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Pros and cons

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The 5th LNG Russia Congress is coming, taking place on 6-8th June in Moscow, so let's check how's the Russian LNG sector doing; what are the most promising projects already in place, what is planned across the country, as well as how Iran can change the gas game.

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Our qualitative-and-quantitative study comprised a questionnaire on the one hand, and in-depth interviews with industry experts on the other. In total, we received feedback from 153 respondents (incl. representatives of Gazprom and its subsidiaries, Sakhalin Energy, Saipem, Novatek, Rosneft, BASF, LNG-Gorskaya, Eurotube, Kriomash-BZKM, Technip, and the Moscow-based Institute for Energy and Finance), gaining valuable information – often publicly unavailable – from those who largely shape the future of Russia's LNG industry.

Specific and common LNG stumbling blocks

The first question, with no predefined answers, went as follows: What are the key challenges affecting your business in the LNG industry? As such, participants had to identify three problems, the elimination of which would promote their business development. And as our respondents consisted of two groups – industrial enterprises (such as oil and gas producers, and project operators) as well as service providers (engineering companies, design institutes, equipment producers, and technology suppliers), the representatives' opinions have been split to better illustrate specific hurdles they're dealing with. However, there's also a set of challenges common to both groups.

Key challenges facing service providers pertain, first, to the closed nature of the Russian LNG business. This restriction was highlighted by as many as 60% of surveyed service providers, and is characterized by the lack of project access for independent service providers, Russian customers' focus on foreign developers and suppliers, the lack of interest in domestic equipment, as well as a predefined "nomination" of separate companies as contractors of some services. Secondly, finance (25%), i.e. high net value of LNG equipment and potential customers' lack of financial sources, along with clients' requirements in providing substantial technical information at the preliminary stage without payments. Thirdly, technologies (15%), i.e. the lack of experience in LNG facilities

Tab. 1. The most promising large-scale LNG projects in Russia, according to Vostock Capital's survey respondents

