



ORAL PRESENTATION

New Seismic imaging Reveals Opportunities in Asia Pacific

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Through its heritage companies, BP has 50 years of operating history in Indonesia. Current activities are dominated by our exploration and production business, particularly the Tangguh LNG plant.

Tangguh started LNG production in 2009, just four years after its initial sanction by the Government of Indonesia. Its performance is best in class in safety and reliability and it recently achieved a milestone of 1000 cargoes delivered successfully to its customers. In 2016 the Tangguh Expansion Project to build a third liquefied natural gas (LNG) train was sanctioned.

Since their discovery in the 1990s, the Tangguh gas fields have faced seismic imaging challenges due to a number of factors including shallow water, strong currents, shallow gas, karst overburden and faulting.

An ultra-high-density Ocean Bottom Node survey using BP Independent Simultaneous Source technology (ISS®) was acquired in 2017/18 to support future development of the Tangguh LNG gas fields. Utilizing this advanced acquisition technology enabled a step change in data density, cost efficiency and data quality. The ultra-dense wide azimuth data appears ideally suited for fast-track imaging. Despite the huge amount of data to process, fast-track products were provided within 4 months of the last relevant node retrieval, which is equivalent to an 80% cycle time reduction versus vintage OBC processing flows. This acceleration of data delivery supports timely well planning and field development decision making.

Reprocessing of legacy Ocean Bottom Cable data acquired in 2010 has also proved successful in the greater Bintuni basin. The reprocessing project was completed in 2016 and the improved imaging led to the drilling of Ubadari Deep - BP's first exploration well in Indonesia for 5 years.

Elsewhere in Asia Pacific, BP has been in Australia for 100 years and is a founding member of the North West Shelf Venture (NWSV). In 2014 the NWSV partners funded the acquisition of the Fortuna 3D seismic. The previous seismic survey over the acreage (Demeter) was conducted just over a decade prior in 2003. The improved subsurface imaging has led to a refreshed portfolio of exploration prospects and the first of those to be drilled is Achernar which will be drilled in 2019.

The reprocessing of legacy 3D seismic in the North Carnarvon Basin has also led to the identification of new exploration opportunities. The Olympus 3D dataset, which BP licensed from Spectrum in 2016, covers almost 20,000 km², combines 19 3D surveys and is broadband processed from field tapes to create a unified PSDM volume. The continuous, high-quality seismic volume has enabled BP to access the Ironbark prospect and identify additional prospectivity close to the NWSV.

SPEAKER BIOGRAPHY

Mike Cottam is a Senior Geologist within BP Exploration's Asia Pacific New Ventures team based in Sunbury, UK. After initially joining BP in the North Sea region, Mike has spent the last five years working across BP Exploration as both an integrated geologist and a structural geology specialist.

Prior to joining BP Mike worked in academia for several years, undertaking field and laboratory based geological research with the SE Asia Research Group based at Royal Holloway University of London, UK. Mike holds a MGeol undergraduate degree from the University of Leicester, UK and a PhD in Tectonics & Structural Geology from Royal Holloway University of London, UK.