

Current State and Prospects of Interaction Between Russia and Baltic Sea Region in LNG Market

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Abstract—The LNG market is characterized by growth and volatility, change of operating conditions. The Baltic states create a gas infrastructure of LNG which is independent of the Russian Federation. Russia has not created the complex strategy of LNG production and export. The research objective is to study the role of the Russian LNG export in the Baltic Sea region, assessment of the Russian possible prospects in the LNG market. The main results of the research include the following: defining competitive advantage of Russia in the Baltic Sea region; determining prospects of creating essential infrastructure of LNG production in the Northwest region of Russia. The Russian Federation has competitive advantages due to short delivery distances, good relationships with the majority of the Baltic states; price advantages; considerable export potential due to the possibility of developing the system of the LNG mini-plants destroying monopoly of the Russian gas exporters. Thus it will allow one to improve the Russian-European relationship in accordance with the possibility of implementing the Third Energy Package of the EU (2009). The theoretical and practical importance of the research is defined by the described tendencies and prospects of the LNG Baltic market development with the Russian Federation cooperation. They can be used for forming strategic programs including implementation of the LNG projects by the Russian companies and incentivized investors. Participation of the Russian Federation in the LNG market of the Baltic Sea region is possible, mutually beneficial and commercially reasonable.

Keywords—liquefied natural gas (LNG), export, Baltic sea region

I. INTRODUCTION

The geographical location, resource endowment of Russia and financial technological capabilities of the EU have caused strong trade connection between them which can not be destroyed in short terms without enormous losses for all participants. The relationships are exposed to strong negative impact from the different parties in which both economic and political aspects, and the interests of various beneficiaries are mixed. In such conditions it seems to be relevant to do the research of the current state and to justify possible development prospects of one of the new volatile markets in the region in which many issues and contradictions as well as a high share of uncertainty have been presented. According to the authors' opinion, the market of LNG in the Baltic region can be regarded as the market taking into account interests and deliveries of Russia. The authors try to carry out their research in the most pragmatic direction but considering growth of negative factors, which are mostly political ones. The choice of the Baltic region for the research is caused by its functioning features which are quite different from the EU. So it has created the "Baltic Europe" concept. The positive cooperative experience of Russia and the Baltic region in the Post-Soviet time is

confirmed by successful development of the "Northern Measurement" program among the EU, Russia, Norway and Iceland. It has been established not only for sale of the Russian resources, but also for cooperation between the countries of Northern Europe. The authors are based on the transformation of the relations to the LNG market from communication between the EU and Russia into two directions.

According to the authors' opinion the research of the LNG market should be done taking into consideration not only regulatory and business practice formed in the process of cooperation between Russia and EU, but also relations of interaction between the EU-Baltic Europe and Baltic Europe – "Northern measurement".

The authors' hypothesis is focused on experts opinions that the Baltic Europe and "Northern measurement" are the special metaregions for providing safety and stability based on principles of the Partnership and Cooperation Agreement between Russia and the EU. In spite of deterioration in the relations, the issue of energy security is significant for all participants. For the countries of the Baltic region it is connected with the fears caused by dependence on the Russian gas supply. Though for Russia it is associated with "safety of demand" - necessity to obtain gas sale guarantees. In this case the LNG market is unique as, unlike pipeline gas, the above-stated contradictions are not so strict. The Baltic countries can replace the main LNG supplier without any serious consequences. Whereas Russia can use other customers in the case of adverse trading conditions. Thus, it is possible to speak about reducing the political component in these relations and consider only economy of the competitive market. Particularly we take into account the situation with the LNG market taking place in recent years and having impact on development of the situation in the Baltic region.

High uncertainty and volatility of LNG market are limiting factors in the research of the topic.

LNG location with field distribution and a focus on Europe are gaining importance at the present time. LNG market is divided into gas fields where gas is produced. The biggest ones are the Pacific and the Atlantic gas fields. The biggest part of production comes from the Middle East where the main reserves are concentrated in Iran, Russia, Qatar, Turkmenistan, and countries of the Middle East. The development of gas-carrier industry is stimulated by the development of new deposits and the growing production at the existing ones [12].

