

Hydrocarbon prospects of the Ukrainian Black Sea

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The Ukrainian part of the Black Sea consists of the Odessa and the Kerch shelves with water depth up to 100 m and deep water area with water depth from 100 up to 2200 m. Geology of the offshore was studied with a number of wells (about 90) within the shelves and vast set of regional reflection seismic profiles. Exploration activity has been taking in the region for about last four decades. Eight gas-condensate commercial fields have been discovered within the Odessa shelf during this period. One oil field (Subbotina) has been recently discovered within the Kerch shelf. Two fields are being developed: Golitsyno and Shtormovoe. Up to day the official recoverable reserves of the offshore fields are not high.

Present-day exploration activity is focused on structural traps that were formed due to compressional tectonic events in the Late Eocene – Middle Miocene time. Stratigraphic pinchouts and fluvial fans and channels could be potential traps also. As a potential traps could be stratigraphic pinchouts and fluvial fans and channels. The main productive horizons are located in Upper Cretaceous (Maastrichtian), Palaeocene, Eocene, Oligocene and Lower Miocene sequences. Among potential reservoirs the Upper Jurassic carbonate, Lower Cretaceous (Albian) sandstones and Miocene-Pliocene fluvial sediments can be considered as potential reservoirs. Intraformational mudstones play a role of seals. According to the data from the adjacent area the source rocks are Maikopian and Aptian-Albian mudstones.

Prospects of the shelves are non-drilled anticlines, potential plays in the existed fields and traps formed by stratigraphic pinchouts and fluvial channels. Some sixty non-drilled anticline structures are known within the shelves. The stratigraphic traps are formed in areas where Paleocene-Eocene sandstones pinchout under base of Maikopian clays.

The recent expert appraisal of the deepwater area demonstrates high perspective for discoveries of huge fields in the area. Potential targets are Miocene-Pliocene submarine fans. The continuation of the paleo-fluvial system can be recognized from the shelf towards the deep water area. Furthermore, according to the seismic data the numerous gas chimneys and bright spots are widely developed within the deep water area. Besides, methane seeps are widely distributed along the continental shelf and slope. It is expected that giant hydrocarbon fields will be discovered at water depths from 100 m to 2000 m.

Described above prospects of the Ukrainian Black Sea point out that the area contains huge reserves of hydrocarbons, which are even have not been accurately appreciated.