

ENERGY SECURITY IN CENTRAL AND EASTERN EUROPE AND THE OPERATIONS OF RUSSIAN STATE-OWNED ENERGY ENTERPRISES

*Executive Summary of a Joint Study by
the Faculty of Social Studies of Masaryk University
& the Prague Security Studies Institute*

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JOINT STUDY OF THE FACULTY OF SOCIAL STUDIES, MASARYK UNIVERSITY AND THE PRAGUE SECURITY STUDIES INSTITUTE

EXECUTIVE SUMMARY

The Ukraine crisis has not only challenged NATO's security architecture and mission, but has provided the impetus to take stock of future energy development in Central and Eastern Europe (CEE) and dependencies on key Russian state-owned energy enterprises, notably Gazprom and Rosatom. These and other Russian energy enterprises (e.g. Rosneft) have been many times accused of being strategic tools or levers of the Kremlin in the past and such allegations are now arising once again.

Both Gazprom and Rosatom play a substantial role in the energy sector of the CEE and the behavioural characteristics of these companies – shuttling between the commercial and strategic – forms the basis of most of the concerns referenced in this report. Gazprom holds the dominant position in the natural gas sectors of the majority of CEE countries, relying on Russian gas for more than 75% of their consumption and several even 100% dependent. Given the importance of natural gas for industry and heating, where any supply curtailments can have a cascading, negative impact, disputes over Russian gas deliveries have periodically caused market disruption and political controversy. These concerns were demonstrated during the 2006 and 2009 Russian gas supply crises and again by the role they played in the course of the current Ukraine conflict.

In the nuclear sector, Rosatom is positioned as the dominant provider of nuclear technology and fuel supplies to the region, in large part stemming from the Soviet legacy in CEE countries. Compounding this challenge, nuclear energy is one of the major sources of power generation in CEE. Given the long-time, near monopoly of Russian nuclear technology/design in the region and plans to expand further the nuclear capacity of select CEE countries, the sector requires careful monitoring from both a technical and security-minded perspective. The behaviour of these Russian energy giants in Asia was also examined, due to the region's rise to be the new centre of gravity in the global energy environment and, as such, can offer valuable comparisons to the conduct of these companies in CEE.

This study is principally designed to evaluate the operations and behavioural characteristics of these two Russian state-owned enterprises (SOEs) in the gas and nuclear sectors of Central and Eastern Europe and assess whether Gazprom and Rosatom subscribe to specific patterns of conduct with regard to this business environment. If so, what are the determining factors of such behaviour and to what extent are these entities "politicized" as tools of Russian foreign and security policy.

The CEE countries examined were as follows: the Czech Republic, Slovakia, Poland, Hungary, Bulgaria, Romania, Latvia, Lithuania, Estonia, Ukraine, Belarus and Moldova. These countries offer an extensive,

¹ This executive summary is a part of a comprehensive study that will be published in the fall of 2015.

heterogeneous population of cases bound by a common history under the yoke of the Soviet Union and in a geographical area that Russia stubbornly, and sometimes maliciously, perceives as its sphere of influence. These countries have different characteristics in terms of the internal structure of their economies, energy mixes, foreign policy priorities, import dependence and membership in international organizations. This rather wide spectrum of characteristics enabled the research team to gather enough evidence to describe Gazprom's behaviour in various energy and political environments.

To meet the goals of the study, the following hypothesis was formulated: *„Russian state-owned energy companies in the natural gas and nuclear sectors act in order to maximize their influence and market share in CEE markets and strengthen Russian geopolitical leverage and positioning in this region.“* This hypothesis was addressed separately for the natural gas and nuclear sectors. A secondary goal was to identify the behavioural determinants of these Russian SOEs and how they differ according to various environments. Chapters providing an overview of the Asian gas and nuclear sector were also included to address the growing energy-related importance of this region and its attractiveness to major energy contractors, especially Russian energy SOEs. This regional analysis therefore offers a valuable set of comparisons with respect to Moscow's energy strategies and broader national interests.

The core of the study is comprised of a series of case studies involving each country under scrutiny. To facilitate this formidable task, the research team developed specific tools. For the nuclear sector, the team developed a set of specific research questions to help unearth the potential risks associated with each stage of the nuclear fuel cycle. For the gas sector a theoretical model of strategically-motivated behaviour was constructed. It was an ideal or standardized behavioural model characterized by a set of features and their real-world applications (i.e. indicators). The research team was searching for evidence of these indicators in attempting to answer the question of to what extent Gazprom and its subsidiaries subscribe to a strategic approach in individual cases.

Due to the enormous amount of data collected and processed by the research team and the flexibility of the research models employed, this study can be a resource for policy practitioners and decision-makers and can also be further developed and updated simply by adding new data.

SUMMARY ASSESSMENT OF THE NUCLEAR SECTOR

The nuclear energy sector has a number of structural differences when compared to crude oil, natural gas or coal; most typically it is not dependent on certain infrastructure and the uninterrupted flow of energy supplies. These wide differences, including safety and other technical concerns, alter the behaviour of commercial actors in this space and make it somewhat more difficult to detect strategically motivated behaviour. Accordingly, the research team developed a specific approach to assess the potential risks associated with three different stages of the nuclear plant life-cycle: **(1) the initial stage when the plant is being planned and financing is being secured;** **(2) the three sub-stages of the nuclear fuel cycle;** and **(3) the final stage which is the decommissioning of the facility.** In the case of nuclear fuel, its origin, supply sources, usage and waste management were taken into account. The following Table summarizes the key points within each examined stage. The main findings of this exercise are below.

Table 1: Criteria by Which the Nuclear Cycle Was Assessed

QUESTIONS	STAGE OF THE NUCLEAR CYCLE
Is there a nuclear production capacity present in the country?	Fuel cycle – service period
Is there a project to expand capacity? What is the status of the project?	Initial stage
How was the project procured?	Initial stage
Which contractor is in charge of the project?	Initial stage
How was the financing secured?	Initial stage
Who is the operator of the facility?	Fuel cycle – service period
Are there enough domestic experts to run the facility safely?	Fuel cycle – service period
Who will be in charge of decommissioning the facility?	Decommissioning stage
Who provides nuclear fuel and under what conditions?	Fuel cycle – front end
What is the experience with the fuel being currently used? Is there any rationale or path-dependency behind the current contract?	Fuel cycle – service period
Is there any part of the nuclear fuel industry present in the country? If so, how does it contribute to the country's nuclear fuel cycle?	Fuel cycle – front end
How is used fuel treated and disposed of and by who?	Fuel cycle – back end

THE STUDY'S KEY FINDINGS WITH RESPECT TO THE RUSSIAN NUCLEAR SECTOR WERE AS FOLLOWS:

FINDING 1: ALL ROADS LEAD TO ROSATOM

Although the research was aimed at the operations of Rosatom State Atomic Energy Corporation (Rosatom), the evidence shows Rosatom operating directly in only three countries (Bulgaria, Hungary and Slovakia). Rosatom is the contractor of a new nuclear power plant (NPP) only in Hungary. However, Rosatom's network of subsidiaries is extensive and the bulk of the Russian Federation's nuclear portfolio is executed through these subsidiaries which include, ZAO AtomStroyExport, OAO OKB Gidropress, OAO TVEL and others. The Table below helps illuminate the network of companies that ultimately reports to Rosatom.