In the Baltic countries, LNG import growth is caused by an effort to provide a variety of energy supply and, as a result, to develop alternative routes of gas transportation. A short-

distance marine transportation and potential LNG demand are a decisive factor for all countries. Large marine terminals are expected to be constructed in Denmark, Norway, Sweden, and Finland by 2020. Furthermore, investment into other large-scale projects, such as LNG bunker terminals in Germany, Belgium, and the Netherlands, which will assist the already existing LNG terminals, are planned [17].

Political and economic challenges of energy security at the developing LNG market deserve a scientific investigation. According to some research, American LNG will play an important part on the European energy market in the future. Washington is planning to facilitate shipping terms for American LNG exporters to Eastern and Central Europe. The strategic mission is to decrease energy dependence of these regions from Russian supplies, both by land and under the Baltic Sea (Nord Stream). The American government is planning to use the rapidly developing national gas reserves as a “political instrument” [13].

A globalization of economic relations between the Baltic States after launching a floating LNG terminal in Lithuania is planned. The Baltic States are considering investment alternatives. The terminal will make a considerable impact on gas prices. Lithuania is planning to export gas to other Baltic States [16].

Both Russia and EU have a number of LNG projects in the Baltic Sea. These projects involve gas supplies to the Baltic States as alternative ways of gas transportation, thus reducing energy dependence on Russia. Russian LNG terminals are meant for supplies to Asian markets, which are not receiving natural gas at present, or could alternatively transport gas to Kaliningrad. The Baltic projects of EU are based on geopolitical grounds. However, they are attractive for the market. The main obstacle here is a lack of a joint project, while every EU member country is wishing to get profit from their own LNG enterprise [19].

As it is noted in many scientific studies the features of the LNG market are caused by rigid connections of its transportation and creating infrastructure. In the region of the Baltic Sea the LNG market develops dynamically and new ways of LNG transportation and use stimulate infrastructure investments. The LNG terminals in Poland and Lithuania have import power allowing both countries to be the world markets of LNG. Besides deliveries diversification and increasing energy security, the terminals also allow the countries to expand the portfolio of contracts. Sales stimulate development of small-scale infrastructure of LNG: small terminals, LNG carriers and tanker trucks with the maximum power from 17,5 million cubic meters to 1,3 billion cubic meters. It increases availability of LNG to the automobile and marine transport, power and industry in general. LNG can be delivered to ultimate consumers even in the absence of pipeline infrastructure that makes it flexible and competitive. In the recent years the trade of LNG have become more liquid: world trade and number of the import countries have grown, the prices have fallen, and the average life of agreement and volume of contracts have been reduced [18]. Projects of LNG-infrastructure will allow to supply the countries of the Baltic region with gas and provide

alternative ways of transportation and weaken dependence on Russia [19].

It is expected that large-scale terminals will have been installed in Denmark, Norway, Sweden, and Finland by 2020. Besides, it is planned to make investments into large-scale projects such as LNG-bunker terminals in Germany, Belgium and the Netherlands which will supplement the existing LNG storage terminals [17].

The features of Russian strategy on the LNG market of the Baltic region are also considered to be up to date [19].

The prospects of the LNG market development will be connected with elaboration of the environmental legislation. The LNG market development is stimulated by environmental legislation, new applications and expansion of LNG use in small scales. Natural gas will also compete with coal because of its advantage of being used as back-up fuel for renewable sources of energy. It is mostly used for microgeneration of energy and heat as well as fuel for trucks, public transport and railroads. Wider spread availability of LNG, lower transportation costs and development of the LNG small transport parks allow to carry out LNG deliveries of smaller volumes to the local markets which are not included in gas network. Not only regional importers, but also such exporters as Russia want to use this tendency[18].

Further development of the gas market will influence price formation in this sector. One of the most important tendencies in European gas wholesale markets of the recent years has been active replacement of the price formation mechanisms dominating earlier. First of all oil indexation (because of a significant role of “Gazprom” long-term contracts dealing with such mechanism) is due to price formation development on the basis of the competition “gas — gas” on gas hubs. The target gas market model for Europe means domination of this price formation mechanism, and it is presented by the European regulators as guarantee of the honest competition of suppliers in the wholesale market of gas[14].

