Allenby Capital

Company Note

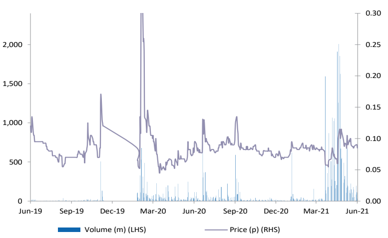
Update

08 June 2021

Corporate

Current price	**0.085p**
Sector	**Oil & Gas**
Code	**BOIL.L**
AIM	**AIM**

Share Performance



	1m	3m	12m
BOIL.L	-12.8%	0.0%	+6.2%

Source: Thomson Reuters, Allenby Capital

Share Data		
Market Cap (£m)		**8.94**
Shares in issue (bn)		**10.43**
52 weeks (p)	High	Low
	0.14	**0.06**
Financial year end		**31 December**

Source: Company Data, Allenby Capital

Key Shareholders	
Hargreaves Lansdown	10.26%
JIM Nominees	10.02%
Barclays Direct Investors	4.79%
Vidacos Nominees	4.40%
Premier Miton Group	3.87%

Source: Argus Vickers, Allenby Capital

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Baron Oil plc (BOIL.L)

Chuditch seismic reprocessing underway

Baron Oil is very much a play on its high-impact Chuditch natural gas project in the Timor Sea in which it has a 63.75% effective stake. Chuditch, we believe, has excellent credentials in terms of critical mass for development and proximity to infrastructure. In principle, Chuditch could be connected relatively easily to the existing Santos operated pipeline from the Bayu-Undan field to its LNG plant near Darwin. Chuditch has low geological risk being based on a Shell discovery in 1998 and possibly has significant liquids exploration upside. Baron Oil has embarked on a $3.5m work programme leading to a drill or drop decision by November 2022. The key element concerns the reprocessing and evaluation of legacy 3-D seismic which should further de-risk the project and greatly increase its attraction to potential farm-in partners. TGS, a leading geoscience specialist, has recently commenced the reprocessing and evaluation work. Based on the terms of the PSC contingent drilling will need to be undertaken in 2023.

- **Chuditch PSC:** Chuditch lies in the Timor Sea 185 km south-east of the southern Timor-Leste coast, 400km north-west of Darwin and 120 km north-east of Santos's Bayu-Undan giant condensate/gas field (recoverable reserves 967mm boe). The Chuditch PSC ownership is Baron Oil 63.75% (indirect), Singapore-based SundaGas Pte Ltd 11.25% and the Timor-Leste NOC 25%. The operator is a jointly owned SundaGas/Baron company.

- **Resource base:** The Chuditch-1 discovery was made in the Jurassic Plover sandstones, a regionally prolific reservoir formation. Water depths in the Chuditch PSC are around 70m which enables jack-up rigs to be used rather than more expensive semi-submersibles. Baron's estimate of mean prospective gas resources in the PSC is 3.53 tcf (588mm boe) gross. Given the prevalence of wet gas in the Bonaparte Basin, the resource base could be significantly higher than indicated. Shell put the geological chances of success for the original discovery at 100% but the latest resource estimate includes several additional prospects and a lead. Baron believes that the juxtaposition of the prospects and leads to the original discovery could be pointing to one large continuous accumulation. This would have profoundly positive implications for project economics.

- **Work programme:** Baron has indicated that it expects the results of the seismic reprocessing to be delivered between Q4 2021 and Q2 2022. In parallel an evaluation programme will be undertaken prior to the drill or drop decision in Q4 2022. Given the lead time involved for well planning, Baron will probably need to secure a free-carry farm-in partner by Q2 2022 to drill in 2023. The overall cost of the TGS reprocessing contract is according to Baron slightly less than the $1.6m previously estimated. In addition, the Chuditch work programme involves outlays of a further $1.9m in 2021/22.

- **Valuation:** We are maintaining our risked sum-of-the-parts valuation for Baron at £25.4m or 0.244p/share, given in our March 25, 2021 report. Note, for Chuditch we have assumed a free-carry farm-in and allowed for a concession on project equity of 50% for this purpose. Our risking factor for Chuditch is 33% through to the FEED. In a success case our valuation for Chuditch would be £67.2m or 0.645p/share.

