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CUTTING THE TENTACLES OF RUSSIAN ENERGY ‘OCTOPUS’

DiXi Group follows on the series of materials aimed at exploring the foreign ties of key Russian energy companies for elaboration of proposals for expanding sanctions limiting the international influence of Russian energy sector.

ROSATOM
ROSATOM’S TENTACLES SORTED OUT

ROSATOM IS AMONG LEADING PLAYERS IN THE GLOBAL NUCLEAR ENERGY MARKET. IT IS ESSENTIAL TO LOOK AT ALL THE ‘TENTACLES’ OF THIS RUSSIAN ENERGY ‘OCTOPUS’ TO SEE WHERE THEY CAN BE CUT OFF.

Europe
- **GERMANY** uranium for Germany’s three remaining reactors
- cooperation on the Facility for Antiproton and Ion Research (5 partners, located in Germany)
- cooperation with Nukem Technologies, Urenco
- BULGARIA fuel supply
  - Belene NPP (agreement on construction suspended, probably would not be realized)
  - Kozloduy NPP (potential use of Atomstroyexport equipment)
- CZECH REPUBLIC fuel supply contract
  - cooperation with ŠKODA JS
- HUNGARY fuel supply
  - Paks II NPP construction
  - joint ventures Ganz EEG Kft and European Power Services Ltd
- FINLAND fuel supply
- cooperation with ŠKODA JS
- SWITZERLAND
- **CUBA**
- **PARAGUAY**

North America
- **CANADA**
  - Alpha Lithium Corporation made a joint venture agreement to develop a lithium project of Argentina Uranium One (suspended)
  - cooperation with Wealth Minerals Ltd in a lithium project in Chile
- **USA** fuel supply (16% in 2020)
  - the Agreement Suspending the Antidumping Investigation on Uranium From the Russian Federation
- **ARGENTINA** possible NPP construction
- **BOLIVIA**
  - cooperation with the Nuclear Research and Technology Center
  - MoU in the field of developing the lithium industry
- **CHILE**
- **CUBA**
- **PARAGUAY**

South America
- **ARGENTINA**
- **BOLIVIA**
- **CHILE**
- **CUBA**
- **PARAGUAY**

Africa
- **EGYPT** fuel components supply
  - El Dabaa NPP construction
- **SOUTH AFRICA** fuel supply
- **ALGERIA**
- **GHANA**
- **NIGERIA**
- **SUDAN**
- **TUNISIA**
- **ZAMBIA**
- **ZAMBIAS**
- **UGANDA**
- **TANZANIA**

Asia & other
- **TURKEY**
  - Akkuyu NPP construction
- **IRAN**
  - Bushehr NPP, plans to construct phases 2, 3
  - involvement of Russia in Iran nuclear deal
  - Agreement on Cooperation, MoU
- **ARMENIA** fuel supply
  - Armenian NPP (upgrade, plans to construct a new power unit)
- **UZBEKISTAN**
  - negotiations over the draft general contract for NPP construction
- **IRAQ**
  - gold mining projects with KAZ Minerals in Baimsky GOK
  - fuel fabrication in Kazakhstan
  - possible NPP construction
- **VIETNAM**
  - possible small reactors projects
- **SOUTH KOREA**
  - Rosatom’s subsidiary RENERA acquired a 45% stake in Enertech International. Li-ion cells and energy storage systems manufacturer
- **CHINA**
  - fuel supply
  - Tianwan NPP, Xudabao NPP
  - contracts on long-term cooperation
- **BANGLADESH**
  - fuel supply
  - Rooppur NPP construction
  - framework agreement
- **KAZAKHSTAN**
  - gold mining projects with KAZ Minerals in Baimsky GOK
  - fuel fabrication in Kazakhstan
  - possible NPP construction
- **VIETNAM**
  - possible small reactors projects
- **JORDAN** regional representative offices

Please note only the most crucial connections are reflected. Rosatom’s global business network is more extensive, as the company has partners in 50 countries around the globe.
**HOW TO CUT ROSATOM’S TENTACLES**

