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ORAL PRESENTATION

Cambodia's Hydrocarbon Prospectivity - An Insight from Block A

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The Gulf of Thailand is one of the most prolific areas for oil, gas and condensate production in Southeast Asia. Formed by the collision of the Indian Plate and the Eurasian Plate in the Eocene, the Gulf of Thailand is made up of asymmetrical grabens filled with non-marine to marginal marine Tertiary sediments in several structurally complex transtensional basins. One of these basins, the Khmer Trough, is the subject of this paper; with Block A, operated by KrisEnergy, providing an invaluable insight into the untapped hydrocarbon potential of offshore Cambodia. The Block itself is close to several large producing oil and gas fields in the Central and Northern Pattani basins and contains the Apsara oil field - Cambodia's only confirmed discovery.

The exploration potential of the pre-, syn- and post-rift sections of the Khmer Trough have been evaluated by synthesising the tectonic, structural and depositional history of the basin in order to summarise proven and potential plays and identify new play concepts. In turn, the in-depth evaluation of Block A has been constrained by seismic, well, gravity, geochemical, heat flow and other complimentary datasets.

In the Gulf of Thailand, the sediments are deposited from an initial period of alluvial-fluvial to a progressively mid-phase fluvial-lacustrine, fluvial-dominated setting and ending with an increasingly marine environment from the Mid Miocene. Lacustrine shales present in the Oligocene syn-rift sequences are sources for the oil and gas accumulations. Hydrocarbon-bearing reservoirs within the Khmer Trough consist of Early Miocene syn- to post-rift, fluvial sandstones. Intra-formational fluvial shales from paleosols are the main top seals of hydrocarbon bearing reservoirs in the Khmer Trough. Fault seals are accomplished by sand-shale juxtaposition and gouge smear.

Prospective trends in Block A have been identified with 3D seismic interpretation and exploratory drilling. These plays are situated within 3-way dip structural closures of north-south trending fault blocks, with multiple stacked reservoirs throughout the Oligo-Miocene section. There is also substantial potential for other fault bounded complexes and stratigraphic traps.

This talk highlights some of the technical work undertaken by KrisEnergy for the first phase of Apsara oil development in Cambodia Block A. KrisEnergy, as operator, and the various government authorities have agreed on the terms for development and steps are underway, aiming for first oil approximately 24 months after the final investment decision was declared in October, 2017.