Allenby CAPITAL

Company Note

Update

8 January 2021

Baron Oil plc (BOIL.L)

Major Chuditch resource upgrade

Baron Oil has announced a major resource upgrade to the Chuditch natural gas project in the Bonaparte Basin located in the Timor Sea. This is a high-impact former Shell project in which Baron has a 25% indirect interest. The upgrade reflects the effect of a new licence area, sub-surface evaluation work using legacy 2-D seismic and an increase in the recovery rate from 65% to 75%. The operator, Singapore-based SundaGas, identified an extension of an earlier Shell prospect and mapped the new large Chuditch NE lead. Gross un-risked prospective resources are now put by SundaGas at 3.53 tcf or 588mm boe, up 118% from the 1.62 tcf we had used previously. Significantly, the issues surrounding access to the Chuditch 3-D seismic that surfaced in September 2020 may now be nearing resolution. Reprocessing work will be undertaken by TGS, a leading geoscience specialist and should commence in the coming months. De-risking work will probably be a prelude to a Chuditch farm-out in 2022 and drilling in 2023.

- **Chuditch PSC:** SundaGas was granted the Chuditch PSC in December 2019 by ANPM, the Timor-Leste regulatory body. Chuditch lies in the Timor Sea 185km south east of the southern Timor-Leste coast and 400km north west of Darwin. Geo-physically, Chuditch lies towards the northern frontier of the Bonaparte Basin, an established hydrocarbon producing province. Chuditch lies about 150km north east of Santos's Bayu-Undan giant condensate and gas field (recoverable reserves 967mm boe). The Chuditch PSC ownership is: SundaGas 75% (including Baron's indirect 25%) and the Timor-Leste NOC 25%.

- **Resource base:** Shell discovered gas at Chuditch in 1998 in Jurassic Plover sandstones at 2,900m on the flank of a large-faulted structure. The gas in place for the Chuditch-1 discovery was 1.83 tcf gross. Three nearby prospects identified by Shell boosted this to 2.90 tcf gross which translated into prospective resources of 2.18 tcf based on a recovery rate of 75%. Recent evaluation work undertaken by SundaGas has increased prospective resources to 3.52 tcf or 587mm boe gross. Allowing for our commercial risking factor of 40% for the discovery and prospects and 20% for the Chuditch NE lead, risked resources for the Chuditch PSC would be 1.18 tcf gross. Baron's share is 295 bcf or 49mm boe against 27mm boe previously. Condensate is likely to provide upside in due course.

- **Work programme:** The 2021 Chuditch work programme will be focused on reprocessing and evaluating 1,270 km^2 of 3-D seismic. The work will take approximately 12 months and cost around $1.5m gross. It should provide the final stage in the geological de-risking process and provide a deep understanding of the sub-surface and assist in identifying drilling locations. Project expenditure of a further $1.5m gross is planned for 2022

- **Valuation:** Our valuation methodology continues to reflect a risked sum of the projects' calculation. We have used a net corporate resource base of 56.7mm boe risked for the commercial chances of success and a valuation quotient of $0.5/boe. Our risked absolute valuation for Baron has been upgraded from £14.1m to £22.1m to reflect the uplift in the Chuditch resource base. After diluting for our forecast cash outflow in 2021 and 2022, our risked and diluted valuation per share is 0.243p against 0.142p previously.

Year End: 31 December					
(£'000)	**2018**	**2019**	**2020E**	**2021E**	**2022E**
EBITDA	(549)	(442)	(460)	(510)	(612)
NET CASH/(NET DEBT)*	1,709	347	1276	(227)	(2,360)

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

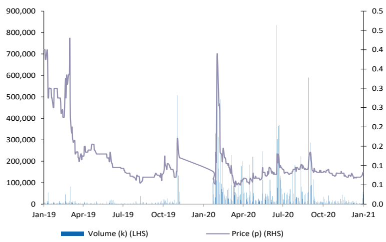
Please refer to the last page of this communication for all required disclosures and risk warnings.

