

Corporate

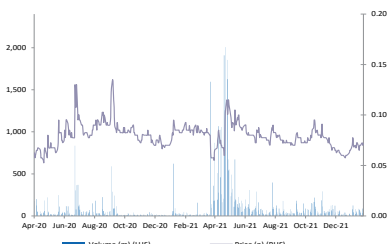
Current price **0.07p**

Sector **Oil & Gas**

Code **BOIL.L**

AIM **AIM**

Share Performance



% Change	1m	3m	12m
BOIL.L	+19.5	-15.6	-15.6

Source: Thomson Reuters, Allenby Capital

Share Data

Market Cap (£m) **8.3**

Shares in issue (bn) **11.58**

52 weeks (p)	High	Low
	0.12	0.06

Financial year end **31 December**

Source: Company Data, Allenby Capital

Key Shareholders

Hargreaves Lansdown	17.62%
Interactive Investor Services	11.96%
JIM Nominees Ltd	11.18%
SundaGas PTE Ltd	9.99%
HSDL Nominees Ltd	9.52%

Source: Company, Allenby Capital

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Baron Oil plc (BOIL.L)

Chuditch project on schedule

Baron Oil has provided a comprehensive review of its potentially world class Chuditch gas project offshore Timor-Leste. While there were no dramatic revelations, we note that the technical appraisal of the project is on schedule and budget. Significantly, high fidelity reprocessed and evaluated 3-D seismic data is scheduled for delivery in Q2 2022. This should accurately define the structure and help identify a suitable drilling location. Baron is scheduled to decide by end 2022 on an Chuditch appraisal well. An affirmative decision will lead to a drilling commitment by end 2023. Baron has had discussions with potential farm-in partners. One will probably need to be secured during Q3 2022. We consider a year sufficient for well planning, rig acquisition and mobilisation and material procurement. According to Baron, the dry hole cost for a prospective Chuditch well will be \$15-20m. Importantly, the LNG market backdrop remains very auspicious for natural gas development in East Asia with the regional JKM benchmark trading at \$25/mm Btu.

- Chuditch project:** Chuditch lies in the Timor Sea 185 km south-east of the Timor-Leste coast, 400 km north-west of Darwin and 120 km north-east of Santos's Bayu Undan giant condensate and gas field. The ownership of the Chuditch PSC is Baron 75% and the Timor-Leste NOC 25%. The Chuditch project was originally based on the Chuditch-1 discovery made by Shell in 1998 in the Jurassic Plover sandstones, a regionally prolific reservoir formation. This, however, was never flow tested. Following the discovery, several analogous prospects and leads have been identified which may suggest a larger structure.
- Chuditch resource base:** Prospective mean resources have been independently assessed for Chuditch at 3.55 tcf or 591mm boe gross split 95% gas and 5% liquids. The P10 estimate is 1,156mm boe. The mean estimate constitutes a sizeable resource base with significant scale for attractive economics in our view. The P10 estimate exceeds Bayu Undan's recoverable reserves of 967mm boe and would imply world class scale. Baron is aiming to convert the prospective resource base to contingent in 2022.
- Chuditch risks:** Chuditch is a relatively low-risk project. This reflects the fact that it is based on a discovery in a regionally prolific reservoir formation. Shell put the geological chances of success at 100% for Chuditch-1. The reservoir is of good quality in terms of porosity, permeability and gas saturation. The CO₂ content at 18% is the same as in Santos's Barossa field 250 km to the east. We also note that infrastructure in the form of the Bayu Undan pipeline to Santos's Darwin LNG plant is close to Chuditch. Water depth around Chuditch is modest at about 70m. The planned well depth is unexceptional at 3,000m.
- Financials:** Cash demands have been heavy in 2021 largely reflecting the \$3.5m Chuditch work programme. A major factor has been the \$1.6m 3-D seismic reprocessing/evaluation exercise being carried out in the UK by the geophysical concern, TGS. Petroleum system modelling and petrophysical evaluation have also been undertaken along with a preliminary well design. Chuditch cash requirements will remain heavy in 2022. We continue to forecast cash and net debt positions of £1.52m and £1.15m at end 2021 and £1.15m respectively. The latter assumes £0.43m for drilling the El Barco well in Peru.

Year End: 31 December

(£'000)	2018	2019	2020	2021E	2022E
EBITDA	(549)	(442)	(710)	(1,171)	(1,218)
NET CASH / (NET DEBT)*	1,838	472	1,311	1,517	(1,146)

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

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

Potential Chuditch development timeline

We understand that the tentative initial development plan for Chuditch is to drill one appraisal and one exploration well back-to-back in late 2023, assuming that a joint-venture partner is secured. Drilling sequentially clearly has economic advantages in terms of well planning and rig mobilisation. Assuming positive results, we presume that a prospective operator would then move to full scale field development. We believe it is unlikely that a Chuditch gas field could be brought on-stream before 2026 and quite possibly 2027. Extraction of liquids via an FPSO (floating, production, storage and offloading) vessel could conceivably occur at an earlier stage, if volumes are sufficient.

Chuditch export routes

A major consideration in the economics of offshore gas projects concerns export routes and infrastructure. Baron has undertaken a review of the potential opportunities. In our view, the most plausible route is a tie-in to the existing Santos operated Bayu Undan field to Darwin, Northern Territory pipeline. This links with the Wickham LNG plant which Santos is planning to expand. An alternative approach could be to connect with Wickham via the Barossa or Evans Shoal fields.

