

**AAPG Annual Convention
Salt Lake City, Utah
May 11-14, 2003**

Ole J. Martinsen, Trond Lien, John Gjelberg, Tore M Loseth, and Kristian Soegaard, Norsk Hydro ASA, Bergen, Norway

Deep-Water Sedimentation in Some Circum-Atlantic Basins: Controls and Comparisons

Existing classification schemes for deep-water depositional systems are too simple and largely non-pragmatic for a thorough analysis for exploration purposes. To develop predictive models for deep-water reservoir deposition, a number of critical factors are necessary to evaluate to compare depositional styles. The factors include the nature of the subaerial source area, the type of coastal system temporarily storing or bypassing sediments to deep-water areas, the shelf width, the large-scale physiography of the shelf-to-slope-to-basin floor area, the sediment grain-size range, sedimentary processes operating in the deep-water area, slope physiography and accommodation, relative sea-level changes affecting the shoreline and supply system, tectonic regime, and the morphology and bathymetry of the deep-water basin. Such a process-based approach helps construct reliable depositional models that lead to better prediction for reservoir and seal development. This analysis involves deep-water basins offshore Norway, on the West African margin, offshore Brazil and Trinidad, in the Gulf of Mexico and offshore eastern Canada. These basins are widely different in terms of processes and depositional systems. No unique and common critical factors can be discriminated which on their own explain sufficient reservoir presence in all the basins. However, the analysis shows that subaerial drainage basin, shelf width and sea-level stand are significant for reservoir presence, while the other factors largely control the shape and distribution of the deposits.