STATUS AND DEVELOPMENT PROSPECTS OF THE RUSSIAN DOMESTIC NATURAL GAS MARKET

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Russia
ABSTRACT

Modern condition and development prospectives of Russian domestic gas market draws high attention both inside country and abroad for the following reasons:

- Gas industry provides more than 25% tax revenues in the federal budget of Russian Federation and 30% of the currency income.
- Over 30% of world gas reserves concentrated on Russian Federation territory.
- Part of Russian gas supply on European market is about 25%.

The domestic Russian gas market represents as a natural monopoly due to existing historical conditions, which is determined by uniqueness of the United Gas Transmission System (UGTS).

At the present time Russian gas market goes through evolutionsal transformation, concerning changes in sphere of government control of relations in gas industry. The development of Russian gas industry is targeted at free market sector formation and further gas prices liberalization for industrial consumers, as well as problems solution of the off-sited organizations access to the United Gas Transmission System, which is under Gazprom control and ownership.

Russian gas market is represented by specialized gas companies (JSC “Gazprom”, which consist of production, transport, processing and selling daughter companies, and independent producers and gas suppliers) and vertical-integrated oil companies.

From the view of state interference gas market splits on two sectors – controllable and uncontrollable. The state controllable elements of gas end price are following:

- wholesale gas price for industrial users, automobile gas filling compressor station (AGFCS) and population;
- gas-distribution network transportation tariffs;
- supply and sales fee for gas supplier.

Uncontrollable market segment takes about 15% of gas selling amount. Independent gas producers and suppliers working within this segment. Market gas price exceeds controllable wholesale price on 25%.

At the moment, there are some actual problems to be solved to achieve the market development. They are:

- Expansion, modernization and reconstruction of the existing gas supplying systems;
- Improvement of current laws, concerning relations controlling in gas industry;
- Development and improvement of market relations in gas industry;
- Development of the alternative ways of gas using, directed on improvement of its using effectiveness, implementation of gas-saving technologies;
- Dynamic development of compressed and liquefied gas markets;
- Necessity of export contracts execution beyond Russian borders, with taking into account that primary Gazprom fields goes into falling production stage;
- Consolidation of Russia positions on foreign markets, suppression of gas re-export.

As a result of current market researches, prospects of the domestic gas market development were determined with consideration of gas demand forecast, gas prices dynamics on domestic and foreign markets, tendencies of gas industry development.

Current domestic gas market in Russia does not meet the modern requirements to the market economy. The necessity of gas business structure transformation is mainly caused by impossibility of effective functioning of current system that brakes not only gas industry, but also the whole country economy. Market relations development should be fulfilled step-by-step, due to some characteristic features of current gas supplying system.

The improvement of gas business transactions on the domestic market will have a positive influence on social and economic characteristics, as well as the country image at the foreign market.
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1. STATUS AND DEVELOPMENT PROSPECTS OF THE RUSSIAN DOMESTIC NATURAL GAS MARKET

Current state and the prospects of the development of the domestic gas market in Russia attracts much attention both inside the country and abroad for the following reasons:

- Gas industry provides more than 10% of the tax income into Russian budget and 20% of the currency sales proceeds of natural gas export;
- More than 30% of the world natural gas reserves is based on the Russian territory;
- Russia is on the second place of the world gas production (23%);
- Russia is also on the second place of the gas consumption;
- Nearly 25% of the European gas consumption is the consumption of the Russian exported gas;
- The Russian gas pipeline system is integrated into the European pipeline system;
- Natural gas resources give Russia an opportunity to become one of the key players on the developing market of LNG.

All those factors prove the strategic advantage and the leading role of Russia on the world gas market. The forecast increase in the gas consumption in European countries requires the high attention to the main suppliers of that unique energy resource.

Keeping Russia's leading position on the world gas market depends mostly on the success of the domestic market development. The present report is aimed to observe a current state of domestic Russian gas market and the expert evaluation of the Russian gas market development prospects with taking into account the probable variants of gas business improvement.