- Rosatom should be delisted from the participants of the UN Global Compact.
- Russia should be excluded from the IAEA governing bodies, by removing all Russians from key positions in the Agency’s Secretariat and restricting their access to information about Ukraine’s nuclear power plants. The IAEA and Rosatom Agreement to Strengthen IAEA Nuclear Infrastructure Capacity Building should be terminated.
- Rosatom should be excluded from the international research projects such as the International Project on Innovative Nuclear Reactors and Fuel Cycles (INPRO), the Generation IV International Forum (GIF), and the Stable Nuclear Energy Technological Platform (SNETP).
- Exclusion of Russia (subsequently, also Rosatom) from the ITER International Fusion Energy Organization or suspension of any activities with Russian specialists (or in any relation to them) in the ITER project.
- Rosatom’s regional representative offices (Praha, Budapest, Johannesburg, Singapore, Tokyo, Paris, Nur-Sultan, Tashkent, Rio de Janeiro, Beijing, Washington D.C., Mumbai, Dubai) should be closed or reduced.
- Expanding the sanctions list to Rosatom’s companies to prevent them from international financial operations, would put the necessary pressure on the group’s ability to invest in its projects abroad. Any new foreign projects of Rosatom should be blocked using financial restrictions.

### NORTH & SOUTH AMERICA

**USA**
- Revision of the Agreement Suspending the Antidumping Investigation on Uranium From the Russian Federation
- Launching support and cooperation programs for non-Russian producers on the global uranium market

**CANADA**
- Irrevocably renounce closing the suspended deal between Alpha Lithium Corporation (company from Canada) and Uranium One (part of Rosatom) on developing a lithium project in Argentina; reject any possible cooperation of Uranium One Group with Canada-listed Wealth Minerals Ltd in a lithium project in Chile

**ARGENTINA**
- Prevent Rosatom or its subsidiaries from operating in the global lithium market as a part of lithium projects in Argentina, Chile, and Bolivia; stop lithium carbonate export from Bolivia to Russia, following the example of Argentina and Chile

**CHILE**

**BOLIVIA**

### ASIA & AFRICA

**CHINA**
- Revision of the Tianwan NPP units 7 and 8 (with a Western alternative provider as an option) and the Xudabao NPP units 3 and 4 projects (with possible extension of Westinghouse AP1000 reactors contract on all 4 planned units)

**INDIA**
- Revision of the Kudankulam NPP units 5 and 6 project, with a Western alternative provider as an option
- Revision of the supply contracts with Nuclear Power Corporation of India Limited (NPCIL)

**EGYPT**
- Revision of the El Dabaa NPP project, with a Western alternative provider as an option

**TANZANIA**

**NAMIBIA**

**ZIMBABWE**
- Prevent Rosatom or its subsidiaries from developing mining projects for uranium (Tanzania, Namibia) and lithium (Zimbabwe)

**BANGLADESH**
- Revision of the Rooppur NPP project, at least for unit 2

### EUROPE

**FINLAND**
- Revision of Rosatom’s share in Fennovoima (full exit, in view of the decision to terminate the contract with Rosatom)

**HUNGARY**
- Revision of the Paks II project with a Western alternative provider as an option

**TURKEY**
- Revision of the Akkuyu NPP project, at least for units 2-4 which are at early stages of construction, with a Western alternative provider as an option

**CZECH REPUBLIC**
- Revision of the supply contracts with Nuclear Energy Technological Platform (CNP), at least for unit 2

**BULGARIA**

**SERBIA**
- Revision of the deal between the Republic of Serbia and Rosatom on the construction of a Centre for Nuclear Science, Technology and Innovation, with a Western alternative provider as an option

**FRANCE**
- Stop the possible purchase of a share in GEAST (French manufacturer of the Arabelle turbine)
- Termination of the strategic cooperation agreement between Rosatom and EDF Group, closing the EDF office in Russia

**GERMANY**
- Exclusion of Rosatom from the list of signatories of the FAIR Convention and activities of the Facility for Antiproton and Ion Research

**EGYPT**
- Revision of the El Dabaa NPP project, with a Western alternative provider as an option

**TANZANIA**

**NAMIBIA**

**ZIMBABWE**
- Prevent Rosatom or its subsidiaries from developing mining projects for uranium (Tanzania, Namibia) and lithium (Zimbabwe)

**BANGLADESH**
- Revision of the Rooppur NPP project, at least for unit 2
The current lack of sanctions against the company is motivated by the fact that its products and services are too unique to be replaced quickly and play a significant role in international markets. Indeed, in 2020 Rosatom was first in the global uranium enrichment market (36%), second in the world in terms of uranium production (15% of the market), and third in the global nuclear fuel market (17%)²⁴.

