Export Risks of Resource Development Projects in the Yamalo—Nenets Autonomous Okrug

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Abstract—This paper considers problems of long-term development of the Yamalo—Nenets Autonomous Okrug and shows that the financial-economic crisis may have a profound effect on the implementation of large-scale strategic projects in the region. It estimates the export risks of the Yamal gas resource development project at a time when the European energy sector is switching to other gas markets. Closing of the Yamal program may have such an adverse effect on the okrug’s budget revenues that one might have to review the entire regional strategy of socioeconomic development.

Keywords: region, strategy, strategic project, business and social efficiency, energy intensity, export, risks.
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INTRODUCTION

The Yamalo—Nenets Autonomous Okrug (YaNAO) is a unique area with a high concentration of gas and oil industry and a hydrocarbon resource potential of global importance. Over the entire period of development of the oil and gas resources, the total output by January 1, 2008, was more than 13 trillion m³ of natural gas and more than 830 million tons of oil and condensate. This is only 13% of the okrug’s ultimate potential resources. More than 70% of the discovered and prospective hydrocarbon reserves are located in the Yamal and Tazov districts.

Evident competitive advantages of the YaNAO over other sub-Arctic and Arctic oil and gas regions of Russia are a large amount of local human resources with sufficient qualifications, entrepreneurial skills, and innovative experience in exploring the North and Arctic. The main problems in development of the YaNAO are posed by the fact that the unique large oil and gas fields that were put into production in the 1980s are now in their closing stage, while new oil and gas areas lack infrastructure. The potential for growth of oil and gas production at the producing fields is practically exhausted.

In 2006—2007, the YaNAO’s economic growth began to slow down. According to official statistics, in 2006 the gross regional product in physical terms was at the 2005 level and grew only by 2% in 2007. The rate of growth of industrial production also fell from 6% in 2005 to 2% in 2007. In 2004—2006, the volume index of fixed investments was observed to decrease. The growth of tax revenues in the okrug also slackened. For example, in 2006 the average annual growth of revenues to the YaNAO’s budget was down by 50% compared to 2005.

According to estimates of the Institute of Oil and Gas Geology and Institute of Economics and Industrial Engineering (Novosibirsk, Russia), by 2030 the capacities of the producing gas fields may fall to 25% of the present level; those of the oil fields, to 40% [1]. According to our calculations, the resource potential of the producing gas fields will provide no growth of budget revenues in the forecast period even if domestic gas prices increase. The budget revenues may shrink by 50% by 2030 as compared to 2005. Today, more than 67% of the budget revenues come from gas production enterprises, and 58% of this is revenues from gas production at unique fields of the Urengoi, Tazov, and Nadym districts. Any delay in the exploration of new fields could result in aggravation of social tensions in the okrug. A production slump in the okrug’s extractive industries could result in 44 thousand people being left out of work, and if we consider a decline in the demand for services this figure could be as high as 120 thousand. As a result we can expect an unprecedented outflow of workforce and decline in the okrug’s population by 25–30%, because the economically active population will still be highly mobile.

Therefore, it is in the strategic interests of the YaNAO’s sustainable development to:

- Intensely develop oil and gas resources on new territories that could offset the production decline at the unique sites in the next five years;
- Preserve the specialization of the okrug’s towns as rotation workers’ residential settlements that should
be competitive against cross-regional rotations and the external market of construction and other services;

- Improve the spatial organization of production and settlements.