Large gas producers need to record high reliability of deliveries and their financial availability for consumers. Active development of the competition on the basis of the new price formation mechanism is just a good signal for it. An approach to an optimum level of gas market development in the Baltic region which unites most of the largest consumers confirms the analysis of correlation between the spot prices on the major hubs [15]. The traditional international situation in the field of sale of gas is changing due to the changing role of LNG in the world. As of the beginning of 2018, the world situation with LNG is characterized by the following factors:

1. A significant number of gas fields have been opened in the United States, the Middle East, East Africa, Australia; the companies and countries are making efforts to find and create new sales markets, which made it possible to cut the prices abruptly within less than two years, from \$ 600 to \$ 180 – \$ 350.

2. In 2017, 39 countries were importing LNG, according to IHS Markit; their number will increase to 46 by 2020; Uruguay, Bahrain, Bangladesh, the United States, China are building production capacities.

3. In 2017, approximately 283.5 million tons of LNG were produced (an increase of 22% within 3 years), one third is accrued to Qatar; the figures will grow by 21% by 2021. Every year, LNG production capacities grow by 90 million tons per year.

4. According to the portal “Vedomosti”, in 2015, 40% of global transactions accounted for maritime transportation of gas; by 2040 this share will exceed the share of gas sold through pipelines [10].

5. Although most of the gas contracts are long-term, mainly covering Asia and Gazprom pipeline gas in Europe, still some LNG contracts are short-term; the increased supply boosts competition and affects the cost and duration of contracts toward their reduction. According to different estimates, the spot transactions account for approximately 30-35%. Such prospects stimulate the LNG development.

Thus, the LNG market will be characterized until 2020 by the insignificant infrastructure, small number of LNG plants, excessive supply, low prices (especially what concerns the USA), long-term contracts, unstable international economic and legal regulation, dependence on the manufacturer. After 2021, we will presumably have supply redundancy, growth in the number of LNG plants and the infrastructure, extension of short-term contracts, increase of service functions for buyers, increased manufacturers' competition.

Let us now examine in more detail the situation with LNG in the Baltic region.

Liquefied natural gas is undoubtedly more flexible for logistic supplies unlike the traditional pipeline gas. The Baltic region, due to the flexibility of LNG logistics supplies, seeks to create a single system of distribution of liquefied natural gas throughout the whole region, using not only LNG terminals, storage vessels, but also pipeworks and distribution stations.

The countries of the Baltic region have begun to create a multi-component infrastructure: LNG receiving terminals, large-tonnage methane carriers, storage facilities (both underground and surface), power plants for needs within the infrastructure. In some countries in the Baltic region (Lithuania, Latvia, Estonia), the capacity of the existing and projected LNG terminals fully covers the annual national consumption of natural gas. This implies incomplete operation of the terminal capacities or released capacities of the terminal for possible re-export. It is more economically profitable for the countries of this region to purchase gas from a pipeline for internal consumption and to build low-tonnage terminals for intake of liquefied natural gas along with large underground gas storage facilities.

The research of a consulting company Booz & Company, commissioned by the European Commission on the potential of natural gas and LNG in the Baltic countries, outlines the major projects that include not only LNG terminals but also international gas pipelines that contribute to the development of LNG infrastructure in the Baltic region. An example is the GIPL international gas pipeline project (Poland-Lithuania), which was given the status of top priority project by the European Commission [2, 4].

According to the European Commission, currently 20 LNG projects are planned for realization in the Baltic region, of which (Fig. 1):

- there are 13 LNG terminals; of them 6 operate in Lithuania, Poland, Sweden and Finland, 7 - under construction in Poland, Estonia, Finland, Sweden, and Latvia, Germany;
- liquefied gas plant in Denmark;
- gas distribution station in Lithuania;
- underground gas storage facility operates in Latvia, is designed in Lithuania and Latvia.



