www.ngv.ru

NATIONAL INDUSTRY ENERGY MAGAZINE

OIL AND GAS VERTICAL

May 18
No.2 (433)

Oil and gas sector and russia's economic growth problems

EVGENIY GAVRILENKOV

Page 59

OIL AND GAS
VERTICAL
NATIONAL INDUSTRY ENERGY MAGAZINE

2(433)18

Inside

16+

The magazine is registered at the Russian Press Committee
Registration certificate No.016629
Reported circulation 15 000 copies
Printed at Atlant-C LLC, 125476, Moscow, Vasily Petushkov street, 8, floor 3
In case of materials reprinting, reference to the MAGAZINE "Oil and Gas Vertical" is obligatory.
Subscription index: OJSC "Federal Agency on Press and Mass Communications", 47571

Public catalogue Russian Press, volume 145380
Editors have no responsibility for truthfulness of the information published in advertisements.

Actual address:
Complex "Tower on the Embankment" block C
Presnenskaya Embankment, 10, floor 47
123317, Moscow, Russia
Tel./fax: +7(495)5105724
e-mail: info@ngv.ru
Mail address:
Profsoyuznaya street, 124
117321, Moscow, Russia
Representative in Azerbaijan (Baku)
Vladimir Mishin
Mishin1305@mail.ru
Tel./fax: (99412) 465-9432

Open price

EU's fourth energy package

Gazprom in Europe: what to prepare for

ANDREY KONOPLYANIK

Advisor to Director General of OOO Gazprom Export, a professor at the International Oil and Gas Business Department of the Russian State University of Oil and Gas (NIU) named after I.M. Gubkin

Modern architecture of the EU gas market has been formed for over 50 years. It dates back to 1951, when the Treaty of Paris was concluded, which initiated the creation of the first integration association in Western Europe – the European Coal and Steel Community (ECSC). France, Germany, Italy and the Benelux countries put their signatures under it. This laid the foundation for the restoration of machine-building industries in Europe – the main driving force of postwar industrial development. But, most importantly, this integration union accelerated the reconciliation of two recent adversaries in the Second World War – France and Germany – for nothing can reconcile conflicting parties better than joint creative work.

What were the "steps of a long way" in building a single EU gas market and what are the prospects for its further transformation in the face of a changing paradigm of the development of global energy markets and increasing global competition? And, finally, how can all these processes affect the competitive positions of Gazprom in the European market?

The next step on the road to European integration was the Treaty of Rome, signed by the same countries in 1957. It provided for the creation of the European Economic Community (EEC), covering a large number of goods and services. It was also planned to eliminate all barriers to the free movement of people, goods, services and capital.

Liberalization took place in accordance with economic logic, on a "simple-to-complex" basis, starting from less capital-intensive industries. Therefore, the last thing involved was the energy industry – a capital-intensive and, what's more, based on a permanent infrastructure, branch. Only in the late 1990s was the First Energy Package of the EU adopted (in 1996 – for the electric power industry, in 1998 – for gas).

Further development of the gas market regulation system of the expanding European Union took place against the background of several interdependent processes *(see graph "Formation of modern architecture")*.

SINGLE MARKET INGREDIENTS

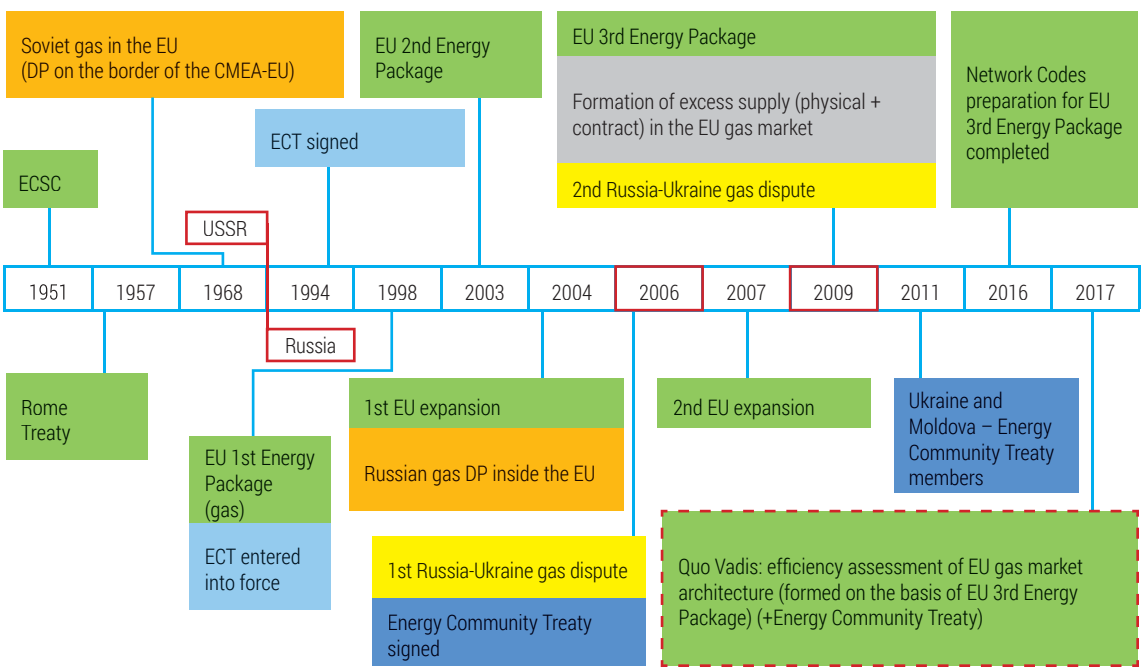
The EU countries have always been highly dependent on the import of energy resources in general and gas in particular. Apparently, this dependence will grow even further. This understanding is unequivocally stated as the position of the Directorate-General for Energy of the European Commission (DG Ener) in its internal documents.

But this also means that the dependence of the EU countries on the sovereign decisions of the gas exporting countries will also be growing. They supply gas to the EU from fields which are developed by them and are mostly vast – for realization of "economies of scale" – and have, therefore, a sovereign right to maximize their monetized resource rent. And this causes concern to the EU institutions.

Liberalization took place in accordance with economic logic, on a "simple-to-complex" basis, starting from less capital-intensive industries

Objective economic logic requires that mechanisms for the EU gas market regulation be formed taking into account justified, investment-related requirements of exporting states, especially, those connected with the EU by a capital-intensive fixed cross-border infrastructure (Russia is the main such exporter). Moreover, the fact that the EU depends on import makes it impossible to build its gas market according to the American model, since in the US the gas market has been evolving on the basis of the country's own – mostly small and

FORMATION OF MODERN ARCHITECTURE AND THE SYSTEM OF REGULATION OF THE EU GAS MARKET: THE STAGES OF A LONG WAY



Source: author

medium-sized – fields, developed by private businesses. And the role of the state has mainly boiled down to fiscal management.

However, the EU seeks to impose its own model on exporting states, the model which is aimed at creating a competitive market. And they are doing it by fostering greater competition of suppliers, in the first place, and, as a result, by taking a course for reducing prices in Europe. This creates a deep conflict of interests between exporters and importers. It can be satisfactorily resolved only by finding a balance of interests of the parties.

In 1968, the USSR / Russia started to supply gas to the EU, later the gas supplies continued to increase. They were based on long-term export contracts (LTGEC) according to the Groningen model. It should be taken into consideration that if before the enlargement of the European Union (in 2004) the delivery points of Soviet / Russian gas were located on its external border, afterwards they turned out to be located deep inside the EU.

Therefore, if earlier only the change in contract prices influenced the Russian deliveries within the framework of LTEGCs, now part of the Russian gas supply chain was located on the territory of the EU. That is to say that the rules of the European gas market regulation concerning, in particular, the unbundling of the functions of production, purchase and sale and transportation of gas, were now applied to it. In accordance with these rules, the gas supplier could no longer be the operator of the gas transportation system (GTS), through which the supply is carried out.

Also, after 2003, in the EU a general rule was established that required the so-called mandatory third parties access (TPA) to the gas transportation infrastructure. This created the risks of contract non-compliance. Therefore, after the adoption of the Second Energy Package in 2003 and the enlargement of the European Union in 2004, risks for gas exporters to the EU, especially Russian companies, increased substantially,

The EU countries have always been highly dependent on the import of energy resources in general and gas in particular. Apparently, this dependence will grow even further

The system of international mechanisms for regulating energy markets with the participation of the EU, Russia and other countries of the "Greater Energy Europe" was also developing. There is a correlation between the processes of formation of the EU internal legislation and international legal acts with the participation of the EU. The latter include the Energy Charter Treaty (ECT, whose member countries, including EU and non-EU countries, have drawn up mutually acceptable rules for regulating energy business on the territory of the Treaty) and the Energy Community Treaty (DES, whose member countries are obliged to apply the statutory provisions of the EU energy law to their domestic legislation).

At some stages, this correlation was positive, in other words, it served shared – or at least not conflicting – interests of the contracting parties, including the EU energy importing countries and the energy exporting countries. This happened, for example, between signing the ECT and adopting the First Energy Package of the EU. At some stages the correlation was negative, for example, between signing the ECT and adopting the Second and Third Energy Packages of the EU and the DES *(see graph "Instruments of internal liberalization").*

The EU seeks to impose its own model on exporting states, the model which is aimed at creating a competitive market. By fostering greater competition of suppliers, in the first place

Evolutionary processes in international gas markets have had their impact on Europe. Thus, in 2009 the excess demand was replaced by an excess supply. This was the result of changes on both the demand side (the consequences of the economic crisis of 2007-2008, the effect of long-term policies aimed at improving energy efficiency), and on the supply side (the domino effect of the US shale revolution). Excess supply (both physical and contractual) dramatically increased the effectiveness of liberalization activities in the EU gas market. They were implemented on the basis of the provisions of the Third Energy Package, which entered into force in the same 2009.