Table 2: Ownership Structure of Russian Nuclear Energy Companies

COMPANY	SHAREHOLDERS	Share (%)
Rosatom State Atomic Energy Corporation	Government of Russian Federation	100
ZAO AtomStroyExport	Rosatom State Atomic Energy Corporation	78.5362
	AO VPO Zarubezhatomenergostroy	9.4346
	OAO TVEL	1.3303
	OAO Gazprombank	10.6989
OAO OKB Gidropress Experimental Design Bureau	OJSC Atomenergomash	100
OAO TVEL	OJSC Atomic Energy Power Corporation Atomenergoprom	100
JSC NIAEP	OJSC Atomic Energy Power Corporation Atomenergoprom	100
JSC Atomic Energy Power Corporation Atomenergoprom	Rosatom State Atomic Energy Corporation	100
JSC Inter RAO UES	Rosneftegaz Group	27.63
	FGC UES Group	18.57
	Minorities*	16.65*
	INTER RAO Capital	13.93
	Norilsk Nickel Group	13.21
	VEB	5.11
	RusHydro Group	4.92
OJSC Atomenergomash	OJSC Atomic Energy Power Corporation Atomenergoprom	80.6296
	CJSC AEM Leasing	2.3673
	INTERNEXCO GMBH	9.0896
	OFEJSC Techsnabexport	2.8481
	LLC Energomashkompleks	0.0453

* Minority shareholdings include ZAO AtomStroyExport, OJSC Rosenergoatom Concern, Rosatom Securities Limited. All these companies are part of the Rosatom which owns a 13.42% stake in JSC Inter RAO UES through these minorities.

FINDING 2: PATH DEPENDENCY IS AN IMPORTANT FACTOR

Evidence of relatively strong path dependency was found in the nuclear sectors of the CEE countries. Of the twelve countries analyzed, six house a nuclear power plant on their soil and all plan to expand current capacity or construct new NPPs. The six countries referenced are Bulgaria, the Czech Republic, Hungary, Romania, Slovakia and Ukraine. Bulgaria proved to be an anomaly in that it has two VVER-1000 units in operation and yet awarded Westinghouse Electric Company LLC the contract for the construction of Kozloduy 7, despite previous experience with only Russian technology. All of the other countries referenced have followed the path dependency related to previously implemented nuclear technology.

Historical experience in the construction, commissioning and operation of reactors as well as downstream industries, education and training systems factor heavily in tender decisions. These past experiences are all tied to specific technologies and infrastructure, a powerful lever for Moscow. While it is generally the case that Rosatom is strongly advantaged in these tender scenarios, historical experience can also have the opposite effect.

The operating phase is also dependent on a sufficient number of well-trained staff able to operate the facility. The uninterrupted development of a country's nuclear sector can greatly assist in maintaining this vital know-how. From this perspective, securing operation of nuclear units within a country is often key to Rosatom's future business development for the contractor as well as the customer country's preferences.

FINDING 3: RUSSIAN NUCLEAR SOEs ADAPT TO THE SPECIFIC NEEDS AND CONDITIONS OF THE OPERATING COUNTRY

The enormous cost of every NPP construction project makes such business extremely attractive for contractors given the limited number of such projects worldwide. The financial burden of such projects, however, often requires contractors to offer large-scale, low-cost financing packages in order to win tenders or be selected on a sole-source basis (i.e. with no tender process – a standard Russian sales goal). Smaller countries such as Slovakia, the Czech Republic and Hungary (not to mention the Baltic States) cannot hope to shoulder these multi-billion-dollar price-tags on their own. Quite understandably, in such situations contractors try to decrease the risk of financial loss or at least to secure their position in terms of future revenues by employing various financing schemes. In certain cases, they are also obliged to secure financing of the project appropriate to their share in the joint-venture as, for instance, in the case of Bulgaria.

Rosatom is a very flexible and adaptive entity when it comes to addressing the exact needs and conditions of the prospective sovereign client. Sales techniques and options that are widely accepted – and are also used by Russia – include: vendor investments (favored in the Czech Republic); strategic investment in the project itself (e.g. sharing the financial burden in exchange for a stake in the project and future (as took place for the Czech Temelín NPP and Romanian Cernavoda NPP); providing financial loans through national and/or private banks (as in the cases of the Bulgarian Kozloduy NPP, Ukrainian Khmelnytsky NPP and Hungarian Pakš NPP); and the turnkey option (exercised for the Belarusian Ostrovets NPP and the Slovakian Jaslovské Bohunice NPP). Indeed, Rosatom was the first contractor to arrange payment for the entire construction phase of an NPP project.

Quite recently a new type of contract has been introduced to the nuclear industry, namely the “Build-Own-Operate” (BOO) model or “Build-Own-Operate-Transfer” (BOOT). Rosatom markets this type of contract to “newcomers” that require an elaborate support structure. This sales model was applied in the case of Turkey’s Akkuyu NPP, which will be that country’s first nuclear power generating facility. In the BOO model, the contractor builds the plant and also operates it, while serving as the principal owner. Although it defies logic at some level, in effect, to turn over a strategically-sensitive national asset like a nuclear power complex to another country – particularly one like Russia – some states are content, via the BOO model, to exchange favorable financing for merely hosting the facility on its soil.²

Among the several potential dangers of this scheme include the sovereign client becoming a “hostage” of the contractor who will be operating the facility. The popular view, however, is that the contractor would never abuse its position, as it could estrange potential future clients. This is especially true given the fact that Russians claim the BOO scheme is the best way to attract newcomers to the nuclear club.

The problem here is that the prospect of future business does not always deter Moscow from taking geopolitical action in the nuclear sector. For example, on March 5, 2014, both Russian Deputy Prime Minister Rogozin and President Putin publicly threatened Ukraine with a cut-off of Russian nuclear fuel if it continued down the path toward an EU Association Agreement. Even though the President of Rosatom, Sergei Kiriyenko, later refuted this possibility, it proved that such nuclear disruption was on the Kremlin’s mind as a way to bludgeon Kiev into capitulation.

As mentioned, Rosatom operates through many different subsidiaries, in part to blur its identity, as illustrated in Finding 1. Although some of these subsidiaries were, no doubt, formed as a consequence of commercial circumstances, others were established to assist with Rosatom’s reputational challenges.

FINDING 4: THE SECTOR IS STRONGLY DRIVEN BY ECONOMICS

Generally, the nuclear sector offers limited opportunities to exert influence because of the specific nature of the sector itself which shapes the behavior of respective actors and provides a framework for operational interaction. In fact, it is primarily the economics of a nuclear power project, driven by extraordinarily high costs of construction and the longevity of the projects (e.g, as many as 30 years or more), that provides Russia, in particular, with substantial advantage in the bidding process. Few, if any, countries and/or companies are able to build and finance an entire nuclear power plant. This makes the initial stage, where financing and identifying a strategic partner takes place, crucial and simultaneously the most sensitive in terms of the potential influence that can be exerted by an external actor.

Given the limited amount of contracts in the nuclear sector and the revenue implications of each one, any attempt to use a nuclear contract as leverage on a particular country would cause substantial damage to any contractor’s reputation. This fact diminishes the possibility of a nuclear contractor exerting political pressure over a sovereign client, as contractors with damaged reputations would find themselves in a

² Under the “Build-Own-Operate-Transfer” variant the facility is transferred to the state after certain, previously agreed, period of time.

difficult situation regarding future business prospects worldwide. Rosatom probably calculates that it cannot afford to be found guilty of abusing a particular project to advance its political/strategic goals.