Corporate

Current price	**0.08p**

Sector	**Oil & Gas**
Code	**BOIL.L**
AIM	**AIM**

Share Performance



	1m	3m	12m
BOIL.L	7.8%	-2.0%	-4.9%

Source: Thomson Reuters, Allenby Capital

Share Data		
Market Cap (£m)		**3.54**
Shares in issue (bn)		**4.43**
52 weeks	High	Low
	0.39	**0.05**
Financial year end		**31 December**

Source: Company Data, Allenby Capital

Key Shareholders	
JIM Nominees Ltd	12.88%
VIDACOS Nominees Ltd	6.33%
Interactive Investor Services	5.88%
Barclays Direct Investing Nom	5.49%
HSDL Nominees	4.95%

Source: Company Data, Allenby Capital

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Equity Research

Chuditch PSC working interest

Baron Oil has a 25% indirect working interest in the Chuditch project through its 33.33% ownership of the SundaGas (Holdings) Pte Ltd subsidiary, SundaGas (TLS) Pte Ltd. SundaGas (TLS), which owns 100% of SundaGas Unipessoal Ltd, the operator, has a 75% interest in the project. The Timor-Leste NOC (national oil company), Timor Gap, owns the balance and is free-carried through development. SundaGas and Baron split expenditure pro-rata to their shareholdings in SundaGas (TLS) i.e. 66.67% and 33.33% respectively.

The Chuditch PSC was originally granted by ANPM on December 18, 2019 for two years. Due to circumstances beyond its control, largely surrounding access to the 3-D seismic, development work on the project has been considerably delayed. The operator, SundaGas has put forward a new plan of campaign to ANPM which it believes will resolve the situation regarding access to the 3-D seismic and other matters. SundaGas's proposals include a one-year extension of the PSC to take account of the delays.

Exhibit 1: Chuditch resource base

Project	Interest %	Status	Source	GIIP bcf bn	Recovery rate %	Gross unrisked prospective resources bcf bn	Net unrisked prospective resources bcf bn	Risking factor %	Risked prospective resources Gross bcf bn	Net bcf bn	Net boe m
Chuditch-1	25	Discovery	Shell	1830	75	1373	343	40	549	137	23
Chuditch West	25	Prospect	Shell	129	75	97	24	40	39	10	2
Chuditch South West	25	Prospect	Shell	581	75	436	109	40	174	44	7
Chuditch North (Bilby) ZOCA 91-09	25	Prospect	Shell	361	75	271	68	40	108	27	5
Previously reported discovery and prospects				**2901**		**2176**	**544**		**870**	**218**	**36**
Chuditch North (Bilby) in Chuditch PSC not in ZOCA 91-09	25	Prospect ext	Shell	258	75	194	48	40	77	19	3
Chuditch North East	25	Lead	SundaGas	1544	75	1158	290	20	232	58	10
Total				**4703**		**3527**	**882**	**33**	**1179**	**295**	**49**

Source: Company; Allenby Capital

Why has Chuditch not been developed before?

Chuditch would appear to have excellent development credentials reflecting the following:

- The prospective resource base is substantial at 588mm boe.
- The water depth is not in the least challenging at 60-80m which enables jack-up rather than more expensive semi-submersible drilling rigs to be used.
- At around 3,000m the drilling depth is none too daunting and as far as we are aware there are no major drilling challenges geologically.
- Evaluation work reveals the potential for a large gas accumulation reflecting the near-coincidence of prospect and discovery spill points. This could have positive implications for production economics.
- Conceptually, Chuditch has several development opportunities with the most obvious perhaps being a tie-in to the Santos Bayu-Undan to Darwin pipeline. This in turn links to the Wickham Point LNG facility at the latter location. An alternative would be a development linked to a prospective Greater Sunrise project about 100km to the north. Another strategy would be to establish a floating LNG facility.