Liberalization trends in the EU gas market were largely accelerated by the Russian-Ukrainian transit crises of 2006 and 2009, which led to temporary interruptions in gas supply from Russia to the EU via Ukraine due to unauthorized withdrawals from the transit pipeline. This was reflected in the more radical – and, in part, discriminatory – nature of the EU gas regulatory system in relation to external suppliers, notably, from Russia.

All these intertwining processes led to the formation of today's system of regulation of the EU gas market. Its effectiveness was to be assessed within the framework of the Quo Vadis project *(see One-Sided, Oil and Gas Vertical #15-16/2017).*

THIRD ENERGY PACKAGE

In September 2009, the Third Energy Package was adopted. It came into force in March 2011. In accord-

ance with it, a new architecture of the single internal EU gas market was formed, built on the principle of a set of market zones *(see graph "Organization of a single internal gas market")*.

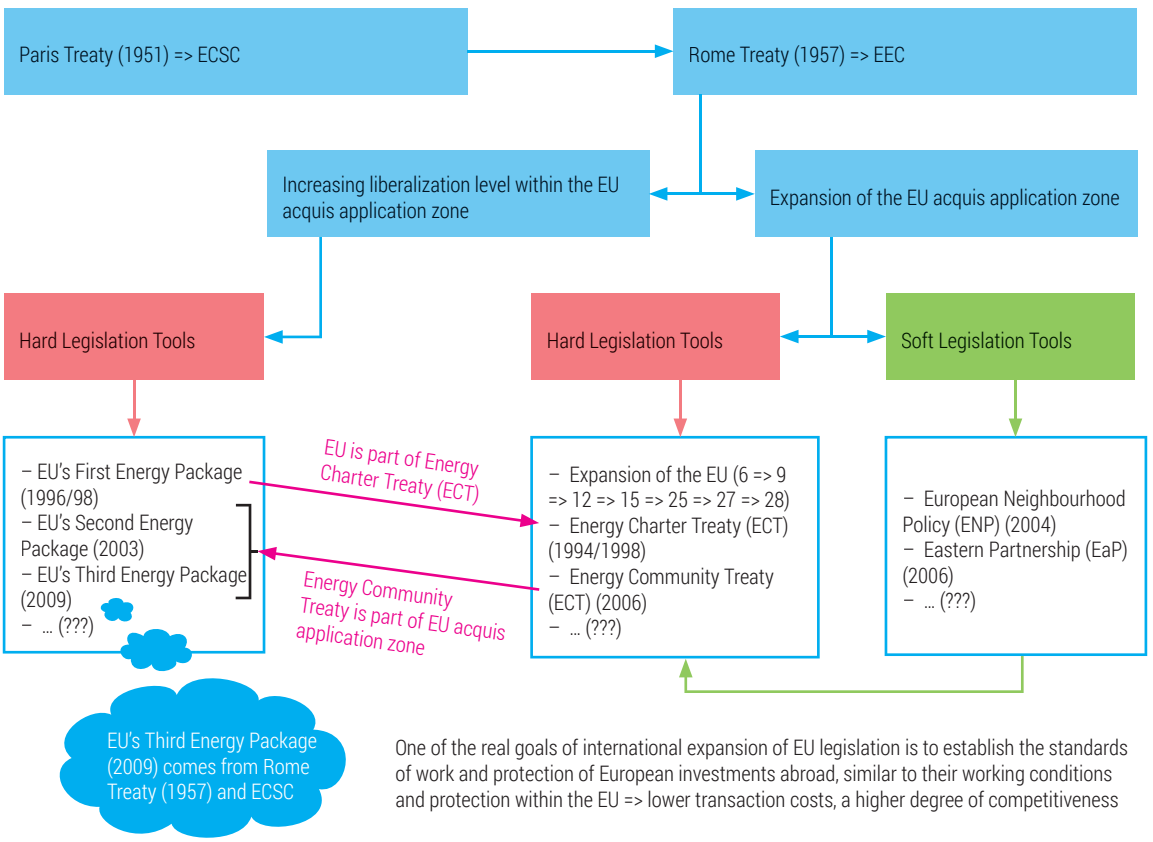
These market zones are created in the form of "pools", communicating with each other through pipelines-interconnectors. Transportation tariffs are calculated on the basis of the entry-exit system. Access to gas transportation system (GTS) capacities at the zone borders should be offered to shippers in the form of "related products", that is, as an entry-exit package at each point of the zone boundary crossing. Inside the zones, the gas transportation system operator is responsible for the transportation of gas. This is a radical departure from the previously used methodology of distance tariffs for transportation within interrelated markets.

Gas sales under all new contracts should be carried out on virtual trading floors (hubs) within each zone. And it is not necessary that zones coincide with the geographical boundaries of individual EU countries. This is no less radical departure from the principle that had been in effect since the 1960s. Previously, gas sales were carried out at custody transfer points at the border of a country. At the same time, prices were set within the framework of fixed-term contracts on the basis of various modifications of the so-called Groningen formula and depended on the cost of substituting energy resources of the end user.

The Third Energy Package created new risks and uncertainties for the traditional investment model for the development of gas resources and its long-term supply. But it also opened up new opportunities for exporters. For example – the possibility of deliveries directly to end users, bypassing wholesale dealers.

Thus, there were risks of a transition period from one model of the functioning of the gas market to another. The EU countries, of course, have the sovereign right to choose such a model. But it is important that this choice is carried out taking into account the interests of states that are interdependent with the EU within the technological infrastructure of gas supply.

INSTRUMENTS FOR INTERNAL LIBERALIZATION AND INTERNATIONAL EXPANSION OF THE EU IN THE ENERGY SECTOR



One of the real goals of international expansion of EU legislation is to establish the standards of work and protection of European investments abroad, similar to their working conditions and protection within the EU => lower transaction costs, a higher degree of competitiveness

Source: author

CODES AND TARGET MODEL

In 2010, the process of preparing by-laws to the Third Energy Package – Network Codes (NC) began. This process lasted until early 2017 *(see "Third Energy Package").* It was a complex, lengthy, multi-stage bureaucratic procedure involving all major players in the European gas market, both from regulators and from the gas business.

That is why the process of working on the NCs continued for a long seven-odd years. Over this time, six legally binding codes were prepared and adopted (at first it had been planned that there would be 12 of them). They concern the following areas:

- congestion management;
- access to the existing and new facilities of the GTS;
- balancing the GTS;
- the possibility of joint operation of the GTS and the interaction of their operators (rules for the exchange of information)
- tariffs;
- integrity and transparency of wholesale markets.

The preparation of new NCs is not envisaged by the current plans of the European Commission. That is to say that the Third Energy Package is now finalized.

The formulation of NCs was conducted within the framework of the discussion on the parameters of the Gas Target Model (GTM). Two editions were adopted, in 2011 and 2014 respectively. Although the GTM is not a legally binding document, it provides the vision of what a single liberalised EU gas market should be, as seen by participants of this discussion. The GTM paper says that the following conditions need to be met for such a market to be present: a certain level of trade in terms of total volume of gas traded compared to the volume of gas consumed (i.e. a churn rate of 8), at least three sources of gas supply for each market zone, etc.

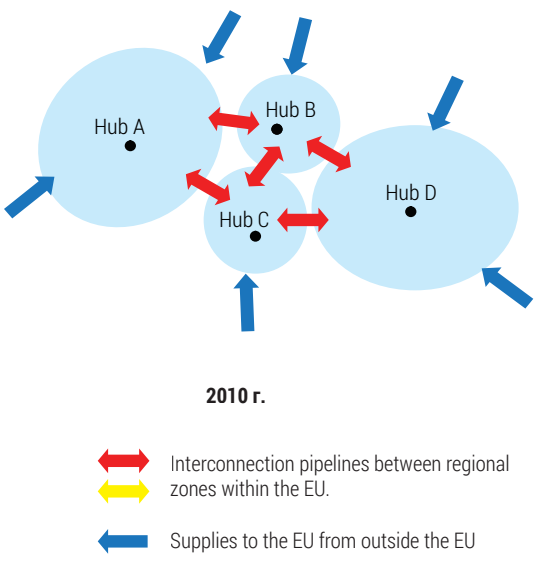
There is a correlation between the processes of formation of the EU internal legislation and international legal acts

INTERNATIONAL EXPANSION

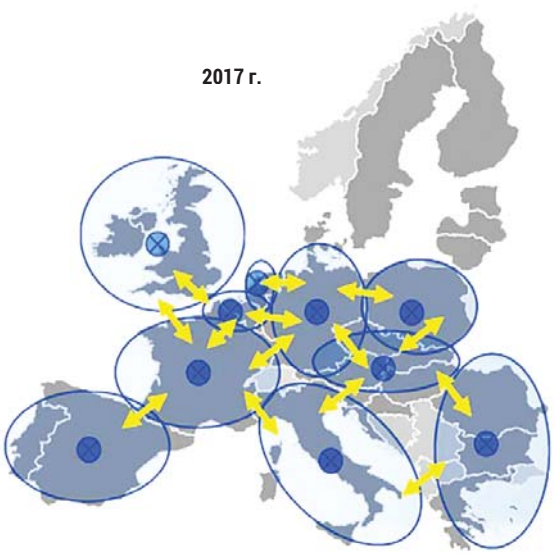
At all stages of the formation of the EU energy legislation, its purposeful expansion took place internationally. The attempts to impose it on the legislation of the neighboring states never stopped.