The scale of NPPs often requires Head of State attention and bargaining for some of the reasons mentioned above. Financing is the key issue of every project to ensure that initial costs are repaid during a reasonable period of time (i.e. before the life-cycle of the plant comes to an end). This very much depends on the electricity price in the client country, which has been an issue for some time in Europe due to relatively low and unpredictable prices that have undermined the commercial viability of certain nuclear projects. Obviously, this is an overarching concern, not exclusively related to the operations of Russian SOEs. On the other hand, Russian SOEs operating in the sector often come with a model that gives them a sizeable advantage over Western competitors in the sector as described in the following section.

FINDING 5: ROSATOM COMES WITH ATTRACTIVE FINANCING

There are five countries in which public procurements have taken place or are underway where Rosatom is a player. These are Belarus, Bulgaria, the Czech Republic, Slovakia and Ukraine. Russia has selected financing as its “tip of the spear” in these competitive circumstances, some of which are referenced below.

In the case of Belarus, Russia’s Vnesheconombank, provided the Belarusian commercial bank Belvnesheconombank a subsidized USD 6 billion loan for the construction of the Ostovets NPP site in a remote area in the north of the country. This loan was renegotiated in 2009 and 2011 to end up at USD 10 billion, including investment in new infrastructure. The loan has a term of 25 years and will finance 90% of the total contract cost between AtomStroyExport and the Belarus Directorate for Nuclear Power Plant Construction.

The Bulgarian Belene project, which was originally set to utilize the Russian VVER-1000 design, has been offered a large-scale Russian loan several times to support the AtomStroyExport-led consortium. These offers have, thus far, been rejected for primarily political and security-related reasons. The project was eventually scrapped and attention shifted to a new unit at the Kozloduy site where Westinghouse Electric Company LLC was selected to be the contractor – a bold move by Bulgaria.

In the Czech Republic, two vendor financial offers were made towards the end of the public procurement process for Temelin’s 3 and 4 units. Rosatom offered 100% coverage of project costs (through its JSC Rusatom Overseas subsidiary). Westinghouse, in turn, arranged a U.S. Exim Bank credit covering 50% of project costs. This one example speaks volumes about the respective levels of financial competitiveness of the two sides. In the end, no agreements were concluded and ČEZ, a.s. cancelled the whole procurement procedure in April 2014. A major reason for the cancellation was the Czech government’s announcement that it will not provide any electricity price guarantees for construction of the NPP. A less public reason could be that Rosatom was set to win the tender, but it was judged too controversial for the Czech government to award Moscow the tender in the midst of the Ukraine crisis.

In the case of Slovakia’s Jaslovské Bohunice project, Rosatom expressed the willingness to purchase a 51% stake in the project company Jadrová energetická spoločnosť Slovenska, a. s., thus making it both

the technology provider and strategic investor. Rosatom sought a guaranteed long-term electricity price of EUR 60-70 /MWh and possibly a BOO (build-own-operate) arrangement. As the Slovak Minister of Economy, Tomáš Malatinský, was unwilling to meet these conditions, the offer was rejected. The Slovaks eventually ended negotiations with the Russians at the end of 2013, as Rosatom continued to insist on guaranteed electricity prices. Shortly thereafter, at the beginning of 2014, Rosatom changed course abruptly and stopped insisting on a price guarantee. Indeed, it is now prepared to consider any form of support from the Slovak side, which will ensure that the project is economically viable for investors as well as for creditors. Moreover, the new Minister of Economy of Slovakia, Pavol Pavlis, who entered office in July 2014, is inclined to offer such electricity price guarantees.

Concerning Ukraine, in February 2011 Russia's ZAO AtomStroyExport and Ukrainian SE AtomProektInzhiniring (a subdivision of DP NNEGC Energoatom) signed an agreement to complete reactor units 3 and 4 at the Khmel'nitsky site. The following year, the Ukrainian Parliament adopted legislation to create a framework to finance the project, which included a plan to attract 80% of the necessary funds from Russia. The terms of the agreement were that Russia would provide a loan for 80%-85% of total project cost (estimated at EUR 3.7 billion) and the remainder would be financed by Ukraine. To date, Ukraine and Russia have not agreed on a government guarantee for this loan or on the interest rate. One of the principal conditions for the loan was a Ukrainian government guarantee that has not been granted to the necessary extent. As a result, Sberbank offered Energoatom a credit to implement the project on commercial terms, to which the Ukrainian side has not agreed. There has been generally no progress in the case since 2012, and current Russia-Ukraine relations do not bode well for the deal being concluded.

Hungary is a rather special case. Rosatom was victorious in providing an expansion of the Pakš NPP complex with no public tender whatsoever. It was rather a classic "backroom" deal concluded by the two Heads of State in a highly secret framework. In fact, the Hungarian Parliament was pressured by the Hungarian Prime Minister to pass legislation making it a crime to reveal the terms and conditions for a 30-year period. A EUR 10 billion loan was offered by the Russian Federation to co-finance the project³ and the deal was eventually cemented in January 2014. The deal will reportedly involve the Russian Federation granting Hungary an interest-only loan at an annual rate of 3.9%, starting in 2014. Once construction is completed in 2026 (the expected operational date), the principal balance will be amortized over 21 years, with an interest rate of 4.5% for the first seven years, 4.8% for the next seven, and 4.95% for the final seven.

FINDING 6: BUSINESS ENVIRONMENT SETS THE OPERATIONAL FRAMEWORK

Historical ties and traditional policies play an important role in the operational framework of Russian state-controlled companies. The research indicates three categories of "nuclear energy" states in the region. First is the Western-leaning countries of Bulgaria, the Czech Republic, Romania and Slovakia. These countries are enmeshed in EU structures, policies and procedures, making it more difficult

³ The Russian side was reportedly the only party prepared to offer financing to support the project. The loan would equal 80% of the total costs of the project.

for Russia to cut “sweetheart” deals of the type on display in Hungary. The interconnection with EU legislation also reduces the space for shadowy undertakings. EU procurement procedures and related documentation is formulated quite precisely, according to respective regulations and laws, especially those related to promoting fair competition. These positive features of EU integration and involvement in other Western political structures however, is accompanied by a tedious and complicated bureaucracy.

The second category is non-nuclear states that seek to enter the nuclear club, but have more negative relationships with the Russian Federation. These countries include Poland and the Baltic states. For example, the Lithuanian government explicitly excluded a Russian design in its tender for the Visaginas NPP. Rosatom, through its subsidiary JSC Inter RAO UES, sought to oppose the project by offering its own alternative in Kaliningrad’s Neman NPP announced in 2008. This effort however, was unsuccessful. The actual tender in Poland has not yet been opened, but it is also likely that there will be no Russian contractor or subcontractor allowed to bid on the project.

The third category consists of CEE nuclear countries that remain close to the Russian Federation for political, historical and economic reasons. These countries include Belarus and Hungary. Not so long ago, Ukraine would have appeared in this category, but, obviously, not now. These countries favor Russian energy enterprises, and Rosatom in particular. In addition, the business and political environments are more accommodating for Russian companies.

As referenced earlier, special attention is warranted in the case of Hungary. It now fits in this third category, despite its EU membership, for ignoring proper procurement procedures and including state subsidies being granted to MVM Group. The EU has not sought to unwind the Rosatom contract for the Pakš NPP, despite every necessary justification to do so, and instead concentrated on reducing Rosatom’s monopoly on nuclear fuel supplies from twenty years to ten years. The decision to grant the project to the Russians was made by the Prime Minister and his closest collaborators without any official procurement procedure or even consultations with other interested parties, industry experts or the public at large.

