BAHRAIN

Government event celebrating Bahrain's first ever oil find in 1932

Photo: Bahrain News Agency

Offshore shale challenge

Bahrain's unique offshore shale find could see the development of new extraction technology, writes *Paul Cochrane*.

In April 2018, Bahrain announced it had found an estimated 81.5bn barrels of oil and 390bn cm of associated gas in the Khaleej Al Bahrain Basin, which lies offshore to the west and south of the archipelago-state, in territorial waters between it and Saudi Arabia. Bahrain's first oil find since 1932, the discovery is of major economic significance to the small Gulf state, which has been less reliant on hydrocarbons than its oil and gas-rich neighbours.

However, it is also of global significance, being a unique, conventional-unconventional offshore shale find in shallow waters. 'Globally, there's no similar development, so Bahrain would be the first to develop shale offshore,' reports Abdulaziz Al Doseri, Research Analyst, Economics & Energy Studies, at the Bahrain Center for Strategic, International and Energy Studies (DERASAT).

With Bahrain running a budget deficit, the government wants production to start by 2023. One year into the find, Halliburton and Schlumberger are drilling two test oil wells to determine the crude's quality, with the results to be announced in 1Q2019.

So far, there has been no interest from major international oil companies (IOCs) in the find. 'I don't think anyone is jumping at it because we would need to see the results, and if that looks promising; even then there is a longish road ahead to get an international partner and negotiate a deal,' says Robin Mills, CEO of Qamar Energy, in Dubai.

Halliburton and Schlumberger have classified the find as a 'P50'. 'At least 50% or more can be recovered given the current conditions, but it could fluctuate. Some officials have said the oil field is borderline conventional and unconventional, not being rock but like mud, so we're not sure how difficult it is to extract from such geology. The government is optimistic that it will be cheaper than fracking in the US,' comments Al Doseri.

Based on US fracking experience, an estimated 5–10%, may be recoverable.

Offshore challenge

The challenge with the field being what Edgar van der Meer, Senior Research Analyst at NRG Expert, in London, calls 'a one of a kind oil find' is that fracking technologies have thus far been developed for use *onshore*. 'Nobody has yet produced unconventionals offshore. There's no reason not to do it, but inevitably it is more expensive. This adds another layer of complexity and caution, to get the appropriate drilling rigs and service vessels and so on.' says Mills.

Well costs and flow rates will determine the find's commercial viability, he adds. 'In the US, it takes 20 wells to understand a play properly. With offshore wells, [the cost is] a minimum of $10mn, even $20mn, per well, so it is pretty costly.'

However, the find's viability is bolstered by being in shallow waters. It could draw on the technologies and practices of other offshore fields in the Gulf, such as development of Qatar's offshore Al Shaheen field by Maersk Oil in the 1990s. 'Al Shaheen was a difficult conventional field [to bring into production]. Maersk made a success of it, bringing it up to 300,000 b/d; it is a good comparison as some of the technology might be used,' comments Mills.

Meanwhile, Al Doseri cites the Saudi Aramco-developed Manifa field, off Saudi Arabia's northern Gulf coast. 'Manifa is close to shore so they had to develop man-made islands, which Bahrain could do, but it will depend on who develops the field and the proposals suggested,' he says.

Bahrain's National Oil and Gas Authority (NOGA) does not have experience with offshore drilling or shale, and has not given sole concessions to IOCs in the recent past. 'The government is proposing some sort of concession and long-term contract as the Bahraini petroleum business model is not like the private sector. We need a bigger profit margin to justify projects. The budget is based on $55/b, so any cost higher than that [for extraction] is not worth it,' says Al Doseri.

The resource is expected to be exported as Bahrain does not have a refinery configured for light crude, and there is pressure on the government to get the project online as soon as possible to bring in revenues.

With the kingdom's GDP growth sluggish (projected at 2.6% for 2019 by the World Bank), 'there is pressure on the Bahrain economy to boost production and the bottom line will perhaps dictate such decisions', notes van der Meer. 'As the time frame given is short, there's not the time to put regulatory amendments in place [re fracking] – but they could learn from others' experience.'

As the government and IOCs await the test drilling results, the potential of the find will be driven by the cost of oil going forward. 'If oil prices went up, to $80 or $100/b, there would be a lot more interest and push from the Bahrain side,' concludes Mills. ●