Until the late 1980s and the early 1990s, the USSR and the EU were separated by the Iron Curtain. Therefore, gas supplies were made to the "watershed line", where the ownership rights changed. Each counterparty could only ensure proper promotion of the goods within their jurisdiction, i.e. on their side of the Curtain. When this curtain collapsed, first, the prerequisites for interpenetration of commodity and capital flows beyond the countries' jurisdictions were created. Second-

ORGANIZATION OF THE EU'S INTERNAL GAS MARKET IN ACCORDANCE WITH THE THIRD ENERGY PACKAGE



Source: 17th Madrid Forum (January 2010) – energy regulators of EU member states



Source: ACER Gas Target Model, 30th Madrid Forum (October 2017)

ly, the number of sovereign participants in foreign trade on the territory of Eurasia sharply increased. Thus, an opportunity for the formation of multilateral – in addition to existing bilateral – mechanisms of protection and promotion of trade and investment, primarily in the energy sector, opened up.

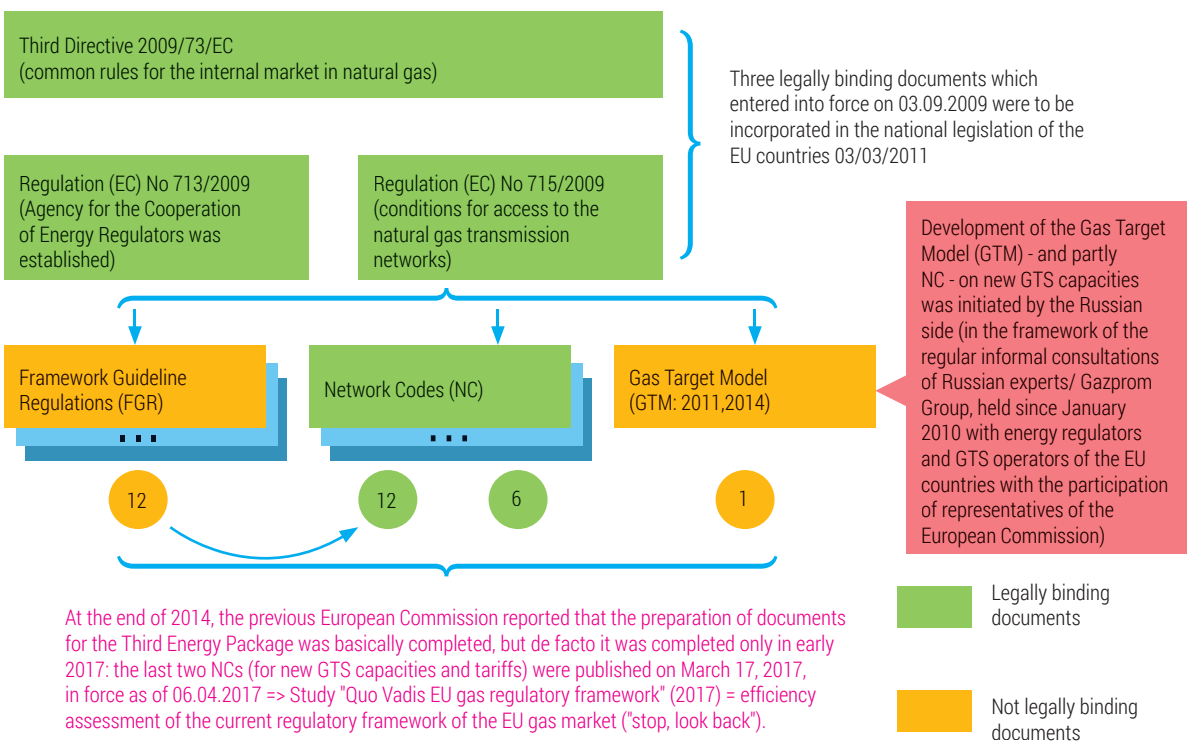
Western countries were interested in protecting their foreign investments, in the first place. In other words, they were keen to create normal operating conditions for their own investors working in the countries of the former socialist camp, whereas former socialist countries were eager to adopt the new Western legislation. There were two ways for that. The first one was to borrow and incorporate the legislation into the national legal system. The second was to form general rules of the game for the countries of the West and the East by developing multilateral international legal instruments.

It is clear that the views of importing consumers and exporting producers differed significantly. For the former, uninterrupted supplies at the lowest price were important. For the latter, return on investment in long-term capital-intensive production and supply projects, and hence predictability of effective demand for energy resources, was the necessary requirement. That meant that the minimum long-term price had to be at a level not lower than the price of self-financing. And taking into account the depletion of non-renewable energy resources, the exporting state has the right (protected by international legal documents) to receive maximum monetized resource rent.

To ensure plentiful and uninterrupted supplies, diversify their sources and routes, the EU seeks to create more comfortable and competitive conditions for European business operations outside the European Union. Therefore, one of the actual goals of international expansion of EU legislation is to introduce standards of work and protection of European investments abroad. This leads to lower transaction costs and increased competitiveness of European companies.

As the domestic gas markets of the EU member countries are liberalized, the EU is trying to extend its rules of the game to an even wider area outside the European Union. This is happening both through the increase in the level of liberalization in the zone of application of EU legislation, and through the expansion of this zone. In the latter case it is happening through the tools of so-called soft and hard legislation. In particular, more liberal principles and mechanisms are being included in international legal treaties involving the EU *(see graph "Instruments of internal liberalization").*

THE THIRD ENERGY PACKAGE OF THE EU (GAS) AND ITS FURTHER DEVELOPMENT



Source: author

At the initial stage of building the general rules of the game for the East and West (in the 1990s), being confident in the competitive advantages of their companies in the markets of the receiving states, the Western states professed the liberal principles of the Washington Consensus. Relations with the countries of the East were built according to the principle: "natural resources in exchange for investment in the development of those resources."

Liberalization trends in the EU gas market were largely accelerated by the Russian-Ukrainian transit crises of 2006 and 2009

Now the companies of the receiving countries of the East have developed and become stronger. And now we are talking, first of all, about their access to the markets of Western countries. Therefore, clear signs of a departure from the liberal models of the Washington Consensus are beginning to appear. The focus now is not on building open, non-discriminatory markets, but on a protectionist model of regulation based on individual preferences and / or discrimination of individual players, protecting their own domestic markets and closing them off from undesirable participants.

It is this metamorphosis that, in my opinion, is taking place in the EU gas sector in relation to external suppliers, notably, to Russia. Europe is standing at a crossroads: will the course to consistent liberalization of energy legislation be pursued or will there be a sharp turn towards protectionism and unilateral preferences?

An additional factor stimulating such a "reverse realignment" may be the relative reduction in demand for fossil fuels due to a change in the paradigm of the development of the world energy industry from the expectation of a "peak supply" to a "peak demand."

FLOW TEST

For each phenomenon you can find its "litmus test". In my opinion, the evolution of the intentions of the European Commission in relation to the Nord Stream-2 project (NS-2) provides such a test for Europe. The struggle for its regulation is a new stage in the policy of exporting European legislation. This time it is based on the desire to liberalize the Russian gas market according to the European model in order to obtain lower import prices.

The latest EC's actions concerning NS-2 are closely connected with modernization of the Third Gas Directive. In particular, in the document the notion "pipeline-interconnector" and related articles were edited. The purpose of these manipulations is understandable: they aim at complicating – if not impeding – the construction of the gas pipeline and at the same time seek to introduce in Russia the statutory provisions of European legislation that are beneficial to importers, but not beneficial to the state which is the owner of resources, because they lead to a reduction in its monetized resource rent. The mechanism for achieving the last goal is as follows: to bring two Russian state companies – Gazprom and Rosneft into confrontation. They are already known to be acting as adversaries on a number of key issues.

Gazprom is a monopoly exporter of pipeline gas, which serves the purposes of maximizing resource rent of the Russian Federation. Rosneft also possesses gas resources and aspires to become its exporter – in the foreign markets payment discipline and prices are higher. Therefore, Rosneft is dreaming to split Gazprom in order to gain access to the export pipe and form the Russian gas market according to the American or European model (by isolating transportation from other types of gas business). Plus, the company has an agreement with BP on gas marketing, whereas their agency agreement with Gazprom Export didn't work.