In sum, Rosatom is most often forced to operate within specific local, political, economic and regulatory frameworks, which means the business and political environment has a great deal to do with determining tender winners and losers and the operations of these facilities. In this regard, the importance of multilateral regimes, especially the EU, is as clear as it is necessary to discipline’s Rosatom’s behaviour, which is often more strategic, under Kremlin oversight, than it is commercial.

FINDING 7: DELAYS ARE NATURAL PART OF THE PROCESS

When examining the nuclear industry, one of the key issues is actually the construction itself. To build a nuclear power plant is a complex undertaking that typically takes some five to seven years. Currently in countries such as South Korea and China, construction timetables range from four to six years and in European countries between six and eight years. Delays and additional work are natural components of the process. For example, the in-service dates of the pilot project of the Westinghouse's AP1000 design at the American Vogtle NPP in Georgia (in the United States) has been recently moved from April 2016 to December 2017 (unit I) and December 2018 (unit II) with additional work costing some \$650 million. Rosatom's VVER-1200 design at the Russian Novovoronezh II site has been postponed from the original in-operation date (2012 for unit I and 2013 for unit II) to 2014 for unit I and 2016 for unit II. Moreover, this project is likely to be postponed again. AREVA's pilot European Pressurized Reactor (EPR) design at Finland's Olkiluoto-3 site has also been postponed several times. The original date of in-service (2009) has been recently changed once again to the end of 2018. Olkiluoto-3's construction costs were first estimated at 3.2 billion euro. Later in 2012, the CEO of AREVA estimated the overall cost would end up closer to 8.5 billion euro.

These are only a few examples of the challenges of NPP construction that have reportedly afflicted some 50 of the 67 reactors under construction in 2014. The delays have stretched from several months to several years. All of the 17 remaining units are currently in their initial stage of construction, making it difficult to assess whether they are on schedule or not. Either the construction process or the public procurement process, were behind schedule in each of the CEE countries analyzed.

Although the reasons for these persistent delays and cost-overruns are often not made public, they are generally caused by rising material costs, delayed subcontractors' work, accidents, increasing safety requirements and public opposition. It seems clear that these set-backs are a natural part of the process of building highly complex nuclear units. There was no evidence of any delays motivated by political considerations, but this is not to exclude the possibility.

Such irresponsible actions would mean substantial damage to the contractor's reputation, given the complexity and strategic nature of a nuclear power plant for the client. As there are a limited number of such high cost contracts, the suppliers have to proceed very carefully not to compromise their position for future projects. In this sense, any effort to use delaying tactics concerning a nuclear contract for geopolitical purposes would be perilous for the contractor's reputation in the markets, as was pointed out earlier. That said, Russia's efforts to derail Lithuania's NPP involved trying to delay the procurement process by introducing its own alternative in Kaliningrad to confuse the process.

FINDING 8: DEPENDENCY OF OPERATORS OF VVER REACTORS ON OAO TVEL FUEL

Not surprisingly, for the VVER reactor design, the dominant supplier is the Russian company OAO TVEL. This company supplies nuclear fuel for each of the analyzed countries, except for Romania and partially Slovakia and Ukraine. The VVER type fuel assemblies are hexagonal, while the Western reactor fuel employs square-shaped fuel assemblies. Although the VVER type fuel can be produced by Western companies, Russian experience and facilities are difficult to beat in terms of price of the product. Even though AREVA, Westinghouse⁴ and other companies⁵ are capable of supplying the client country with VVER design fuel assemblies, they cannot do so at competitive prices.⁶ For example, Westinghouse says it could resume VVER fuel rod production with an investment of \$20 million, if allowed back into the market. Such a plan, however, would take at least two years. The economies of scale play into the hands of Russian TVEL.

The logic chain is as follows: Westinghouse will reenter the market only if customers can be found; these will be found only if the product is offered at a competitive price; the product will be offered at a competitive price only if the existence of customers allows investment into production capabilities; the investment in production capabilities will be allowed only if customers can be found. Accordingly, the situation resembles a kind of a vicious circle that can be breached, but is unlikely to be anytime soon. (It is also worth noting that TVEL manufactures nuclear fuel assemblies for Western type reactors as well.)

This feature of the nuclear sector is currently being addressed at the EU level, as the European Commission offered a research grant of EUR 2 million for safety analyses, tests and further study into the licensing of other than TVEL-produced nuclear fuel. Such an allocation supports the diversification of nuclear fuel supplies and also serves as indirect support of TVEL competitors in the EU market, especially Westinghouse and Areva. It is also clear evidence of the fact that political will can change a seemingly unchangeable pattern, at least from a commercial perspective.

In sum, the nuclear fuel cycle does not represent an unworkable, one-sided dependency on Russian supply. This is, in part, because of the global abundance of uranium and a highly competitive uranium market, enabling countries to switch between suppliers more easily. On the other hand, Rosatom's fuel subsidiary has some sizeable advantages over other suppliers stemming from long-term, technology-specific relations with CEE countries, experience and technological compatibility based on the prevalence of nuclear units built according to Russian design. This results in better pricing – also occasionally

4 The Czech experience: The long-time fuel supplier for the Temelín NPP was the Russian company TVEL. Since 2002, when the plant was launched, to the end of 2009, fuel for the Temelín NPP was supplied by the American company Westinghouse Electric Company, LLC. It is well-known that the fuel rods were defective in the active zone of reactor at that time. This was caused by the different shape of the fuel assemblies which Westinghouse produced. Hexagonal assemblies for Temelín were initially provided by Westinghouse Electric Company LLC, but the fuel rods suffered from torsion, which resulted in forced operational interruption, limited production and inability to produce electricity at full capacity. These issues occurred mainly due to Westinghouse's short experience with VVER design fuel assemblies, as they began providing this product only in 1997. In 2010, a selection process for a new supplier took place and was awarded to the Russian TVEL, which submitted a financial offer that was substantially below other offers. TVEL will now be supplying nuclear fuel to the Czech Republic until 2020, and is now the exclusive fuel supplier for both Czech nuclear power plants.

5 For example, since 2010 part of the nuclear fuel supplies for Chinese VVER design reactors has been produced by Chinese China National Nuclear Corporation.

6 Westinghouse, for example, now supplies VVER design fuel assemblies to Ukraine. Although the price of the contract was not published, the logic is clear. The Ukrainians made a political decision aimed at diversifying the supply of nuclear fuel even at a higher cost. Although some problems similar to those faced by the Czech Republic have surfaced, after the Russian annexation of Crimea the contract with Westinghouse was extended until 2020, validating the politicization of the decision.

lowered for political purposes – and generally smoother operation of those fuel assemblies provided. Switching to another provider is possible, but may be accompanied by higher prices and operational difficulties in the early stages.

FINDING 9: SPENT FUEL TREATMENT PROCEDURE POSES ONLY STANDARD RISKS

There are two types of nuclear fuel cycles that differ in the last phase. When the fuel is not reprocessed and is disposed after use, it is called the “open” or “once-through” nuclear fuel cycle. If the fuel is reprocessed, the nuclear fuel cycle is referred to as “closed”. Fuel reprocessing is nowadays technically and financially demanding, which only a few countries in the world are willing or able to afford.⁷ In the next 50 years, this may become common practice. Currently, nuclear fuel is reprocessed only by countries with a broad portfolio of nuclear power plants (such as France, Russia, UK, Japan and certain others). The global recycling capacity is presently some 5,370 tons annually, which is only around 8.7% of global uranium demand. Far more usual is the open nuclear fuel cycle option.