Fig. 1. Map of priority projects in the Baltic sea region (Source: Bakanova N. [1])

To realize these projects, Lithuania has spent 690 million Euros (LNG terminal), Latvia – 120 million Euros (“Inčukalns” gas storage); the international gas pipeline “BalticConnector” will cost 287 million Euro, the pipeline between Lithuania and Poland requires investment of 558 million Euro. Taking other projects into account, the development of gas market in the Baltic will cost over 6 billion Euro, including about 4.5 billion Euros of own funds – from the budget of the Baltic region. The creation of the natural gas market in the Baltic countries will cost on the average 56 Euros per each resident of all the three countries, without regard for the subsidies of the European Union (39 Euros with regard for them). There are no data available on return of the subsidies to the European Union by the Baltic region; in case of demand for recovery, each resident will need to have about 17 Euros returned. After the realization of all projects by the end of 2023, the Baltic region will be able to provide itself with gas by 61%.

It is concluded, on the basis of the assessment of economic efficiency of the above projects [1], that if all of the projects are realized at a time, as a single project, then about 18 projects will be implemented within 13 years; the performance indicators can achieve the following values:

- payback of the project - over 6 years, accurately within several months;
- PN indicator – year-average net profit excluding investments and exclusive of outflow - is 916.24 Euro;
- rate of return ROI is 100%, respectively, it demonstrates the profitability of the project;
- profit investment ratio is 1.12 Euro, which demonstrates the project efficiency per each invested Euro;
- internal rate of return is 12.08% per annum, characterizing the maximum cost of attracted capital;
- net present value is equal to 685.66 Euro, showing the effect from realization of the projects.

Considering the ecological situation in the world, the European Union has developed a programme for formation of the LNG infrastructure in Europe, and respectively in the Baltic region, which supposes switching the freight, urban and road transport to liquefied natural gas by 2020 in order to achieve reduction in carbon dioxide emission and creation of “blue corridors”.

After considering the technical and economic parameters of the LNG system in the Baltic region, it is necessary to correlate the current state with LNG supplies.

It was assumed that the region would receive liquefied gas from Qatar, and partly from the USA. For that purpose, a regasification terminal was built in Świnoujście, Poland, for the intake of Qatari gas, which would make it possible to transmit the gas to the countries of the region through gas distribution networks. As proposed by US President D. Trump, Poland should become a “gateway” of the American LNG in Europe. However, “According to the U.S. Energy Information Administration (EIA), as well as Reuters and Argus, in 2016 the United States delivered about 500 million m³ to Europe. For comparison, the growth in exports of the Russian gas to Europe is almost 40 times higher than the supply of American LNG, reaching 19.9 billion m³” [3].

In 2017, “according to ...James Henderson, the American LNG suppliers are satisfied with the price of \$ 245 per thousand m³, while in the middle of the year it was \$ 140 in the EU market” [3].

Thus, currently the LNG market of the Baltic region is not saturated and stable in terms of price; the EU's development strategy and regulation are not fully balanced.

A number of necessary international procedures have been completed as part of the Nord Stream-2 project, that are stipulated by the Convention on Environmental Impact Assessment and which are involved in construction of this gas pipeline. The ecological examination of the Russian section along which the gas pipeline will be laid has been completed. In total, five countries will be involved in the Nord Stream-2:

Russia, Finland, Sweden, Denmark, Germany. The pipeline builders (primarily Gazprom) managed to attract, at own instance, the Norwegian company Kvaerner as a contractor - a company that is 30 percent owned by the Norwegian government.

There are all necessary prerequisites to believe that this project will be realized. First, the construction of Baltic LNG is planned on the territory of the North-Western region of Russia, in Ust-Luga; therefore it has been planned to construct 360 km of gas pipeline from the town of Volkhov with a capacity of 25 billion m³.

Second, the reduction in gas production in the Netherlands and the transformation of this country into a net importer of gas can change the gas sector in Europe, which will also make it possible to substantiate the construction of Nord Stream-2.

