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Rosatom to Use Umbrella Brand

Rosatom Group companies have switched over to a united umbrella brand, which is intended to improve Rosatom’s visibility and competitive edge in the national and international markets and strengthen the feeling of unity among its employees.

The Russian nuclear corporation has changed the look of its logotype — from now on, each company will use a Möbius strip as its trademark. Besides, the word ‘Rosatom’ will be added to the company’s existing name (see examples below). Legal names will not be changed.

The unified logotype based on Rosatom’s logo will help developing a joint positioning strategy for all Rosatom Group companies in the national and international markets.

The logotype will unambiguously identify a company as belonging to the Russian nuclear corporation. Rosatom’s management expects to increase brand awareness, recognition and visibility in media, thus making Rosatom Group companies more competitive on the global scale.

The practice of sharing similar visual identity — using the same logotype and brand name — is called umbrella branding and often used by large companies, including those in the energy industry. For example, General Electric uses an umbrella brand; Virgin Energy has become part of the Virgin Home umbrella brand. RusHydro, a Russian operator of hydro power plants, has also switched over to an umbrella brand recently.

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EXAMPLES OF NEW LOGOS OF ROSATOM SUBSIDIARIES



“A company will spend time and money making people aware of a brand and communicating what the brand means. If an existing product has already done that work, then the investment needed to launch a new product is significantly reduced if the new product can share the existing brand,” this is how the logic behind an umbrella brand is explained on the web portal Brandmarketing.com.

This logic is also confirmed by Rosatom’s press release, “Rosatom has established a strong and reputable brand on the global scale; using the name that has existed over decades for new non-nuclear products (digital products, development of the Arctic, environmental projects, mechanical engineering, etc.) opens up new opportunities for Rosatom in entering prospective markets.”

The rebranding campaign has become part of the United Rosatom strategy adopted this April. The strategy provides for transition from global leadership in the nuclear industry to global technology leadership. Rosatom plans to earn over 40% of its

revenue from selling new products, and more than a half of its earnings is expected to come from international contracts.

The overarching goal set by Rosatom is to strengthen the unity of its group companies by improving project management and teamwork. The strategy also aims to unlock the potential of Rosatom employees to the maximum extent possible, including by way of continuous education and talent acquisition.

The mission of the Russian nuclear corporation is to use achievements in nuclear science and high technology for the benefit of people.

Rosatom Group includes over 400 companies employing more than 250,000 people. The rebranding campaign is aligned with the 75th anniversary of the Russian nuclear industry celebrated this year.



The Belarusian NPP Connects to Better Quality of Life

The Belarusian authorities have announced the launch date for the country's first nuclear power plant. The NPP will make the country less dependent on energy imports, reduce power production costs and improve technologies.

The Belarusian nuclear power plant will be launched on November 7, 2020, President of Belarus Alexander Lukashenko said. The day that will go down in history of the global nuclear industry. The Belarusian NPP is the first Generation III+ reactor unit in Europe outside Russia. It is also the first power unit built in Europe outside Russia in the last 13 years.

The event was preceded by a huge amount of work. When the unit is fully commissioned, it would operate for a period comparable with a human life span, 60 years plus a potential extension of 20 years. Even before being commissioned, the Belarusian NPP — a large infrastructural project — started changing the country's economy and improving the people's life.

Quality of life

Two new housing blocks, a fire station, two schools, four kindergartens, a hospital, bike lanes, parks, fitness centers and a stadium for the local football team were built in Ostrovets (Astravets), a town hosting the nuclear power plant. Existing utility lines in the town are being repaired and new lines being built.

Sustainable cities and communities is Goal 11, one of 17 sustainable development goals (SDGs) adopted by the United Nations in 2015.

Clean air

According to expert estimates, greenhouse gas emissions will be reduced by more than 7 million tonnes per annum after the Belarusian NPP is brought online. The plant will also save oxygen produced by about 6 to 8 million hectares of boreal forests, which is comparable with a half of Greece's territory if it were covered by forest.

Climate action is UN SDG 13.

Affordable energy

The commissioning of the Belarusian NPP will cut energy production costs since the country will have to buy less natural gas to fire local power generating stations. The nuclear power plant can save money needed to buy 4.5 billion cubic meters of natural gas per annum.

