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The Early Syn-Rift Petroleum System in the Eastern Cuu Long Basin, Offshore Vietnam

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Structural syn-rift reservoirs in faulted margins of continental rift basins are usually disregarded in exploration consideration due to concerns of absence of reliable top seal and diagenetic alterations that significantly reduce reservoir porosity and permeability. Not an exception to this trend, Early Oligocene reservoirs in the eastern margin of the Cuu Long Basin (CLB), offshore Vietnam were overlooked in the past since they were interpreted as small and scattered structures without top seals.

Recent exploration results in the eastern edge of CBL differ from past assessment regarding early syn-rift (ESR) reservoirs of the area. The new seismic and exploration wells data confirm existent of the thick black lacustrine shale layers distribute widely across the area, acting as source rocks as well as top seals for potential prospects in the CLB eastern margin. The new data interpretation also put top of granitic Basement at a deeper depth than previously interpreted. As a result, syn-rift reservoirs which were small and insignificant have become larger scale with faulted structures and/or pinch out traps. Key reservoirs discovered is the Basal sandstones, mainly composed of near-source sediment with mostly granitic fragments, were deposited right on top and shared a similar topography with the underlying Pre-Cenozoic granitic Basement. These Basal sandstones' porosity and permeability have been preserved better than shallower reservoirs.

This work shares exploration/appraisal experiences in the eastern edge of CLB as an example for HC potential in early syn-rift reservoirs in margin area of the rift basin. The case study discusses on petroleum system elements in faulted margin of continental rift basin and the model of sedimentary to support for selection of exploration candidates in study area.

Speaker Biography

Dr Tran Nhu Huy is Deputy Director in charge of Geology for PVEPPOC, a subsidiary of Petrovietnam Exploration Production Corporation (PVEP). He received a B.S degree in Geology from Ho Chi Minh City University of Technology (HCMUT), an M.Sc. in Reservoir Engineering from Norwegian University of Science and Technology (NTNU), and Ph.D in Petroleum Geology from HCMUT. He has 24 years of experience in oil industry, the last eight in PVEPPOC's projects discussed in this presentation.