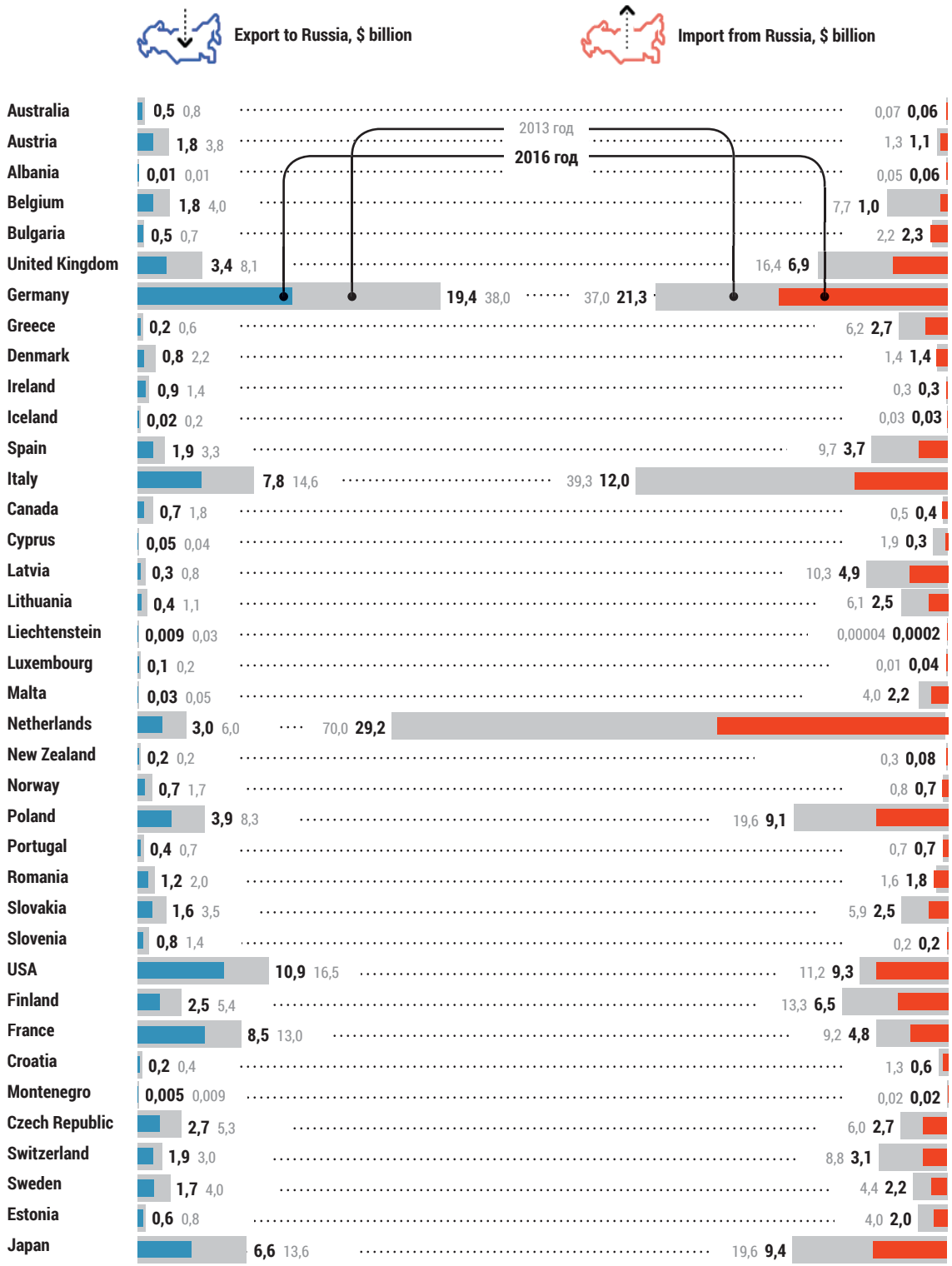
The decision to extend the principle of mandatory TPA (Third Party Access) to Nord Stream-2, bringing the pipeline, along its entire length, under the EU legislation, should serve the hidden agenda of the European Commission to liberalize the Russian gas market, since such a measure creates competition between different Russian gas suppliers. In addition, it is forcing two Russian state companies to fight, which solves the political task of the Western authorities to weaken "Putin's regime" by inflicting damage on "Putin's friends". The conflict between the two state-owned companies should weaken them, and price reduction as a result of competition can lead to a decrease in the incomes of "Putin's regime" (in Western terminology). Plus, the BP business will expand (although, due to Brexit, the UK is already outside the EU).

The Third Energy Package created new risks and uncertainties for the traditional investment model for the development of gas resources and its long-term supply.

The logic of the export of European legislation is reflected in other strategic documents of the EU too. Thus, the abovementioned project Quo Vadis offers a set of model scenarios that lead to direct economic and administrative discrimination of the Russian gas supplies and to creation of artificial competitive advantages for LNG (primarily American) in Europe.

In the EU's understanding, "cooperation" is adoption of the statutory provisions of the importing country (aimed at minimizing the price of the supplied energy

WHAT WESTERN COUNTRIES SUFFERED MOST FROM ANTI-RUSSIAN SANCTIONS



Source: https://ria.ru/

resource) by the exporting state (which has the right to receive maximum monetized resource rent). Elaboration of interaction standards between the parties on the basis of the balance of their interests is out of the question in this situation. This approach de facto means refusal to cooperate.

The process of working on the NCs continued for a long seven-odd years. Over this time, six legally binding codes were prepared and adopted

TWO EUROPEAN CAMPS

The successive waves of liberalization and protectionism reflect the changing alignment of forces in the global competitive struggle. As the evidence from practice shows: the stronger the competition, the more pronounced is the tendency towards protectionism as an instrument for defending national interests. If, for some reason, competition weakens, the trend towards liberalism starts to grow, because national economic agents need less protection.

The EU turned out to be, in my opinion, a hostage and a possible victim of such changes. This is reflected in the upcoming – planned, but not necessarily predetermined – changes in the gas market in Europe. They are orchestrated, in my opinion, by the United States, while the actual doers are the new EU member states, or the former members of the CMEA. The main victim is the old EU members and the EU itself as a single consolidated structure. Its split deprives Europe of a number of competitive advantages.

Internal contradictions in the EU have grown over time. The point of no return, in my opinion, was passed after the expansion in 2004-2007. Then, the Union adopted 12 new members, but could not effectively "digest" the acquisition, provide painless assimilation and incorporation into the EU with the preservation of homogeneity of the community. This was reflected in the energy sector, notably, in the gas industry, since in the "new" EU countries, due to objective historical reasons, the level of gas transportation infrastructure saturation is much lower than in the "old" ones. Hence – a lesser predisposition to the formation of competitive national markets.

Thus, according to the estimates of Ekaterina Orlova from the Institute of Energy and Finance, in 2012 the GTS infrastructure saturation level of the countries of Central and South-Eastern Europe corresponded to the figure that North-West Europe's states had in the 1970s and the beginning of the 1980s. But it is the degree of branching of this infrastructure that provides technical and economic prerequisites for formation of competitive and liquid markets, because suppliers and customers have the opportunity to choose their counterparties.

Therefore, for all the rhetoric about the "single internal gas market of the EU", there are two levels of its development. And the "two-speed Europe" policy proposed by some European leaders is based on understanding of this harsh reality. In fact, the European Union has already split up into two economic camps, different in terms of global competitiveness. More precisely, it has never been able to become a single whole.

POISON PILL

In my opinion, Ukraine became the "poison pill" which exacerbated the objectively predetermined split between the "new" and "old" EU countries. The doctor who prescribed this "pill" was the United States. The "refugee crisis" that delivered an extra blow on Europe was also actually provoked by America, for it arose as a result of numerous color revolutions in the Middle East and North Africa – where from, among other things, energy supplies go to Europe.

The US sanctions against Russia in connection with Ukraine were aimed, first, at driving a wedge between Kiev and Moscow, and then, at involving the European Union in this matter. By doing this, America managed to make Russia and the EU – its main trading partner – fall out. At the same time, the internal contradictions of the EU itself – between "old" and "new" members – were extensively utilized.

The "old" European Union is trying to pursue an independent policy: least of all is it interested in confrontation with Russia. Countries that have been the backbone of European integration since the 1950s are suffering the greatest losses from the sanctions they imposed *(see "Western countries most affected by the introduction of anti-Russian sanctions").*

At all stages of the formation of the EU energy legislation, its purposeful expansion took place internationally

And the "new" members of the European Union quickly became disappointed with the "secondary" role assigned to them in fact. They did not reap the windfall of financial assistance from Brussels. Their GTS infrastructure did not experience a boom. On the contrary, there was a slowdown in its development. Therefore, in Central and South-Eastern Europe, unlike the North-West, there was no decline in gas prices.

In the conditions of high oil prices (until 2014) and due to the lack of alternative supplies, the Eastern European countries had to pay a higher contract price for imported gas than the spot price for gas paid by the "old" EU members. This only aggravated the differences between the "two Europes".

As a result, not having received the expected financial flows from Brussels, the "new" EU countries began to contact Washington directly to obtain the money. For this, a serious reason had to be presented. And it was easily found, because there was a breeding ground for it on both sides of the Atlantic. "The genetic memory" of the military confrontation with the USSR had not yet disappeared in the United States. At the same time, the world elites, after the well-known Munich speech of V.Putin, realized that the USA was gradually losing the role of the leader of the unipolar world they were carefully building and the return to the multi-polar world was inevitable. Therefore, Washington is interested in deterring Moscow, by methods of military confrontation, in particular, including strengthening its military presence along the fringe of the Russian Federation.

NATO's expansion to the East was in full accord with the unmet expectations of the former CMEA member countries where anti-Russian sentiments still run high and there are social strata that appeal to the dramatic events of our common history and give them a subjective anti-Russian interpretation. It has become financially profitable to play the political game of the "threat from the East" in the energy sector, in particular, representing Gazprom as the "Kremlin's energy weapon", which sets high "political" prices for the former CMEA members.