The question arises as to why Chuditch has not been developed over the past 20 or so years since Shell's original discovery. There are several explanations. These include the following: the relative remoteness of the Bonaparte Basin notwithstanding earlier development activity, maritime boundary issues between Timor-Leste and Australia, disputes between operators and Timor-Leste over development options and technical and economic challenges based on a development involving constructing infrastructure to the Timor-Leste shoreline. The last mentioned would involve crossing the Timor Trough at depths of up to 3,000m. It should also be noted that the oil & gas majors have substantially reduced their presence in south-east Asia partly for strategic reasons and partly due to an extended period of depressed LNG prices. ConocoPhillips, originally a pioneer in the Bonaparte Basin, is a key example of a major exiting the region.

Japan-Korea LNG marker surges: Interestingly we note that LNG prices have surged in recent months with the Japan-Korea marker hitting $14/mm Btu in early 2021, up 7x on the Q2 2020 lows and around a six-year high. Prices have been buoyed by strong demand in the northern Pacific Rim (seasonally colder than normal conditions) and supply constraints at several key exporters, including those sourcing from the Australia NW Shelf.

Why has the recovery rate increased?

Shell originally put the gas recovery rate for Chuditch-1 within a range 55%-65%. SundaGas/Baron, however, believe that reflecting the advances in well completion technology over the past 20 plus years that recovery rates should have increased significantly. A range of 65%-85% is, therefore, now considered more appropriate. Our view is that a rate of around 75% is by no means unusual in major gas fields currently.

Potential development programme

The geoscience specialist TGS has been contracted to undertake 1,270 km² 3-D seismic reprocessing programme across the Chuditch licence. Work should commence shortly after the new contractual arrangements have been agreed with the Timor-Leste regulatory body ANPM. We would expect TGS to begin their work no later than the end of the first quarter of 2021, if a new agreement can be agreed in the coming weeks.

Assuming that the Chuditch project is satisfactorily de-risked geologically following the evaluation of the reprocessed 3-D seismic, the next development stage will be well planning. This will probably commence in earnest in 2022. We understand the initial plan is to drill one appraisal and one exploration well back-to-back. According to the prospective PSC terms and the lead times involved, the final drill or drop decision will need to be made by end 2022. We understand that dry well costs are likely to be modest at around $12m reflecting several of the factors mentioned previously. Post drilling in 2023 and assuming encouraging results, the project would then probably advance to the FEED (front end engineering and design) stage. It is, however, possible that further appraisal drilling will be required. The FEED would effectively be a feasibility study. The final stages of the project would be the FID (final investment decision) and the EPC (engineering, procurement and construction). We think it unlikely that a project on the scale and scope of Chuditch could be completed before 2026/27.

In our view, it is also unlikely that SundaGas/Baron would be involved operationally with a prospective Chuditch project much beyond 3-D seismic evaluation and de-risking. This reflects the sizeable requirement for engineering and financial resources for full-scale development. We would therefore expect SundaGas/Baron to seek a free-carry joint-venture partner post de-risking in 2022 if not before. As we have alluded to previously, Santos is the most obvious partner or buyer given the proximity of the Bayu-Undan to Darwin pipeline and the probable medium-term need for extra feedstock for its Wickham Point LNG facility.

Bonaparte development activity: We note that Santos is currently very active in undertaking development work in the Bonaparte Basin. In early December 2020 Santos announced a supply and purchase agreement for LNG with Mitsubishi using gas from the Barossa project about 300km north of Darwin. This was followed in early January 2021 by FID announcement for a $235m infill drilling programme at the Bayu-Undan field. Significantly, Santos mentioned that this would extend the life of both the field and the Wickham Point LNG facility. Elsewhere in the Bonaparte Basin, ASX-listed Carnarvon Petroleum recently announced a redevelopment project with AIM-listed Advance Energy for the Buffalo field.

Chuditch development cost

We believe phase 1 and 2 of the planned Chuditch development programme involving broadly 3-D seismic evaluation and well planning are likely to cost around $3m gross split more or less evenly between the two phases. Baron's share of the costs would, therefore, be approximately $1m (33% of the total) or £0.77m, assuming an exchange rate of £1=$1.30.