Each unit with a Generation III+ VVER-1200 reactor will be capable of generating about 27 million kilowatt-hours per day or more than 9.8 billion kilowatt-hours per year.

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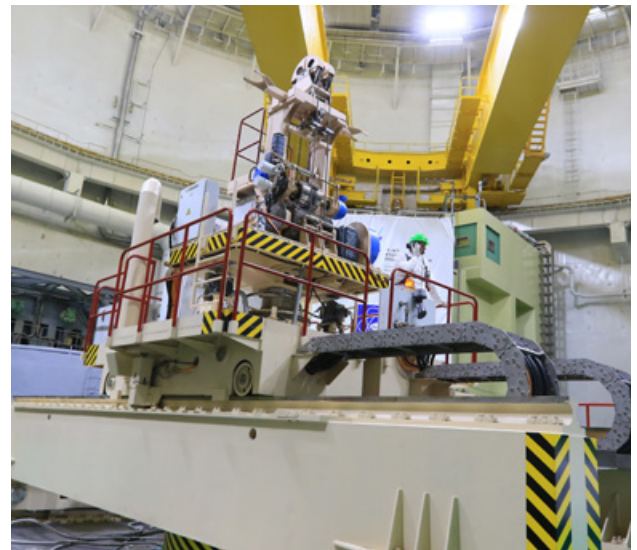
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Having commissioned both power units of the Belarusian NPP, the country will have a clean and reliable energy source that will meet a half of its domestic demand for electric power. In 2019, Belarus consumed 38.3 billion kWh of electricity.

Affordable and clean energy is UN SDG 7.

Support of knowledge intensive industries

Construction of the nuclear power plant stimulates production of construction materials, electrical engineering and knowledge intensive industries. **“Many Belarusian companies supply machinery for the nuclear power plant under construction. They have already adapted themselves to the requirements for quality of the machinery and follow them carefully. This trend will continue going forward,”** Mikhail Mikhadyuk, Deputy Minister of Energy, said. Instrumentation engineering is one of the industries that benefits from the nuclear power plant. The Belarusian NPP uses over 640 types of instrumentation, and Atomtex, a local manufacturer of instrumentation and control devices for



nuclear facilities, won a large contract. The company produced and supplied a set of equipment to measure baseline radiation around the nuclear power plant and an automatic radiation monitoring system. The system consists of ten automatic radiation monitoring stations with super-sensitive smart units capable of detecting even the slightest changes in background radiation and broad-range (emergency) detection units.

The power grid infrastructure is improving, too. According to Mikhail Mikhadyuk, 1,700 kilometers of high voltage lines has already been built in Belarus to transmit electricity from the nuclear power plant to different communities across the country.

Building resilient infrastructure, promoting sustainable industrialization and fostering innovation is UN SDG 9.

Decent job

Construction of the Belarusian NPP created over 3,000 jobs both at the plant and in servicing companies. **“The nuclear power**





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plant has a design life of 60 years. However, as international practice shows, it is not unrealistic to extend the life span for 20 more years. Over this time, a host of new companies will appear around the plant. And across the country as well,” Mikhail Mikhadyuk said.

“Nikita graduated in chemistry from the Belarus State University and took a job at the nuclear power plant. His wife Natasha followed him and also found a job there — she graduated from the same Faculty of Chemistry. They took a flat on lease in the new housing block and were offered a good salary,” the Belarusian portal <https://realt.onliner.by> tells a story of one married couple. Nikita was in the team that brought the first reactor to criticality.

Economic growth

Having a long-lasting nuclear source of power allows a country to make economic development plans for decades ahead, establish new production facilities and improve supply of electricity in cities, **“Electric transportation is on the rise in Belarus; the R&D Center for Agricultural Machinery of the National Academy of Sciences announced the start of research**