No.	Project's name	Description
1	Yamal LNG	Yamal LNG executes the project for the construction of an LNG plant with the capacity of 16.5 mln tn of LNG annually on the resource base of the Yuzhno-Tambeysk field. The first train of the plant was commissioned in 2017. The 2nd and the 3rd trains will be commissioned in 2018-2019. Once reaching the full capacity, Russia will move up from rank 9 to rank 5 on the global LNG arena by the volumes of liquefied gas production. The construction involves France's Technip and JGC. The project is estimated at USD 27 bln, 96% of future LNG is contracted. The equipment delivery contracts cost exceeded RUB 600 bln, and the figure will be sharply increased.
2	Sakhalin-2	Russia's largest project developed with the use of private funds. The project is led by Sakhalin Energy Investment company; the stakeholders are Gazprom (50% + 1%), Shell (27.5% - 1%), Mitsui (12.5%), Mitsubishi (10%). The plant has two parallel process trains producing over 9.6 mln tn of LNG annually. The bulk of gas is contracted for the delivery for 20 years ahead with 11 buyers. In 2015 the development of project documentation for the construction of the 3rd production train was initiated. The train is expected to be commissioned in 2021. Shell Global Solutions International and Giprogazcentr are involved in the development.
3	Arctic LNG 2	The project valued at USD 10 bln will be implemented on the Gydan peninsula that juts into the Kara sea. The construction of LNG plant within the framework of Arctic LNG-2 is due to start in 2019, the production is scheduled for 2023. The project will eventually produce around 18 mln tn of liquefied natural gas per year. According to some sources, France's Total expressed interest in participating in Arctic LNG-2 project.
4	Baltic LNG	Baltic LNG is a project for the construction of an LNG facility in Ust-Luga of the Leningrad region. It is planned that LNG will be delivered to customers in Atlantic Ocean regions, Middle East, South Asia. Plant production capacity is estimated at 10 mln tn per annum of LNG. The framework agreements between Gazprom and Shell to establish a joint venture and conduct feasibility study were signed in June 2017. This joint venture will be engaged in design, fund-raising, construction and maintenance activities.
5	Pechora LNG	Pechora LNG is a large-scale project, stipulating for the development of two fields: Kumzhinsky and Korovinsky. Besides, within the project it is planned to develop gas pipeline infrastructure and to build an LNG plant and marine terminal. Projected plant liquefaction capacity, based on APCI technology, will amount to 8-10 mln tn per annum. The operator is evaluating the opportunity to apply floating plant technology. The project aims to export LNG to APR countries with a shipment via the marine terminal located nearby. Project investment is estimated at USD 4 bln.
6	Far East LNG	The cost of a gas liquefaction plant, which is now being built by Rosneft and ExxonMobil, is estimated at USD 15.3 bln. Design capacity of the 1st plant's train will total 6.2 mln tn per annum, with further possible expansion. Rosneft initiated the construction in 2013. According to the latest data, plant commissioning is expected in 2020. Rosneft considers the projects as the main solution for Sakhalin-1 gas monetisation. Pre-FEED activities were carried out within 2017.
7	LNG Gorskaya	LNG Gorskaya provides for the construction of an LNG complex and fleet, ensuring LNG delivery to customers in Europe and vessels bunkering in the Gulf of Finland. Liquefied natural gas will be produced on three non-selfpropelled barges. The overall plant capacity is designed for processing of 1.97 bln m^3 of natural gas, which corresponds to 1.3 mln tn of LNG per annum. The production complex is intended to enter the commissioning in late 2018, selling start point is scheduled for January 2019.
8	LNG terminal in the Port of Vysotsk	Dmitry Medvedev signed an agreement related to the expansion of a marine port of Vysotsk in the Leningrad region, where LNG will be unloaded. Project implementation period is 2023-2024. The capital provider is Gazprombank; project investment is about RUB 50 bln, terminal capacity will amount to 2 mln tn of liquefied gas. General design contractor is Giprokislorod (United Heavy Machinery Plants Group). Key project licensor is French Air Liquide. Within the project, it is planned to erect a vessel mooring line, LNG offloading jetty, a jetty for the acceptance of bulk cargo.

design and construction as compared to foreign companies, LNG tanker equipment selection criteria not stipulating for breakthrough technologies, and adherence to dogmas and old technologies.

Producing enterprises, in turn, have listed the following challenges as their sore LNG points. Firstly, the market (57%), covering such barriers as export restrictions and an absence of export permits, lack of customers' infrastructure, fuel consumers' unavailability to LNG-convert, a poorly developed internal market, demotivation of regional authorities in using LNG due to its final cost in a regasified state, competition with non-efficient projects, field owners unwilling to process the associated petroleum gas, as well as the basic energy sources oversupply on the global market. Secondly, finance (32%), but understood differently than in the case of service providers, i.e. as expensive materials and LNG equipment, insufficient project funding, high prices on LNG transportation due to the deposit's remoteness, high capital costs, budgeting, finance attraction difficulties, low level of required investments, fixed price on gas regardless of the remoteness from the pipe, high cost of project funding at low LNG prices. Thirdly, personnel (11%) is an issue, too, as a narrow field of LNG specialists is available to hire, weak competence of domestic participants in the design, equipment production, and facilities construction processes, as well as unqualified local engineering, procurement, and construction contractors.

Apart from these specific problems, the Russian LNG industry also raises problems familiar to all market players. Above all, there are administrative barriers (85% of respondents pointed to this issue), ranging from bureaucracy and corruption in the authorities, uncertainty in government regulation prospects, lack of forecasts on potential LNG demand and the sector's development in Russia, inefficient state regulation of the industry, excessive requirements from the authorities' side, lack of legal framework documents in health and safety executive and fire safety, immaturity of the legal framework associated with LNG usage for land vehicles, absence of Russian GOST standards and requirements (a set of technical standards maintained by the Euro-Asian Council for Standardization, Metrology and Certification), an outdated legal framework on design, monopoly in the gas sector, as well as information security issues. Secondly, again finance (10%) – tight credits, ambivalence in price regulation, project freeze. Last but not least (5%), macroeconomics, i.e. an unstable economic environment, Western sanctions, and high macroeconomic risks.