Financials

We believe Baron Oil's balance sheet was in good shape at 2020 year-end reflecting a timely £2.50m gross raise (£2.31m net) in February 2020 and subdued spending both in terms of G&A and projects. The company reported an unencumbered cash position of £1.80m at the end of June 2020 and we continue to look for £1.28m at end 2020.

We had been looking for rising cash needs in 2021 reflecting stepped-up development activity at Chuditch and the assumed drilling of the El Barco-3X exploration well on Block-XXI in the Sechura Basin in Peru. For the year we were forecasting a cash outflow of £1.50m which would imply a 2021 year-end net debt position of £0.23m. For the moment we are leaving our 2021 year-end net debt position unchanged but recognise that the situation could be more favourable by about £0.5m if El Barco drilling fails to materialise.

For 2022, we had been looking for a hefty cash outflow of £4.41m reflecting both the drilling of a well at Chuditch and at the Dunrobin prospect on licence P2478 located in the Inner Moray Firth. Given the delays in 3-D seismic reprocessing and evaluation, Chuditch drilling in 2022 is now practically impossible and in any case, we are assuming that wells will be financed by a farm-in partner. We have, therefore, removed our estimate of Chuditch drilling costs of £2.28m from the cash outflow in 2022 leaving it at £2.13m. The implied net debt position at end 2022 is now £2.36m, well down on £4.64m previously.

We believe the cash outflows forecast for 2021 and 2022 should be capable of being financed reasonably comfortably subject to the caveats that Chuditch development confirms prospectivity and SundaGas/Baron manage to attract farm-in interest. These are clearly the principal risks along with the LNG commodity price picture. In terms of LNG, the key indicator is the forward price curve rather than the spot price, given that we are looking at a long lead time project.

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 Undiluted	Diluted
Basin	**Project**	**%**	**bcfe**	**boemm**	**%**	**boemm**	**$/boe**	**$m**	**$m**	**£m**	**p/share**	**p/share**
Bonaparte	Timor-Leste Chuditch	25.0	882	147.0	33	48.5	0.5	73.5	24.2	18.7	0.421	0.208
Sechura	Peru Block-XX1	50.0	65	10.8	33	3.6	0.5	5.4	1.8	1.4	0.031	0.015
Moray Firth	UK P2478	8.0	94	15.6	30	4.7	0.5	7.8	2.3	1.8	0.041	0.020
Total			**1041**	**173.4**		**56.7**		**86.7**	**28.4**	**21.8**	**0.493**	**0.243**

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 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.

We dilute to reflect the need to finance cash outflows in 2021/22 of £3.64m. We have assumed that new money is raised at 0.08p/share resulting in the issue of 4.55bn shares

The fully diluted shares in issue used in the calculation is 8.98 bn.

Exchange rate: £1=$1.30.

Exhibit 3: Summary financials

Income statement (£'000)							
Year end December	**2016**	**2017**	**2018**	**2019**	**2020e**	**2021e**	**2022e**
EBITDA	-700	-510	-549	-442	-460	-510	-612
Exploration and evaluation expenditure	-739	-109	-1526	-160	0	0	0
Intangible asset impairment	-356	-1837	-1360	-1047	0	0	0
Receivables impairment	73	43	-54	16	0	0	0
Deconsolidation of Colombia	31	831	0	0	0	0	0
Administration expenses	-700	-510	-549	-442	-460	-510	-612
(Loss)/profit on exchange	1131	-508	130	-41	0	0	0
Other operating income	319	21	83	0	0	0	0
Operating loss	-241	-2069	-3276	-1674	-460	-510	-612
Finance cost	-35	-8	-10	-1	0	0	0
Finance income	101	19	6	1	0	0	0
Loss on ordinary activities before tax	-175	-2058	-3280	-1674	-460	-510	-612
Income tax credit/(expense)	-113	519	785	0	0	0	0
Loss on ordinary activities after tax	**-288**	**-1539**	**-2495**	**-1674**	**-460**	**-510**	**-612**