In 2020, 16% of total US purchases of uranium (48.9 million pounds) were originated from Russia. This is a relatively uncomfortable dependence from a country that has waged the biggest war in Europe since WWII and has proven itself to be an unreliable partner. With that in mind, revision of the Agreement Suspending the Antidumping Investigation on Uranium From the Russian Federation and the Agreement between the Government of the Russian Federation and the Government of the United States of America on Cooperation in Nuclear- and Energy-related Scientific Research and Development might be a logical next step, as well as launching support programs for non-Russian producers on the global uranium market, especially depressed after COVID-19 pandemic²². As for the EU, uranium imports from Russia were the second-largest after those from Niger in 2020 (20.2%)²³,²⁴.

Foreign projects and contracts are the key sources of revenue (7.5 billion USD out of USD 16.7 billion of general revenue in 2020)²⁰, taxes on which — and this is 3.5 billion USD in 2020 — are used to finance Russia’s war machine.

In 2020, Rosatom provided services for 49 operating and planned power units of Soviet and Russian design abroad²⁶. Under the umbrella of Rosatom International Network, there are offices in Prague, Budapest, Johannesburg, Singapore, Tokyo, Paris, Nur-Sultan, Tashkent, Rio de Janeiro, Beijing, Washington D.C., Mumbai, Dubai²⁷. Why is a decisive response to Rosatom’s criminal actions so important?

First, the current response (such as the IAEA statements) on the seizure of the Zaporizhzhia NPP and turning it into a ‘military base’ have not yielded visible results. Suppose the situation will remain the same, and the threats of nuclear terrorism would not find proper response and action. It could provide a signal that the Russian coercive actions toward other nuclear facilities in Ukraine (as in other countries under conditions of conflict) are possible and will not be punished.

Second, international cooperation and access to the global markets are essential for Rosatom, and this fact should be used as leverage. As mentioned, foreign projects and contracts are the key sources of revenue (7.5 billion USD out of 16.7 billion USD in total 2020 revenues)²⁸, taxes on which — namely 3.5 billion USD in 2020 — are used to finance war crimes in Ukraine.

The current lack of sanctions against the company is motivated by the fact that its products and services are hard to be substituted quickly and play a significant role in the international markets. However, instead of abandoning or further delaying the possibility of imposing sanctions on the company, the free world should find such formats for restrictions that would have a limited negative impact on the Western markets.

Below we present possible options for sanctions on the Rosatom group and the Russian nuclear sector, which can be a moderate burden on the Western economies.

1. The White House. FACT SHEET: United States Bans Imports of Russian Oil, Liquefied Natural Gas, and Coal /
2. Interfax-Ukraine. Rosatom participates in raiding of Zaporizhzhia nuclear power plant as its property / Rosatom Annual Report 2020
3. Rosatom Annual Report 2020
4. Rosatom Annual Report 2020
5. Rosatom Annual Report 2020 (calculations are made based on average RUB rate for 2020, 72.1 RUB for an USD)
6. Rosatom Annual Report 2020
8. Rosatom Annual Report 2020
9. ISA. Nuclear explained
10. 2020 Amendment to the Agreement Suspending the Antidumping Investigation on Uranium From the Russian Federation
12. NEA OECD. Uranium 2020: Resources, Production and Demand. P. 11
13. Statista. Imports of natural uranium from Russia in the European Union (EU) from 2010 to 2020
15. Rosatom Annual Report 2020
16. Rosatom International Network
17. IAEA Director General Statement on Situation in Ukraine
18. ibid. (calculations are made based on average RUB/USD rate for 2020)
19. ibid.
RECOMMENDATIONS

1. Political exclusion as a response to Russian (and Rosatom’s) malign actions

Rosatom is a part of a comprehensive system of related international organizations and treaties; therefore, associated mechanisms could be applied on different levels to give a clear statement to the company.

