Hydrocarbon Potential of Casablanca offshore

R. Bouchta (1), A. Ait Salem(2), Z. Taki (1)
(1)Maghreb Petroleum Exploration, Résidence Kays, Rue Toudgha, Agdal-Rabat, Morocco
(2)Office National des Hydrocarbures et des Mines, 34, Avenue Al fadila CYM, Rabat, Morocco
rabouchta@gmail.com
aitsalem@onhym.com
zouhairtaki@yahoo.fr

The Casablanca offshore area is located on the northwestem extension of the Moroccan coastal meseta. This hercynian structural domain is characterized by broad structures that affect the quartzitic sandstone layers of Cambrian and Ordovician. Devonian limestone and Carboniferous siliciclastic strata are relatively more deformed and could by detached from underlying beds at the Silurian level.

The post Hercynian unconformity cut locally in the Paleozoic section. The area was then peneplained and covered unconformably by Triassic red beds which consist of coarse conglomerate and sandstone formations.

Since the Upper Lias, the area has evolved as segment of the Moroccan Atlantic passive margin where carbonate and siliciclastic facies have been deposited.

During Tertiary the area was uplifted and truncated by base Oligocene unconformity.

Various geochemical studies conducted on Paleozoic rock samples from the Moroccan Meseta, indicate the presence of potential Cambrian, Silurian and Lower Devonian source rocks.

Reservoir rocks are expected in Cambro-Ordovician dolomite and quartzitic sandstones for this offshore area. Similar quartzitic sandstones have shown primary porosities of about 8% in the Doukkala and Essaouira basins. This porosity could likely be increased by fractures related to Hercynian folding and by erosional weathering near unconformities, as observed at the outcrops.

Since no drilling has been done to date in this offshore basin and since four large structural traps have been identified as CASA-l (310 km²), CASA-2 (170 km²), CASA-3 (217 km²) and CASA-4 (130 km²) prospects, it is obvious that drilling should start with the evaluation of one of these structural prospects.