History of the Belarusian NPP

- January 2008 — the Security Council of Belarus makes a decision to build a nuclear power plant in the country.
- May 2009 — the Russian Government and the Belarusian Government sign an agreement on cooperation in peaceful uses of nuclear power.
- July 2010 — after public hearings and consultations, including with neighboring countries, have been completed, the Ministry of Natural Resources and Environmental Protection performs an expert review of the environmental impact assessment report on the Belarusian NPP.
- March 2011 — Russia and Belarus sign an agreement to construct a nuclear power plant based on the AES-2006 design.
- June 2012 — the IAEA conducts its Integrated Nuclear Infrastructure Review mission in Belarus.
- July 2012 — Belarus signs a general construction contract for the nuclear power plant.
- September 2013 — the Ministry of Emergency Situations Nuclear and Radiation Safety Department issues a special construction permit for Unit 1 of the Belarusian NPP.
- November 2013 — basemat concreting starts at the construction site of Belarus Unit 1.
- April 2014 — construction starts at Unit 2.
- April 2017 — the reactor pressure vessel is installed in its final position at Unit 1.
- December 2017 — the reactor pressure vessel is installed in its final position at Unit 2.
- December 2019 — hot functional testing begins at Unit 1 of the Belarusian NPP.
- May 2020 — fresh nuclear fuel for Unit 1 is delivered to the Belarusian NPP construction site.
- June 2020 — the pre-operational flushing phase starts at Belarus Unit 2 to clean active and passive safety systems and piping.



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into electrical machines for agricultural applications; energy saving lighting systems and smart homes make it to the scene in Belarus.”

The nuclear power plant can continue benefiting the country even after its decommissioning. For example, it can be turned into a museum. By that time, the

Belarusian nuclear industry will have had a long history that could be shown to new generations and tourists. Another option is to establish new production facilities at the plant’s site to make use of its extensive energy infrastructure and employ thousands of its highly qualified professionals.

Decent work and economic growth is UN SDG 8.

For Belarus, the nuclear power plant is an opportunity to supply its people with clean energy, have a reliable source of power for decades to come, and provide growing cities and large industrial facilities with electricity. Fulfilling these tasks means, in fact, achieving the UN Sustainable Development Goals, which is high quality of life without harming the future generations. ^{NL}

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Rosatom headquarters in Moscow

Rosatom Turns 75

On August 20, the Russian nuclear industry celebrated its 75th anniversary. Rosatom is a world-class company operating almost all nuclear and related facilities in Russia. The company continues improving nuclear technology for a higher quality of life all over the world.

Seventy-five years ago, on August 20, 1945, the USSR State Defense Committee established a special commission with a mandate to develop nuclear weapons and achieve nuclear parity between the USSR and the USA. This day is considered to be the birthday of the national nuclear industry.

The world's first nuclear power plant was put into operation in the USSR. Brought online on June 27, 1954, the Obninsk NPP had a capacity of only 5 MW. It generated power safely for 48 years, 18 year more than designed. The plant was shut down in April 2002. At present, Russia has a number of one-of-a-kind nuclear stations. The Beloyarsk NPP operates the world's only commercial fast neutron reactors; the world's only floating nuclear station generates power in Chukotka, and the Bilibino NPP is the world's only plant built in the permafrost. What is more, Russia is a global leader by the number of research reactors produced (over 20% of the global research reactor fleet).

The Soviet Union also built the world's first nuclear icebreaker Lenin. Today, Rosatom has



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the world's only nuclear ice-breaking fleet. It consists of four nuclear icebreakers (Vaygach, Taymyr, Yamal and 50 Let Pobedy) and the world's only nuclear lighter Sevmorput. More nuclear-powered vessels are coming soon. The icebreaker Arktika, the first in a series, has completed its sea trials; two more icebreakers of the same series, Sibir and Ural, are under construction; the keel of the fourth vessel, Yakutia, was laid in late May. Construction of the fifth icebreaker will begin soon. This series will be followed by three super-heavy Project 10501 icebreakers.

What Rosatom does

The Russian nuclear industry has been a leader in nuclear technology and services since its early days. Since the very beginning, Rosatom has offered its customers end-to-end nuclear energy solutions. The Russian nuclear corporation provides engineering, procurement and construction services for nuclear power plants, supplies them with nuclear fuel throughout their life span, provides maintenance, repair and upgrade services, trains nuclear staff, decommissions nuclear facilities, and is engaged in spent fuel management.

Apart from traditional nuclear markets, Rosatom, as a research and technology leader, seeks to enter new high-tech markets. The key segments are wind generation, composite materials, additive manufacturing, nuclear medicine, cargo transportation on the Northern Sea Route, waste management, software, and laser technology. Rosatom participates in complex international research projects.