By continuing de facto and de jure cooperation with Russia and Rosatom, those and other organizations are discrediting themselves.

2. Financial exclusion of Rosatom and its subsidiaries

In the case of nuclear energy, it is not always possible to withdraw from the project or abruptly terminate cooperation. However, as Rosatom is closely dependent on the international financial streams and instruments (primarily due to implementation of a large number of foreign projects), blocking access to financial markets, services, and bank accounts is an optimal way to help ensure security at nuclear facilities while not financing the war through the Russian economy.

Financial sanctions can be applied to both Rosatom and its subsidiaries, the key ones of which are listed below.

Key Rosatom’s subsidiaries

**TENEX**

JSC TENEX (Techsnabexport) is responsible for supplying uranium products abroad (one of the world’s leading suppliers of initial nuclear fuel cycle products).

In 2020, TENEX supplied uranium products to 42 customers in 16 countries worldwide and concluded 30 deals with 17 customers in 7 countries for 1.7 billion USD. The annual sales volume totaled about 2 billion USD.

**Uranium One**

Uranium One Inc. is a part of TENEX, and one of the world’s largest uranium producers, with assets in Kazakhstan, Tanzania, Namibia, etc.

The mineral resource base of the company (including a 100% share of Mantra Resources Pty Limited) in 2020 amounted to 187,000 tons. In the same year, 4,300 tons of uranium were mined in Kazakhstan.

**TVEL**

JSC TVEL is Rosatom’s organization that exports nuclear fuel, totaling 0.7 billion USD in 2020, with a 15.7 billion USD 10-years portfolio.

In 2020, TVEL fully covered the nuclear fuel needs of Armenia, Belarus, Bulgaria, Hungary, Slovakia, and the Czech Republic, and partially for India, China, Ukraine, and Finland. In the partnership with Framatome, fuel and components produced in Russia from reprocessed uranium are supplied to Western Europe.

**European Power Services Ltd**

European Power Services Ltd is a joint venture of JSC Rusatom Service and the Hungarian holding MVM to strengthen its presence in Central and Eastern Europe.

**Rusatom Service and DZHET**

JSC ITC DZHET and Rusatom Service JSC are subsidiaries of Rosatom, responsible for the personnel training and equipping training centers for foreign NPPs.

United Nations

Since October 2020, Rosatom has joined the UN Global Compact, committing itself to follow human rights principles, among others. Due to the participation and assistance in the Zaporizhzhia NPP occupation, Rosatom should be delisted from the participants.

International Atomic Energy Agency

Within the permanent management of the IAEA, about 100 people are citizens of the Russian Federation. As the Russian government has captured the largest nuclear power plant in Ukraine, these people shouldn’t have access to the data from Ukraine and be a part of the decision-making process due to safety and confidentiality reasons and to ensure unbiasedness. The Ukrainian side has already filed the corresponding request.

Moreover, Russian Federation should be excluded from the Member States list, or its role should be limited until Russian troops leave Ukraine. All scientific and technological cooperation with the Russian counterparts should be terminated.

European Atomic Energy Community

Any further cooperation should be terminated, and the Agreement for cooperation between Euratom and the Russian Federation in the field of nuclear safety should be revised.

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21 ROSATOM has joined UN Global Compact.
22 Ukraine asks the IAEA to dissuade Russians from making decisions during the war
23 Agreement for cooperation between the European Atomic Energy Community and the Government of the Russian Federation in the field of nuclear safety
24 Rosatom Annual Report 2020
25 Rosatom Annual Report 2020
26 Rosatom Annual Report 2020
27 Rosatom Annual Report 2020
28 Rusatom Service. Industry replenishment
3. Recognizing the problem of dependence on Rosatom and the Russian nuclear industry and taking immediate steps to reduce this dependence

Right after the Russian intervention, the European Parliament has already voted for the resolution on the Russian aggression against Ukraine with a clear call to the Member States “to stop any collaboration with Russia in the nuclear field, in particular cooperation with Rosatom and its subsidiaries, including cooperation with Russia in the International Atomic Energy Agency and the termination or removal of operating licenses for all Rosatom subsidiaries.”

