

Shale Gas in Morocco- A First Inventory

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The ever increasing energy demands and decreased number of huge oil and gas discoveries has turned the attention of geoscientists from conventional to unconventional thinking. A first assessment of possible unconventional gas reservoirs was made, examining the Paleozoic depositional system of Morocco.

The main shale gas reservoir is the Silurian sequence corresponding to a regional highstand depositional system with black hot shale at the base characterized by a high Gamma ray signature. Gas potential of these formations is indicated by high TOC content that range from 1 to 12% with mean TOC value of 4.5%. A predominance of Kerogen type II has been identified in Silurian and Devonian Formations and a mixture of Kerogen II and III dominates in Carboniferous Formation. Thermal maturation of these Paleozoic Formations change regionally from $R_o = 0.5\%$ to over 2%.

Within the context of an integrative assessment program a database for shale gas in Morocco, including their occurrences and their geochemical attributes, is in development.

The first results of the assessment of shale gas show that the subsurface of Morocco contains a significant number of interesting shale layers. The most interesting layers are the Ordovician, Silurian, Devonian and Carboniferous Shales. This assessment is based on rock descriptions and already available geochemical data such as vitrinite reflectance, TOC and Rock-Eval analyses.