Year End: 31 December					
(£'000)	**2018**	**2019**	**2020**	**2021E**	**2022E**
EBITDA	(549)	(442)	(710)	(871)	(906)
NET CASH / (NET DEBT)*	1,709	347	1,311	1581	(663)

Allenby Capital acts as Nomad & Broker to Baron Oil plc (BOIL.L). *Including restricted cash.

Equity Research

Chuditch development programme and farm-in potential

We are confident that Baron will be able to secure a free-carry farm-in partner to undertake exploration drilling at Chuditch. The caveat is that the seismic reprocessing and evaluation exercise conclusively supports project prospectivity. As we have commented previously, the most obvious partner is Santos Ltd, Australia's second largest oil and gas producer, the largest player in the Bonaparte Basin and the only producer presently operating in Timor-Leste waters. Santos also operates the 26-inch pipeline from the Bayu-Undan field to its Wickham LNG plant near Darwin. The plant has a capacity of 3.7mm tonnes/year of LNG requiring approximately 180 bcf/year of feedstock. Wickham ranks as a medium to large scale LNG facility based on a single train liquefaction unit. There are other much larger facilities in terms of total capacity but these are based on multi-liquefaction trains.

We believe there are no physical impediments to connecting a prospective development at Chuditch to the Bayu-Undan to Wickham pipeline. Furthermore, Santos has been seeking new feedstock sources for Wickham given declining output from the Bayu-Undan field. Falling utilisation at Wickham should however be stemmed near-term by infill drilling at Bayu-Undan. Medium to longer term the issue of Wickham utilisation has been addressed by the recent decision of a Santos led consortium to pursue development of the Barossa field 300 km north of Darwin in Australian waters. Barossa, according to industry reports, has 4.5 tcf of recoverable gas and 50mm barrels of condensate making it a world class field. In the case of gas, development will be via sub-sea production wells and infrastructure linked to the Bayu-Undan to Darwin pipeline. Liquids will be produced using an FPSO (floating production and storage and offloading) as has been the case at Bayu-Undan. First production at Barossa is scheduled for 2025. The life of the field is expected by Santos to be 15 to 20 years.

Barossa's gas resources would be sufficient to fully utilise Wickham's existing 3.7mm tpy LNG capacity. Broadly 1 tcf of gas is required to produce 0.8mm tpy of LNG over 20 years. Given the prospective development of Barossa, Wickham's capacity would therefore need expanding to handle a potential major field development at Chuditch. We understand the feasibility of expanding Wickham has been considered in the past and according to Baron Santos is considering a capacity expansion to 10mm tonnes/year.

In principle, an extra liquefaction unit can be added relatively easily assuming permitting and the availability of space and the existence of site infrastructure. It should be noted however that the capital cost of a liquefaction train is substantial. According to industrial sources, liquefaction trains account for 50% or more of the cost of an LNG plant. Based on typical liquefaction CAPEX costs of over $1,200/tpa we could be looking at a capital cost of over $2bn to add a train the size of the existing Wickham facility ($1,200/tpa*3.7mm tpy*0.5). Baron's mean estimate of prospective resources at Chuditch of 3.53 tcf would need a liquefaction train with a capacity of approximately 2.8 tpa of LNG. Based on the above formula the CAPEX could be around $1.7bn

A key conclusion of the above is that any prospective Chuditch joint-venture partner would need to have a very clear idea for downstream development assuming a gas discovery. Conceptually a Chuditch gas field could also be used for a gas-power project in the Northern Territory. Assuming a wet gas discovery liquids production could be handled using a FPSO vessel.

Chuditch well drilling costs and potential development programme

Baron has intimated previously that the intention would be to drill back-to-back on the Chuditch licence one appraisal and one exploration well in 2023. Drilling costs are believed to be modest at around $12m on a dry hole basis. Depressing costs are relatively shallow water at significantly less than 100m which enables the use of jack-up rigs, the ready availability of rigs in SE Asia and a moderate TD (total depth) objective of less than 3,000m.

For development to be pursued gas will need to be brought to the surface under test and positive results will be required for key parameters such as flow rates, reservoir permeability and well EURs (estimated ultimate recovery rates). It should be remembered here that Shell's Chuditch-1 well was not tested.

In a success case for the drilling programme the next stage in proceedings would probably be the FEED (front end engineering and design) process. This is effectively a feasibility study which may also be combined with further appraisal drilling. We would expect the FEED to be undertaken in 2024/25. Assuming satisfactory results the FID (final investment decision) and the EPC (engineering procurement and construction) would follow. Given the scope and potential scale of a potential Chuditch development project, we think it unlikely that it could be brought on-stream before 2027. Chuditch development would also need coordinating with downstream investment presumably in the form of LNG.

