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### **New Play Concepts for the Deep-Water Shelf of Sao Tome and Principe**

The deep-water shelf surrounding the islands of Sao Tome and Principe, in the Gulf of Guinea, is an entirely unexplored area contiguous with the petroliferous basins of Nigeria, Cameroon and Equatorial Guinea. There are oil seeps and documented subsurface hydrocarbon shows on the islands, which point to the existence of effective petroleum systems within the adjacent shelf areas.

Principal prospectivity is recognized in the compressional fold and toe-thrust zones of the Niger Delta front. Within these zones Neogene delta slope clastic turbidites are charged from Paleogene to Neogene-aged pro-delta source facies shales. Many closures exhibit crestal amplitude anomalies and discernable flat-spots occurring throughout stacked anticlinal closures. Sub-thrust anticlines developed in some areas provide an additional play type developed beneath the stacked closures. Prospectivity is also recognised in the Tertiary abyssal plains beyond the toe-thrust zone in drape anticlines and stratigraphic anomalies where the sedimentary section is thick enough to mature Paleogene source rocks. In some parts of the deep-water shelf, Cretaceous rift basins offer further trapping potential in marginal pinch-outs associated with half-graben hinge zones. These basins may also contain Upper Cretaceous source rocks.