As the domestic gas markets of the EU member countries are liberalized, the EU is trying to extend its rules of the game to an even wider area outside the European Union.

Therefore, when the "new" EU countries began to seek protection "from the threat from the East" in Washington, the energy industry fitted well in the spectrum of these "threats". The argument was the prices for Russian gas which were understandably higher than in Western Europe. And it did not matter that in reality responsibility for this rested not with Moscow and Gazprom, but with the EU itself, which had underfunded the development of alternative gas infrastructure.

At the same time, the transit crises of 2006 and 2009 were regularly mentioned. Everywhere in the West it was alleged that those incidents purportedly provide evidence against Russia as an unreliable supplier. At the same time, the negative role played by Ukraine which was engaged in unauthorized gas withdrawals from the transit pipeline was ignored.

The effect of all these events that lead to a split (or rather prevent from further consolidation) within the EU has been recently exacerbated by such "black swans" as Brexit, the Catalan referendum, etc. This clearly does not contribute to strengthening global competitiveness of the European Union.

THE EU SPLIT AND GLOBAL COMPETITION

Protectionism is a policy designed to support domestic businesses and restrain the "aliens". It hampers creation of non-discriminatory conditions and open markets, where the most effective, but not necessarily the insider, wins in competition.

In my opinion, it is the erosion of EU competitiveness that is the true goal of US actions aimed at supporting the current political regime in Ukraine, which is hostile to Russia. I think that is exactly why the United States of America is trying to involve the EU in the joint anti-Russian policy, sometimes even without coordinating the new "joint" sanction initiatives with Brussels.

The motto of any American administration has always been America First. The current administration has added Global Energy Dominance to the list of goals. In particular, the aim is to squeeze the Russian pipeline gas out of the zone of its historical dominance in the east of the EU. To do this, they utilize the European energy regulators and create additional economic and administrative barriers on the way to Europe *(see the Quo Vadis project)*.

Meanwhile, global competition has now become tougher than 10-15 years ago. Apart from the once-dominant triad: the US – Western Europe – Japan, other states – countries of Southeast Asia, BRICS members (primarily China and India) and others – have now firmly established themselves on the world stage in the sphere of advanced technologies. In the conditions of toughened competition, there are two ways (which are not mutually exclusive and can coexist) to hold onto advanced positions. The first is to run faster than competitors. The second is to put some broken glass in the competitor's sneakers. In other words, eliminate the "weak link" in order to occupy its competitive niche.

In my opinion, it is precisely what is happening now – the EU has become this "weak link" as a result of all the metamorphoses described above, intrinsic and extrinsic. Entangling the EU in the US policy aimed at retaining Ukraine's transit to Europe after 2019 and hindering the construction of gas pipelines bypassing Ukraine reflect the desire of the United States to make Russian gas supplies to the EU more expensive. This clears the way for American coal and LNG, which are more expensive for deliveries to the EU than Russian gas. In other words, Europe is becoming a market for more expensive and impure American energy resources. The increase in the energy component will make the products of the manufacturing industries of the EU member countries more expensive, and therefore less competitive in the global market. "Nothing personal. it's just business".

New records ahead

Market situation in 2017 contributed to the growth of supplies of Gazprom to Europe

The article was provided by the Contracts structuring and Pricing department of OOO Gazprom Export

In 2017, the situation at the European gas market - a key one for Gazprom - developed absolutely favorably. A whole combination of factors led to the fact that the volume of natural gas consumption in the European far abroad (European countries, excluding the Baltic States and Turkey included) exceeded the level of 2016 by 26.5 bcm or 4.9pc to 568.2 billion cubic meters (bcm). This is the highest rate since 2011.

Among the drivers of growth there were: an increase in gas consumption in the European power industry with the reduction of coal's share and a weak dynamics of its own gas production in Europe, which is not keeping up with the growth in demand. The situation at the world gas market was also favorable for Russia - most LNG exporters were aimed at the premium Asian market, which contributed to the growth of Gazprom's pipeline supplies.

In 2018, perhaps, these factors will no longer play such a significant role. But there may be new drivers for the growth of Russian gas exports. In particular - the abnormally cold end of winter in Europe and the need to fill underground gas storage facilities. This allows us to hope for the new records of Gazprom.

Photo turkstream.info

CONTRARY TO WEATHER

The most important factor affecting gas consumption is the weather. In 2017, the weather conditions were close to the climatic norm in average. So, the weather index of Europe, calculated on the basis of degree-days, was 98.2pc to its average historical level. A similar situation was in 2016, when the index deviated from the norm by 1.2pc.

If we talk about the actual figures and not the average ones, then it can be stated that weather conditions in the European countries had significant and multidirectional deviations from the climatic norm. The anomalously cold January of 2017 contributed to the growth of gas demand. However, in March, on the contrary, the weather index dropped to the lowest level in recent years. In the second and third quarters, temperatures above the multi-year averages were observed in a number of countries in Central and Southern Europe, especially in Italy, Croatia, Austria, and the Czech Republic. This had a positive effect on the gas consumption. In warm October, the weather index was again close to the lowest level in recent years.

The fact that actual consumption, despite this, increased in 2017, due to the positive impact of factors not related to the weather

Model calculations show that if the weather were within the climatic norm, the estimated consumption could be higher than the actual by 7.0 bcm. In 2016, the negative impact of the weather factor led to a relatively smaller conditional loss - 3.0 bcm. The fact that actual consumption, despite this, increased in 2017, due to the positive impact of factors not related to the weather.

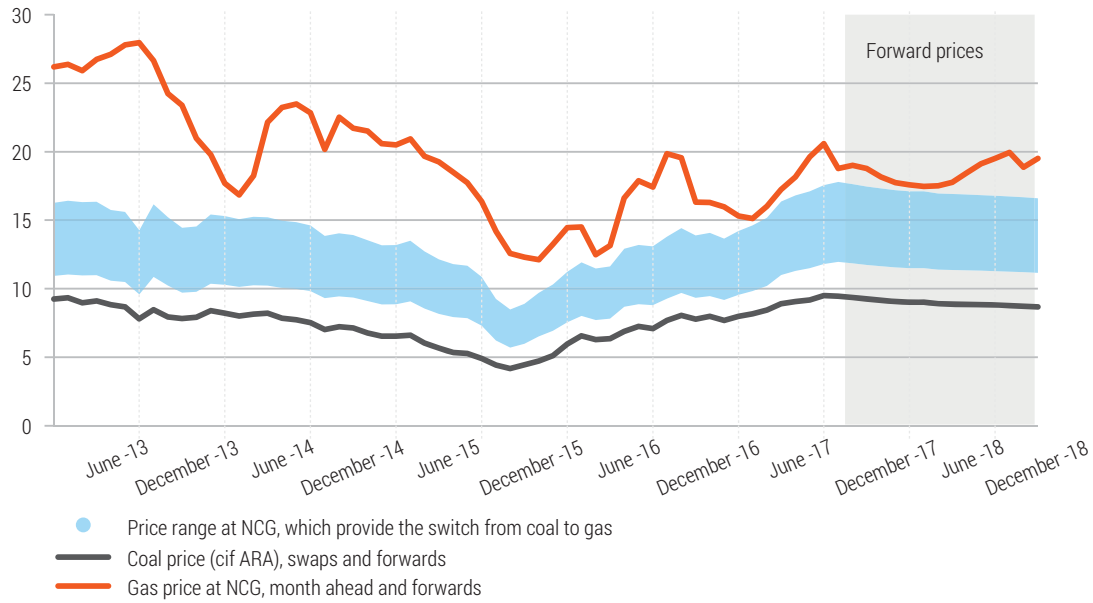
PRESSING UP COAL

Power generation played an important role in increasing gas consumption in 2017. Gas consumption in this sector in the European far abroad increased by 7.6pc, while consumption in other sectors grew only by 3.7pc. The share of electricity production in the gas consumption structure expanded from 30.2pc in 2016 to 31pc in 2017.

In early 2017, there was a sharp reduction in electricity generation from renewable sources in Germany due to snow and windless weather. The reduction of electricity generation at nuclear power plants in Germany and in France also was important. In the first case, because of planned decommissioning of nuclear reactors, in the second – because of closure of a number of reactors for testing. In addition, the production at the hydroelectric power stations in a number of southern European countries (Spain, Italy, Portugal, Turkey) decreased in summer due to less than usual rainfall.

Market conditions for gas power generation have improved significantly due to the increase in world prices for coal in 2016-2017. In Germany, the range of estimat-

SWITCHING PRICES OF POWER PLANTS FROM COAL TO GAS IN CONTINENTAL EUROPE, megawatt hour



Source: Gazprom Export

ed switching prices for gas power stations became as close as possible to the current gas prices at the NCG hub. It is important to keep in mind that a comparison is made with the coal station of average efficiency. The least effective stations running on coal in 2017 often lost competition to gas (*see graph "Switching prices of power plants from coal to gas in continental Europe"*).

Power generation played an important role in increasing gas consumption in 2017. Gas consumption in this sector in the European far abroad increased by 7.6pc, while consumption in other sectors grew only by 3.7pc

In the UK, where an additional fee for greenhouse gas emissions is applied, gas continued to displace coal. At the same time, the share of wind and solar generation in the structure of electricity production in the country remains small - about 7pc (against 43.2pc for gas generation). This additional fee provides UK gas power stations with a higher margin than coal stations. It achieves maximum levels in summer periods with a seasonal decline in gas prices on the NBP hub (*see graph "Switching prices of power plants from coal to gas in the UK"*).