Another potential pipeline export route could be via a prospective Greater Sunrise hub to the Timor-Leste southern shoreline and a planned LNG facility. There are, however, two drawbacks to a link with Timor-Leste. The first is that the timing of a Greater Sunrise development is highly uncertain. The second issue concerns a deep trough offshore Timor-Leste which would probably be technically challenging and costly to traverse.

Baron has also considered three standalone export solutions not requiring pipelines. These are a floating liquefied natural gas (FLNG) vessel, a fixed platform LNG (PLNG) facility and a CNG facility. All are suitable, in principle, for operation in remote locations and provide direct access to international markets but in our view have operational and economic drawbacks. Operational experience so far with FLNG vessels is limited. They are, however, known to be complex technically, costly and potentially hazardous. Shell has a large scale application of the technology on the Prelude field 475 km off the Western Australian coast. Downtime due to technical issues has been significant. Industry sources suggest that smaller scale FLNG vessels than Shell Prelude may be subject to fewer technical drawbacks.

Apparently, BHP considered a PLNG facility for the Bayu Undan field before sale to ConocoPhillips in the 1990s. Currently there are no analogue PLNG facilities operational. Compressed natural gas is a common transportation fuel in Asia and can also be used in small scale power generation facilities. Baron, however, believes that Chuditch will have too much gas for a standalone CNG facility.

JKM LNG prices

The surge in LNG prices over the past year to 18 months has been one of the most dramatic commodity market developments during the period notwithstanding the softening over the past month or so. Taking the JKM (Japan Korea Marker) benchmark for East Asia, the price as of late January 2022 was around \$25/mm Btu cif (cost of insurance and freight), up about 178% from a year ago and until recently a price rarely seen. Significantly, the JKM in late December 2021 was trading at an unprecedented \$50/mm Btu, equivalent to \$300/barrel. For perspective the JKM was trading at averages of \$5.5mm Btu in 2019 and \$4.0/mm Btu in 2020 and plumbed a recent low of under \$2/mm Btu in the second quarter of 2020.

The surge in LNG prices over the past 18 months or so is reflective of a very tight market. This appears to have been driven by a strong rebound in demand post coronavirus restrictions being lifted, positive weather related influences, production outages and a policy decision in China to reduce emissions by using more LNG and natural gas. Tight steam coal markets probably also contributed to the advance in LNG prices in East Asia. The above factors conspired in seasonally low inventories at the beginning of the heating season in the East Asian northern hemisphere.

Currently, the front end of the JKM forward curve is pointing to a continuation of elevated prices. According to Platts, the JKM remains at about \$25/mm Btu through March before dipping to about \$21/mm Btu in the second quarter. For deliveries in a years' time the curve is showing a peak price of about \$29/mm Btu. Thereafter, the curve trends downward hitting around \$12/mm Btu in early 2025. Arguably the mid-section of the forward curve is erring to an unduly pessimistic view of the marketplace given the importance of gas as a low emission transition fuel and tight gas supplies. Medium-term we may be looking at an underlying JKM price above \$12/mm Btu.

The front to mid-section of the JKM forward curve clearly provides an auspicious backdrop for a natural gas development project for conversion into LNG and sale into East Asia. By implication it is also a positive backdrop for securing a farm-in partner for an integrated LNG project. Broadly speaking, we believe that based on industry commentary LNG cash costs, assuming a prospective large-scale Chuditch gas field feeding Santos's Wickham facility, could be in the region of \$7-8/mm Btu. This reflects \$2-3/mm Btu for lifting, processing and pipeline and \$5/mm Btu for liquefaction and transportation. While producing and selling LNG at \$25/mm Btu is highly lucrative, a JKM price in the range \$12-15/mm Btu should still generate excellent returns. It should be noted that costs are probably also elevated currently due to historically high energy prices.

Valuation

Our valuation methodology for Baron is based on a sum-of-the-parts calculation where the parts are the different projects. Chuditch is by far the most influential which leaves the stock very much a play on the project. For each project the key components of the valuation are the net resource base, a risking factor which takes into account our assessment of commercialisation at this stage of development and a valuation quotient expressed in \$/boe. We have used \$0.5/boe for this purpose. Note, we adjust working interests where appropriate for anticipated farm-ins for the first stage of appraisal/exploration. In the case of Chuditch we have assumed that Baron will be seeking a free-carry farm-in and that this will necessitate conceding 50% of the equity in the project. Its working interest will therefore drop from 75.0% to 37.5%.

We are leaving our absolute and per/share valuations unchanged from our September 2021 interim report at £30.9m and 0.27p/share respectively. In a success case for the initial drilling programme at Chuditch we would probably need to boost the valuation quotient to at least \$2/boe and the probability of commercialisation to 60%. This would boost the absolute valuation to £110m, equivalent to 0.949p/share.

Exhibit 1: Baron Oil risked and diluted valuation summary

Basin	Project	Working interest %	Net un-risked mean resources				Valuation quotient \$/boe	Un-risked valuation \$m	Risk adjusted valuation post farm ins		
			bcfe	boemm	Risking factor %	mean resources boemm			Absolute \$m	£m	p/share
Bonaparte	Timor-Leste Chuditch	37.5	1323	220.5	33	73.7	0.5	110.2	36.9	26.3	0.227
Sechura	Peru Block-XX1	50.0	65	10.8	33	3.6	0.5	5.4	1.8	1.3	0.011
Moray Firth	UK P2478	16.0	188	31.3	30	9.4	0.5	15.6	4.7	3.4	0.029
Total			1575	262.5		86.7		131.3	43.3	30.9	0.267

Source: Allenby Capital.

Notes: 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. P2478 valuation includes both Dunrobin and Golspie prospects.

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 11.5836 bn. Exchange rate: £1=\$1.40.

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