CONTENTS

March to Pevek

The floating nuclear power unit Akademik Lomonosov reached the city of Pevek in the Chukotka Region in the far north-east of Russia in 18 days. The unit will be put in operation as a floating nuclear power plant in December 2019 after the mooring and verification of all systems.

Three ice-class ships escorted the floating nuclear power unit (FNPU) along the Northern Sea Route. The Dikson icebreaker was towing the unit; the Kapitan Martyshkin tugboat was holding it back when needed, while the Yasny tugboat was following the convoy as a standby vessel.

The FNPU departure ceremony was attended by Rosatom's Director General Alexey Likhachev, managers of the companies involved in the construction of Akademik Lomonosov, representatives of the federal authorities, and regional officials from the Murmansk Region and the Chukotka Autonomous Area. Experts from Bellona Foundation, an international environmental organization, also kept a close eye on the vessel's departure.

"The vessel is safe. It was designed for unrestricted navigation," Dmitry Alekseyenko, RosEnergoAtom's Deputy Director for Floating Nuclear Power Stations, assured the audience.

The journey lasted 18 days a plan of 15 to 45 days. There are 74 people currently working on Akademik Lomonosov. Their task is to maintain the reactors in a subcritical state, monitor the equipment performance and ensure that the facility functions safely. These

people belong to Shift 1 and will be replaced with Shift 2 in Pevek in early October. A total number of station's personnel is 375.

Akademik Lomonosov was moored to a mole in the Pevek harbor with a special shoring device consisting of two pairs of rigid mooring hawsers attached to the starboard side of the vessel. Each hawser is made of a long boom and a set of shock absorbers. The mole protects the floating nuclear power plant from northern storms, pressure ridges and a fierce south wind that falls from the hills and sweeps through the Pevek harbor, blowing off the snow and damaging the buildings. The mole's design provides for withstanding high winds of up to 50 m/s. **"There was no damage from southerns [wind] for the entire two years of mole construction. Yesterday, a southern wind blew again and the structures remained intact,"** Vitaly Trutnev, RosEnergoAtom's Director for Floating Nuclear Power Stations said.

The floating nuclear power unit is designed to withstand 7 to 8 magnitude earthquakes, 45 m/s winds, explosions (for example, an explosion of a 600-ton fuel tanker with a maximum explosion pressure of 650 kPa), a direct lightning strike, and even the crash of an 11-ton aircraft.

The FNPU will soon replace two power plants, Chaun thermal power plant and Bilibino nuclear power plant. **"The thermal power plant in Pevek, which was built ages ago, will be shut down. The main thing, though, is that it is coal-fired. Thus, coal will no longer be used as a fuel in Chukotka. This will help us cut carbon emissions to zero,"** Sergey Ivanov, Presidential Plenipotentiary Representative for Environmental Protection and Transport commented. The new plant will also cut electricity tariffs by 75% (from USD 0.25 down USD 0.094 per kW).

The Chaun thermal power plant generates 30 MW of electricity and 99 Gcal/h of thermal power, but according to the estimates, its capacity utilization does not exceed 25%. The Bilibino nuclear power plant has an installed power capacity of 48 MW and thermal capacity of 66 Gcal/h. However, its current power and thermal capacities were brought down to 36 MW and 49.5 Gcal/h respectively as one of its power units was shut down. As a comparison, the installed power and thermal capacities of the floating nuclear power plant are 70 MW and 146 Gcal/h respectively.

Electric power will be transmitted via cables laid on a beam between the floating nuclear

power plant and the mole. Thermal power will be delivered through four flexible pipelines, which are capable of functioning even in heavy sea. The cables and pipes run through a flyover that connects the mole and the shore where they are connected to the onshore power grids and hot water pipelines.

The floating nuclear power plant will be refueled on the spot every three to four years, with spent fuel to be kept on the FNPU. Every 12 years, it will be towed to a shipyard for intermediate maintenance. The facility is designed for a service life lasting three such cycles, or 36 years in total (40 years, considering the periods of transportation).

