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Will Equals Way: Unconventional Gas in Russia

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Although the present conjuncture is not conducive to investments in the still locally unproven and expensive methods of obtaining energy resources, Russia is developing its unconventional gas industry more and more boldly. However, catching up on the significant technological lag in comparison to other countries is not Russia's only goal. The change in Moscow's strategy is essential if the country is to maintain a strong leadership position among gas producers, as well as for the attainment of Russia's geopolitical aspirations. Russia's room for manoeuvre is limited to three options, which, while running in parallel, could each have different international ramifications.

According to estimates there are 665–680 trillion cubic metres of unconventional gas resources in Russian subsoil, out of which 75% constitute gas clathrates (hydrates), 15% tight gas, 7% coal-bed methane and only 3% shale gas. Most of the gas is located in the sparsely populated regions of north-eastern Siberia, the Ural Mountains and the hard-to-access Arctic. Most importantly, however, Russia has the largest proven reserves of conventional natural gas, amounting to approximately 48 tcm. This gas is also cheaper to obtain than unconventional resources. Russia is also the second largest gas producer, which is why, in the nearly 10 years since the beginning of the shale gas boom in the United States, there has been neither sufficient economic justification for the development of the unconventional gas sector in Russia nor firm support from policy makers. This is despite visible signs of interest, for example, the inclusion of new gas technologies in Russia's energy strategies, and Alexei Miller's 2003 declaration on Gazprom's launch of a study devoted to the creation of effective technologies for the extraction of gas from hydrate deposits located in a permafrost areas.

Economic Limitations. Using purely economic arguments to explain the development of the unconventional gas sector in Russia remains difficult. Despite Gazprom's predictions of a decline in gas production from existing conventional sources by 25% by 2020 and by 75% by 2030, new reserves of natural gas on the Yamal Peninsula, in the Arctic, and from deep layers of the Siberian deposits, may in the medium and long term prove to be sufficient to meet domestic needs and fulfil existing export contracts. After economic and financial crises, Russia experienced a slowdown in domestic demand for energy, strengthened by the improvement of domestic energy efficiency, which also had a negative impact on the level of gas consumption. Additionally, in 2014 exports of Russia's gas to its traditional customers (the EU, Turkey, and the Commonwealth of Independent States) hit an all time low (approximately 195 bcm), as a result of the crisis in Ukraine. In view of the European suppliers' diversification policy, Russia's participation in the EU market probably will not reach former levels.

Moreover, the country's general economic condition has deteriorated significantly, due, among other things, to sanctions imposed on Russia. European and U.S. companies have been banned from selling equipment and technologies that might be used for the extraction of unconventional oil and gas. The unfavourable economic situation deters investors—the total FDI inflows to Russia fell by nearly half in 2014 compared to previous years. Still, conventional gas remains more accessible, and therefore more cost effective than the development of unconventional technologies, especially given the current low oil price.

Geopolitical Aspirations. Russia may, however, expedite technological expansion towards unconventional gas production out of geopolitical motives, which have often overshadowed its economic rationality. In view of the

reshuffle among gas suppliers, and the anticipated increase in global demand for gas by more than 50% by 2040 (according to the IEA), Russia will find it difficult to maintain its current share of almost 20% of the global gas market without embracing new technologies that significantly enhance the supply of gas, and opening up to new export directions. While Russia's competitors, such as the United States, South Africa and Australia, already have mature technologies for unconventional gas extraction (primarily from shale), Russia is only at the beginning of a long-term investment cycle. Stagnation in the sector means that, according to government declarations, the prospect of commercial production of unconventional gas in Russia is still distant—2020 for tight gas and methane and 2030 at the earliest for shale gas and hydrates.

To be able to lay claim to the status of gas power in the future, and to maintain its geopolitical influence in the world by trading gas skilfully, Russia is already being forced to take steps aimed at including unconventional gas in its portfolio. Given the ensuing situation, and in view of uncertain perspectives for Russia's economic future, three parallel options remain. These are, for Russia to implement its own projects related to unconventional gas on a small scale, for it to shift towards cooperation with its eastern partners, and to take strategic business and geopolitical steps towards the development of the unconventional gas industry.