However, the seasonal increase of the gas prices and the expected decline in coal prices, as forward prices indicate for 2018-2019, could lead to a worsening of the situation and a reduction in gas use in the electric power industry of Germany and the United Kingdom.

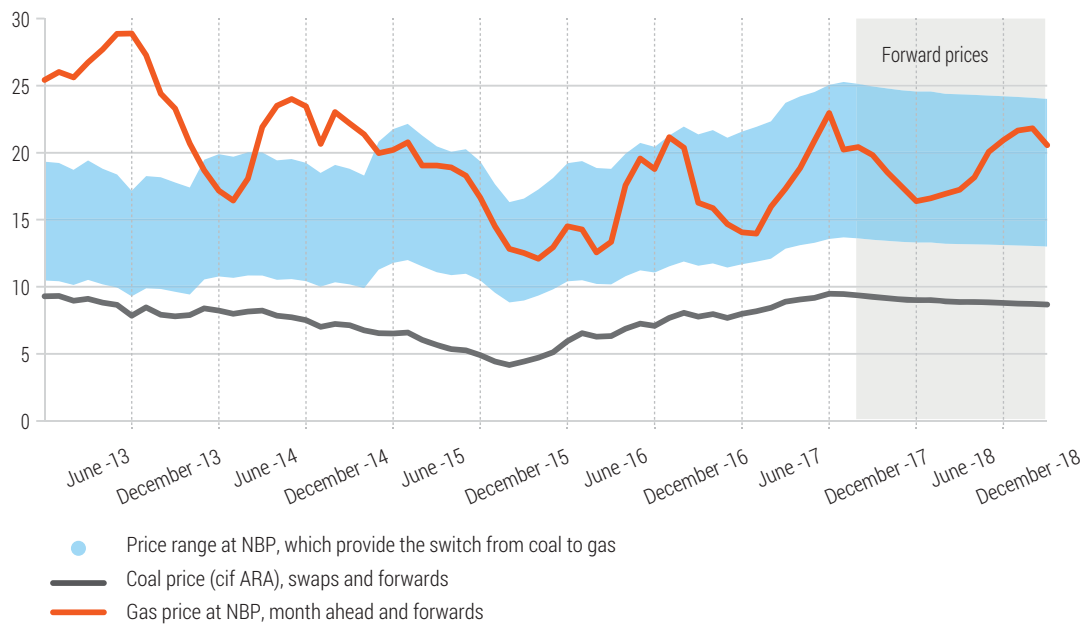
OWN PRODUCTION

The index of industrial production in 2017 was significantly higher than the level of the previous year (the average value was +2.9pc compared to +1.6pc a year earlier). This was a consequence of the rise of the Eurozone economies. The confidence index in the industrial sector of the economy, which is an indicator of the subjective attitude to growth prospects, reached 8.6pc in December 2017 - a record value over the last ten years. In the power generation sector, growth also continued: in January-October, electricity generated 2.4pc more than a year ago.

Own gas production in the European far abroad in 2017 showed a slight increase compared to the level of the previous year - up to 264.1 bcm or 1.4pc. At the same time, it increased significantly in Norway, which delivered to this market 134.7 bcm (+10.6 bcm or + 8.6pc), including a result of a decrease in exports to other regions.

The increase in production is observed in Romania (+0.8 bcm or + 7.7pc), as well as Denmark (+0.4 bcm or + 7.4pc). But shipments from the Netherlands decreased (by 6.0 bcm or 13.2pc), where there are gas production limits at the largest Groningen field.

SWITCHING PRICES OF POWER PLANTS FROM COAL TO GAS IN THE UK



Source: Gazprom Export

In the UK, production slightly increased (+0.1 bcm or + 0.2pc), which allowed the country to retain the role of second-largest domestic supplier. Despite the fact that North Sea gas production is at a stable level and even shows growth in certain periods of time, sources in the industry note a reduction in investment and a reduction in the volume of geological exploration to the level of the 1970s. This creates a threat of instability of supply in the medium term. In addition, the Norwegian authorities plan to prohibit drilling of wells and geological prospecting for hydrocarbons in the most vulnerable regions of the Arctic for four years. This means that the oil and gas industry in Europe in the coming years will not have access to new promising deposits.

EUROPEAN IMPORTS

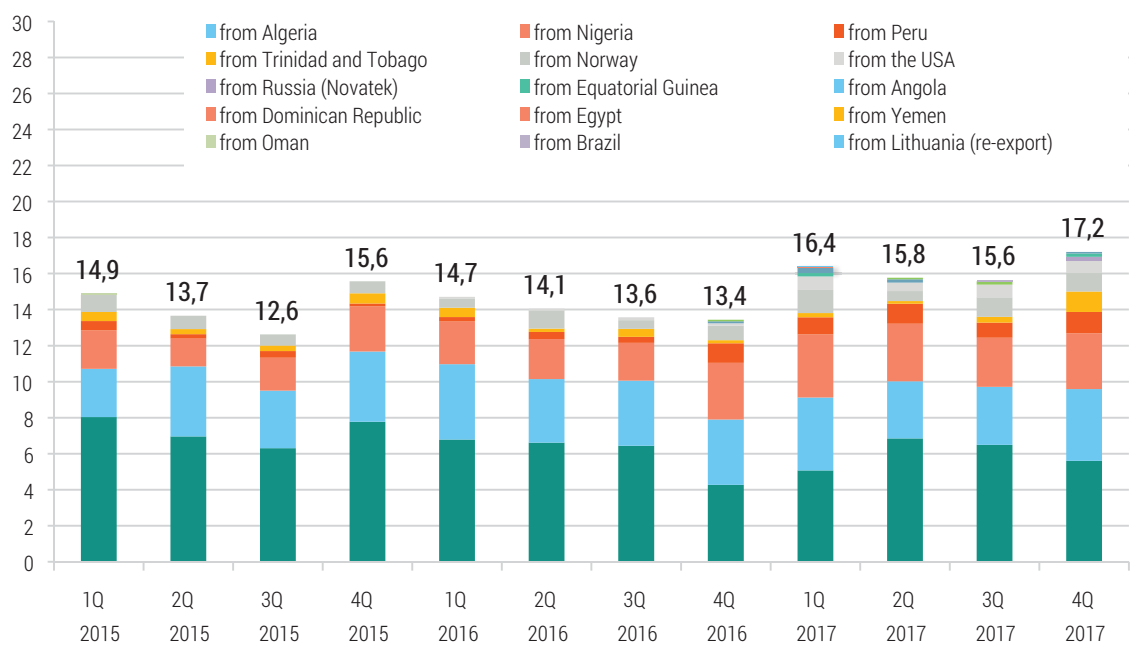
In 2017, net injection into underground gas storage facilities (UGS) in European countries amounted to only 0.3 bcm compared to net extraction of 5.5 bcm a year earlier. This indicator is important because it serves as a kind of add-on to the actual consumption and, as a result, affects the overall demand for imported gas. Thus, we can say that in 2017 the demand for gas from the storage facilities was 5.8 bcm more than in the previous year. In other words, the demand for imported gas increased by 5.8 bcm due to European storage facilities. The volume of gas in the UGS at the end of the fourth quarter of 2017 was slightly higher than the level of the previous year - 70.2 bcm, which is 59.6pc of the total storage capacity.

Market conditions for gas power generation have improved significantly due to the increase in world prices for coal in 2016-2017

Due to the above factors, there is a significant increase in demand for imported gas. Thus, the sale of Gazprom's gas to the European countries outside the CIS in 2017 increased by 15.1 bcm (+ 8.4pc), to 194.4 bcm (including supplies under direct contracts of Gazprom Schweiz, and also trading and volumes sold at Gazprom Export auctions). Gas offtake showed significant growth in Germany, where it updated historical highs and reached 53.4 bcm (+3.6 bcm). Positive dynamics was observed in Turkey, where shipments increased by 4.3 bcm, to 29 bcm. At the same time, the level of gas offtake in Italy decreased by 0.9 bcm, to 23.8 bcm.

The dynamics of the gas offtake also determined the relative share of pipeline supplies of natural gas from Russia to the European market. In 2017, its share reached 34.2pc, up by 1.1 percentage points than in the previous year. At the same time, the share of Gazprom

DYNAMICS OF LNG SUPPLIES TO THE EUROPEAN MARKET, bcm



Source: Gazprom Export

in gas consumption in the EU increased to 32.8pc (+1.0 percentage points).

Gross gas imports to Europe in 2017 increased by 23.5 bcm, or by 8.1pc, for the first time in history, exceeding the level of 300 bcm. The import dependence of the Old World was steadily consolidated at a level above 50pc, and by the results of the last year it was 53pc. Back in 2013, it did not exceed 48pc.

At the same time, imports from Algeria to Europe in 2017 decreased by 1.7 bcm (by 3.4pc). There has been a decline in supplies from this North African state, both pipeline gas and LNG. Meanwhile, the supply of liquefied gas from Algeria to non-European countries (Egypt, Jordan, China, Kuwait, the United Arab Emirates, Singapore, Thailand) more than doubled.

The index of industrial production in 2017 was significantly higher than the level of the previous year (the average value was +2.9pc compared to +1.6pc a year earlier). This was a consequence of the rise of the Eurozone economies

Exports of LNG from Qatar to Europe decreased slightly (by 0.1 bcm or by 0.3pc), also due to increased supplies to the premium markets in Asia and Latin America. On the contrary, LNG imports from Nigeria increased by 2.8 bcm, to 12.6 bcm.