During the maintenance periods, the power shortage will be compensated by two 18 MW diesel generators that are being designed at the moment. They will be installed on an already existing site near the onshore infrastructure for Akademik Lomonosov.

The commissioning of the floating nuclear power plant will help reaching two vital goals. The first goal is to ensure a reliable supply of sustainable and cheap power and heat to Pevek and Bilibino and support small-scale mining projects and, more importantly, the construction of a mining and processing facility at the Peschanka gold and copper deposit. The latter is of special importance to the authorities of the Chukotka Autonomous Area and Magadan Region. The second goal is to showcase the efficiency of the engineering solutions and transportation technologies used in construction and operation of the floating nuclear power plant, thus confirming that it is a field-proven solution.

Nuclear Industry Taking Off

The World Nuclear Association Symposium became a landmark event for the industry as the WNA, for the first time after the Fukushima accident, raised the growth forecast for every segment of the nuclear energy industry. But even if the new forecast is true, the Harmony program's goal of sourcing 25% of global electricity from nuclear by 2050 will not be achieved without support from national governments.

The most encouraging news announced at the WNA Symposium held in London on September 4–6 was, perhaps, the forecast for growth of the nuclear industry until 2040. Described in the WNA's Nuclear Fuel Report, the reference case and upper case development scenarios suggest that nuclear generation will be on the rise, while the lower case scenario expects it to have a slight downturn.

The reference scenario assumes that the number of reactor units will grow from the current 420 to 555 by 2040. According to the

upper scenario, there will be 753 reactors in 2040. The lower scenario provides that the number of reactors will remain almost unchanged, with a slight decrease of about 6%. Nevertheless, it is the first time after the Fukushima accident that the industry shows a generally upward trend. For instance, the uranium output forecast, even under the lower scenario, is 10% higher than two years ago.

These positive changes are supported by a friendlier attitude towards nuclear energy from national governments. According to the report, France decided to carry over the start of its nuclear phase-out program from 2025 to 2035 and allowed operators to extend the service life of existing nuclear plants. The US government also moderated its nuclear energy policy. Not long ago, the country's nuclear regulator permitted extension of the power plants' service lives to 80 years. China and India are commissioning nuclear generating capacity at the fastest pace in the world. For instance, the reference case scenario provides that the total installed capacity of nuclear plants will increase from 6.2 GW to 41 GW in India and from 45 GW to 180 GW in China. Interest towards nuclear power from newcomer countries such as Uzbekistan and Poland also looks encouraging.

It became known at the symposium that other countries, apart from those mentioned in the report, were also taking interest in nuclear. For example, Australia is ready to lift the moratorium on nuclear plant construction due to its plans to decommission coal-fired power stations in 10 or more years. **"The IPCC (Intergovernmental Panel on Climate Change) and the IEA all say the same thing – if we are to keep temperature increases to 1.5 or 2 degrees, we're going to need nuclear power – and lots of it.**

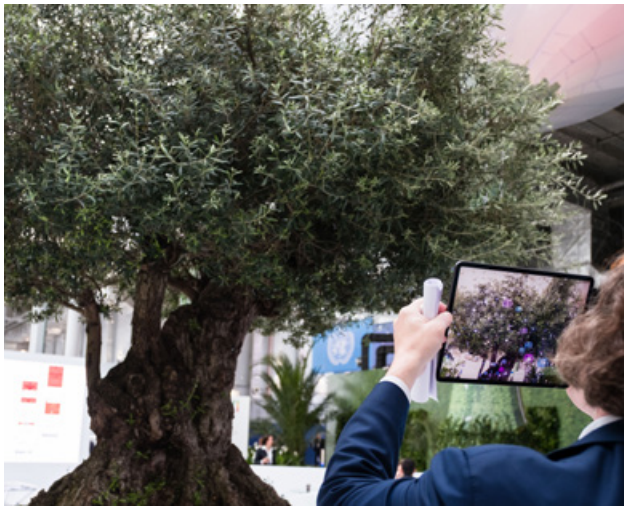
Furthermore, the coal-fired generation fleet that produces 70% of Australia's electricity is getting old, with an average age of 34 years. Much of this capacity is due to retire over the next 10–20 years. In addition, electricity prices in Australia have increased by 90% over the past decade and the country is facing the real possibility of blackouts caused by a lack of generation capacity," said Patrick Gibbons from the Minerals Council of Australia (MCA) at the symposium.

