

## **Petroleum Systems and Hydrocarbon Potential of Chad Rift Basins**

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A series of rift basins of Cretaceous to Tertiary age are located in Chad. Estimated yet-to-find recoverable reserves for these basins are 3-5 billion barrels of oil.

The basins are immature in terms of exploration, due to their remote location and previous lack of export route. Despite their immaturity, exploration in the rifts has been successful; of the 48 wells drilled in Chad, mainly in the 1970's and 1980's, 29 were exploration, yielding 14 oil discoveries. Commercial development of three fields in the Doba Basin was commenced by Exxon in 2000, with combined reserves of 950 MMBO. Oil export via a 1040 km pipeline, currently under construction from Chad to offshore tanker loading facilities in Cameroon, is expected to commence in 2003.

The combination of laterally extensive lacustrine source rocks of Early Cretaceous age, fluvio-lacustrine clastic reservoir systems of Early-Late Cretaceous age, plus thick regional mudstone sealing horizons, has created prolific and highly prospective petroleum systems in the rift basins. Transpression and inversion, related to strike-slip movement along the Central African Fault Zone during Late Cretaceous to Tertiary times, created an abundance of prospective hydrocarbon-trapping folds.

Critical risks for exploration are: i) trap breaching through inversion faulting, ii) reservoir degradation due to deep burial, and iii) oil biodegradation.