After removal from the reactor, three phases of fuel disposal follow. In the first phase, fuel cassettes are actively cooled in a pool next to a reactor. After at least five years they are moved into dry containers and then passively cooled in interim storage facilities. The interim storage units are built with the capacity to last for several decades, at least for a period exceeding the lifespan of the power plant itself. The second phase includes safe transport to the final waste disposal site. The third phase, disposal, is understood to be the final operation, which is why the depository for the spent fuel needs to offer impenetrable protection. None of these phases generally pose a risk related to Russian SOEs.

The countries analyzed, can be divided into two basic categories. Those countries in the first category (i.e. Belarus, Bulgaria and Ukraine) send their spent fuel to the Russian Federation for reprocessing. It is not actual reprocessing per se, as the same reprocessed fuel is not returned to the country. Rather, as a part of their contracts, the fuel is “leased” and repatriated after use. Only the separated wastes are returned to the country for storage. The states in the second category (i.e. the Czech Republic, Hungary, Lithuania, Romania, Slovakia and partly Ukraine) purchase fuel from Rosatom and spent fuel management is completely done by them. This option is much more common.

The spent fuel (or back-end) treatment procedure is nothing extraordinary. It is a fairly common procedure and no threats or abuses appear to be related to Russian involvement, as the nuclear fuel cycle is regulated by strict rules due the potentially hazardous materials involved. Although the amount of waste produced by nuclear plants is usually not an issue in terms of quantity, the challenge of its ultimate storage remains. Little has been done in terms of building final underground storage facilities.

⁷ In 2011, it was only China, France, the Great Britain, India, Japan, Pakistan, Russia and the USA.

ROSATOM'S ACTIVITIES IN THE ASIAN MARKET

As far as civil nuclear power development is concerned, the research identified several different groups of players in the Asian market: 1) mature countries with their own nuclear technology and services export programs (i.e., Japan, South Korea, and increasingly China); 2) countries which operate nuclear power plants, but have had otherwise limited participation in the nuclear sector due to being non-signatories to the Nuclear Non-proliferation Treaty (i.e., India until 2008, Pakistan); and 3) newcomers to the sector, who decided to address their rapidly growing energy demand by developing their own nuclear power-generating capacity (e.g. Vietnam and Bangladesh). Within the study, we examined Rosatom's activities in select case studies representing each of the above-mentioned groups. The countries under scrutiny were China, India and Vietnam. Major findings derived from this research are below.

FINDING 1: RUSSIAN SOEs ADJUST THEIR EXPORT STRATEGIES BASED ON THE CUSTOMER'S SPECIFIC POSITION

The diversity in the Asian market led Rosatom to differentiate its export strategies vis-à-vis the position and aspirations of respective customers in the nuclear energy business. A clear example of this finding is the case of China. Beijing's long-term goal is to develop a sophisticated nuclear energy program that is capable of satisfying growing domestic energy demand as well as become an exporter of its own domestic reactor designs to third countries. To meet this goal, China has implemented a policy of international cooperation with global players and has been encouraging the transfer of technologies. Technology transfers were one of the major factors in the 2004 nuclear tender for a third generation of reactor design, which was eventually won by Westinghouse with its AP1000 design.

Given the development of the Chinese nuclear sector, China will most likely be competing with Russian suppliers in the future as it apparently has taken aim at the same markets.⁸ Accordingly, it can be assumed, that for that reason, Rosatom is not willing to share its prized technologies with its Chinese counterparts. Anyway, Rosatom's activities in China are limited to a single project, even though one of the country's largest, the Tianwan nuclear power plant project. Even in this case, China has successfully raised its share of the construction work from 50% (Tianwan 1&2) to 70% (Tianwan 3&4). China's desire to involve the Russians in its nuclear power development most likely stems from its contract on uranium enrichment technology, which was attached to the package agreement on Tianwan 1&2.

China's two major enrichment plants were built under agreements with Russia in the 1990s and a 2008 agreement. Russia has been providing technical assistance to build additional capacity and also supply low-enriched uranium to Chinese nuclear power stations. Additionally, in 2010, China bought Russian fuel production technology. China's Yibin fabrication plant will thus be in a position to supply Tianwan 2 with Russian TVS-2M fuel, enabling the plant to operate on longer 18-months cycles.

Although India has developed its own nuclear power program as well, Rosatom is making substantial headway in the Indian market. India has focused on the three-phased, heavy-water thorium fuel cycle

⁸ For instance, China has explored options for nuclear cooperation with India and closed a nuclear power agreement with Vietnam.

instead of conventional PWR reactor designs to offset insufficient domestic uranium resources. Rosatom's strong position in the country stems from historical ties. For example, Russia was the only country willing to provide assistance to India's civilian nuclear program after the withdrawal of Canada and other vendors following the country's 1974 nuclear weapon test and the formation of Nuclear Suppliers Group (NSG). After the 2008 U.S.-India nuclear deal was signed (followed by agreements between India and the IAEA and NSG, respectively), the door was open for technology and fuel supplies from foreign suppliers, but, by then, Russia found itself in a privileged position in India.

The Kudankulam 1&2 NPP project construction began in 2002. Previous agreements had secured greater Russian involvement in India's nuclear energy sector. Recently, construction of four or more additional Russian nuclear reactors has been discussed and planned either in Kudankulam or at another site. TVEL was also the first company to sign a uranium supply agreement with India since the lifting of NSG restrictions. In a development favorable to Rosatom, India agreed not to apply the problematic 2010 "liability law" to Kudankulam 1&2 project and the two parties apparently reached an accord of some kind concerning the liability issue also in the case of Kudankulam 3&4. The Russian position in India is further reinforced by its willingness to allow India to retain and reprocess used fuel for its indigenous three-stage fuel cycle.

Vietnam has no nuclear power production capacity or nuclear-related facilities. It has, however, declared its serious intention to integrate nuclear power energy into its energy mix for the future and develop its own nuclear program. In similar cases in the past, Rosatom has developed export strategies addressing the specific situations of nuclear sector newcomers by providing complex "nuclear solutions", including tailored ones, for building nuclear power plants. It is, therefore, probable that this almost fatherly approach by Moscow was quite decisive in Vietnam choosing Rosatom as the general contractor for its first nuclear power plant - Ninh Thuan 1 (units 1&2). In this case, Russia agreed to construct the plant as a turnkey project (see below). An elaborate Russian arms sale placed in the window of Vietnam's decision may also be seen as a potentially important factor influencing the decision of the Vietnamese government.

FINDING 2: ROSATOM ARRIVES WITH SUBSIDIZED FINANCING

Similar to the findings derived from an examination of CEE countries, the Russian side has arrived in Asia ready to offer inexpensive, long-term financing (though payment details are usually not publicly disclosed). A good example is the Indian Kudankulam 1&2 NPP project which was built under a Russian-financed contract. A long-term credit covered about half of the cost of the plant. Consistent with this arrangement, the Indian government made clear in 2012 that it expected the same credit terms and coverage for Kudankulam units 3&4. In Vietnam, Rosatom has confirmed that Russia's Ministry of Finance is prepared to underwrite at least 85% of the first plant, which is a cornerstone of Vietnam's development plans.

FINDING 3: ROSATOM OFFERS COMPLEX SOLUTIONS FOR NEWCOMERS

As mentioned, Rosatom is flexible in addressing the various needs and conditions of a client country. Coming back to Vietnam's case, the Ninh Thuan 1 agreement included: design, development, supply of the equipment and materials, construction work, construction and adjustment of the equipment, nuclear power plant commissioning, as well as training of the nuclear power plant operating staff. Rosatom was ready to provide educational resources as well as in-company training for Vietnamese students, engage Vietnamese workers in the construction and installation of nuclear power plants in Russia and establish a Nuclear Science and Technology Centre with a small research reactor in Hanoi intended for training. The Rosatom subsidiary, JSC "E4 Group," completed the documentation needed for approval of the nuclear power plant site and also provided the feasibility study. Rosatom also committed itself to supply fresh fuel and to take responsibility for the repatriation of used fuel during the entire life-cycle of the plant. In short, this Russian sales strategy matches well the complex requirements of countries with no previous experience in the nuclear sector.