Considering the implementation of the Nord Stream-2 project, a question arises on feasibility of investing by the Baltic and European Union countries in development of the infrastructure of LNG-projects that are estimated to make a fairly impressive amount - over six billion Euros. In addition, it is known that, despite the impendence of sanctions, the investors have invested three billion Euros in Nord Stream-2; the funds have been distributed in equal shares between the Western investors and Gazprom.

One can note the following among the possible unfavourable moments: first, the blocking of Nord Stream-2 by some of the Baltic countries - Poland has intensified its opposition; the Parliament of Denmark has passed a law prohibiting laying of a pipe through its territorial waters; Lithuania and a number of other countries in Central and Eastern Europe are actively opposing the realization of this project.

Second, the revision of the EU gas directive in terms of its extension to the partners of the European community can also complicate the realization of this project.

Analyzing the positive factors of LNG projects in the Baltic countries, the authors are willing to note that the realization of Nord Stream-2 will have a significant impact on the activities related to the further implementation of LNG projects. The authors believe that if all of the presumably involved participants of Nord Stream-2 realize the project, then the LNG infrastructure of the Baltic region countries will be in less demand, with insignificant payback, in virtue of the relatively low cost of the pipeline gas compared to LNG. In the event of unfavourable outcome of Nord Stream-2, if the countries of the region fail to come to a common opinion, this will also have a negative impact on the region, as it will infringe the integrity of the closed energy system within the European Union.

Thus, successful realization of the Nord Stream-2 project should have a positive impact on the economic security of the European Union.

Russia is a major world exporter of gas, being a part of the Baltic region, and needs, as a global player, its presence in the international gas market in the conditions of ever-growing international competition and ousting the Russian gas suppliers from international transactions.

The current situation can be characterized as follows: only two large natural gas processing plants have been functioning in the country by the beginning of 2018, which is extremely insufficient. The first one is Sakhalin-2 owned by Gazprom, and the second one, launched by the end of 2017, - Yamal LNG owned by Novatek. The construction and launch of Yamal LNG plant is connected with legal, tax and fiscal difficulties. Thus, the LNG plant project was estimated at \$ 10 billion, but by the moment of launch, its cost increased to \$ 27 billion. Novatek owns 51%; 29% belongs to Chinese companies, 20% - to Total, which has signed a contract for supply of 4 million tons of liquefied gas per year (5.5 billion m³ of gas). In addition, another 2.5 million tons (about 3.5 billion m³) will be annually supplied under a contract with the Spanish firm Gas Natural Fenosa. The increase in the cost of the project required borrowing from the Russian National Welfare Fund. The project payback period is set to be 15 years, with the break-even point calculated at the price of supplied gas as \$ 7 - \$ 7.5 per 1 mmbtu (in 2017 the average price was \$ 5.2 per 1 mmbtu). It can be assumed that, with low prices remaining, the recoupment period will be extended. Nevertheless, the launch of the second plant is a positive factor undermining the monopoly of Gazprom, as it was originally assumed that all the products of the plant would be exported. Yamal LNG has become a competitor to Gazprom both in the national and foreign markets. Since Yamal LNG is located in the Arctic, it has been granted substantial tax benefits: non-recovery of export duty and mineral production tax for 12 years, plus 13% profit tax rate, instead of 18%. Gazprom asserts that the state budget revenues from export duty and mineral production tax resulting from Gazprom's export flows will exceed 4.1 thousand rubles per 1 thousand m³. The government believes that this amounts to 3.5 thousand rubles for 1 thousand m³. Even the amount of 1 billion m³ will immediately deprive the budget of 45 billion rubles. The Ministry of Finance wishes to receive in addition almost as much as that from Gazprom in 2018 by increasing dividend payments. Besides, the state finances the infrastructure construction: airport, seaport, icebreaking and transport fleet. Such benefits cause Gazprom's confrontation, but nevertheless it was forced to agree. This is connected with the fact that Rosneft also got access to the gas market. The most stringent confrontation relates to the supply of Russian gas to Europe. In 2012, it was assumed, when discussing the possible liberalization of foreign gas trade, that Novatek would not compete with Gazprom in Europe, and the whole of its flow would be directed to Asia and other regions. However, in virtue of the present composition of shareholders and the long-term supply contracts, nearly 40% of LNG is being supplied to Europe at this moment.