Rosatom is also a party to international treaties on peaceful uses of nuclear energy

and nuclear non-proliferation, a reputable member of international organizations and expert panels dealing with nuclear energy and nuclear industry matters.

Working for the future

Rosatom is the only company in the world to work towards the closed nuclear fuel cycle, which will make nuclear almost a renewable source of energy. Rosatom is gradually loading its BN-800 fast neutron reactor with mixed oxide (MOX) fuel and plans to fully switch over to MOX fuel in 2022. This fuel consists of uranium and plutonium oxides obtained from wastes of other fuel fabrication stages. Plutonium oxide is extracted from irradiated fuel of thermal reactors, while uranium oxide is obtained, as an option, from depleted uranium left over after enrichment. Simultaneously, Rosatom is working on the Proryv (Breakthrough) Project, building a lead-cooled fast reactor BREST with a

Rosatom in facts and figures

Rosatom is a **global leader** in terms of power units constructed abroad (36 units in 12 countries).

Rosatom is a **leader in uranium enrichment** (38% of the global market).

Rosatom **ranks second by uranium mined** (14% of the global market).

Rosatom **ranks second in terms of uranium reserves**.

Rosatom holds **16%** of the global nuclear fuel market.

More than 20 research reactors have been built with Russia's support or to Russian designs.



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fabrication/refabrication unit for mixed uranium-plutonium nitride (MUPN) fuel.

Rosatom also takes part in the ITER project, which is intended to demonstrate the possibility of using thermonuclear synthesis in commercial applications, such as energy production.

Another focus of the future energy industry is research into applications of hydrogen as a fuel. Nuclear power plant can produce hydrogen by water electrolysis, the process considered the most eco-friendly. Since nuclear power plants, like solar and wind farms, do not generate greenhouse gas emissions, hydrogen produced with nuclear energy is the cleanest in term of environment protection. Rosatom plans to use hydrogen to fuel trains on the island of Sakhalin.

In the non-energy segment, Rosatom supervises the development of quantum processors using several promising technologies, including superconductors, ions and cold atoms. Quantum processors need to make complex calculations in material science, biology, pharmacology and other industries.



Nuclear technology for people

People benefit from Rosatom's core activities, starting with construction of nuclear power plants.

As the Akademik Lomonosov floating nuclear power plant was commissioned and brought online, Rosatom took the lead in construction of small modular reactors (SMRs). Akademik Lomonosov is the first and the only SMR put into operation in the world in the 21st century. It already supplies heat and power to the city of Pevek in Russia's most northeastern region and will soon replace the old coal-fired Chaun thermal power plant polluting the environment. Later Akademik Lomonosov will also begin supplying electric power to Bilibino, another town in Chukotka.

Production of carbon-free energy at a stable price is not the only application of nuclear technology. As the coronavirus pandemic broke out, the use of ionizing radiation to sterilize expendables and medical equipment came to the fore. By mid-September, Rosatom sterilized nearly 40 million face masks and over a million of medical containers for COVID-19 tests.

Rosatom is also a global leader in the production of medical isotopes for diagnostic and treatment purposes. Diagnostic isotopes are used to detect damaged cell clusters (for example, in patients with cancer), while treatment isotopes serve to target and destroy such clusters without affecting healthy cells.

A nuclear science and technology center (NSTC) with a research reactor is one of Rosatom's packaged solutions. A country that builds an NSTC would have a compact multi-purpose facility capable of fabricating isotopes for national medicine, sterilizing food and



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medicinal products, conducting research and training students and staff.

Rosatom also strives to strengthen its position on the global composites market. The Russian nuclear corporation is a major producer of composite materials and products. Composites are used to reinforce power transmission towers, manufacture aircraft parts, sports equipment, implants and many other things. Rosatom plans to go global. According to its estimates, the carbon fiber market will grow by 10% globally and by more than 15% in Russia over the period until 2030.