Own Abilities. The publication of a growing number of studies and analysis on unconventional gas is indicative of the formation of the right theoretical background for this developing sector. Both the government and the extractive sector companies support research activity in Russia financially. Apart from Gazprom, which declared its willingness to allocate $4 million to Gubkin Russian State University of Oil and Gas, for research and development in the field of unconventional gas, other companies such as Rosneft and Lukoil have also expressed their interest in exploring unconventional Russian deposits. The first pilot extraction projects, relating to methane in coal seams, have been implemented in the Kuznetsk Basin, amongst other places, but gas production from such projects will in the near future reach a maximum of approx. 4 bcm. As a result of a March 2014 agreement between the Ministry of Natural Resources and Environment and the local administration of the Tomsk Oblast, a new site for conducting tests on exploration technologies and penetration of harder to reach reserves became available. Nonetheless, real, large-scale undertakings aimed at verification of the potential for unconventional gas extraction are at an early stage of development.

New Partnerships. If Russia is to exploit the potential of its unconventional resources and develop its own extraction industry, it will require the transfer of technical knowledge from more advanced countries, as well as substantial foreign investments. Due to the similarity in the technology of oil and gas extraction from shale, the experience gained by Russia through cooperation with, among others, Statoil and Exxon in the Bazhen fields and in the Samara Oblast is significant. However, under current conditions and consistent with the visible pivot to Asia in terms of other energy resources, Russia is strengthening ties with economies in the region. Indonesia, Vietnam, and South Korea, but mainly India and China, are conducting research programmes on unconventional gas on their respective territories, and have access to the latest Western extraction technologies, primarily from shale and coal seams. Attracting Asian interest, experience and capital to Russian deposits will be crucial for the development of the unconventional gas sector in Russia. As shown in the energy partnership between Russia and China, the scope of cooperation and possibilities of investments for financing unconventional gas will depend on the potential tangible benefits to Russia's partners, and their desire to share knowledge and technology.

Competitive Advantages. The possibility of gaining new spheres of influence determines the choice of directions for further development of Russia's unconventional gas industry. Success will depend on technological and geographical pioneering, and on the skilful manipulation of external conditions. Due to the abundance of gas clathrates in the world, as well as Russia's lack of industrial acquisition technology, the country engages in the development of this particular industry. Japan is the co-owner of more than 80 bcm of clathrate reserves on the shelf of the Kurils, and it is also the country most advanced in the study of hydrates. Although the legal status of the islands has not been agreed, cooperation between Russia and Japan in clathrate industrial extraction is possible. Russia needs Japanese experience, and its deposits are more accessible than the Japanese, while Japan needs energy resources. Thus any competitive technological advantage gained from such a partnership (paradoxically supported by climate change, as the melting ice cap facilitates access to clathrates), could open the way for Russia to develop clathrate deposits in the Arctic and justify the already increased activity of Gazprom and Rosneft in the region.

Priority access to prospective unconventional gas resources in other countries also serves the strategic interests of Russia. For example, the memorandum signed in April 2015, between Gazprom and the Argentine YPF, on joint shale gas production from the Vaca Muerta field, gives Russia access to the world's second-largest shale-gas reserve, and establishes a counterweight to Chinese and U.S. influences.

Conclusions. The prospects, albeit for the moment distant, of industrial unconventional gas production by Russia could become a reality by the parallel implementation of the three abovementioned scenarios. Their political implications, however, differ greatly. The resolute implementation of the first and second options will exacerbate already existing industry trends in Russia, such as self-sufficiency and the pivot towards Asia, especially China. The third option could be groundbreaking for international relations, for example, through the use of gas argument to alleviate relations with Japan, and to soften its attitude towards sanctions. Dexterity in shifts between East and West, and the ability to use unconventional gas to build new alliances, will determine the effective realisation of Russia's interests.