In these conditions, it is extremely important to launch the Baltic LNG plant in Ust-Luga, announced by Gazprom PJSC back in 2010. The current state of the project demonstrates the permanent postponement of the start-up and of the plant availability. The later the plant will reach the design capacity, the more difficult it will be to integrate into the established LNG system of the Baltic region.

One of the most important problems connected with procrastination in the launch of the Baltic LNG plant is that, according to the estimate of Gazprom PJSC, the cost of

construction of the plant will make \$ 15.1 billion. The high costs are largely accounted for by the lack of major equipment in Russia, necessary for production of LNG, as well as by no conditions for its acquisition in the present-day foreign economic situation and unfavourable international environment. Nevertheless, this estimate seems to be excessively exaggerated, as, for instance, each facility from the entire list of LNG objects, taken in the single LNG system of the Baltic region, costs no more than \$ 1 billion, with a payback period from 1 to 7 years. Undoubtedly, there is a difference between the cost of generating and regasifying enterprises, but the fact that all the potential and former investors, mostly foreign, refused to participate in co-financing, apparently points at the unreasonable high cost of the designed enterprise.

Gazprom is also planning to build a LNG transshipment terminal in Vysotsk (Leningrad region) with the capacity of up to 2 million tons of LNG per year, for vessels with a capacity of 170,000 m³. Novatek is also developing the Baltic region; it has bought a LNG plant in Vysotsk with the capacity of 660 thousand tons per year, with a terminal for pumping LNG to offshore gas carriers. Half of produced LNG will be supplied to Finland, the enterprise Gasum Oy. The Russian government does not remain indifferent to the prospects of LNG development; therefore, to stimulate the export of LNG, two exceptions were established:

1. If the export of natural gas is subject to export duty of 30%, the export duty for LNG exports is set at 0%.
2. The list of exporting organizations for LNG export has been extended to include Rosneft and NOVATEK in addition to Gazprom PJSC.

II. RESEARCH RESULTS AND DISCUSSION

The authors believe, following the implemented research, that the LNG prospects in the Baltic region should be considered in three directions. First direction – the Russian LNG.

The authors deem that the main obstacle for efficient development of the LNG market in Russia is the imperfect regulatory legal framework that does not meet the current state of the gas industry. Legal regulation of the gas industry in Russia is exercised through a great number of statutory acts, including: Federal Law of March 31, 1999 No. 69-ФЗ “On Gas Supply in the Russian Federation” [6] – it establishes the legal basis for functioning and development of the Unified gas supply system and for the unified gas market on the territory of the Russian Federation, the basic economic relations in the sphere of gas supply and antimonopoly regulation of gas supply; Federal Law No. 147-ФЗ of August 17, 1995 “On Natural Monopolies” [5] – it defines the legal basis of the federal policy in relation to natural monopolies in the Russian Federation and is aimed at achieving a balance of interests between the consumers and the natural monopoly entities, to secure availability of their goods for the consumers as well as efficient operation of the natural monopoly entities, proper operation of the natural monopoly entities - transportation of oil and oil products through main pipelines; transportation of gas by pipelines; services for transmission of electric and thermal energy; rail transportation; services of transport terminals,

ports, airports; community electric and postal services; the Law of RSFSR as of March 22, 1991 No. 948-1 "On competition and restriction of monopolistic activity in commodity markets" [9] – it defines the organizational and legal framework for preventing, restricting and precluding monopolistic activity and unfair competition and is aimed at providing due conditions for development and efficient functioning of commodity markets, etc.

Analysing the legal regulation of the Russian gas industry, we can draw the following conclusions:

1. Having the diversity and a great number of statutory acts that regulate the gas industry, the legal framework is rather confused; it was formed as deemed necessary for regulation of particular situations.

2. In general, due to the high rate of changes in the gas sector, the regulatory framework of the industry either becomes obsolete quickly or is not regulated properly, having no necessary standards.

3. There is no mobility in development and adoption of legal norms in the context of the changing conjuncture of the global gas market, including the extension of LNG segment.