The question arises as to whether Baron/SundaGas could undertake an independent Chuditch development programme. We think this is extremely unlikely given the following:

- The scale of the capital requirement through EPC
- Baron's lack of technical resources and experience as an offshore operator
- The need for integration downstream into an LNG or a gas-power project

Financials

2020

There were no major surprises in Baron's recently announced statement for 2020. Administrative expenses at £710,000 were however higher than our forecast of £460,000 and up 61% from 2019. The variance reflected a combination of share-based payments, an upward adjustment to remuneration after the pay cuts of the previous year and higher outlays on professional services. The year-end cash balance of £1.31m was modestly below our forecast of £1.40m. The cash outflow for 2020 of £1.45m before the £2.50m gross (£2.30m net) equity raise in February 2020, reflected an outflow of £0.92m on operations and exploration activity and outlays of £0.53m on intangibles. The bulk of the latter related to Baron's 33.3% investment in and advances to SundaGas Timor-Leste (Sahul) Pte Ltd. This is the parent company of the operator of the offshore Timor-Leste TL SO-19-16 PSC.

The February 2020 raise was undertaken at 0.1p/share.

2021/22

Baron's near-term work programme is under-pinned financially thanks to the £3.00m gross (£2.77m net) equity raise in March/April. The raise was undertaken at 0.05p/share. For 2021 we forecast a financing requirement of £2.50m split operations £0.83m and project-related spending on intangibles £1.67m. We believe the underlying operational cash outflow in 2021 will increase from the previous year, given the consolidation of the SundaGas investment. This follows the increase in Baron's stake from 33.3% to 85.0% in April 2021. Our forecast includes £0.14m for this factor.

The bulk of the outlays on intangibles in 2021 reflects the Chuditch project of which the TGS seismic reprocessing and evaluation contract is the key part. We understand that payments against the contract will be phased with £0.9m payable at commencement. Further payments of about £0.7m will be made by end Q1 2022. In addition, we have included £0.7m for other Chuditch-related expenditure in 2021, taking the total for that year to £1.6m.

Outlays related to Baron's 15% interest in the Corallian Energy operated Inner Moray Firth licence P2478 are likely to be modest in 2020. We have allowed £0.05m for this purpose. The interesting aspect to P2478 is the large Dunrobin prospect. A decision here to drill or drop is required by July 2023. Baron's project on Block XXI in Peru to drill the El Barco-3X prospect looks like being severely delayed due to Covid-19 restrictions on movement in the country. Drilling now appears impossible in 2021. We have consequently moved expenditure on this project from 2021 to 2022. Currently, Block XXI is in Force Majeure. Baron is seeking a three-year extension to the licence.

At the end of May 2021, we estimate that Baron had a cash position of about £2.6m. By end 2021 we look for this to decline to £1.58m but this still implies a comfortable position financially early in 2022. For 2022 as a whole, we forecast a financing requirement of £2.24m split operations £0.89m and outlays on intangibles £1.35m. In terms of the latter, Chuditch accounts for £0.88m, Peru Block XXI £0.43m and Inner Moray Firth £0.05m. Based on our financing requirement there would be a theoretical net debt position at 2022 year-end of £0.66m.

Exhibit 1: Summary financials

Income statement							
Year-end December (£'000)	**2016**	**2017**	**2018**	**2019**	**2020**	**2021e**	**2022e**
EBITDA	-700	-510	-549	-442	-710	-871	-906
Exploration and evaluation expenditure	-739	-109	-1526	-160	-145	0	0
Intangible asset impairment	-356	-1837	-1360	-1047	57	0	0
Receivables' impairment	73	43	-54	16	74	0	0
Deconsolidation of Colombia	31	831	0	0	0	0	0
Administration expenses	-700	-510	-549	-442	-710	-871	-906
(Loss)/profit on exchange	1131	-508	130	-41	-157	0	0
Other operating income	319	21	83	0	0	0	0
Operating loss	-241	-2069	-3276	-1674	-881	-871	-906
Associated undertaking	0	0	0	0	-44	0	0
Finance cost	-35	-8	-10	-1	0	0	0
Finance income	101	19	6	1	5	0	0
Loss on ordinary activities before tax	-175	-2058	-3280	-1674	-920	-871	-906
Income tax credit/(expense)	-113	519	785	0	0	0	0
Loss on ordinary activities after tax	**-288**	**-1539**	**-2495**	**-1674**	**-920**	**-871**	**-906**