Balance sheet (£'000)							
Year end December	**2016**	**2017**	**2018**	**2019**	**2020e**	**2021e**	**2022e**
Assets							
Non-current assets							
Property, plant and equipment	3	0	0	0	0	0	0
Intangibles	1325	1260	66	5	657	1811	3346
Goodwill	0	0	0	0	0	0	0
Total	**1328**	**1260**	**66**	**5**	**657**	**1811**	**3346**
Current assets							
Trade and other receivables	2070	18	503	49	49	49	55
Cash	5231	3992	1838	472	1401	500	500
Other	0	0	0	0	265	265	265
Total	**7301**	**4010**	**2341**	**521**	**1715**	**814**	**820**
Total assets	**8629**	**5270**	**2407**	**526**	**2372**	**2625**	**4166**
Current liabilities							
Trade payables	1054	195	594	64	64	100	120
Taxes payable	1502	812	23	7	7	7	7
Debt	0	0	0	0	0	727	2860
Total	**2556**	**1007**	**617**	**71**	**71**	**834**	**2987**
Net assets	**6073**	**4263**	**1790**	**455**	**2301**	**1791**	**1179**
Net cash/(debt)	**5231**	**3992**	**1838**	**472**	**1401**	**-227**	**-2360**
Shareholders' equity							
Share capital	344	344	344	482	1107	1107	1107
Reserves	5729	3919	1446	-27	1194	684	72
Total equity	**6073**	**4263**	**1790**	**455**	**2301**	**1791**	**1179**
Total equity and liabilities	**8629**	**5270**	**2407**	**526**	**2372**	**2625**	**4166**
Shares in issue end year m	1376.4	1376.4	1376.4	1926.4	4426.4	4426.4	4426.4

Source: Company and Allenby Capital

Exhibit 4: Summary financials

Cash flow statement (£'000)							
Year end December	**2016**	**2017**	**2018**	**2019**	**2020e**	**2021e**	**2022e**
Loss attributable to controlling interests	-32	-1539	-2495	-1674	-460	-510	-612
Depreciation, amortisation and impairments	331	2	1360	1047	0	0	0
Share based payments	0	41	33	0	0	0	0
Finance income	-101	-19	-6	-1	0	0	0
Tax benefit	113	-519	-785	0	0	0	0
Foreign exchange translation	-1319	512	-73	-4	0	0	0
Other	-257	-347	0	0	0	0	0
Operating cash flow before working capital	-1265	-1869	-1966	-632	-460	-510	-612
Receivables (increase)/decrease	-440	2052	-485	454	0	0	-6
Tax paid	71	-4	-53	0	0	0	0
Payables (decrease)/increase	-692	-859	400	-546	0	36	20
Net cash flow from operating activities	-2326	-680	-2104	-724	-460	-474	-598
Acquisition of intangibles	-493	-298	-66	-1047	-652	-1154	-1535
Cash previously not available now released	0	2674	0	0	0	125	0
Sale of intangible assets	1784	0	0	0	0	0	0
Other	183	19	6	1	-265	0	0
Share issues	0	0	0	408	2306	0	0
Net cash flow	**-852**	**1715**	**-2164**	**-1362**	**929**	**-1503**	**-2133**
Opening cash	3010	2158	3873	1709	347	1276	-227
Closing net cash/(debt)	2158	3873	1709	347	1276	-227	-2360
Peru licence commitment guarantees	3073	119	129	125	125	0	0
Net cash/(debt) as per balance sheet	**5231**	**3992**	**1838**	**472**	**1401**	**-227**	**-2360**

Capital expenditure	**2016**	**2017**	**2018**	**2019**	**2020e**	**2021e**	**2022e**
Chuditch East Timor 33.3%					520	624	385
Block-XXI Peru 100% (2020), 50% thereafter					100	480	100
P2478 Inner Moray Firth 15%					30	50	1050
Colter Wessex Basin 8%					2	0	0
Total					**652**	**1154**	**1535**

Source: Company and Allenby Capital

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