The current pace of NPP construction is insufficient to achieve the Harmony program's goal of raising the share of nuclear to a quarter of the global energy mix. For this purpose, the construction should run faster than in the upper case scenario. **"Achieving the Harmony's goal of supplying 25% of the world's electricity before 2050 will require a rapid ramp-up of new nuclear build, higher than projected in the Upper scenario, which in turn would lead to the need of greater amounts of uranium, enrichment, fuel fabrication, transport and used fuel services. Nuclear fuel cycle participants should be prepared to meet a potentially large increase in demand to meet the Harmony's goal,"** said Agneta Rising, Director General of the World Nuclear Association.

Nuclear power should become affordable for consumers to draw support from politicians

and businesses. This is why it is, among other things, important to hold a dialogue with nuclear regulators. **"We currently have a situation where the cost of constructing a new reactor ends up being two or three times as much as the initial calculation. That cannot go on. From our side, we are going to put efforts into pushing this. This is a common issue we have to work on. I'm sure we can also work with regulators ... in order to address that issue because we all believe that the industry has – and must have – a future,"** said Magnus Hall, CEO of Swedish power company Vattenfall AB.

It is, however, more important to ensure that the development of nuclear industry results in a better quality of life. WNA Chairman Kirill Komarov stressed this point during his speech saying, **"Developing nuclear energy and industry can contribute substantially to 10 out of 17 UN Sustainable Development Goals. I can say that nuclear power is a frontrunner among all the generation sources by the number of SDGs achieved, followed by renewables and hydropower. This fundamental role of nuclear power in providing a better life for people all around the world urges us to introduce nuclear in the agenda of major international energy and sustainable development forums."**



Driven by Sustainability

In 2019, Rosatom formalized its efforts to achieve sustainable development goals. The results of the company's actions to improve quality of life will be expressed in clear numbers.

The Project Office for Sustainable Development Programs was established as part of Rosatom Corporate Development and International Business Department in early 2019 to coordinate the company's sustainable development efforts.

System of Common Values

The pursuit of sustainable development goals became a priority for businesses more than 10 years ago, in response to the public demand for responsible consumption, environmental protection and respect for the rights of local communities. To satisfy the demand, companies started publishing special sustainability reports where they described all their steps and achievements

in such areas as anti-corruption measures, fight against discrimination by sex or other criteria, environmental protection, local community support, etc.

The companies that comply with sustainable development principles are offered new opportunities, such as access to green or sustainable finance provided by some banks and development institutions. By contrast, the companies ignoring these principles may face restrictions and even lose the market.

The concept of sustainable development was taking shape gradually. An important milestone was reached in 2015 when the UN formulated 17 sustainable development goals which are expected to be achieved by 2030.

Rosatom is also working to ensure sustainable development. Specifically, the company has developed and released such regulatory documents as Environment Policy, Social Policy, Uniform Procurement Standard and others, and public reports on sustainable development in line with the guidelines of Global Reporting Initiative (GRI).

One of the reasons why Rosatom created a special office was because it wanted to systematize, formalize and quantitatively assess its efforts in life quality improvement so they could be evident for stakeholders. One more reason was the need to determine further areas of focus.

100-Point Rating Scale

By this year's end, Rosatom is expected to receive a sustainability rating which will be assigned by a special agency. Independent experts will assess the company's activity in three areas – environmental protection, social responsibility, and quality of business processes. Rosatom's main criteria for choosing a rating agency were independence and experience, the latter being important for comparing the company with its peers in similar business areas.

The agency is going to draw up a questionnaire taking into account Rosatom's business specifics. Within two or three weeks, the experts will collect answers and relevant documents which will later be analyzed for about one and a half months. The resulting report will be sent to the customer.