The Russian gas market is above all the domestic market of Russian Federation. The energy strategy of Russia provides complete and secure gas supplies to the Russian population and economy of the country and absolute meeting the export engagements. The domestic gas market can be divided into two segments:

- Gas transport pipeline system of the United gas transmission system (gas market of UGTS);
- Gas market of the local systems of gas supplies.

Gas market of UGTS covers 55 of 57 administrative regions of European part and 9 regions of the Western Siberia and covers less than a half of the territory of Russian Federation.

This market provides gas for 6 economic regions: Central, Northwestern, Privolgskkij, Southern, partly Uralskij and West- Siberian.

The local systems of gas supply are the market of the single seller performing all the stages of production including upstream, transportation, and downstream, which is the natural monopoly market. That market segment consumes less than 2% of the annual gas consumption of Russia.

The domestic Russian gas market by virtue of the historical peculiarities of the gas industry development is the market of natural monopoly due to originality of the existing Unite gas supply system (UGTS), which is operated by JSC Gazprom.

The subjects of the economic relations on the domestic gas market are:

- Companies owners of the systems of gas supply, defined in the Federal Law “On gas supply in Russian Federation”;
- Independent gas producing organisations;
- Other companies that have gas and/or legally render services on its transportation and storage themselves or by their authorised parties;
- Byers resellers obtaining gas for the further resale.
According to the Government Regulation of the Russia Federation from 14.07.1997 №858 (under edition from 03.05.2001 №334) the “interdependent organisation” is the organisation that doesn’t belong to JSC Gazprom system (independent producer, supplier, consumer).

From the producer’s part all market players can be classified in the following way:

- JSC Gazprom and its affiliated companies;
- Specialised gas companies providing gas for local consumers’
- Specialised gas companies that are not in Gazprom group of companies supplying gas through gas transmission systems UGTS;
- Vertically integrated oil companies;
- Specialised companies rendering services of gas transportation through gas distribution systems;
- Specialised companies on gas supplies for the final consumer.

At the present time the gas market faces the evolutonal transformations in government gas industry regulating sphere. The development of Russian gas industry is aimed on the formation of the free market sector and further gas price liberalisation for the industrial consumers and also for the solving the problem of third party access to the UGTS of Russia, that is owned and operated by JSC Gazprom.

Reforming of the Russian domestic gas market primarily presumes improvement of the currently in force legislation and gas pricing system.

Gas sphere legislation can be relatively divided into 4 parts:

- Laws and regulations determining principles of domestic gas market functioning;
- Government regulations determining gas pricing system on the domestic market;
- Normative-legal regulations concerning issues of gas industry reforming;
- Other regulation documents concerning in any way gas industry.

Key legal documents on this sphere are:

Energy strategy of Russia to 2020, approved by the Government of Russian Federation Resolution from 28.08.2003 № 1234-p,

Federal law from 31.03.1999 № 69 FL “On gas supply in Russian Federation” (in wording of 22.08.2002 № 122-FL),


Government of Russian Federation regulation from 29.01.1993 № 88 “On state regulation of natural gas and other energy prices”,


Government of Russian Federation regulation from 29.12.2000 № 1021 “On basic provisions of determination and state regulation of gas prices and tariffs on gas transportation in Russian Federation”, in wording of government regulation from 22.05.2002 № 328,

Government of Russian Federation regulation from 14.07.1997 № 858 “On providing access of independent companies to Gazprom gas transportation system”

President of Russian Federation decree from 28.12.1996 № 1782 “On increase of gas supply security of consumers in Russian Federation” (in wording from 25.05.2000 № 951),
Federal law from 17.08.1995 № 147-FL “On natural monopolies” (in wording of Federal law from 29.06.2004 № 58-FL),


Within the existing two-level gas pricing system prices for the gas sold by Gazprom and affiliates (Kamchatgazprom, Rosneft-Sakhalinmorneftegaz, Norilskgazprom, Sakhalinmorneftegaz, Yakutgazprom) are state regulated.

Independent gas producers and sellers have the opportunity to sell gas at agreed price that on the average 25-30% higher than wholesale price fixed for the definite year by the Federal Tariff Office of Russia.

