Exciting opportunity attracts LNG investors off East Timor

Baron Oil is seeking investors to back a relatively low-risk appraisal drilling campaign at the Chuditch gas field offshore East Timor. Possible suitors include Eni, Inpex, Santos, Petronas, and even Chinese national oil companies (NOCs), for the potential LNG project.

By Damon Evans, 20 November 2023

Significantly, the field, discovered by Shell in 1998, is expected to be larger than initially thought, following modern seismic interpretation work, Baron Oil told Energy News in a recent interview.

The mean contingent resource is now estimated at 1.16 trillion cubic feet (cf) for Chuditch, up from around 700 billion cf previously. Adjacent prospects offer an additional 2.1 trillion cf of prospective resource potential.

Baron expects to drill a Chuditch-2 appraisal well in late 2024, subject to drill financing.

"We have several discussions with various parties for financing and we are working on all aspects of funding. However, we are very confident that we will drill, hence preparations are already underway," Andy Butler, chief executive of Baron Oil subsidiary, Sunda Gas, told Energy News.

The Chuditch PSC expires next month and extending another year into 2024 will require the operator to commit to drilling an appraisal well, which could easily cost US$25 million to US$30 million, Robert Chambers, an APAC-focused upstream energy expert, told Energy News.

Funding the drilling could prove challenging for Baron, so an ideal solution would be a farm-in partner, who could carry them through this period, added Chambers.

Baron have set out several potential developments for Chuditch and the other prospects in the PSC. Commercialising the gas will require access to an LNG liquefaction facility, be this a floating LNG (FLNG) plant at the field, a new onshore LNG plant in East Timor, or the gaining of access to existing or expansion LNG trains in Darwin, such as Santos' Darwin LNG or Inpex's Ichthys LNG. Of these, the standalone FLNG solution is likely to present the quickest path to first gas, added Chambers.

"Based on Baron's resource estimates, a standalone FLNG development around the 2 million tonnes per year (t/y) scale would certainly be commercial in today's LNG price environment," noted Chambers.

Moreover, "the new government in Timor Leste is very focused on accelerating oil and gas development and understands the positive impact that the revenues could have on the country's economic future. Timor-Leste has seen positive signs, with a successful 2022 bid round seeing blocks awarded to Santos and Eni," he added.

"It is likely that any investor would require experience in the LNG space and, ideally, the experience and patience to navigate the above-ground challenges. This would put companies such as Eni or INPEX into prime position. Santos could also be included on this list, but will likely be focused on solving their development challenges at Barossa. Other options could include PETRONAS for their FLNG expertise or the Chinese NOCs," said Chambers.

LNG opportunity attracts attention

Marc Howson, Head of Asia at Welligence Energy Analytics, told Energy News that "Chuditch is a significant shallow-water discovered gas resource, located near several gas-short Southeast Asian markets. It therefore does attract attention from investors willing to consider taking appraisal risk on a project likely to startup by 2030."

"Potentially interested investors include FLNG infrastructure companies, who would consider taking upstream exposure and would help progress the development with technical expertise as well as funding. Private energy-focused investors, with medium-term investment horizons, are also likely to be interested in Chuditch," added Howson.

"Assuming a new investor contributes towards drilling costs, we expect an appraisal well to be drilled on Chuditch in late-2024, followed by potentially another appraisal well in 2025. If successful, the operator could take FID on a Chuditch FLNG project in 2026, before first gas/LNG production by 2030," said Howson.

Chuditch could supply around 300 million cubic feet per day of feedgas into a 2 million t/y FLNG vessel by 2030, with carbon dioxide (CO_2) stored through carbon capture and storage (CCS), noted Howson.

"We understand Chuditch's gas contains around 18% CO_2 and the CO_2 will either be injected into the Chuditch reservoir as CCS, or exported to Bayu Undan CCS," he added.

Welligence expects Asian LNG prices to exceed US$9/MMbtu in 2030, which, supported by Chuditch's location close to several LNG-importing markets, incentivises the development.

Regardless of the development route taken, the end goal remains the same—the lucrative Asian LNG markets. "So, teaming up with investors who have expertise in FLNG developments makes the most sense for potential joint venture partners. The Asian LNG buyers tend to pick up equity near FID when a project is more concrete," Krishan Pal Birda, product manager Australasia Oil & Gas Solutions at Rystad Energy, told Energy News.