Deliveries of pipeline gas to Turkey from Iran, according to preliminary data, increased by 1.6 bcm, or by 20.1pc, to 9.6 bcm. LNG imports from Peru (+2 bcm) and Norway (+1.1 bcm) also increased. In addition, there were deliveries of liquefied gas from the US in the volume of 2.6 bcm. Thus, the share of this source in European gas consumption has not yet reached even 0.5pc. Also, small deliveries were made from a number of countries in Africa and South America. And it is also worth mentioning the beginning of shipments of Russian LNG from the Yamal LNG project.

In general, LNG imports to Europe increased by 9.2 bcm (+ 16.5pc), to 65 bcm. Almost 40pc of this increase occurred in the fourth quarter of 2017, due to the seasonal expectation of cold weather (*see graph "Dynamics of LNG supplies to the European market"*).

Reverse volumes to Ukraine increased by 3 bcm. More than 70pc of these supplies were from Slovakia. This had some influence on the level of net imports to Europe, which, however, was partly offset by a decrease in the volume of LNG redirection (up to 1.7 bcm). Net imports soared by 23.0 bcm (by 8.4pc) and amounted to 295.5 bcm.

WHAT ARE THE PROSPECTS?

As for the medium-term prospects of the European market, industry experts during 2017, observing the positive development of the situation, increased the expectations of the dynamics of demand in comparison with their previous forecasts. In the medium term, stagnation or even a slight decrease in gas consumption in the municipal sector is expected due to the increase in energy efficiency. However, its use will be expanded for power generation and transport. Consultants of IHS expect the demand to remain at the level not lower than the last years. And more optimistic forecasts of PIRA suggest a smooth growth in the medium term.

Talking about medium-term import prospects, it should be noted that if the parity of prices in Europe and Asia is restored, there may be possible a return to the European market of LNG volumes, previously redirected to the premium Asian markets. At the global level, it is also expected that supplies from new liquefaction projects will increase (USA, Australia, Mozambique). And some of them can be sent to the Old World. However, we should not forget about the problems with the launches of new plants and the transfer of their terms. Thus, the main wave of access to the market for the new capacities is expected not in 2018, but in 2019. However, the decisive factor on which the availability of free LNG volumes depends, the level of demand for gas in Asia will be. Including the new importers in Asia. Corrections to medium-term trends may be initiated by the restart of nuclear power plants in Japan and the prospects for own gas production in China.

Own gas production in the European far abroad in 2017 showed a slight increase compared to the level of the previous year – up to 264.1 bcm

Summarizing, it is worthwhile to focus attention on the fact that in 2017 the market situation was extremely favorable for Russian gas exports. Whether to consolidate the volume indicators achieved in the previous year, it is necessary to repeat a combination of many factors or the emergence of the new drivers. However, one of them was already presented by the severe February weather, thanks to which Gazprom broke several records of daily export volumes of gas to Europe. We can confidently say that in summer 2018, the volume of Russian exports will be boosted by the injection of gas into the storage facilities, which were pretty devastated by the end of winter, being at a minimum level since 2011.

HORIZONTALLY

Sergey Donskoy:

There are grounds to talk about growing investors' interest in geological exploration

Prospecting and exploration for hydrocarbons are the foundation for the oil and gas industry. It is the reliable resource potential that is the key to production growth and the inflow of investments and, as a matter of fact, determines the future of the industry. At the same time, geological exploration is also the most vulnerable segment of oil and gas industry. During the period of falling prices for hydrocarbons, there is a great temptation to "economize on the future", that is, on investments in the development of the mineral resources base. Therefore, today many experts express concern that underfunding of geological exploration will result in a shortage of new oil production assets in a few years.

And what about the situation in Russia? Despite the drop in oil prices and Western sanctions, the hydrocarbon reserves growth in our country exceeds production volumes, and investments in geological exploration are rising. In the interview with "Oil and Gas Vertical", Sergey DONSKOY, the Ex-Minister of Natural Resources and the Environment of Russia

Photo kremlin.ru

Sergei Efimovich, what progress was made in geological exploration for oil and gas in 2017? How many new fields were discovered, what growth in reserves was achieved? Does it meet targets and expectations?

S. Donskoy: Yes, it does. In 2017, 75 fields of hydrocarbons were discovered, the estimated reserves growth as a result of geological exploration for liquid hydrocarbons was 550 million tons, gas – 890 billion cubic meters (bcm). This meets both the targets and our expectations. If we talk about the largest fields, they include Central Olginskoye with estimated oil reserves of 80 million tons (category C1 + C2), South Lunskoye with gas reserves of about 50 bcm, Gorodinsky and Viatshinsky with oil reserves of 26 and 19 million tons respectively.

In the 1990s and the early 2000s, the production of hydrocarbons significantly exceeded the reserves growth, which gave rise to speculations about excessive consumption of resource potential. In recent years, the situation in this area has changed. What has helped to achieve such results?

S. Donskoy: Indeed, the production of liquid hydrocarbons exceeded the reserves growth from 1992 to 2005, and for free gas and free gas caps – up to 2007.

Today the situation is gradually changing. First of all, thanks to the improvement of legislation. The amendments are aimed at stimulating subsoil use and removing administrative barriers.

Over the past few years a lot has been done in this area. Cancellation of payment for providing geological information has made it readily accessible. A single geological information database is being formed. The time allowed for geological exploration of subsoil resources has been increased from five to seven years in hard-to-reach and insufficiently explored regions. The procedure for provision of land plots owned by the state and municipalities for the needs of subsoil use has been simplified.

In 2017, 75 fields of hydrocarbons were discovered, the estimated reserves growth as a result of geological exploration for liquid hydrocarbons was 550 million tons, gas - 890 billion cubic meters

In addition, the procedure for expropriation of forest tracts for subsoil resource use purposes, or mountain easement, has been improved.

Also, the possibility of changing the boundaries of the made available for use subsoil plot has been legislated to ensure completeness of geological exploration, sustainable use and subsoil protection.

MAIN DISCOVERIES

The largest hydrocarbons reserves discovered in 2012-2016 are as follows:

- Ilbokichskoe (Krasnoyarsk region) with recoverable gas reserves of categories C1 + C2 59 bcm;
- Named after V.B. Mazur (Irkutsk region) – 39.6 million tons of oil;
- Ourya (Khanty-Mansi Autonomous Area) – 33.7 million tons of oil;
- Harbey (Yamalo-Nenets Autonomous District) - 26.7 bcm, 6.6 million tons of oil;
- Pobeda (Victory) (Kara Sea shelf) - 130 million tons of oil, 395 bcm of gas;
- Koshinskoe (Orenburg region) – 24.2 million tons of oil;
- Demyanskoye (Tyumen region) – 24.1 million tons;
- D-33 (Baltic Sea) – 21.1 million tons.

Nor should we fail to mention that town planning expertise of drilling projects has been cancelled.

The strategy aimed at improving legislation is based on reduction of administrative, technical and financial costs incurred by subsoil users (oil and gas companies), while implementing costly geological exploration projects in new territories and in the regions of active mineral development. In this way, we stimulate access to new unexplored zones and continuation of development of producing regions at the same time.

As a result of the decline in oil prices around the world, investment in geological exploration has decreased. How is Russian geology tackling this global crisis? Is there a drop in investments or do they remain stable?

S. Donskoy: The exact figures will be known in March. According to preliminary data, the expenditure of oil and gas companies on geological exploration for oil and gas is estimated at 302 billion roubles in 2017. In 2016, the costs were lower and totalled 252 billion rubles. So there are grounds to speak about growing interest of investors. And our efforts to improve the regulatory regime play a significant role in this.

What are the most up-to-date and promising directions of geological exploration today? In which regions will their main volume be concentrated in the near future?

S. Donskoy: Speaking of geological exploration financed by the state, in the next few years it will be

concentrated within five priority oil and gas promising zones. Among them, there are Ozinsko-Altatinskaya, Yugansko-Koltogorskaya, Karabashskaya, Gydano-Khatangskaya, Argish-Chunskaya zones. Based on the results of this exploration, we can obtain the increase in prepared and localized hydrocarbon resources in the amount of 2.7 billion tons of fuel equivalent.

The area of the unlicensed part of the five above-mentioned zones is about 800 thousand km2. Based on the results of geological exploration, it is planned to increase the recoverable category C1 reserves in the amount of about 700 million tons**,** with funds provided by oil and gas companies.

The amendments to the legislation are aimed at stimulating subsoil use and removing administrative barriers

The fall in prices for hydrocarbons brings into question profitability of developing resources on the Arctic shelf. How have these price changes affected the dynamics of geological exploration in the Arctic? How much work is planned for the coming years?

S. Donskoy: Of course, the drop in the oil price has had an impact on the amount of geological exploration to some extent. In addition, the government has established a moratorium on the provision of subsoil blocks for use on the continental shelf.

Currently, companies are carrying out geophysical surveys within the framework of license obligations. With the funds of the federal budget, the study of the transit zone and inland seas is being conducted.

I would also like to note that, despite a certain reduction in the amount of exploration work, companies are employing non-standard approaches to its implementation. For example, the company Rosneft discovered the Central Olginskoye oil field in the Hatangsky Bay of the Laptev Sea by drilling from the shore.