Balance sheet							
Year-end December (£'000)	**2016**	**2017**	**2018**	**2019**	**2020**	**2021e**	**2022e**
Non-current assets							
Property, plant and equipment	3	0	0	0	43	43	43
Intangibles	1325	1260	66	5	18	1687	3044
Goodwill	0	0	0	0	0	0	0
Associated undertaking	0	0	0	0	151	151	151
Total	**1328**	**1260**	**66**	**5**	**212**	**1881**	**3238**
Current assets							
Trade and other receivables	2070	18	503	49	376	376	376
Cash	5231	3992	1838	472	1311	1581	500
Other	0	0	0	0	0	0	0
Total	**7301**	**4010**	**2341**	**521**	**1687**	**1957**	**876**
Total assets	**8629**	**5270**	**2407**	**526**	**1899**	**3838**	**4114**
Current liabilities							
Trade payables	1054	195	594	64	58	100	120
Taxes payable	1502	812	23	7	16	16	16
Debt	0	0	0	0	0	0	1163
Total	**2556**	**1007**	**617**	**71**	**74**	**116**	**1299**
Non-current liabilities							
Lease finance	0	0	0	0	29	29	29
Total liabilities	**2556**	**1007**	**617**	**71**	**103**	**29**	**29**
Net assets	**6073**	**4263**	**1790**	**455**	**1796**	**3693**	**2787**
Net cash/(debt)	**5231**	**3992**	**1838**	**472**	**1311**	**1581**	**-663**

Shareholders' equity							
Share capital	344	344	344	482	1107	2607	2607
Reserves	5729	3919	1446	-27	689	1086	180
Total equity	**6073**	**4263**	**1790**	**455**	**1796**	**3693**	**2787**
Total equity and liabilities	**8629**	**5270**	**2407**	**526**	**1899**	**3838**	**4114**
Shares in issue end year (m)	1376.4	1376.4	1376.4	1926.4	4426.4	10426	10426

Cash flow statement							
Year-end December (£'000)	**2016**	**2017**	**2018**	**2019**	**2020**	**2021e**	**2022e**
Loss attributable to controlling interests	-32	-1539	-2495	-1674	-920	-871	-906
Depreciation, amortisation and impairments	331	2	1360	1047	-57	0	0
Share based payments	0	41	33	0	81	0	0
Finance income	-101	-19	-6	-1	-5	0	0
Tax benefit	113	-519	-785	0	0	0	0
Associates	0	0	0	0	44		
Foreign exchange translation	-1319	512	-73	-4	-52	0	0
Other	-257	-347	0	0	0	0	0
Operating cash flow before working capital	-1265	-1869	-1966	-632	-909	-871	-906
Receivables (increase)/decrease	-440	2052	-485	454	-4	0	0
Tax paid	71	-4	-53	0	0	0	0
Payables (decrease)/increase	-692	-859	400	-546	-6	42	20
Net cash flow from operating activities	-2326	-680	-2104	-724	-919	-829	-886
Acquisition of intangibles	-493	-298	-66	-1047	-527	-1669	-1358
Cash previously not available now released	0	2674	0	0	0	0	0
Sale of intangible assets	1784	0	0	0	0	0	0
Other	183	19	6	1	-6	0	0
Share issues	0	0	0	408	2295	2768	0
Net cash flow	**-852**	**1715**	**-2164**	**-1362**	**843**	**270**	**-2244**
Opening cash	**3010**	**2158**	**3873**	**1709**	**347**	**1190**	**1460**
Closing net cash/(debt)	**2158**	**3873**	**1709**	**347**	**1190**	**1460**	**-784**
Peru licence commitment guarantees	3073	119	129	125	121	121	121
Net cash/(debt) as per balance sheet	**5231**	**3992**	**1838**	**472**	**1311**	**1581**	**-663**

Capital expenditure		
Chuditch Timor-Leste 100%	1619	879
Block-XXI Peru 50%	0	429
P2478 Inner Moray Firth 15%	50	50
Total	**1669**	**1358**

Source: Source: Company; Allenby Capital

Valuation

We continue to use risked sum of the parts methodology for assessing valuation. Chuditch is overwhelmingly the key constituent part. Our valuation retains the same valuation quotient and risking factors for the project as previously of $0.50/boe and 33% respectively. A further adjustment has been made for the potential dilution of working interest to allow for free-carry farm-ins. For this purpose, we have assumed an approximate halving of working interest. In the case of Chuditch the valuation reflects a prospective interest of 32% rather than the current 63.75%.

