

New Exploration Plays in the Bohai Bay Basin, East China

Deng, Yunhua, and Yongan Xue, CNOOC, Tanggu, Tianjin, China

The Bohai Bay Basin, east China, is a mature oil exploration basin offshore. The major hydrocarbon producing intervals include the Palaeogene plays (e.g. Shengli and Liaohe oilfields), pre-Cenozoic plays (e.g. Huabei Oilfield), and the Neogene uplift plays (around Bozhong Oilfield). The Neogene sag plays were recently identified as new exploration targets in the mature basins. Two new models for oil pool accumulation in the basin have recently been established including (1) "Transfer Station" hydrocarbon migration model, and (2) four varieties of "Faulted Sand" assemblage model.

The "Transfer Station" model evaluates whether hydrocarbons can be migrated from the deeper Palaeogene to the shallow Neogene plays through transfer zones. The "Faulted Sand" assemblage models predict the most favourable hydrocarbon enrichment blocks. The new models have been applied in the Bohai Bay region and have led to an important breakthrough in finding new petroleum resources in the existing mature basin.