"The other challenge is the 18% CO_2 content in the reservoir which the operator plans to either reinject or export to the planned Bayu-Undan CCS. Adding this cost of carbon abatement to FLNG's cost and complexity could potentially challenge the economics of the project if the resource is not big enough. So, we'll have a lot more clarity on this after the appraisal drilling," said Birda.

Low risk investment?

Some of the geological risk should be reduced as Baron's proposed drilling is an appraisal of a discovered resource, Angus Rodger, a senior upstream analyst at research company Wood Mackenzie told Energy News.

"If the well is drilled, it will also flow-test the reservoir - which didn't happen with the original discovery - which will give us a greater understanding of the field's commerciality. However, one risk will be CO_2 content though, as high levels of contaminants will be problematic," added Rodger.

Baron has equity of 75% in the PSC and must carry the cost of its 25% partner, state-owned Timor Gap, through to development. "This is a large equity stake and capital exposure for a small-cap explorer, and so it will likely want to dilute that stake and bring in farm-in partners to defray costs," noted Rodger.

"The good news is that because this is an appraisal of a discovered resource, potential partners will not feel like they are being exposed to frontier exploration risk. Plus, there is still healthy levels of appetite for exploration in the region - recent licensing and drilling success stories in nearby Indonesia and Malaysia is testament to that," he said.

However, the key here is the value creation narrative. "Most modern oil and gas exploration is laser-focused on finding resources that can be brought to market within a short timeframe to enhance returns. Asia-Pacific has many large, stranded gas resources, including Chuditch, that have struggled to find commercial routes to market for many decades. Greenfield development in a frontier area like East Timor will take time, therefore any fast-track commercial solutions that could bring this gas on relatively quickly, such as utilising existing infrastructure, will create a more attractive investment thesis," cautioned Rodger.

Peter Cockroft, an oil and gas expert, that has advised East Timor, also known as Timor Leste, for decades, told Energy News that "Chuditch would be a very important project if it works and there should be more focus on it. "If successful, it could improve the economics for the whole of Timor Leste, in terms of national revenues and improving the economics for the development of Greater Sunrise."

"Chuditch could move quickly if successfully appraised. If Chuditch expands and gets bigger, a pipeline could be laid connecting it to the undeveloped Greater Sunrise fields operated by Woodside Energy, which enhances the economics" added Cockroft.

The Timorese aspire to develop the Greater Sunrise field, to the north of Chuditch, via a greenfield LNG export facility onshore East Timor. However, there are some complexities around that, in terms of getting the gas to the island of Timor due to the deepwater between the fields and the coastline.

The operator of Greater Sunrise, Woodside Energy, has long claimed the economics do not stack up to develop the fields onshore East Timor. However, if more gas is discovered in the vicinity of the Greater Sunrise, then the economics could be improved.

Much bigger gas discovery seen offshore East Timor

After using modern techniques to reprocess old seismic data from Shell's 1998 Chuditch gas discovery offshore East Timor, the current operator Baron Oil, is expecting a much bigger gas field than previously anticipated. Crucially, the London-listed explorer is now gearing up to drill an exciting appraisal well, subject to financing, in a neighborhood that recently attracted Italy's Eni.

Analysis by Damon Evans 21 Nov 2023

Baron Oil has successfully reprocessed 1270 square kilometres (kms) of old 3D seismic to PSDM and applied full wave inversion techniques (FWI) and modern algorithms, as well as various approaches to maximise the information that was in the data," Andy Butler, the company's director Asia-Pacific and MD of Baron's Timor-Leste operating subsidiary, SundaGas, told Energy News in an interview.

As a result, the mean contingent resource is now estimated at 1.16 trillion cubic feet (cf) of gas for Chuditch, up from around 700 billion cf, which was previously talked about, added Butler.

The explorer also mapped out three adjacent prospects, in the same Plover Sandstone reservoirs, and at similar depths to Chuditch. As a result, we estimate an additional 2.1 trillion cf of mean prospective resource potential, said Butler.

"Although they are undrilled features, we see them as pretty low risk. Overall, the contingent and prospective resources on the block are very exciting," he said.

Drill Financing

Baron expects to drill a Chuditch-2 appraisal well in late 2024, subject to drill financing.

"We have discussions with various parties for financing and we are working on all aspects of funding. However, we are very confident that we will drill, hence preparations are already underway," said Butler.

Baron reported it has recruited a well operations manager and is holding workshops with Timor Leste government regulator ANP and joint venture partner TIMOR GAP. The firm is also in talks with other regional operators to identify potential logistical and operational cost-saving synergies and has submitted first-phase documentation to ANP for environmental permits.

