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# Russia's Ambitions in Europe's Nuclear Energy Sector: A Test of Credibility

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*For Rosatom, the Russian state nuclear company, exemplary cooperation with EU countries is crucial. Because the EU's nuclear sector is well-structured, the use of Rosatom to influence the bloc geopolitically is limited, and thus its presence on the prestigious EU market primarily serves to construct a positive image of the company. EU Member States should ensure that the nuclear relationship with Russia is also characterised by reciprocity.*

**Rosatom's Expansion in the EU.** The close link between Russia's nuclear power sector and its political authorities means that Rosatom, the second most-influential Russian company after Gazprom, is another mechanism used by Moscow to achieve not only its economic goals but also, primarily, its political aims. Russia uses the company to strengthen relations with key countries according to its geopolitical interests. Rosatom focuses its expansion efforts on developing countries in Asia, Africa and South America, proposing advantageous contract conditions in exchange for a privileged or exclusive position on those markets.

From this point of view, the European market is not a priority for the company's development, despite the fact that nuclear energy is a low-carbon alternative to fossil fuels and that many EU Member States are intent on maintaining or developing their nuclear power programmes. The EU market is well-structured and stable, giving Russia few possibilities to acquire direct geopolitical and economic benefits. Hence, Moscow sees the EU primarily as a prestigious market and standard-setting, participation in which validates Rosatom's competence and burnishes its image.

Although knowledge about the risks of energy cooperation with Russia, regardless of the sector, is widespread in Europe, Rosatom has managed to win the trust of many EU countries. Even the political crisis between the EU and Russia, provoked by the actions of the latter in Ukraine and lasting nearly two years so far, has had no major impact on the bilateral nuclear relationship. Given the general consensus on the need for reasonable cooperation between technology providers and their customers, and moreover, of cooperation unhindered by geopolitics, Rosatom's presence in the EU has not been challenged. This can be explained in large part by both sides' efforts to ensure the adaptability and compatibility of their different nuclear cultures, both in terms of reactor construction and fuel supplies.

**Reactor Construction.** The major moment of confrontation between the Western European and Russian nuclear technology sectors was the EU enlargement in 2004. All reactors located in future Member States were covered by the obligation to adapt to EU standards. The most problematic Soviet units, in Bulgaria, Lithuania, and Slovakia, were closed, a process carried out with the support of both the EU and Russia. Eighteen Russian VVER reactors, which meet the highest EU requirements, are still in operation in Bulgaria, the Czech Republic, Finland, Hungary, and Slovakia. The end of their initial period of operation is approaching (with an average lifespan now of close to 28 years), but the dependence of these countries on electricity from nuclear power and their determination to maintain it in their energy portfolios make modernisation and extension of reactor lifetimes a necessity. The selection of contractors for such work remains a matter of choice for national governments, and due to extensive experience and competitive tenders, contracts have very often been won by Rosatom subsidiaries (for example, Atomstroyexport) in cooperation with European companies.

The construction of new reactors in the EU is, for Russia, a matter of reputation rather than economic necessity. Moscow wants to maintain its lead position in the new EU Member States, and investments in the West are seen as valuable showcases of Russian technology. Regardless of the location and history of cooperation with particular states,

Rosatom is obliged to use investment incentives consistent with EU law. This aspect of cooperation between the EU and Russia has yet to be refined. Therefore, for example, a contract signed by Rosatom with Hungary in 2014 for the construction of twoVVER-1200 units at the Paks nuclear plant, offering a credit of up to €10 billion has been subject to two proceedings of the European Commission, initiated due to suspicions of unlawful state aid and failure to comply with public procurement rules.

The ability of Rosatom to adjust to European realities is, however, reflected in the fact that the company consented in 2014 to a different investment model, according to which Rusatom (a subsidiary of Rosatom) will be the technology provider but only a minority (34%) shareholder in the consortium. The Russian companies (together with Fortum and Rolls Royce) were officially invited by the United Kingdom in 2013 to build new reactors on its territory, and although geopolitics dampened British enthusiasm, this project has not yet been officially abandoned. Atomstroyexport is currently participating in the development of Mochovce in Slovakia and submitted a bid for the expansion of Temelin in the Czech Republic (the tender was cancelled in 2014). In all of these cases, Rosatom assumes the maximum involvement of local businesses and European suppliers. In the Temelin tender, for example, a Czech-Russian consortium offered local contractors up to 70% of the work, while at the Paks plant in Hungary, the figure is 40% of orders.

