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BSP PREPARES FOR FUTURE GROWTH

Exploring for Potential Oil and Gas Resources enabled by an Innovative Offshore Seismic Survey

Leveraging off a two-year geological review that highlighted as yet potentially untapped hydrocarbons in offshore East Brunei, the Brunei Shell Petroleum Co. Sdn. Bhd. (BSP) took the decision to design and execute an Ocean Bottom Node (OBN) seismic survey. Accordingly dubbed the *Intan* (Malay for diamond) OBN survey, this state-of-the-art technology generates a 3D representation of complex subsurface features at an unprecedented level of clarity and detail. Such new technology will increase the accuracy of BSP's subsurface knowledge, allowing for safer exploration drilling and the targeting of deeper, more elusive hydrocarbon deposits.

Conventional offshore seismic surveys require a vessel towing up to 3km of streamers lined with hydrophones (listening devices) to record reflections of seismic waves created by an underwater seismic source echoing back from the Earth's layers below. The OBN survey method instead deploys listening devices (known as nodes) directly onto the sea floor itself, producing more detailed data which will lead to identification of complex hydrocarbon traps around existing fields whilst also unlocking new, deeper drilling targets in frontier areas. Another advantage of this method is the elimination of the physical constraints associated with towing long lines of streamers around the vicinity of busy operational offshore infrastructure. This allows for safer access closer to such facilities, as well as sensitive marine areas, and shallow waters.

Dr Ceri M. Powell, Managing Director of BSP shared her optimism for the outcome of the Intan OBN Survey, saying "As BSP is embarking on a new growth journey over the coming decades, it is crucial to develop new approaches to hydrocarbon exploration. The clarity and detail of the sub-surface geology more than 4000m below the sea-bed using OBN technology will be a step-change for offshore Brunei, allowing deeper wells to be drilled with greater accuracy and chance of success. I am looking forward to successful and positive results from this innovative project".

Building Bruneian capabilities

The Intan OBN survey is one of the largest and densest OBN surveys Shell has undertaken globally. From pioneering Snake Wells to Smart Fields, the Intan OBN survey continues BSP's legacy as a company of many technological firsts.

Not only is it about technology and data; the project is also an opportunity to develop local capabilities and skillsets. BGP Inc., who won the tender to conduct the survey, has already recruited 27 talented Bruneian technical professionals to work alongside international seismic experts for rapid, on-the-job transfer of knowledge. This is an excellent opportunity for our Bruneians to be directly involved and work in a complex and technologically-challenging project.

To fully benefit from the huge volumes of high-resolution data generated, BSP invested in a cutting-edge seismic interpretation system. Two Bruneian “early adopters” were sent to Houston, Texas to receive training for the system to become operational in BSP as of last month. This will also inspire the team to use novel digitalisation techniques, furthering BSP’s growth journey and securing the talent pipeline for BSP through capability building.

Challenging the status quo

The Intan survey is a testament of what can be achieved by a talented workforce challenging the status quo and championing pan-BSP collaboration to better deliver for the company and the country, both today, and for the future.

This survey technique had not been executed on such a large scale around existing production facilities due to cost and complexity such that it was initially deemed unfeasible. However, the team behind Intan OBN was undeterred and overcame their first hurdle with a competitive scoping mindset; finding the most cost-effective methods. They embarked on a scoping exercise that made large-scale OBN seismic commercially viable in Brunei and reduced the estimated survey duration without compromising on safety and quality.

Synergies were found which resulted in significant cost savings to the company and enabled the seismic survey project to be economic. The project will take about 6 months which is equivalent to 2 billion ‘work-seconds’ carried out by over 500 offshore employees, resulting in the acquisition of almost a Petabyte (1,000,000 GB) of raw seismic data in an area that has more than 100 operational facilities.

Paving a new standard

BSP has come a long way from the initial gravity surveys that led to the discovery of the first commercial well in 1929, thus giving birth to the oil and gas industry in Brunei. As demonstrated most recently in 2014, a similar adoption by BSP of world-class technology within the Rasau 3D Seismic project ultimately unlocked previously unknown onshore gas reserves.

Today, the Intan OBN survey is another breakthrough in BSP’s mission to continue to be the most valuable company in Brunei. The technology paves a new standard of exploring for oil and gas, provides the platform for competitive capability building for Bruneians, and is another cornerstone enabling BSP to continue fuelling Brunei’s future for generations to come.

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NOTES TO EDITORS:

Brunei Shell Petroleum Company Sdn Bhd (BSP) explores for, and produces, oil and gas from onshore and offshore fields for domestic consumption and export to international markets. The Government of Brunei Darussalam and Royal Dutch Shell Group each own a 50% stake in BSP. The Brunei Shell Petroleum Company Sdn Bhd is referred to as BSP or Brunei Shell Petroleum Company for abbreviation or headline purposes.