The following steps should be considered:

- The Euratom Supply Agency shall guarantee the maximum possible limitation of the Russian nuclear supply to the EU using its right of option to acquire nuclear materials granted by Article 52 of the Euratom Treaty.
- The EU authorities should foster the dialogue with Westinghouse, the only competitor of Rosatom’s fuel manufacturing subsidiary TVEL, to ensure as urgent as possible refusal form Russian fuel for VVER-type European reactors (five EU member states — Bulgaria, Czech Republic, Finland, Hungary, and Slovakia — operate four VVER-1000 and 14 VVER-440 units).

4. Targeting Rosatom’s projects abroad

There are two main ways to limit the Russian ability to receive revenues from these projects:

- Suspension or closing of the projects under construction. Following the example of the Hanhikivi-1 project (Finland) where the decision was made on termination of the contract with Rosatom, other projects such as Paks II in Hungary and Akkuyu NPP in Turkey should freeze any cooperation with Rosatom. As the sites are ready for construction, Western providers and designs could be proposed to build nuclear power plants in those countries.
- Imposing the sanctions on Rosatom’s assets and explore the secondary sanctions on Russian financial system to prevent Rosatom from international financial operations with the American and European banks, as a way to limit Rosatom’s ability to generate revenue on Asian and African construction projects (e.g. El Dabaa NPP in Egypt, Tianwan and Xudabao NPPs in China, Rooppur NPP in Bangladesh, and Kudankulam NPP in India) and supply contracts (e.g. with the IEC from Bangladesh, NPCIL from India, IAEA from Egypt, etc.).

Also, it is important to stop all the new possible contracts of Rosatom, as in the case of the possible purchase of the share of GEAST company (French manufacturer of the Arabelle turbine).

5. Termination of any technological cooperation and research projects

In 2020, Rosatom provided services for 49 operating and planned power units of Soviet and Russian design abroad. Rosatom as a company is deeply integrated into the world nuclear sector as a services provider, and the process of putting it to an end should include:

- The termination of the IAEA and Rosatom Agreement to Strengthen IAEA Nuclear Infrastructure Capacity Building;
- The termination of the agreement between the Republic of Serbia and Rosatom on the construction of a Centre for Nuclear Science, Technology and Innovation in Serbia;
- The termination of the strategic cooperation agreement between Rosatom and EDF Group, and closing of the EDF office in Russia;
- The exclusion of Russia (and subsequently Rosatom) from the ITER (International Thermonuclear Experimental Reactor) International Fusion Energy Organization or suspension of any activities with Russian specialists (or in any relation to them) in the ITER project;
- The exclusion of Rosatom from the list of signatories of the FAIR Convention and activities of the Facility for Antiproton and Ion Research (Germany);
- The exclusion of Rosatom from the international innovative research projects such as the International Project on Innovative Nuclear Reactors and Fuel Cycles (INPRO), the Generation IV International Forum (GIF), and the Stable Nuclear Energy Technological Platform (SNETP);
- In order to stop Rosatom’s promotion in the lithium market, the following should be done: Western companies should not compromise themselves cooperating with Rosatom or its subsidiaries in the critical minerals sphere. This applies particularly to Canadian companies Alpha Lithium Corporation and Wealth Minerals Ltd, working with Uranium One in lithium projects in Argentina and Chile, respectively. Alpha Lithium Corporation has already provisionally suspended closing the deal with Uranium One; however, all such projects should be permanently abandoned.

6. Prevent Rosatom from entering the global market of critical minerals

While cutting the existing tentacles of Rosatom, attention should also be brought to the company’s new possible business directions, i.e., Rosatom’s strategy of entering the global market of critical minerals. Specifically, Uranium One Inc. (a Rosatom entity) planned to control 3.5% of the global lithium market in 2025 and reach a 9%-10% milestone by 2030 using the M&A deals over the raw material assets.

As targeted measures by countries, the work of Rosatom’s regional representative offices should be blocked.

"CUTTING THE TENTACLES OF RUSSIAN ENERGY ‘OCTOPUS’"