

Russia Country Profile Coal Mine Methane

Methane to Markets Partnership

GENERAL INFORMATION ABOUT EXPERIMENTAL ACTIVITIES OF METHANE EXTRACTION FROM COAL SEAMS IN KUZNETSKY COAL BASIN

I. Targets of the experiment

In 2001г. OAO «Gazprom» made a feasibility study (FS) for experiment of methane extraction from the coal seams of Kuznetsky coal basin (Kuzbass). The FS was made with participation of leading American companies and experts on the field of coalbed methane. The FS results showed the high prospectivity of the researched areas of Kuzbass in the term of industrial CBM production. The project cost-effectiveness estimation showed high competitiveness of CBM in the south Siberian regions in comparison to the natural gas supplies from the deposits of the northern parts of Tyumen region, as the production and transport costs for Tyumen gas are far more higher than gas wholesale prices in Kuzbass region.

The two main targets of the experiment are:

- Technical and economical assessment of possibility to create a new branch in the fuel-energy sector of Russia for coalbed methane extraction in the main coal basins;
- Preparation for industrial coalbed methane extraction in total volume 4-5 bln. m³/year (in future up to 17-20 bln. m³/year) of experimental areas in Erunakovsky and Tom'-Usinsky regions of Kuzbass.

The main objectives of the experiment are:

- experimental proof of industrial gas inflows from coalbed methane wells using technologies approved in different coal basins of the world and adjusted to Kuzbass geological conditions;
- methane resources industrial importance evaluation and reserves estimation for Taldinskaya, Naryksko-Ostashkinskaya, Rospadskaya and Tomskaya areas;
- geological-production and technological base development for design of industrial methane production (in volume of 4-5 bln. m³/year) from the coal seams.;

- base for Russian CBM extraction technologies and equipment creation;
- gas production environmental influence evaluation.

II. Experimental work stages

Untraditional methane resources development projects have usually significant geological and technological risks:

- I stage – methane extraction from coal seams technologies adjustment, resources transfer into reserves of industrial categories at Taldinskaya area of Kuzbass.
- II stage – other intensive methane from coal seams extraction technologies testing (cavitation, directional well drilling); resources transfer into reserves at Naryksko-Ostashkinskaya, Tomskaya and Raspadskaya areas. Geological and geophysical basis preparation for industrial methane extraction from coal seams in volume of 4-5 bln. m³/year.

The second stage scope of work and schedule will be corrected according to the first stage results.

III. I stage of experiment

In the years 2002-2004 managerial procedures, preparation and experimental works for methane extraction from coal seams technologies testing and adjustment were implemented at Taldinskaya area of Kuzbass:

- In order to evaluate possibility of methane extraction from coal seams of Kuzbass region an experimental scientific polygon building Project was developed.
- The polygon was built. It includes two sites: Taldinskaya UM-1 and Taldinskaya UM-5.
- Four experimental coalbed methane wells were drilled at the polygon. Measures for coalbed methane extraction intensification were performed by hydro fraction method. Initial gas inflows were up to 3 000 m³/day in each well.

IV. Project implementation benefits:

For OJSC “Gazprom”

- Creation of raw materials source for gas industry (resources are 13 bln. m³) in the populated part of country with developed gas transportation system sufficient for gas

supply of extensive adjacent territories, and for Russian gas fuel export base strengthening;

- Opportunities to supply replaceable volumes of natural gas from the northern part of Tyumen region to central regions of Russia and to export;
- Savings on costs of natural gas transportation from the northern part of Tyumen region to Kemerovo region and adjacent regions.

For Kemerovo region:

- Energy base creation for the following region social and economic development on the basis of technologic, ecological and pollution-free raw stock;
- Ecological problems solving.

V. Scientific support and maintenance of the experiment

“Program for scientific support and maintenance of the experiment” was developed in order to create regulatory and methodic base, domestically manufactured equipment and technologies for coalbed methane extraction, ecological safety ensuring and decrease of CBM extraction influence to coal mining and environment. The leading applied research and academic organizations are involved in research and development work for the Program: Moscow State University, The State Research Institute of Mining Geomechanics and Mine Surveying (www.vnimi.ru), Research Institute of Comprehensive Exploitation of Mineral Resources of Russian Academy of Science (IPKON www.ipkon.ru), Moscow State Mining University, Oil and Gas Institute - Siberian Branch of Russian Academy of Science, Siberian research institute of and mineral of geodesy, cartography and minerals (SNIIGIMS), R&D Center LORES, The North-Caucasian Scientific Research Project Institute of Natural Gases (SevKavNIPIgaz www.sevcavnipigaz.ru), Rusburmash.

VI. Government support

The Project at the first stage needs to have government support, such as it was in the USA, where government during the initial stage created necessary conditions stimulating unconventional energy sources development in order to decrease oil import into USA. A tax credit of 34 USD for 1000 m³ of methane was issued (and was in force until 1992) and helped to involve significant engineering and financial resources. The tax credit exactly created economic basis for improvement and development of new technologies provided intensive methane extraction growth, that resulted in significant cost savings.

By President V.V.Putin order of 16 September 2000, a standing expert group under the President's Administration was organized in order to ensure Russian-American cooperation for providing commercial methane production in Kemerovo region and for working over the government support proposals. The expert group takes part in creation of organizational, economic and legal basis for executing the project of commercial methane production in total volume of 4-5 bln. m³/year. The basis will include:

- Government rate and tax conditions regulation for coalbed methane production.
- Coalbed methane entry into industry classificatory as an independent mineral wealth.
- Customs regulation for import of foreign coalbed methane production technologies and equipment that do not have domestically produced analogues.