Our absolute risked valuation for Baron across its three projects is $35.6m or £25.4m (£1=$1.40). This is unchanged from that given in our March 2021 report. On a per share basis the risked valuation on the 10.43 bn shares outstanding is 0.244p.

In a success case, our valuation across the three projects is $107m or £77m, equivalent to 0.739p/share. Taking Chuditch alone, our estimate of the valuation in a success case is $94m or £67.2m, equivalent to 0.645p/share. We define success as taking a project through to the FEED or feasibility study stage.

Exhibit 2: Baron Oil risked and diluted valuation summary

		Working interest	Net un-risked mean resources		Risking factor	Net risked mean resources	Valuation quotient	Un-risked valuation	Absolute		Risk adjusted valuation post farm ins
Basin	**Project**	**%**	**bcfe**	**boemm**	**%**	**boemm**	**$/boe**	**$m**	**$m**	**£m**	**p/share**
Bonaparte	Timor-Leste Chuditch	32.0	1129	188.1	33	62.9	0.5	94.1	31.4	22.5	0.215
Sechura	Peru Block-XX1	50.0	65	10.8	33	3.6	0.5	5.4	1.8	1.3	0.012
Moray Firth	UK P2478	8.0	94	15.6	30	4.7	0.5	7.8	2.3	1.7	0.016
Total			**1288**	**214.5**		**71.1**		**107.3**	**35.6**	**25.4**	**0.244**

Source: Allenby Capital

Note: Working interests have been adjusted where appropriate for anticipated farm-ins for the first stage of appraisal/exploration. Adjustments have been made to Timor Leste, Peru Block-XXI and Inner Moray Firth P2478.

Risking factors are Allenby inhouse probability estimates of commercialising projects at this stage.

The Chuditch risking factor is a composite of 40% for the discovery and prospects and 20% for the lead.

The shares in issue used in the per share calculation is 10.4264 bn.

Exchange rate: £1=$1.40.

Share price catalysts

Clearly, the most influential news flow relating to the stock is likely to relate to the Chuditch project. The key areas of interest are firstly, progress on the seismic reprocessing and evaluation study now underway and secondly farm-in news. Based on Baron's most recent statement news on seismic reprocessing is unlikely before Q4 2021. We nevertheless believe that it is possible that Baron could make broad qualitative statements about progress on the reprocessing front in the intervening period. Given that farm-in interest will to a large extent be contingent on the outcome of the seismic reprocessing/evaluation study we think it unlikely that there will be any news on the former until Q4 at the earliest.

As far as Peru is concerned, the logjam on advancing the El Barco 3X project will not be overcome until the current covid-19 epidemic subsides and Force Majeure is lifted. This will take several months. The granting of an extension to licence XXI would be a positive sign. In its most recent statement, Baron has indicated that it intends making a decision on drilling El Barco 3X in the second half of 2021.

We believe there could be interesting news flow relating to the Inner Moray Firth project in the coming months. This reflects the planned inclusion of the findings of a regional technical study undertaken by 'large European E&P company' in the work programme of the Corallian Energy led joint-venture. Baron has indicated that preparations are being made to undertake reprocessing of legacy seismic to help de-risk the apparently large Dunrobin prospect. Interestingly, Baron has suggested that Dunrobin is one of the few remaining targets in the North Sea with mean prospective resources of circa 100mm boe. It should also be noted that Baron continues to screen high-impact exploration and development opportunities. We believe an announcement on such an opportunity is a possibility in the coming months.

Disclaimer

Research Recommendation Disclosure

Peter J Dupont is the author of this research recommendation and is employed by Allenby Capital Limited as an Equity Analyst. Unless otherwise stated, the share prices used in this publication are taken at the close of business for the day prior to the date of publication. Information on research methodologies, definitions of research recommendations, and disclosure in relation to interests or conflicts of interests can be found at www.allenbycapital.com. Allenby Capital acts as Nomad and joint broker to Baron Oil plc.

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