



## **Replenishment of Hydrocarbon Resources of Tatarstan as Consequence of Dynamical process in Sedimentary Basin**

**R. Kh. Muslimov** (1), **V. M. Smelkov** (1), **A. S. Borisov** (1), **I. N. Plotnikova** (1)

(1) Kazan State University, Kazan, Russia

Russian specialists conducted theoretical foundation of structure and evolution of large tectonic elements, developed a principal model of oil and gas basin formation procedure of geodynamic analysis of sedimentary basin and of oil and gas areas. Regarding petroleum development, Tatarstan is believed to have been thoroughly explored. In 2004, the Republic will produce more than 30M tons of oil. This production level has been possible to achieve through the use of innovation technique of drilling, production and development as well as the up-to-date methods of enhancing oil recovery. Most fields in Tatarstan are depleted, the regional oil beds have been fully studied, and today's exploration activities have to focus on small fields and the complex, hard-to-access pools located in less promising areas. Also, additional exploration and recalculation of available resources must frequently be done in the previously discovered fields. All these factors make any increases in potential reserves more difficult, but the old petroleum areas in Tatarstan still have some potentials to play an important role in the future. Parametric wells ##33, 34, 20010 and 1001 drilled in 2002 and 2003 have provided new geological information and velocity properties for a more consistent interpretation of the available seismic data acquired in the central and western parts of Tatarstan. Among all western areas, the Melekes trough is believed to have highest hydrocarbon potentials, since it features classic conditions of the formation and accumulation of hydrocarbons. By today, 11 areas in central Tatarstan have been licensed and 15 more areas in central and western Tatarstan are going to be licensed for the geological study and petroleum exploration. All the areas will require areal seismic surveying, geochemical studies and up-to-date exploration techniques tested in Tatarstan, such as NueoSeism, biogeochemical testing, lateral seismic sounding and some others. Fresh investments in these areas can boost up exploration in central

and western Tatarstan, facilitate the use of up-to-date exploration methods and make them more efficient. A hydrocarbon potential of Tatarstan is still high. However, the remaining reserves are limited to great depth, the fields that are difficult to access or are to hardly to recover deposits. Their development and production will not be possible or profitable without new exploration and drilling technologies, especially the fractured reservoir development technique that is absolutely necessary for studying the crystalline basement.