Gas fields of independent producers are located mostly in Tumen region, therefore the most past of Russian regional markets are almost inaccessible for them and creation of competitive gas market is impossible without possession of their own capacity.

Independent gas producers sell their gas mostly in closely to their gas fields located regions. But in last years the increase of gas sales volume of independent producers and significant geographical expansion of supplies. And if formerly they sold gas in closely to their gas fields located regions, now their supplies reach Leningrad, Arkhangelsk, Tver, Novgorod regions.

During last 5 years gas transportation volume of independent gas producers through Gas Transportation System of United Gas Transmission System increased for 25%. And now the problem of access of independent gas producers to gas transportation capacity is solved. Almost all gas volume of independent gas producers was allowed into the pipeline.

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Table 1: The dynamics of gas production by independent gas producers and gas transportation volumes through Gas Transportation System of United Gas Transmission System
Independent gas producers have access to Gazprom pipeline system in the presence of spare capacity under the same conditions as Gazprom subsidiaries. Furthermore tariffs for independent gas producers are mostly lower than inner corporate tariff of the definite transport company that has to transport gas at an unprofitable tariff fixed for the independent gas producers by the Federal Tariff Office of Russia.

Independent gas producers work in the unregulated segment of the market where about 15% of natural gas is sold. Market gas price is 25% higher than regulated wholesale price.

One of the relevant issues of Russian gas industry development are ways of possible reforming of gas industry. The need of market transformation has drawn to a head.

The rules of running gas business in Russia is strictly regulated by the currently in force legislation. Relatively strict normative-legal regulation of gas industry is caused by the historical backwardness of industry from the point of view of market mechanisms. This becomes apparent under the following conditions:

- gas producers buy equipment at market prices and deliver gas to the consumers at regulated prices that in some price zones do not cover costs of production and transportation;
- all three natural gas price components are state regulated. Artificial restraint of gas prices growth over long period of time had lead to gas prices became the lowest among all energy resources. This reduces competitiveness of alternative energy sources and contradicts the market principles of competiveness between energy sources;
- low wholesale gas prices lead to shortage of gas producer investments that causes first of all reduction of research and development and geological works financing. This leads to lack of efficiency increase along the industrial chain – from gas production to its distribution – and as a result to decline of competitiveness of gas producer. Gas producers can’t flexibly come along with the external factors changes like other Russian producers that more than 10 years work under market relations;
- working restrictions for gas trade produced by Gazprom affiliates do not allow Gazprom efficiently satisfy gas demand at a competitive price.

Market principles of business are based on the demand-and-supply mechanism, as a result market price is set. As it was mentioned above gas prices in Russia are state regulated.

Strategic significance of natural gas as a dominant source of energy in Russian fuel-energy balance and unity of property and industrial complex of gas industry within JSC Gazprom and stock companies in local gas-supply regions determine peculiarities of contemporary gas pricing system on the domestic market.

The existing pricing system is two-level system of wholesale and retail prices. Retail gas price is formed on the basis of the wholesale price of gas produced by Gazprom and affiliates (Kamchatgazprom, Rosneft-Sakhalinmorneftegas, Norilskgazprom, Sakhalinmorneftegas, Yakutgazprom) or gas-production price of independent gas producers (taking into consideration tariffs for transportation through Gas Transportation System of United Gas Supply System), tariffs for transportation through gas distribution network and supply-services payments. All components of retail price are state regulated except market price of gas produced by independent gas producers.

As it was mentioned before gas industry has been over the long period functioning not under market relations, under the same conditions as other branches of industry in Russia.

For the further development of gas industry providing increase of investments and profitability step-by-step liberalization of gas market is needed. This will also lead to activation of independent gas producers in the field of internal gas consumers supplies.