Wind generation is another focus area of the national nuclear corporation. This June, Rosatom put a 150 MW wind farm into operation in Russia's southern region of Adygea. Another large wind farm with a capacity of 210 MW will be built in the Kochubeevsky District of the Stavropol Krai. The construction started in October 2019. In the last three months, Rosatom obtained a construction permit for another three wind farms in Southwest Russia — 60 MW Karmalinovskaya Wind Farm and 120 MW Bondarevskaya Wind Farm in the Stavropol Krai and 120 MW Marchenkovskaya Wind Farm in the Rostov Region.

Rosatom expects its overarching strategic goals to increase its share in international markets and increase revenue in the conventional business segments, such as construction and maintenance of nuclear power plants, conversion and enrichment services, sales of nuclear fuel, wellbeing products based on nuclear technology, and medical isotopes. One more goal is to enter international markets with new products, including small modular reactors and composite materials. 

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Nuclear Flexibility

In late August 2020, the World Nuclear Association published its World Nuclear Performance Report reviewing the global nuclear industry progress in 2019 and analyzing key events and processes in 2020. Electricity generation and utilization of installed nuclear capacity are growing, while the total number of power units is decreasing.

Electricity generation

In 2019, nuclear power plants generated 2,657 TWh of electricity — an increase of 95 TWh compared to 2018 and 331 TWh compared to 2012. This record high output is second to only 2006 when nuclear reactors produced 2,661 TWh of electric power, a historic high in nuclear generation.

Changes in nuclear generation were irregular across continents, and so was their significance. In Western and Central Europe and North America, nuclear generation decreased marginally, by less than one percent. In Russia and Eastern Europe, nuclear generation demonstrated growth — not decline — but it was marginal as well, at little more than one percent. In South America, electric power production by nuclear power plants went up by almost 10% year-on-year, and Asia demonstrated a nearly 15% increase. In relative numbers, the highest increase in power generation was seen in Africa (up 22% year over year), which is clearly driven by a low-base effect.

“Given the reduction in overall nuclear capacity, the increase in generation in 2019 is all the more remarkable,” WNA Director General Agneta Rising writes in the preface to the report.



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Reactor fleet

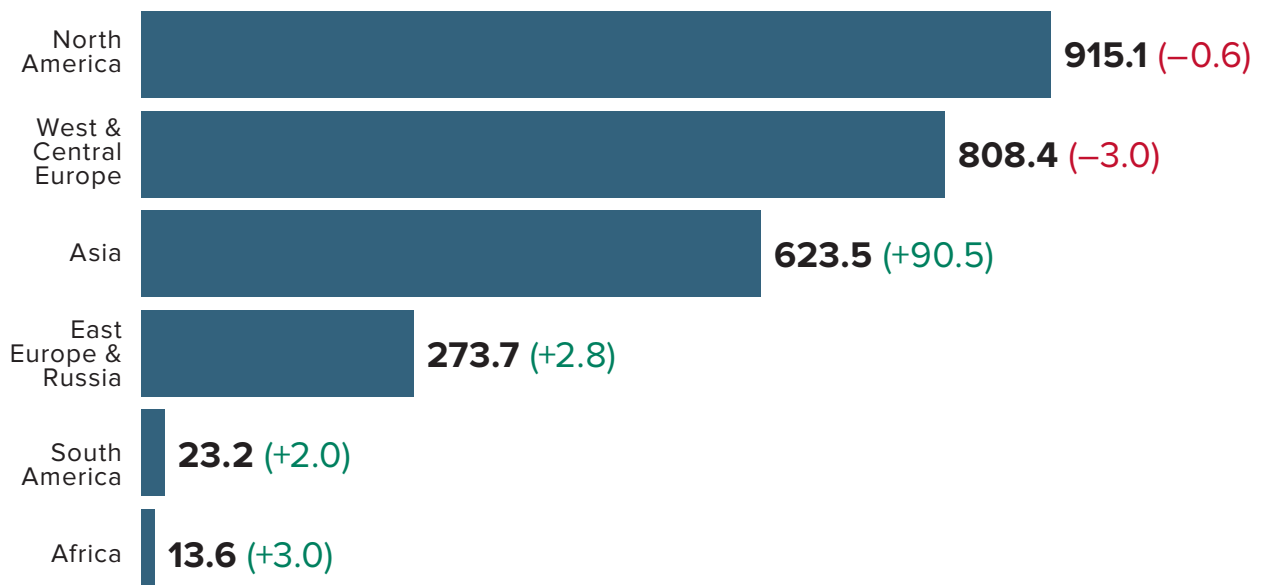
Six reactors were brought online in 2019 (three less than in the previous year). The leader in new connections was Russia with its three reactors, two KLT-40S on board Akademik Lomonosov FNPP and one VVER-1200 at Novovoronezh NPP. Also in 2019, Yangjiang 6 and Taishan 2 were connected to the grid in China, and Shin Kori 4 in South Korea. The KLT-40S reactors on board Akademik Lomonosov are, in fact, the first small modular reactors put into operation in the 21st century.