**STRATEGIC AREAS OF DEVELOPMENT**

Improvement of the social value of hydrocarbon resources and creating conditions for sustainable development in the YaNAO are inextricably intertwined with the government’s targets to provide for the energy security and economic development of Russia. According to these principles, in 2008 the okrug’s administration developed, with the help of a number of research institutes, the key statements of the Strategy for Socioeconomic Development of the YaNAO 2020 [2]. The priority areas of development are as follows:

1. Development of the gas industry as the key gas-production complex in the energy strategy of Russia, according to which the national gas output in 2020 should be 730 billion m³, with 600 billion m³ being produced in the YaNAO;

2. Stabilization of the oil output at 40 million tons through development of the oil and gas—oil deposits in the sub-Arctic zone of the Nadym, Tazov, and Krasnosel’kup districts;

3. Economically efficient diversification of the YaNAO’s economy: coherent development of oil and gas processing and oil and gas chemistry in the okrug, development of the local electricity industry through construction of state district power stations in the towns of Novyi Urengoi, Tarko-Sale, Nadym, Noyabr’sk, and Muravlenko to satisfy the okrug’s electricity needs and, further on, transfer electricity to the Urals; and development of the mineral reserves of chromite ores in the polar and subpolar Urals;

4. Removal of infrastructural constraints in the development of hydrocarbon reserves of sub-Arctic and Arctic regions and development of sea transport to ship liquid hydrocarbons, including Yamal’s liquefied natural gas, in order to meet the needs of the northern regions of Russia and enter new world energy markets. By 2020, it is planned to build 2123 km of railways, 2339 km of highways, a bridge across the River Ob that would connect the towns of Salekhard and Labytnangi, 2153 km of gas pipelines, and more than 300 km of oil pipelines;

5. A sizable increase in the innovative component of the technical refitting of all production facilities in the Okrug, in particular, its infrastructure, in order to seriously cut labor costs and environmental loads of industrial and transportation development;

6. Creation of a stable economic base for development of a modern system of settlements, and proactive use of their production facilities and human resources in the prospective development of the resource potential;

7. Conservation of traditional lifestyles of indigenous ethnic minorities of the North and cohesiveintegration of these ethnocultural communities into the modern Russian and international cultural medium; provision of Russian citizens who are representatives of indigenous ethnic minorities with a package of social services guaranteed in the Constitution of the Russian Federation;

(8) Observance of the ecological principles of land development in the Okrug based on the environmental and social standards adapted to comply with the international criteria of sustainable environmental management.

The key elements of the long-term strategy of socioeconomic development of the YaNAO will create a set of temporally interconnected territorial megaprojects for development of hydrocarbon reserves, comprehensive projects for regional infrastructure development, and a program for the conservation of traditional natural resource use practices of indigenous peoples of the North. The core of the system is the following four major projects:

- The Comprehensive Yamal Development Program on development of the oil and gas fields of the Yamal Peninsula and adjacent offshore areas proposed by Gazprom. According to this program, by 2030 the production output will be 310–360 billion m³ of gas and 12 million tons of oil and condensate. This will allow Russia to increase its gas production to 1000 billion m³ per year and fully compensate for the expected decline in production at the okrug’s unique fields by 2030. Development of Yamal’s resource potential in compliance with international environmental standards dictates the need for a transition to a new technological paradigm of social and infrastructural development of territories;

- The Low-Pressure Gas Project on extraction and processing of the low-pressure gas of the Medvezh’e and Urengoi fields at the closing stage of development;

- The cross-regional Industrial Urals—Polar Urals integration project on creation of a new raw-material resources base for Urals metallurgy and development of chromite and other nonferrous and rare metal ores of the polar and subpolar Urals. Implementation of this megaproject will allow one to stop importing raw materials for Urals metallurgy and release finances for a fundamental modernization of the metallurgical and machine-engineering industries of the region. The planned investment in the project is 830 billion rubles, including 600 billion rubles to build the transport and power supply infrastructure. It is suggested to implement the project within a public—private partnership expected to attract 105 billion rubles from the Investment Fund of Russia and 302 billion rubles from strategic investors. The companies Russian Railways, Gazprom, Yamal’skaya zhelezodorozhnaya kompaniya, Novatek, TNK-BP, Lukoil, Chelyabinsk and Magnitogorsk metallurgical combines, Metchtel, and other strategic investors confirmed their participation in the project at the end of 2008;