Additionally, our respondents were asked to name both Russian and foreign companies, leading the way in developing technologies as well as equipment-supplying Russia's LNG market. Concerning the latter, Cryogenmash, Cryogas, Geliymash, and Kriomash-BZKM were

mentioned in the first place, while in the case of the latter, Siemens, Shell, Linde, Technip, Kvaerner, Cryostar, Air liquid, and JGC Corp were the most popular picks.

Most promising small- and large-scale projects

Next, we asked our respondents about their views on the most promising LNG projects across Russia, both small- and large-scale, marking them on a 1-6 scale, the higher the score, the more a given project shows potential. According to our study's results, the list of Top Russian mega-LNG projects includes Yamal LNG (44% of respondents valued this project the highest), followed by Sakhalin 2 (and especially the construction of the third train line; 39%), Arctic-LNG 2 (15%), Baltic LNG (13%), Pechora LNG (11%), and Far East LNG (10%). For projects' details see Tab. 1.

The small-scale LNG question was in turn open, and had no predefined answer options. Here respondents were supposed to outline three projects of their highest concern, pointing in the first place to two Baltic-located investments – LNG-Gorskaya (70%), and Vysotsk-LNG (56%) – accompanied by Pskov-LNG (24%). Table 2 covers these projects' main features.

A couple of other investments are worth mentioning here as well. First, back in 2014, Gazprom commissioned an LNG complex in Kanyusyata (Karagay area), and three LNG reception, storage, and regasification units – in Ilyinsky, Nerdva, and Severniy Kommunar. Gazprom also plans to implement an autonomous gasification project in the Tomsk region, stipulating for the construction of a mini-plant, as well as LNG reception, storage, and regasification units in four settlements. Moreover, similar projects are being reviewed for implementation in the Vologda and Kirov regions. Moreover, one of Gazprom's subsidiaries, Gas Engine Fuels, is carrying out a project developing the infrastructure for LNG/CNG production and trade in Tatarstan, one of Russia's republics. To distribute the produced LNG, a network of cryogenic filling stations is being built.

Making sense of Iran's LNG potential

At the end we also asked our experts what they make of Iranian LNG prospects and, as such, to what extent are Iran's projects relevant to their companies' business perspectives. Following the sanctions lift, Iran today targets resurfacing its scalable projects for LNG production (e.g. in the not-so-distant past, Iran tried to negotiate with Royal Dutch Shell, Repsol, and Total the construction of three LNG facilities, but was eventually refused in 2010 under pressure from the EU and US).

Currently, the National Iranian Oil Company is developing a project feasibility study, which will become the basis for future tender procedures. As such, Russian parties' interest in getting involved in Iranian LNG projects is high on the agenda these days (e.g. in late July, 2016, Gazprom officially applied for participation in Iran's LNG projects). According to the results of our study, therefore, as many as nine out of 10 respondents highly assess the prospects of Iranian LNG projects, consider them realistic, and take note that they are absolutely in their business interest. On the other hand, however, financing problems as well as it seems unique work features bother almost half of the respondents concerned.

There is no doubt that the Russian LNG market has a lot of constrained potential in it, some of the hurdles blocking it, like sanctions or entrenched red tape, lying beyond the power of market players, while others, e.g. well-trained staff or lobbying in favour of proper standards, being within their reach. Played right, LNG expertise gained across the Russian LNG industry can prove invaluable in entering emerging markets, like Iran, with their own challenges of various sorts. ■