At the first stage industrial gas consumers that use gas most effectively should be lead to the free market. Social consumers (population, residential consumers, defence industry etc.) must be the last to bring to the free market. At the same time the compensation mechanism of the tax free income of gas producers should be worked out.
At the present time the most actual scenarios of market reforms are:

**Scenario 1:**
- Independent producers excavating gas from the fields integrated into the UGTS deal at the unregulated sector;
- Gas projects at the Western Siberia and the Far East are fulfilled under the terms of providing the necessary rate of the investment effectiveness, and at the market prices;
- The volumes of gas sales of JSC Gazprom in the UGTS zone step by step become free from the government price control;
- By 2010 nearly 40% of gas sold for the industry consumers will be supplied at the market prices;
- By 2015 90% of gas sold for the industry consumers and 50% of gas sold to population will be supplied at the market prices;
- By 2020 almost all gas will be sold at the market prices.

**Scenario 2** assumes quicker step to the free market and differs from the first scenario the paces of the becoming free from government gas price control of JSC Gazprom in the UGTS zone:
- By 2010 90% of gas sold for the industry consumers and 50% of gas sold to population will be supplied at the market prices;
- By 2015 all gas will be sold at the market prices.

In the basis of the market relations there should be mid-term and long-term contracts on gas supplies.

At the present time gas supply contracts are concluded for one year period of time. The objective reason for deviation from the mid-term and long-term contract conclusion (both from the producer’s part and consumer’s part) – is the governmental control of the three elements of the final price that limits the possibility of formation the objective gas price forecasts and tariffs on its transportation along the UGTS.

Long-term and mid-term gas supply contracts will be convenient for the large industrial consumers with long production cycle and capital – intensive production.

For each type of the gas supply contract the transparent and well-grounded mechanism should be developed.

Before defining the gas price forming mechanisms it is essential to make the segmentation of the gas consumers market in order to minimise the production and economic consequences of the transition to the market prices for the industrial consumers and population.

For that reason it is advisable to develop for each group of consumers their own gas price formula. All gas consumers may be divided onto 4 groups:

- Consumers who use gas as a raw material for production and can’t use any other raw materials (above all nitric fertilisers production, methanol, polymers production, chemical and petrochemical industries);
- Consumers who may use gas as the fuel and technologically can’t switch to alternative resources (cement and building industry);
- Consumers who use gas as a fuel but are able to limit its consumption or to reject using it at all (mostly power engineering and metallurgy);
- Socially important consumers (population, housing and communal services).

When forming gas market prices regarding its strategic significance and dominating in the energy balance the sensitivity of consumers to gas price changing that depends on ratio of the gas payment in the production costs should be considered. The most sensitive towards the gas prices will
be gas-transforming factories, chemical industry plants, building materials producers (capital intensive production).

Natural gas in Russia is unfortunately the most underestimated fuel and energy resource, which cost does not reflect its consumer’s quality and as a result is the cheapest (correlation of prices on energy resources is on the chart 1). With the present tendency of slowing the growth of controlled wholesale prices the gas consumers will be for long time relatively indifferent to the gas price rise. The range of the gas price indifference varies for each industry and each consumer.

![Figure 1: Gas price correlation on the main energy resources](image)

The top level of the range of the gas price indifference is that level of prices when the gas price is equal to the prices for the alternative energy resources and will provide the reasonable rate of income for the consumer when fulfilling the gas saving projects and taking measures for reequipment the production. When achieving the equilibrium prices for the energy resources the consumers will have to choose the energy resources.

More important problem is the problem of price forming for the electric sector. As the prolonged “gas pause” led to the disbalance in the fuel and energy balance in favour the natural gas in the European part of Russia.

It must be mentioned that at the present time nearly 12% of the total consumption in power engineering is received from the independent producers at the market prices and also if necessary buy gas at the Mezhregiongaz Ltd.

For some consumers whose expenditures for buying gas do not exceed 8-10% will be indifferent for price changes in particular price range which is individual for each consumer and industry.

As a result of such researches it may be concluded that the transition to the gas market prices for industrial consumers will not have strong influence on the gas consumption and worsen the economic indexes of the consumers for the following reasons:

- Gas consumption depends on production programs (production plan, technical and technological capacities of production), market infrastructure and other objective factors influencing the production;
- The present rate of whole sale prices hasn’t reached its maximum after which the necessity of introduction of gas saving technologies or using the alternative resources appears.