**Fuel Supplies.** Another critical issue in cooperation between the EU and Russia, arising from the technological divide in Europe, is the supply of nuclear fuel. For Telex and TVEL, Rosatom subsidiaries responsible for the production and sale of nuclear products, the goal is to increase the supply of nuclear services for Western reactors while maintaining their status as leading fuel suppliers for Russian-type reactors.

Western European nuclear power plant operators sign separate contracts for each stage of the fuel cycle, which guarantees them security of supply and competitive prices. In order to protect European industry, the openness of the common market to imports of nuclear services from outside the EU also used to be limited by the Corfu Declaration (1994), requiring EU suppliers account for 80% of the market. However, due to the increasing complexity of the market, the EU has moved away from these quotas. According to the Euratom Supply Agency (ESA), Russia supplied 18% of all uranium used in European power plants in 2014, and Tenex and TVEL were the second biggest suppliers of uranium enrichment services for European reactors (26%). Despite successful cooperation with European companies and the supply of fuel elements for certain commercial and research reactors in Germany, Switzerland, the Netherlands, the United Kingdom and Sweden, the supply of final nuclear fuel for Western reactors remains for Russia a technological challenge. However, taking advantage of the openness and transparency of the Western market, Rosatom is planning to compete with traditional producers of fuel for the world's most common PWR reactors, which would open up new opportunities for expansion.

For nuclear plants with a Soviet origin, agreements concluded with the Russian manufacturer concern traditionally the final product, the fuel assemblies, delivered directly to the reactors, with the option (used by Hungary and Bulgaria) of sending back spent fuel to Russia. Although Westinghouse also has the appropriate technology to produce fuel for the VVER-440 and VVER-1000 reactors and works in this field in Ukraine, all of the tenders organised in the EU in recent years have been won on price by TVEL. Hence, Russia remains the de facto sole fuel supplier for Soviet-era reactors in the EU. This market dominance is coming into question. For example, Westinghouse, in consortium with eight European partners, received in 2015 a €2 million grant under the European Horizon 2020 programme for work on alternative fuel supplies to the Russian reactors. Most importantly, however, the ESA has the mandate to approve all nuclear fuel agreements signed by EU Member States, including agreements with Russia. As for Paks, Euratom intervened in a contract between Hungary and Russia, reducing the duration of Rosatom's exclusive fuel supply clause from 20 years to 10. The Russian company readily agreed to the ESA's solution because it expects to easily win future supply contracts anyway.

**Conclusions.** A lack of reciprocity could negatively affect the prospects for further development of the relationship between Russia and the EU. The Russian Energy Strategy covering the period to 2030 assumes the use of customs rules and tariffs to limit the expansion of foreign manufacturers on the Russian market. Since Russia entered WTO in 2011, its legislation has been evolving towards the elimination of such rules and tariffs, but it is doubtful whether Moscow will readily open its strategic nuclear sector to, for example, European companies. Thus, while the EU is open to Rosatom, there are only a few cases of European companies working with Russian industry in Russia or third countries (one example is cooperation between Atomenergomash and Alstom in the manufacture of turbines). Hence, the EU should underline the need for equilibrium in the nuclear partnership with Russia so that European companies can benefit on equal terms.

With regard to Poland, it should be noted that the Member States' experience with Russia cannot be related in general or directly to relations between Poland and Russia in this field. On the one hand, TVEL has just won—both on price and experience—a contract for the supply of fuel for Poland's Maria research reactor. On the other hand, the possibility of entrusting construction of the first commercial reactor in Poland to Russia is controversial. In contrast to Western European countries, which could survive without Russian nuclear services, and eastern EU countries, which acquired their own expertise in operating power plants through years of cooperation with Russia, Poland's initial lack of know-how and technological inadequacies would constitute a risk factor that could easily be abused by Russia. For these obvious reasons, Rosatom is not taking part in Poland's integrated nuclear tender process.