

The Fundamental Economic Issues of Petroleum Geological Explorations in Croatia

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The Section of Geology, Geophysics and Geochemistry of the Scientific Council for Petroleum of the Croatian Academy of Sciences and Arts has already organised scientific meetings on several occasions. These meetings were almost without exception concerning geological-geophysical aspects of exploration for oil and gas as well as the application of specific exploration methods. This was understandable given the socio-economic conditions present at those times. The change in social environment gave the economical aspect of exploration and production far greater importance for it can significantly influence the final result as well as knowledge on geologic-geophysical conditions. Because not many in Croatia have occupied themselves with such and related matters it was our aim to inform the broader professional public with how this was applied in other oil-producing countries. The participation of international experts gave this symposium an international character.

Approximately two years ago, the management of the INA-Naftaplin company mentioned the possibility of organising an advisory meeting to discuss the economic factors relevant to the exploration of petroleum. Both the Ministry of Science and Technology and Ministry of Economic Affairs showed their interest.

INA-Naftaplin is the national oil-company of Croatia. It covers a wide spectrum of activities expected of any such oil company from basic exploration and geophysical measurements to the drilling and production of hydrocarbons both inland and abroad. Numerous explorations have been carried out in foreign countries such as Angola, Tunisia, Albania, Egypt, Libya, and a significant expansion of these activities is expected in the future. Other business agreements with international partners have been made, one example being the most recent arrangement on gas production with the Italian company Agip.

All of these successful business relations create a need for the Croatian petroleum economy to systematically enhance its bonds with the world and to be connected to the world-wide circulation of scientific information. Croatia is a country in transition. Not the only

one. This process has started in all the countries of the former eastern block. It is also noted that in some western countries privatisation of the petroleum economy occurs.

The Croatian petroleum economy has undergone rapid expansion after World War II, but under the conditions of a "plan economy". Of course, everything had its price then as well as today. However the price in those times either didn't play an important role in decision making, or the expenditures were not transparent enough. It is hard to believe that the techno-economical parameters were conveniently omitted from the reports on reserves although their importance was well-known. It is only in recent years that, according to the latest "By-law on the data acquisition, evidencing and determination of reserves of mineral deposits and balancing of reserves" from 1992 that the detailed analysis of the rentability of each and every field is required. These matters were the basic reason for organising the symposium.

An optimal and rational approach to the exploration of mineral resources represents the ultimate scientific goal in the field of economic geology. Initially, exploration makes possible the discovery of oil and gas pools. This is followed by exploration carried out for the purpose of the realistic estimation of oil and gas reserves, and phase three comprises exploration procedures carried out in the course of production itself. All of these explorations exhibit a multidisciplinary character, in various portions they include the results of a number of scientific disciplines, primarily geology, geophysics and petroleum engineering.

The aim is to follow the advance of exploration procedures across the world in Croatia. Obviously, the presentation of the results obtained in this sense is of great importance for our country, and that's why the principal objective of the symposium was to give a review of the possible solutions for a system to intensify exploration for the purpose of increasing the recoverable oil and gas reserves.

We expect the lectures (oral presentations) and discussions to address the prospectivity of exploration

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areas with a rational way of carrying out petroleum-geological explorations, the techno-economic valuation of petroleum-geological projects, petroleum-related legislation and problems of a petroleum economy in transition.

The exploration in Croatia, both in part of the Pannonian basin and in the Adriatic off-shore is still incomplete. In the Pannonian basin special attention has to be paid to non-structural, i.e. stratigraphic types of plays as well as to the rocks underlying Tertiary deposits.

There will be an interesting opportunity to discuss the suggestions on the possibility of acquisition of pre-

viously determined and explored oil reserves in foreign countries. A modernisation of the mentioned By-law on Reserves will also be necessary in order to bring it in line with international standards. The contemporary by-law, although actually not old, is in fact merely a modification of one inherited from the old state in accordance to the actual needs. Alternatively, the recently published estimation of value of hydrocarbon reserves of the fields discovered in Croatia showed that we were too rigorous with these reserves, and that the oil and gas are more valuable than previously thought.