The Chuditch PSC expires next month and extending another year into 2024 will require the operator to commit to drilling an appraisal well, which could easily cost US$25 million to US $30 million, Robert Chambers, an APAC-focused upstream energy expert, told Energy News.

Funding the drilling could prove challenging for Baron, so an ideal solution would be a farm-in partner who could carry them through this period, added Chambers.

As Energy News reports in a separate article, potential suitors could include Eni, Inpex, Santos, Petronas, or even Chinese national oil companies (NOCs), to back Baron.

Appraisal drilling

Baron's confidence was boosted by the latest seismic imaging works and its focus will be on a single appraisal well at Chuditch to confirm the much larger resource, before exploring the adjacent features. The company plans to do a production flow test at the field, which Shell did not do previously, as there was no real gas market in the region in 1998.

"We anticipate that the reservoir will flow very well. It's like the nearby Bayu Undan field and we expect similarly excellent rates. It's an equivalent reservoir, maybe slightly better. Similar depths, normal pressures, essentially the same setup geologically," said Butler.

According to the UK player, the chosen location, approximately 4.8 km from the Chuditch-1 discovery well, represents a substantial step-out, demonstrating the size of the field and the company's confidence in the quality of the reprocessed seismic datasets. Baron Oil expects that the Chuditch-2 appraisal well will use a simple vertical well design to target a gas column of over 130 meters, relative to the 30-meter column discovered at Chuditch-1 around 25 years ago. The water depth at the proposed Chuditch-2 location is 60 meters and the well would be drilled to 3,020 meters below mean sea level.

LNG development options

If the appraisal well is successful, Chuditch could start producing by the end of this decade. Significantly, there are multiple development options open to Baron Oil for Chuditch and the cluster of features nearby.

These include tiebacks to other emerging infrastructure, such as the planned development of the Woodside Energy-operated Greater Sunrise field. Baron is also looking at standalone developments. In some ways, these are probably the most likely to work out. These standalone options, which include a floating LNG (FLNG) or fixed platform-based LNG facilities, or some hybrid combination of both, are very interesting, given the shallow 60 metre water depth, said Butler.

Standalone solutions such as FLNG are probably simplest. They take away third-party issues, as well as the need for long pipelines.

The Timorese aspire to develop the Greater Sunrise field, to the north of Chuditch, via a greenfield LNG export facility onshore East Timor. However, there are some complexities around that, in terms of getting the gas to the island of Timor due to the deepwater between the fields and the coastline. There are also challenges developing greenfield LNG projects in a remote location. But this represents just one pathway for Chuditch.

To the south of Chuditch, there is the Darwin LNG (DLNG) terminal in northern Australia and Santos' Barossa field that is currently being developed to backfill DLNG. There are various ways for Chuditch to fit into that picture. It has third-party challenges, but it offers a more definable timeline and a definable set of challenges. Although the complexity is cross border arrangements.

Angus Rodger, a senior upstream analyst at research company Wood Mackenzie told Energy News that a "greenfield development in a frontier area like East Timor will take time, therefore any fast-track commercial solutions that could bring this gas on relatively quickly, such as utilising existing infrastructure, will create a more attractive investment thesis."

Marc Howson, Head of Asia at Welligence Energy Analytics, told Energy News that "Chuditch could supply around 300 million cf per day of feed gas into a 2 million tonnes per year FLNG vessel by 2030, with any carbon dioxide stored through carbon capture and storage (CCS)."