FINDING 4: ROSATOM REVEALS ITS LONG-TERM BUSINESS STRATEGY IN THE REGION

The Vietnamese Ninh Thuan 1 NPP construction can be understood as a "demonstration project" aimed at attracting other potential customers in Southeast Asia. The Nuclear Industry Supplier Forum, ATOMEX Asia, was organized by Rosatom in Vietnam in November 2014. At this event, Rosatom presented itself as a provider of complex solutions that include nuclear infrastructure, nuclear and emergency response, physical protection, a regulatory framework, nuclear education and staff training. The nuclear industry was introduced as an important factor in local modernization efforts, with many areas of cooperation opened to host countries' companies. It is apparent that Rosatom aims to build a reputation as a reliable and comprehensive supplier in newly opening Asian markets. Accordingly, Rosatom has a strong incentive to avoid the perception of a country seeking to leverage its foreign and security policy goals through its nuclear energy relationships, at least in Asia.

SUMMARY ASSESSMENT OF NATURAL GAS SECTOR

For assessing the natural gas sector a different approach was chosen, as the nature of this sector differs widely from that of the nuclear sector and also offers Gazprom more opportunities for abusing its dominant position as a gas supplier to the region. The research team thus developed a theoretical model based on a strategic approach to energy policy. This approach can generally be characterized as one of using energy and energy commodities as tools of the state (directly or through SOEs) to achieve specific foreign and security policy goals. Such behaviour is now of greater concern than in the past, especially given the Kremlin's present ambitions in the region and beyond. Based on this strategically-based behavioural model, the research team derived a set of indicators whose manifestations in reality were used to find out to what extent Gazprom behaves strategically in gas sectors of the countries under scrutiny (see below).

Table 3: Indicators of Strategic Behaviour Searched for in Individual Cases under Scrutiny

INDICATORS OF STRATEGIC BEHAVIOUR

Russian state representatives actively supporting state-owned energy enterprises and their activities in a respective country
The foreign supplier rewarding certain behaviour and linking energy prices to the client state's foreign policy orientation
Abusing infrastructure (e.g. pipelines) and offering different pricing to exert pressure on the client state
Efforts to take control of energy resources, transit routes and distribution networks of the client state
Disrupting (through various means) alternative supply routes/sources of supply
Efforts to gain a dominant market position in the client country
Efforts to eliminate competitive suppliers
Acting against liberalization
Preference for long-term bilateral agreements and „take-or-pay“ type contracts
Diminishing the importance and influence of multilateral regimes like that of the EU
Attempts to control the entire supply chain (regardless of commercial rationale)
Taking economically irrational steps in order to maintain a certain position in the client state's market

As mentioned above, to ascertain Gazprom's pattern of behaviour the research team had to assess the company's actions and operations in various environments. This required drawing from both the experiences of EU members and non-member states. Through this adjustment, the team was able to assess the effect of the EU's internal energy market on both Gazprom's strategy and the energy security situations of the designated countries. Given the global nature of Gazprom's activities and the rapid growth in Asian consumption, the team also conducted an overview of the company's activities in this region. It provided valuable data for comparison with that concerning Europe.

The research team came up with the following findings addressing the hypothesis. Given the sheer volume of the research in substantially different markets, the findings are divided into subsections.

FINDING 1: GAZPROM'S BEHAVIOUR REFLECTS ITS OPERATING ENVIRONMENT

In most cases Gazprom follows the rules set by its operating environment, but often stretches these rules to the maximum extent allowable. In short, it carefully gauges its leverage in a particular country and adjusts its behaviour accordingly. For example, if a country is wholly dependent on its gas supplies and Gazprom has no competitors on the horizon, and the economy in question relies on gas for a substantial share of its energy mix, Gazprom can reasonably be expected to exercise its maximum leverage in a pinch.

Although, in most cases, Gazprom's conduct could be economically justified, the company does have a track record of being misused in certain flare-up circumstances that are most likely to occur in cases of 'vulnerable' countries (see below) where there is more latitude and temptation for 'non-market' conduct. In some cases, other 'non-structural' factors need to be taken into account as the operating environment may also be formed by local or regional politics and the personal ambitions of local state representatives.

The research team identified the following conditions as influencing and shaping Gazprom's behaviour within differing environments.

FINDING 1A: STATE OF DIVERSIFICATION

Gazprom's monopolistic position in CEE markets evolved during a period when Russian gas was the sole option. In situations when countries had only one source of gas, gas prices were determined at Gazprom's discretion. The situation started to change after the fall of the Soviet Union in the 1990s when the former communist countries reoriented their foreign and economic policies toward the West, and energy policy followed suit. In those countries that managed to diversify their gas portfolios via new foreign or domestic sources, Gazprom generally kept a low profile and gas deals were conducted on a standard business basis, with few pricing disputes or supply concerns. The Czech Republic and Romania can be cited as examples in this regard.

The Czech Republic managed to diversify its gas import portfolio in 1996 by building a pipeline to facilitate Norwegian gas deliveries. Due to this source of diversification, Russian supplies tended not to be politicized, much less weaponized, and the country was able to serve as a key player in helping mitigate the impact of the 2009 gas crisis by supplying its neighbours with North Sea gas.

Romania, for its part, had a history of cool, if not cold, relations with the Soviet Union as well as with Russia. This affected many parts of the country's economy, including the energy sector. In the past decade, the country managed to substantially decrease its dependence on foreign gas supplies and has been simultaneously developing its domestic resources. It also does not purchase gas directly from Gazprom, but through intermediaries, which further helps mitigate the risk of politicization.

FINDING 1B: FOREIGN POLICY AND TRACTION OF DEMOCRATIC INSTITUTIONS AS IMPORTANT FACTORS IN GAZPROM'S CASE-BASED APPROACH

In addition to those cited above the condition of the foreign policy discourse with Russia and the stability and traction of democratic institutions are also important factors. Gazprom well understands the non-homogeneity of CEE countries and knows that each country requires a tailored strategy. There is abundant evidence that Gazprom applies a case-based approach reflecting the general foreign policy direction and mood of the respective country, mutual relations and the market setting. If a country is firmly anchored in multilateral commercial regimes like Poland, Romania or the Czech Republic, then the politicization and undue conditionality in deals in the gas sector are less likely to occur. Moreover, the inclination to engage in non-transparent conduct, use personal links to influence the outcome of deals and fail to adhere to EU market rules is less probable within these countries. The opposite example is true of Moldova or Ukraine. As was learned in the case of Hungary, not even EU membership guarantees compliance with EU energy sector regulations.

Moldova represents a clear example of how the absence of standardized market rules and membership of multilateral commercial regimes can harm a country's energy security. It also provides an illustration of how Gazprom adjusts its typical strategy to meet specific local conditions. For example, traditional long-term contracts are not being put in place with Moldova. Gazprom is reluctant to sign a more stable contract so that it might penalize Moldova for its willingness to support and implement the EU Third Energy Package.