4. There is a need for legislative norms that would allow free access to the national gas market for new consumers, which will facilitate free competition as well as constraint of the existing gas monopolists, such as Gazprom PJSC. This sphere is partly regulated by the Enactment of RF Government No. 858 of July 14, 1997 "On Securing Access of Independent Organizations to the Gas Transportation System of the Public Joint-Stock Company Gazprom": the list of exporting organizations for LNG export has been extended to include Rosneft and NOVATEK in addition to Gazprom PJSC [7].

5. Flexible legislation is required in order to provide variability of the export customs duty and to attract additional participants to the LNG market, which goals were partially realized in accordance with the Enactment of RF Government No. 754 of August 30, 2013 "On Approval of Rates of Export Customs Duties in Respect of Goods Exported from the Russian Federation beyond the Borders of the States - Parties to the Customs Union Agreements, and on Invalidation of a number of deeds of the Russian Federation Government": the rate of export duty for LNG export was set at 0% [8].

6. Legal regulation should be aimed at:

- legislative recognition of abolishment of artificially created gas exporters oligopoly;

- elaboration of legislation enabling development of LNG infrastructure in the country, including the ability to apply international standards for engineering of LNG mini plants and other facilities.

Second direction - the countries of the Baltic region

There is no accord in Europe in general and in the Baltic region in particular, regarding participation of Russia in the gas market and the prospects for development of this market. France is discussing the possibility of a ban on import of liquefied gas, since 20% of Yamal LNG belongs to Total and is

supplied to France; 20% of LNG from Yamal LNG flows into Spain. Some of EU countries favour the Russian presence in the gas market in Europe, while some countries are opposing it and prefer to receive gas from other regions. A number of countries support the construction of Nord Stream-2, such as Germany, France, Austria; the others are against it, in particular, Sweden, Denmark, Poland, Lithuania, Latvia, Estonia. In our opinion, under any scenario, the emergence of two Russian LNG enterprises competing on the market will have a positive impact on the Russia's capacity to contract and will lead to price reduction. In 2017 already, Gazprom's supplies to Europe were at a maximum, while the profit decreased by 12%, and under positive development of events this value will not be ultimate.

Third direction - interaction of Russia and the Baltic region countries in the LNG market

We believe that the main criteria for the Baltic region in choosing LNG suppliers and investors are safety, competitiveness and cost. All of the three criteria can be partially achieved through cross-investment of Russian and foreign companies: the Russian ones - in LNG infrastructure of the Baltic region countries, the foreign ones - in LNG plants and the infrastructure in Vysotsk and Ust-Luga, and on condition of liberalization - in other facilities.

Also, given that Russian enterprises are losing export revenues, the only possibility to become now one of the leaders in supplying LNG (not the only one) – on a par with Norway, Qatar, USA - in case of mitigating the foreign policy tension, is supplying gas to the Baltic region. It should be noted that in the event of exporting LNG to this region, Russia will have competitive advantages:

1. Short delivery distance.

2. Long-standing technological and managerial communications with most countries in the region.

3. Possible price advantage.

III. CONCLUSIONS, RECOMMENDATIONS

As a result of the carried out research, the authors believe that:

1. the current situation in the Baltic region with the Russian LNG is strongly competitive, politically almost neutral, economically poorly risky for the participants that provides perfect base for further cooperation;

2. the availability of the two Russian suppliers and having one more in the nearest future ("Gazprom", NOVATEK, "Rosneft") creates a favorable condition for the countries of the Baltic region to negotiate price and service terms with Russia and other suppliers;

3. increasing the Baltic region independence on the Russian LNG supply will improve energy security of these countries and expand international cooperation;

4. increasing competitive economic factors without political component will allow to create joint projects in LNG infrastructure. They will be technologically beneficial for Russia while for the Baltic countries they will be power-financially profitable;

5. the stabilization of the relations on the LNG market will strengthen development of the "Northern Measurement" program. As a result it will ensure safety in the region.

Recommendations for further studies.

