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Ca Voi Xanh Field, Block 118, Offshore Da Nang, Vietnam: Exploration Highlights and Development Challenges

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With support from Vietnam Oil and Gas Group (PVN) and PetroVietnam Exploration Production Ltd. (PVEP)

Vietnam Oil and Gas Group (PVN), ExxonMobil Exploration and Production Vietnam Limited (EMEPVL), and PetroVietnam Exploration Production Corporation Ltd (PVEP) entered into a Petroleum Production Sharing Contract (PSC) for Blocks 117, 118 and 119 located offshore central Vietnam on 30 June 2009. As part of the PSC Exploration Phase 1 work programme, the Ca Voi Xanh Field was discovered in September 2011 by the 118-Ca Voi-Xanh-2X well. The well encountered a gas reservoir with 30% CO₂ content in the Da Nang Carbonate. The 118-Ca Voi Xanh-3X well was drilled in 2012 and confirmed a similar CO₂ content and Gas-Water Contact. 3D seismic acquisition followed in late 2012 and a further appraisal well 118-Ca Voi Xanh-4X in 2015. The Ca Voi Xanh Field currently constitutes the largest gas discovery offshore Vietnam.

The Ca Voi Xanh Field lies along the north-west, south-east trending basement involved Triton Horst structure which forms the antecedent topography for the development of thick Middle Miocene carbonates that comprises the reservoir interval in a number of structures along this horst. Compositional variation of trapped resource exists, with in particular decreasing CO₂ content from north to south along this trend.

Numerous challenges, both technical and commercial have and continue to be addressed prior to development of the field and bringing the gas onshore to Central Vietnam. Technical uncertainties relate primarily to reservoir volume uncertainty and carbonate reservoir quality characterization, including the presence, extent, fill and significance of karst. Numerous static and dynamic modelling scenarios have been generated and investigated to better understand elements most critical to field development and identify approaches to mitigate their impact. Development challenges include the field location, high acid gas composition and complexity of integrated value chain. Efforts to alleviate both technical uncertainty and development challenges are ongoing.