Hungary has tended to close individually tailored deals within both the gas and nuclear sectors. A classic example is the contract closed during Vladimir Putin's visit to Budapest in February 2015. On this visit, Putin and Hungarian Prime Minister Viktor Orbán agreed that Hungary will not have to engage in a take-or-pay contract after its present deal with Moscow expires. Instead, Hungary can continue using its remaining contracted gas with no additional payment required. Such a deal effectively abolishes the take-or-pay condition, something thought unimaginable for most of Gazprom's customers.

The February meeting was part of a broader strengthening of bilateral energy deals. Last year Putin and Orbán cemented a pivotal deal on the Paks NPP through which Russian companies will construct two new nuclear reactor units and will also provide Hungary with a subsidized EUR 10 billion loan. Such transactions, despite having a largely negative impact on the country's longer-term energy security, have the appearance of being mutually beneficial. Hungary offers a stable and reliable customer for Gazprom and a pro-Moscow voice within the EU and the Hungarian Prime Minister can present these agreements as a way of 'stabilizing' Hungary's energy sector with some additional financial 'sweeteners'.

These two countries provide different examples of Gazprom seeking opportunities to conclude transactions that are not significantly influenced by multilateral institutions and achieve important commercial and political benefits. The fact that these energy talks and deals are often concluded at the Head of State level underscores their strategic significance from the perspective of both parties.

FINDING 1C: CASE-SPECIFIC INTERVENING FACTORS NEED TO BE RECOGNIZED

The bulk of the factors comprising the relationships between countries examined and Gazprom are structural in nature. That said, these factors have emerged either as a result of sector-specific developments or as a consequence of the policies imposed by a multilateral authority (i.e. the EU). In some cases, however, these factors are internally created and constitute the main drivers shaping the environment. If Gazprom ascertains that conditions are right, it will tend to go full-throttle for leverage over the client state.

Hungary again serves as an example of a circumstance, like the compatibility of the respective Heads of State that can fundamentally alter traditional ways of doing business (e.g. the termination of take-or-pay contracts). In Romania, the government is rather reluctant to strengthen the regional gas grid as increased exports of domestically produced gas could increase the price paid by Romanian customers due to increased demand for higher-priced imports of foreign gas. This ultimately weakens energy security in the region.

FINDING 1D: EU MEMBERSHIP AND IMPLEMENTATION OF IEM RULES

Historically, the gas trade in Europe was organized on the basis of long-term, take-or-pay contracts. The stability and predictability of the system was further strengthened by the small number of actors in the market (i.e. mainly national monopolies protected by their respected governments) and the limited cross-border gas competition due to the fragmentation of national markets. With pipelines being the default approach to transporting natural gas, producers and consumers were destined to form long-term partnerships.

This model enabled Gazprom to gain – and preserve – significant market dominance in a majority of the gas markets within the EU. It also provided the company with tools to project economic and political power through the use of these long-term, take-or-pay contracts indexed to the cost of alternative non-gas fuels with destination clauses enabling the company to charge different prices in different markets.

In the past two decades the situation has changed. The European Commission (EC) increased its efforts to introduce competition and liberalization in the EU's gas markets with a vision of building a unified Internal Energy Market (IEM). This new regulatory framework has challenged the monopoly power of national incumbents, like Gazprom, and emphasized the role of market and commercially-based contracts. EU regulatory authorities started also to promote short-term trading on gas hubs as an important contributor to competition. Long-term contracts (LTC) came under increasing pressure due to their foreclosure potential. As a result, Gazprom's overall gas strategy, including its market dominance and the occasional misuse of its dominant position are in the process of being compromised. LTCs and their provisions have also been legally challenged forcing Gazprom to adjust its pricing schemes increasingly in the direction of hub-based trading.

Moreover, the research team observed a significant correlation between the level of development of EU markets (in terms of their size, liquidity, concentration, etc.) and their vulnerability to economically or politically-motivated market distortions. It does not mean that politicization cannot occur, only that competitive markets make such reckless forays more difficult and potentially more expensive for Moscow, through the acceleration of national diversification efforts.

This description applies to mainly mature EU markets. In Central and East European countries, the IEM legislative and regulatory framework has been introduced only gradually and the gas network is insufficient, hubs are almost missing and liquidity improvements have moved slowly. That makes the situation in CEE countries considerably more favourable for Gazprom.

Although this difference between Western and the Eastern EU members is narrowing, full convergence of the markets is likely years away. These countries are thus still subject to individual pricing by Gazprom with the final price based to a great extent on the degree of bargaining power of the respective purchasers.

FINDING 1E: CHANGING ENVIRONMENT – GAZPROM IS BECOMING A MARKET SUBJECT RATHER THAN A MARKET MAKER

As mentioned earlier, the historical model of gas marketing in the CEE was built on the bilateral relationships of a limited number of players bound together by long-term contracts. This structure developed based on a consensus that individual agreements would be determined by the bargaining power of the parties involved. Sustained interactions shaped the structure of the market. Relational power defined such interactions among market actors, while structural power was diffused and unassigned.⁹ The liberalizing model of the IEM changed this imbalance. Relational power still plays an important role with regard to certain individual deals. The structure of the market, however, that defines the boundaries for such negotiations, is no longer a result of only a consensus among the respective parties. The power to define and modify the structure of the market was turned over to a great extent to the EU's regulatory bodies (i.e. the European Commission and national regulatory authorities). The consequences of this shift are especially severe for those suppliers outside the EU (including Gazprom), as their influence on the EU policy process and rule-making is limited.

⁹ Relational power is defined as an ability to impose one's will on others with direct link of authority between the one who holds that power and others who do not. Structural power is defined as the ability to shape or determine the functioning of certain structures in one's own interest, even when there is no direct link of authority between oneself and others.

FINDING 2: GAZPROM'S BEHAVIOUR IS GENERALLY COMMERCIALY-ORIENTED, HOWEVER, IN CERTAIN SITUATIONS, CAN BE ATTRIBUTED TO STRATEGIC MOTIVATIONS

Contrary to popular perceptions, there is an economic/business rationale behind most of Gazprom's activities, be it with EU member states or non-member states. Even in cases like Ukraine or Moldova, that are clear examples of political pressure being exerted in the gas portfolio, Gazprom's behaviour can often be explained on the basis of ordinary supplier – consumer relations (e.g. delayed payments, etc.) Certainly, Ukraine strained the relationship with the high amount of debt arrearages that it accumulated with Gazprom. Russia's efforts to stop alternative supplies of gas to the country by, for example, raising transit fees for Turkmen gas intended for the Ukrainian market appear to be more strategic in character, designed to slow or halt any meaningful diversification away from Russian supplies. On the other hand, one cannot neglect the fact that Ukraine is one of Gazprom's biggest customers and any diversification of its supply portfolio is thus against the company's interests. In the case of Moldova, the resistance against the country's efforts to implement the EU's internal market rules is also understandable from an economic point of view, given the dominant role of Russian gas on the Moldovan market. This is not to imply that these kinds of activities are acceptable, but they are generally within the zone of market behaviour.

FINDING 2A: IT IS NOT THE MEASURES THAT ARE SUSPICIOUS BUT RATHER THE TIMING

Despite the observations above, Gazprom's behaviour is, when deemed necessary, shrouded in suspicion, particularly with respect to the timing of its actions. For instance, in the Ukrainian case Gazprom tolerated high levels of Ukrainian debt for many years because of various cash flow challenges facing Kiev. It was only when the bilateral relationship began to suffer that debt collection was made a priority by Moscow. Moreover, the rather dramatic price discounts that were offered and subsequently withdrawn coincided closely with turbulent changes in the bilateral relationship.