Thirteen reactors were decommissioned in 2019. **“This is the joint second highest number of reactors shut down in a single year. However, for the majority of these reactors, 2019 was only the formal shutdown date, having ceased generation between 2011 and 2017,”** the report reads. The majority here refers to four reactors in Japan. Three more reactors, one in each of South Korea, Germany and Taiwan, were

shut down prematurely in accordance with national phase-out policies of these countries.

Five reactors started construction in 2019, two in China and one in each of Iran, Russia and the UK. **“Hinkley Point C2 began construction one year after Unit 1. This plant is the first new nuclear construction in the UK for 30 years,”** the report says. In Russia, construction started at Kursk II Unit 2, which will have a Generation III+ VVER-TOI reactor, according to Rosenergoatom. VVER-TOI is an acronym of the Russian phrase ‘Water-Cooled Water-Moderated Energy Reactor Universal Optimized Digital’. The VVER-TOI design uses digital solutions and relies on expertise from Leningrad II and Novovoronezh II. It is also characterized by improved earthquake resistance, possibility of load following, crash-proof reactor buildings (capable of withstanding a 400-ton airplane crash), and the possibility of using MOX fuel. The VVER-TOI reactor at unit 2 of Kursk II NPP is expected to serve as a model for other reactors to be built in Russia and abroad.

GENERATION IN 2019 (2018), TWh





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A total of 55 reactors were under construction as at the end of 2019, one less than in the previous year.

Capacity utilization

The global average capacity factor grew by 27% to 82.5%. According to the WNA, Asia was a leader in capacity utilization growth over the last five years. As shown in the diagram, the capacity factor increased 8% to 10% to reach 80% in 2019. WNA experts point out that there has been a historically upward trend in capacity utilization.

“There was a substantial improvement in capacity factors achieved from the 1970s through to the 2000s. Since then, this high performance has been maintained. In the 1970s less than half of all reactors achieved a capacity factor greater than 70%, compared to 83% of reactors in 2019.”

Also in 2019, the number of reactors with a capacity factor greater than 95% increased greatly, the report shows.

With power consumption decreasing in some countries on the back of production decline caused by the coronavirus pandemic in 2020, nuclear reactors often operated in the load following mode. **“With load-following**

increasing in some countries, a greater spread of capacity factors may be seen in the future,” the authors of the report assume.

Forced flexibility

Flexible operation of nuclear power plants is discussed in an interview with Stephane Feutry, Head of Nuclear Power Performance at EDF, in the Cases section of the report. Answering the question of whether the ability to operate flexibly is unique to reactors of the type operating in France, Stephane Feutry said that every reactor was flexible to a certain degree. In France, most of its nuclear reactors can reduce their power twice every day, going down to 20% of nominal power in half an hour. This capability is not used that often — only about 15 times a year — but this figure is growing because more and more renewable electricity is being injected into the grid.

A source in Atomstroyexport (Rosatom’s engineering division) has confirmed to Rosatom Newsletter that reactors built by Rosatom abroad also have the load following capability. **“VVER-1200 reactors were initially conceived to be capable of daily power variations. They can go down from 100% to 50% of their power capacity and return to 100% again,”** Andrei Kuchumov, First Deputy CEO for Technology Policy at Atomenergoproekt, says. The VVER design allows power output to be decreased at 1% of the reactor’s nominal capacity per minute and increased at 3% per minute. In case of accidents in the electricity grid, the reactor can be ramped up at 5% of its nominal capacity per minute and ramped down at 20% per minute. The load-following mode is provided for by the designs of all nuclear power plants, which are now in the process



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of construction, including Kursk II, Akkuyu, Hanhikivi and Paks II.