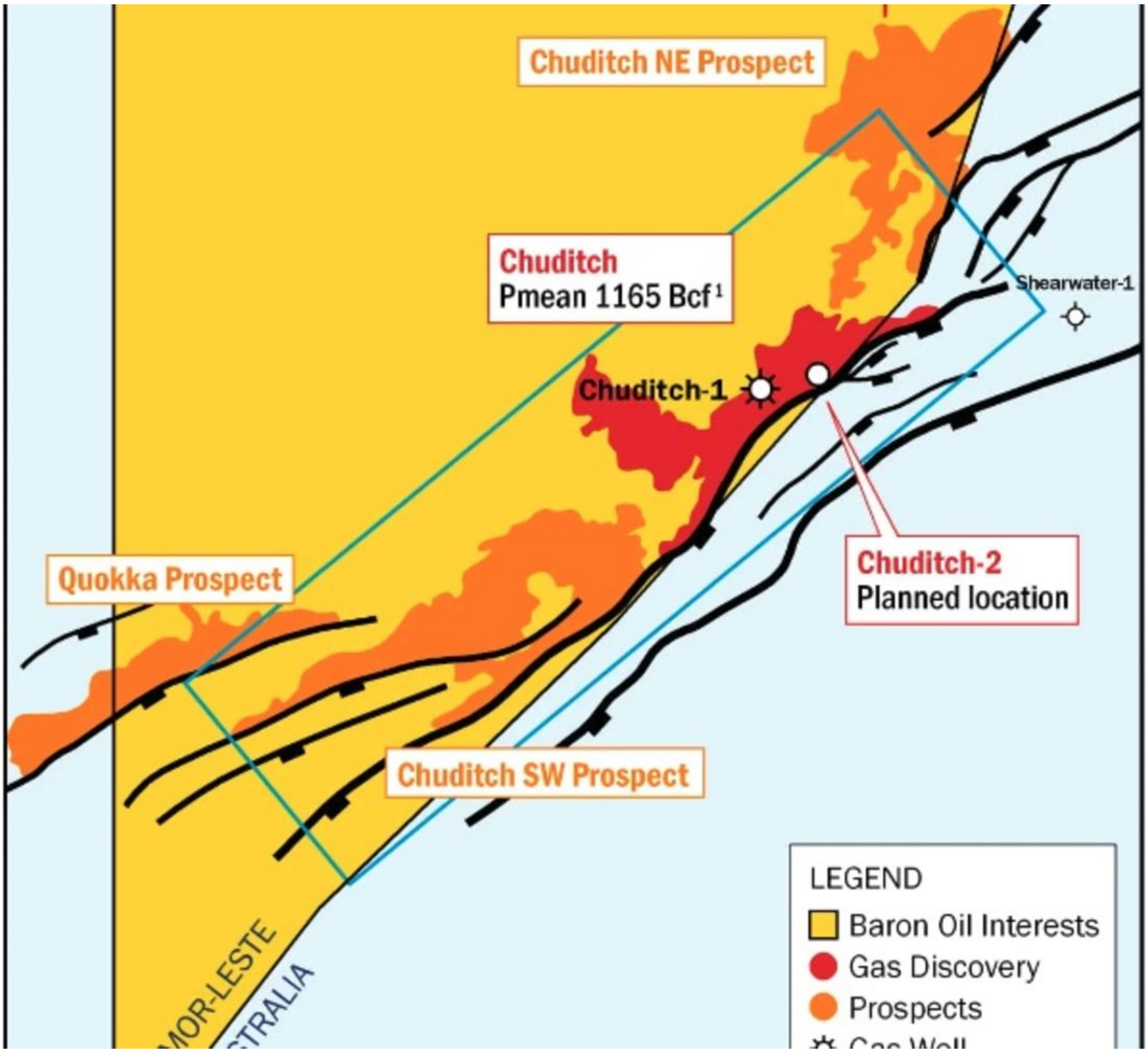
Howson added "we understand Chuditch's gas contains around 18% CO_2 and the CO_2 will either be injected into the Chuditch reservoir as CCS, or exported to Bayu Undan CCS."

Eni enters the neighborhood

Last year, Italy's Eni was awarded offshore Block P, which is close to the Greater Sunrise and Chuditch fields in Timor Leste's maritime area. That PSC is expected to be signed shortly.

"Block P is immediately adjacent to the north of Baron's Chuditch Block, on the gas migration route from Chuditch towards the Greater Sunrise field. That fairway is very interesting," noted Butler.

"A successful explorer like Eni doesn't enter a new block for a small resource, they will be looking for something of size. This fairway has an enormous amount of gas within it. So, it's good news. I see their arrival as a validation. It's great to have such a big name as a neighbour," he added.



Chuditch Field location

Located approximately 185 kms south of Timor-Leste, 100 kms east of the producing Bayu-Undan field, and 50 kms south of the Greater Sunrise potential development, the Chuditch PSC covers an area of approximately 3,571 square kms, in water depths of 50-100m, and contains the Chuditch-1 gas discovery drilled by Shell in 1998.

Back in November 2019, the government of East Timor, also known as Timor Leste, signed a PSC with Sunda Gas and Timor Gap for a block holding the Chuditch discovery, known as the TL-SO-19-16 PSC or the Chuditch PSC. The TL-SO-19-16 license sits in the south of the former joint petroleum development area (JPDA) with Australia, which has transitioned to Timor-Leste exclusive jurisdiction following a maritime border treaty in August 2019.