In the case of Moldova, steep increases in gas price correlated with a rapid worsening in relations after 2003. Although the price rise was presented as bringing Moldova level with other European prices, the coincidence remained suspicious. The series of Russian economic sanctions imposed on Moldova also coincided with the country's signing of the Association Agreement with the EU. There are many other such "timing" issues, including with Bulgaria in the case of the Southstream project, that provided a reminder to Gazprom's sovereign customers that it is not an entirely benign commercial entity.

FINDING 3: GAZPROM STRIVES TO BE AN 'ORDINARY' COMPANY

At some level, Gazprom strives to be an ordinary company, much of the time trying to make a profit and gain market share. On the other hand, Gazprom can be – and has been – misused in circumstances when Moscow intends to punish the political, and even supply diversification-oriented behaviour, of one of

it country clients where possible. Acknowledging this potential, Gazprom's leadership is fully aware of the new operating environment in CEE countries that it is facing and the resulting diminution of their leverage over time. Accordingly, the company has a strong incentive not to take non-commercial actions that could accelerate CEE efforts to exit Russian energy dependencies. Ironically, the principal risk to Gazprom's European operations may be the Kremlin itself that, at times, does not seem to adequately appreciate the tentative position of the Russian gas giant in the European marketplace.

Furthermore, the desire to preserve Russia as a dominant supplier is not always just a one-way proposition. Given the historical roots, certain social and political groups in the CEE countries are still prone to make deals with Russia regardless of the potential impact on a country's energy security or Russian foreign policy discourse. It is thus no wonder that shady deals, including bribery, occur in such an environment as well as Russia's inclination to use the 'energy weapon'.

GAZPROM'S ACTIVITIES IN THE ASIAN MARKET

The findings above can also basically be confirmed in the case of the Asian gas market. That means we took note of the dynamic between for-profit business and Russian geopolitical goals, with an emphasis on the former, all shaped by local and international markets. In short, this is the framework in which Gazprom operates in Asian gas markets. The main findings appear below.

FINDING 1: GAZPROM IS A COMMERCIAL ENTITY, BUT A STATE-OWNED POLICY TOOL WHEN NECESSARY

Similar to the company's position vis-a-vis Europe going back decades, Gazprom has been under considerable pressure to perform in the context of Moscow's Eastern energy strategy. This strategy reflects various factors related to both internal concerns (e.g. gaining better control of the Russian Far East region afflicted by deindustrialization and depopulation) and foreign policy goals (e.g. strengthening Russia's position in the rising Asian energy market). During Putin's second term in office (2004-2008), Gazprom was gradually strengthening its position in Eastern Siberia and the Far East, preparing for gas exports to Asia, often through "resource nationalist efforts."

In 2007, the company was authorized to implement the Kremlin's Eastern Gas Program. The Russian government also interfered significantly with Gazprom's external energy business plan, especially after Putin's re-election in 2012. Pressure from the government was one of many factors that contributed to the conclusion of a long-awaited gas deal with China in May 2014. That said, the government's policy framework is not the only factor affecting the company's conduct, hence Gazprom cannot be considered as just an instrument of the Russian government, at least on a day to day basis. For instance, during the negotiations on gas supplies to China, Gazprom clearly insisted on more favorable commercial terms as well as improved economic viability.

FINDING 2: IN MOST CASES, GAZPROM'S BEHAVIOUR CAN BE ECONOMICALLY JUSTIFIED

Also in its Eastern energy strategy, there is generally an economic rationale underpinning most of Gazprom's activities in the implementation of Russia's Eastern energy strategy. The company repeatedly demonstrated its determination to achieve business goals in the gas export projects it has pursued in China and elsewhere in the region. The compromises which were most often reached tended to be more favorable for China than Gazprom, but this is not solely the result of political pressure from Moscow, but also the company's deteriorating position vis-à-vis its competitors in the international markets.

FINDING 3: GAZPROM TRACKS WITH ITS BUSINESS ENVIRONMENT

In the case of Asian gas markets, Gazprom typically does what the market allows it to do and no more. Several changes in Gazprom's export strategy, which were observed during the course of 2014, indicate that the company flexibly adjusts its conduct based on the opportunities and obstacles present in the

local market as well as other regional gas markets. The new “Gas Export Law” reduced Gazprom’s monopoly over LNG exports in December 2013. Nonetheless, Gazprom pressed ahead with its determination to maintain the dominant role in the East by proceeding with its operating, as well as planned, LNG export projects.

When the U.S. and the EU imposed sanctions against Russia, it started to affect the position of Gazprom’s domestic rivals as well as its own LNG projects developed since 2014. The company announced another switch in its export strategy, returning to gas pipelines to China (the Eastern as well as Western routes). Concerning external factors, Gazprom was aware of the potential negative consequences of its gas deal with China being unsuccessful (i.e. losing its position in a rapidly growing market to competing international suppliers). It is, however, rather easy to understand Gazprom taking the long view of the East’s market potential and its willingness to sacrifice some short-term gains to secure its position.

CONCLUSION

After an exhaustive research process, several popular assumptions about the operations and behaviour of Rosatom and Gazprom were validated, while several others proved exaggerated or outright incorrect. Rosatom, in particular, faces few competitors in a high-end (technically), high-cost marketplace, and hence is visible and monitored by prospective sovereign customers. The company, therefore, must show extra caution concerning the politicization of any of its actions for fear of market estrangement.

It was primarily for this reason that on March 7, 2014, Rosatom's President, Sergei Kiriyenko quickly repudiated an embargo, announced by President Putin and Deputy Prime Minister Rogozin two days before, of Russian nuclear fuel for Ukraine's 15 Russian-built reactors. The government formally changed its position in Kiriyenko's favor some three weeks later (March 28, 2014). In short, Rosatom understands the concept and perils of reputational risk, but this did not stop the Kremlin from making a reckless policy announcement of this kind.

Even though it appears Rosatom is trying to avoid politicization, when a smaller country takes on a multi-billion-dollar, 30-year or more commitment to Russian nuclear power plants (NPPs) and a nuclear fuel supply exclusive, they are being locked in strategically because of largely structural reasons (i.e. the inherent path-dependency nature of the industry). This is why Moscow is prone to package NPP deals with long-term, subsidized financing, non-market terms and conditions and other "sweeteners" that Western competitors cannot hope to provide (e.g. arms sales and other "bigger picture" bilateral benefits).

With respect to Gazprom, it already has a reputation of acting periodically as a "weaponized" state-owned energy enterprise. The research findings, however, indicated that commercial and economic considerations clearly dominate the landscape in the day-to-day operations of the company, particularly in the Asian market and within well diversified and regulated European markets. Its past record indicates that it will go to the water's edge as to what is allowable in the host country, but no further.

Arguably, this is even more the case today given the European market reaction to the Ukraine conflict (and its role in it) and the arrival of competitive new sources of gas, perhaps soon to include U.S. supplies. The Asian market is looking better to Gazprom in the present environment, but it needs to be aware of China's perception that it has the upper hand in gas-related negotiations. Sadly for Gazprom, the research indicated that its dominant position in the CEE countries will likely deteriorate further, as the balance of negotiating power shifts decidedly in favor of the consuming country. A slow-motion escape from undue regional dependency on Russian gas – that has plagued CEE countries for decades – is underway.

Rosatom continues to prosper, but this could be slowed if the EU were to become more robust in holding EU member states, like Hungary, to account for their dismissal of the provisions of EU law. In addition, it is only a matter of time before the non-market, subsidized nature of Rosatom's NPP and fuel contract bids is deemed unacceptable by its global competitors and their respective governments.



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