Despite the industrial peculiarities of gas consumption the regional factor should be considered when switching to liberalised market. The present territorial gas price differentiation system (11 price zones) reflects only costs on excavating and transportation gas to the consumer to any region in Russia. But the price do not reflect the regional peculiarities especially the provision of the own fuel and energy resources, the degree of gasification, the structure of the fuel and energy balance, social and economic region development.

The indicator of the current (spot) gas price should be stock price. At the present time the open trade in Russia is not developed enough. In Russia only two hubs are operating – Electronic
trade hub Mezhregiongaz Ltd. and Interregional stock of the gas and oil complex. The volume of the trades do not exceed 1%.

The active development of the open trades is expected. It is planned that JSC Gazprom and independent producers during 2006 will sell Mezhregiongaz Ltd. about 5 bln. c.m of natural gas each, which is 2% from the expected value of gas consumption.

One of the directions of gas industry development is the increase of sales of compromised and liquid gas.

At the present time gas price used as the fuel at the AGFCS is 690 rub. Per thousand cubic metres. The Limitation level of the retail prices for the compromised gas can not exceed the 50% (including VAT) rate of the price of the petrol A-76 sold in that region. The compromised gas sales in Russia because of the lack of development of the infrastructure of AGFCS are not profitable. But the situation is changing for the better.

Liquid natural gas is produced in small quantities and is supplied for the domestic market. The projects of the building the liquefying factories are one of the most attractive directions of development of gas business.

The successful development of gas industry depends mostly on condition of the gas infrastructure. The basket case of the basic assets in gas industry is about 60%. The average age of the basic assets is about 25 years. The necessity of keeping the basic assets in working conditions provides stable, safe gas supplies, and requires big amount of cash assets for modernisation, reconstruction above all gas transportation systems UGTS.

Length of Gas Transportation System of United Gas Transmission System amounts to more than 150 thousand km, about 60% of which is equipped with the pipes 1420 and 1220 mm in diameter. Period of operation – about 50 years. Deterioration – more than 55%. As a result of physical and moral deterioration productiveness of gas transportation system decreases for 10% annually.

Domestic gas demand growth and impetuous increase of gas demand in Europe, creation of LNG market causes the need of transportation capacity increase of gas transportation system.

One of the Gazprom tasks is to satisfy the existing and future gas demand of domestic and foreign markets. For that not only maintenance of operation condition of United Gas Transmission System is necessary but also increase of its transportation capacity in order to transport the growing volumes of produced natural gas that are planned by Russian gas producers.

The needed volume of investments to provide the planned amount of gas production in the year 2006 – 548 bln m³ and domestic consumption at a level of 391 bln m³ is 310 bln roubles, including 278.4 bln roubles of capital investments. In 2006 the implementation of large-scale gas transportation projects — “Yamal-Europe”, North-European pipeline, Northern regions of Tumen region – Torzhok, extension of Urengoi gas transportation junction, creation of gas transportation system in Eastern Europe and Far East — will continue.

It is significant that Russian domestic gas market develops in close connection with foreign markets, first of all – European gas market. Export gas supplies have for the long period of time provided the profitability of Gazprom activities, compensating threats from domestic market supplies and forming the necessary sources of investments.

The existing Russian domestic market does not comply with market economy requirements. The need for structural transformations of gas business is caused by inefficient functioning of the existing system that prevents the development not only of gas industry but the economy as a whole. The development or market relations must be lead step-by-step taking into consideration peculiarities of Russian gas distribution system.

Making the conclusion it is significant that currently in force legislation allows to fulfil the transition to market prices for industrial consumers determined be means of market mechanisms. Gas
price should be market based and reflect economic, ecologic and social qualities of natural gas using price formula.

Implementation of the formula will increase validity of the gas price for end consumers set taking into consideration the whole complex of regional peculiarities of fuel resources consumption in Russia.

Improvement of gas business running conditions on the domestic market will positively influence not only social-economic indexes of development of industry and Russia but also image of the country in the world.

2. REFERENCES


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