Today, depletion of conventional oil reserves in Western Siberia raises the question of developing non-conventional reserves, including the Bazhenov formation and other shale-like formations. Is domestic geological exploration ready for prospecting and exploration for such resources?

S. Donskoy: It is a well known fact that non-conventional hydrocarbon resources exceed conventional resources by an order of magnitude. Their potential is very large, so forward-looking study of unconventional hydrocarbons is an urgent task for the formation of a Russian resources reserve, but the real pace of their development will depend on economic conditions and technical capabilities.

Speaking specifically of the Bazhenov formation, its development is of strategic importance for the domestic oil industry development and ensuring its global competitiveness and sustainable development for the long term. However, the fact that the collector-capacitive characteristics of the Bazhenov formation are very complicated and the formation is not explored sufficiently explains the necessity to use unique technologies and equipment.

Today, almost all companies are conducting research and experimental work with a view of searching for and testing new technologies. This is not an easy task, but it can be accomplished, so creating a bank of domestic technologies for effective development of hard-to-recover oil reserves of Bazhenov deposits is quite realistic.

In 2016, the state contract "A Differentiated Assessment of Oil-bearing Prospects for the Bazhenov Formation of the West-Siberian Oil and Gas Industry (Unconventional Sources of Shale Oil)" was fulfilled. As a result of this work, new data on the prospects of the deposits of the Bazhenov formation were obtained. An estimation of the initial geological resources of oil was made taking into account their localization according to the properties of oil. The total estimate was 9.6 billion tons of recoverable resources, including 5.4 billion tons of light crude oil.

On the basis of the new data obtained, an updated program for licensing the sediments of the Bazhenov formation has been developed.

According to preliminary data, the expenditure of oil and gas companies on geological exploration for oil and gas is estimated at 302 billion roubles in 2017

How should the roles between the state and business be distributed in the process of ensuring the growth of the mineral resources base of the oil and gas industry? Has the balance been achieved already, or are you expecting business to be more active in terms of geological prospecting?

S. Donskoy: To date, a set of measures for geological study of mineral resources and reproduction of mineral resources base has been provided with the funds of all sources of financing.

The federal budget funds are used to finance the early stages of geological exploration involving the regional study of the country's territory, the search for and evaluation of mineral deposits. The need to allocate budgetary funds is caused by low investment attractiveness of geological exploration objects and a high level of geological and financial risks.

Oil industry traditionally organizes prospecting and appraisal work by attracting private funds, through licensing promising fields.

The activity of oil companies is largely dependent on the cost of oil. Given the stabilization of oil prices, in 2017-2018 it is expected to increase funding for geological exploration with the funds of subsoil users.

At one point, the ministry headed by you was criticized for the fact that the process of subsoil licensing was not going quickly enough, and, as a result, some companies might experience the shortage of raw materials going forward. What is the current status of the licensing issue? What new promising oil and gas facilities and areas are expected to be put up for sale in the near future?

S. Donskoy: At this point, you need to understand that the measures aimed at accelerating the pace of the licensing process cannot solve the problem of the raw materials shortage. By increasing the number of unprepared sites offered for licensing, we will only increase the number of failed auctions. It is necessary to take measures for economic stimulation, simplification of procedures, creation of search reserve, and in terms of infrastructure – to produce comprehensive solutions.

We are trying to carry out the licensing policy in accordance with these principles. Thus, in 2018, we are planning to put up 114 plots on auction. Most of them are subsoil plots with inferred mineral resources.

Also this year, it is planned to auction the right to use the subsoil of the Oktyabrsky section of the Azov Sea. This plot is classified as a subsoil plot of federal significance.

In addition, Rosnedra is now drawing up a tender for the right to use the subsoil in the Khara-Tumus section of the Krasnoyarsk Territory for the purpose of geological prospecting, exploration and production of hydrocarbons. The tender is to be held in the first quarter of 2018.

Today, many production projects in the oil and gas industry enjoy various benefits and preferences. And do we need an additional system of government support measures, including fiscal support, for geological exploration projects?

S. Donskoy: Such preferences are needed, first of all, to activate geological exploration, especially while implementing high-risk projects on the shelf and hard-to-reach land areas.

Economic measures to stimulate geological exploration have already been employed through the mechanism of a multiplying ratio of 1.5, which is applied to the company's expenditure on geological exploration on the shelf, while calculating the profit tax. The ratio was developed jointly with the Ministry of Finance of Russia.

It is also possible to assign either the entire amount of development expenses or any part thereof to expenditures on activities carried out in other subsoil areas.

Work in this direction is not completed. It is advisable to apply multiplying ratios up to 3.5 to expenditures in respect of the most risky and complicated regions, in particular, in the Arctic zone.

BIGGEST AUCTIONS

In 2017, 58 auctions on the right to use subsoil plots were held. Among them, according to the volume of the mineral resources and the size of a single payment, the largest subsoil plots were as follows:

- Erginsky (KhMAO) - 20.072 billion roubles;
- Verkhnetuteisk and Zapadno-Seyahinsky (Yamal) - 6.425 billion roubles;
- Nizhnekhonsky (Yakutia) - 2.328 billion roubles;
- Gydansky (YaNAO) - 2.262 billion roubles;
- Ygyatinsky (Yakutia) - 1.518 billion roubles;
- Osenniy (Autumn) (YaNAO) - 1.402 billion roubles;
- Mirny (Saratov region) - 1.232 billion roubles;
- Pechorogorodsky (Komi Republic) - 1.181 billion roubles;
- Shtormovoy (Storm) (YaNAO) - 1.040 billion roubles.

The practice of so-called junior companies opening new fields and selling them to large mining companies has become widespread in the world. Do you think that such experience can be applicable in Russia? Is it necessary to create a field market in order to stimulate geological exploration?

S. Donskoy: We support this practice. An encouraging start to establishing the junior movement on the territory of our country has already been made.

Last year, the Ministry of Economic Development with the participation of the Ministry of Natural Resources and the Environment, the Ministry of Energy, the Bank of Russia and the expert community developed a Concept for the Development of Junior Geological Exploration Companies. The document outlines the ways of development of the junior movement in the country and the criteria for identifying junior exploration companies.

Speaking of geological exploration financed by the state, in the next few years it will be concentrated within five priority oil and gas promising zones

In addition, the Ministry of Natural Resources and the Environment introduced a so-called declarative principle that allows concerned parties to ob-

tain insufficiently explored subsoil plots within the boundaries that are independently determined by the applicant.

The introduction of the declarative principle has encouraged small and medium-size businesses to get involved in exploration and attracted significant investments into the industry. The planned volume of financing according to project documentation is about 55 billion roubles.

And the investors are getting more and more interested in the declarative principle: in 2014, Rosnedra received 286 applications, in 2015 – 746, in 2016 – 1175, and in 2017 – 1259 applications.

Despite a certain reduction in the amount of exploration work on the Arctic shelf, companies are employing non-standard approaches to its implementation.

The majority of Russian companies are showing an interest in a wider application of the declarative principle to higher categories of inferred resources of solid minerals.

Speaking of the junior movement in relation to the oil industry, one must bear in mind that the cost of oil and gas exploration projects is an order of magnitude greater than the cost of exploration for solid mineral resources. Such funds are not easy to raise on venture exchanges – the main donors of the classical junior movement. This also explains why, for the time being, the use of the declaratory principle for hydrocarbons is limited. But we will definitely share and popularize the successful experience of attracting private funds in the area of hydrocarbon exploration too.

Forward-looking study of unconventional hydrocarbons is an urgent task for the formation of a Russian resources reserve

Further development of the junior movement in Russia can be ensured through the formation of stock markets and the creation of co-financing mechanisms, public-private partnerships, among other things with the aim to developing the necessary infrastructure and attracting venture capital.

There is an opinion that in the field of geological exploration, dependence on foreign technologies and equipment is even higher than in other sectors of the oil and gas industry. What steps are being taken to overcome this dependence and ensure import substitution?

S. Donskoy: Unfortunately, we have to admit that in certain sectors in the field of geological exploration, we are still significantly dependent on foreign technologies and equipment. First of all, this concerns seismic survey – the main method of studying the structure of geological strata – as well as deep exploratory drilling. The situation is especially difficult with carrying out prospecting works in offshore areas.

At the same time, I cannot fail to mention that in recent years in Russia, both technical means of seismic observations and domestic software have been created and are being successfully applied.

In most cases, domestic machinery – seismic stations produced by the Saratov SDB (Special Design Bureau), seismic vibrators produced by the Geosvip plant, which is part of Rosgeo – and the software developed by a number of Russian small enterprises and institutions may well replace Western products.

The activity of oil companies is largely dependent on the cost of oil. Given the stabilization of oil prices, in 2017-2018 it is expected to increase funding for geological exploration with the funds of subsoil users

The main directions for import substitution of oil and gas equipment are laid down in the Plan of Reducing Dependence of Russia's Fuel and Energy Industry on Imported Equipment and Foreign Software. According to the guidelines established in the Plan and taking into account the proposals of the Ministry of Natural Resources of Russia, the Ministry of Industry and Trade of Russia has created a List of equipment, technical devices, components (including element base), software, and services (works) for the fuel and energy industry, subject to import substitution in the short-, medium- and long-term period.

The expert Technologies and Equipment for Geological Prospecting group (moderated by Rosgeo) has prepared specific proposals for the development and creation of domestic hardware and technical equipment and technical devices for oil and gas geophysics.