In the interview to WNA, Stephane Feutry said with confidence that flexible operation is safe and has no impact on reactor equipment and therefore no consequences for the environment. **“Control room operators are trained to monitor and operate their plant in flexible mode. There is not a lot of additional maintenance,”** he explains.

Andrei Kuchumov confirms that flexible operation of nuclear reactors is safe. **“When developing the VVER design, much attention was paid to safe and reliable operation in the load-following mode throughout the reactor life. Tests conducted at Novovoronezh II showed that the reactor performance remained within the operating limits while the power output changed from 100% to 50% and back to 100% of the reactor’s nominal capacity.”**

Andrei Kuchumov noted that nuclear fuel is most effectively used in the base load mode. It is preferred for power grids that include power-generating stations of other, more flexible types with an easily adjustable power output. **“Load following allows generating as much electricity as needed at a particular**

time, but affects economics of a nuclear power plant. What is more, the load following mode generates more radioactive waste as a result of adjusting the coolant level and concentration of boric acid in the reactor,” Kuchumov explains.

Stephane Feutry explained in the interview how French nuclear power plants remain efficient in economic terms even when they operate flexibly. Reactors turn to be most efficient in evening peak hours when both demand and prices are higher and solar generation does not contribute to the energy mix. When power prices in the market are low or much electricity from solar farms is fed into the power grid, nuclear power plants generate less electricity. **“EDF reactors also provide frequency regulation. The fuel unused during this variation is still available. This allows EDF to choose the best period for the next refueling outage. As consumption and prices are higher in winter, it is then possible to schedule an outage in April instead of in February for instance,”** Stephane Feutry explained the benefits. He expressed a hope that nuclear generating stations would remain economically efficient even when renewable sources produced more electricity. However, dissatisfaction with the growing share of renewables in the energy mix can still be felt in his words, **“We do not need to reduce the output of individual reactors any lower than 20% or ramp down output any faster. However, we will need to make those variations simultaneously on more and more plants, which will require more accurate scheduling of maintenance or tests performed in baseload.”**

Flexibility in nuclear generation, including in the time of the pandemic, was also touched upon in the interview given to the WNA by Marc Ringeisen, Deputy Director at EDF





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Centre Opérationnel Production Marchés.

The WNA report also analyzes operational safety of nuclear power plants during the COVID-19 pandemic by studying the cases of Japan and South Korea. Other interviews deal with the commissioning of the first AP-1000 reactor in China and Barakah Units 1 and 2 in the UAE.

Other news

The Country Pages section of the report contains news from the countries with operable nuclear reactors. Two events were mentioned in a brief review of Russia. First, the BREST-OD-300 reactor started construction in December 2019. It is a lead-cooled fast reactor constructed as part of the Proryv (Breakthrough) Project. What makes it different is its inherent safety. Its passive safety systems use the laws of nature and properties of materials to make the pilot reactor safe. Second, the Russian regulator Rospotrebnadzor issued a permit in April 2020 to extend the service life of the sodium-cooled BN-600 fast neutron reactor until 2025. Rosenergoatom plans to extend the operating permit until 2040.



BREST-OD-300 reactor model

Shunning anti-nuclear dogmas

Special attention needs to be paid to the concluding remarks of WNA Director General Agneta Rising. She reminds the readers that nuclear can support national economic recovery efforts in the post-COVID period, **“Supporting existing nuclear generation and promoting new nuclear build will boost economic growth in the short-term and underpin the development of a low-carbon, resilient and cost-effective electricity infrastructure. Nuclear projects attract valuable inward investment, driving sustained long-term local and national economic growth.”** Unlocking the full potential of nuclear generation is impossible without political will. Ms. Rising is confident that countries will not be able to achieve their environment protection goals without nuclear generation, and energy costs will be higher, **“We cannot afford to allow a minority of countries promoting their ill-judged anti-nuclear dogma to dictate and restrict multilateral action on energy and the environment. The failure to include nuclear energy in the European Commission’s sustainable finance taxonomy from the very start, thereby potentially hampering the financing of new nuclear projects, runs counter to its “do no significant harm” principle — constraining nuclear energy will mean more pollution and higher carbon emissions, as well as less reliable supply and higher prices for consumers.”** ^{NL}

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