1. LNG market is unstable and still developing. Therefore, regional differences are quite prominent and require a more detailed study.

2. Prospective LNG joint projects require a further analysis of economic and organizational forms and development of a legal framework for such cooperation.

3. LNG market sprang up and is developing alongside alternative energy sources, therefore a thorough comparative analysis of prospects for regional energy markets is required.

4. The midstream component of gas market in EU and the Baltic region presents a considerable scientific interest due to both its pipeline capacity (with Russia being the only exporter to EU with a developed pipeline system) and marine transportation (deadweight, port infrastructure, gas-carrier potential per country).

5. Assessment of the required reserves and transportation capacity from economic, political, technological, logistical, and regional aspects.

6. Prospects of LNG market along side with a fast development of energy-saving technologies and energy efficiency.

7. Possible decent realization of power supply and customer impact on the choice of technology.

Therefore, in our opinion, the following is necessary for the development of this important area that has a significant export potential in Russia:

1. To cancel the artificially created oligopoly of the Russian gas exporters. Gazprom PJSC and NOVATEK set extremely high prices for construction projects, which are uncomfortable even for the giants in the situation of fiscal sanctions. For instance, the Yamal LNG project has grown in cost from the initial project price to the time of its pending realization - from \$ 10 to \$ 27 billion. At the same time, the Russian side is investing only 50.1%; the remainder will be covered by foreign investors and the debt money with payback period of up to 15 years. The agreements with the Chinese side are not completely transparent, in virtue of the Chinese claims of access to the deposits and (or) other unacceptable bonuses, which conditions Russia had to accept, for instance, when signing the Shanghai Agreement on construction of the "Siberia Power" gas pipeline. As concerns the third potential exporter - PAO Rosneft, it is an extremely overindebted company: its debt connected with the purchase of TNK-BP at the peak of the price does not let it pay the high cost of construction of a plant with a medium payback period. The extremely important factor in these conditions for all potential and real Russian LNG exporters is the drop of LNG price from \$ 600 per thousand m³ several years ago, when mass-scale launch of LNG plants was planned in the Russian Federation, to nearly \$ 300 per thousand m³ at present, for some countries and positions [11].

2. To develop LNG mini-plants systems. The currently operating and projected giants' plants produce and (or) are to produce from 10 to 16.5 million tons of LNG per year. At the same time, LNG mini plants with the production capacity of approximately 0.15 million tons of LNG per year have not been properly developed, though the due equipment for them is available, and their cost does not exceed 400 million rubles. Such plants are easier to launch and recoup if the monopoly that hinders their development is destroyed. This would lead to increased competition in this market; the number of those willing to occupy this niche would be numerous, while the participants would pursue a more vigorous business policy of advancing LNG abroad.

3. The realization of items 1 and 2 would help to improve the Russian-European relations and increase the exports to Europe, as it will be possible to meet the terms of the Third EU energy package of 2009 aimed at further liberalization of the electric power markets. According to Gazprom PJSC, this package which requires differentiation of companies as generating and transporting ones is directed against it, as it is the only one combining these two functions. A number of Russian LNG exporting enterprises could perform these functions one by one. There is no technical need to perform both functions by one company.

4. To think over a possibility of the so-called interception of the Baltic market. The former Baltic republics are oriented at the Russian Federation in supply of gas; they undoubtedly fulfil the requirements of the European Commission, but they try to get gas from Russia to the extent they may do it. If we create comfortable conditions for them, it would be possible to draw them into our zone of influence.

5. To make participation in funding of the Baltic LNG more transparent and accessible to third-party investors, which may help to form a current pool of founders having the means to finance the undertaking, and, possibly, to find approaches to justifying the project price.

6. The construction of Yamal LNG plant costing \$ 27 billion can not be an example of efficient management (most of the money is borrowed from foreign investments); while we have a potentially good example of Baltic LNG plant that will enable Russia to work over the mechanism of production and export of LNG and will also become a powerful impetus for construction of similar enterprises in the Russian Federation, which in turn will strengthen Russia's export positions and, possibly, will help to develop the national technology for construction of LNG plants supposing not a job-lot, but serial production.

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