporate Finance LLP definition of research ratings:

Expected performance over 12 months

Buy - Expected return of greater than +10% Hold - Expected return from -10% to +10% Sell - Expected return of less than -10%

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