The company's final rating will be based on a 100-point scale. The importance of this rating is that it enables Rosatom to determine its sustainable development level as per one of the market's most popular assessment systems, and helps receive recommendations on steps to ensure the company's further development.

Pilot Projects

The Project Office for Sustainable Development Programs is also involved in the implementation of a pilot project program. The plans are to deliver five projects by the end of 2019. Seven more projects, which require more time and human resources, are expected to be finished in 2020.

The pilot projects help to identify in specific contexts and within relatively short time how sustainable development principles impact performance of the companies involved in the projects.

Nuclear Energy (Large and small nuclear plants)

Rusatom Overseas (RAOS, a Rosatom Group company managing foreign projects for nuclear plant construction and operation) is delivering the first two projects which could be useful for national governments, top management of large energy vendors, consulting companies and international organizations. The project results will be summarized in an analytical report showing how the construction of large nuclear plants (Pilot Project 1) and small modular reactors (Pilot Project 2) can help achieve the sustainable development goals (specifically Goals 4–9 and 13).

The document will quantify the effects from operation of a nuclear plant, particularly the power prices keept stable for a long period. This factor may be a compelling argument to be used by the national government in negotiations with prospective investors in large projects. Rusatom Overseas also estimates that each dollar invested in a large nuclear plant will bring USD 1.9 to local stakeholders, USD 4.3 to the national GDP and USD 1.4 in taxes (similar calculations are being done for SMRs as well). Besides, nuclear plants can mitigate the environmental and epidemiological risks posed by air and water pollution caused by fossil fuels. According to the estimates of the project authors, a 1.2 GW nuclear power plant can annually cut carbon dioxide emissions by 7 million tons, while 5% utilization of nuclear plant capacity allows for supplying about 1 million people with clean fresh water for 60 years. Finally, the construction of a nuclear power plant is sure to result in a higher number of local skilled professionals and development of infrastructure (power lines and roads).

NSTC (Nuclear Science and Technology Center)

This project is also delivered by Rusatom Overseas and targets the same interest group as the previous two projects. Once the project is completed, the company will publish a report showing the goals that can be achieved with the help of the NSTC (Goals 2-4, 6, 9 and 12). The NSTC is a stand-alone project as its tasks are mainly associated with research and development. The scientists and students working in the NSTC learn how to operate

reactors and handle nuclear materials and fuels, take part in scientific discussions, and have a chance to publish their surveys in peer-reviewed journals. RAOS also undertakes to train up to 400 operators under engineering, procurement and construction (EPC) contracts and arrange for admission quotas of up to 50 students in Russian universities.

With new specialized facilities and laboratories to join, the center is supposed to improve health of the local population. For instance, the irradiation unit with an annual capacity of 8,000 hours allows for twofold of food product shelf lives, thus resulting in lower hunger and poisoning risks and improving living conditions. The irradiation technology also improves the chances of obtaining quality certificates from importing countries and, consequently, increasing export earnings. Besides, the NSTC can be used for producing medical isotopes. According to the estimates of Rusatom Overseas, each dollar invested in the nuclear materials will bring five dollars to the economy thanks to reduced treatment duration.

Making Radiopharmaceuticals Available to Developing Countries

The project has been initiated by Isotope, Russia's largest isotope supplier. Its results will be presented in a report describing the sustainability benefits the project can bring to customers. The primary goal of the project is to identify the target audience, its structure and problem zones, define the major indicators, and calculate the results.

Quality of Business Processes

The project is implemented by TENEX (a Rosatom's subsidiary) with input from TVEL (Rosatom fuel company) and is intended to be useful for TENEX's suppliers. Its result will be the Supplier Code of Conduct made in compliance with Goals 12 and 17. The document will declare the obligation of each supplier to comply with the sustainable development concept by avoiding damage to the environment, ensuring employee well-being and career growth, meeting regulations and standards, etc. TENEX's suppliers will need to sign the Code because TENEX, as a supplier to foreign companies, is required to sign similar documents and ensure that its chain of suppliers sticks to sustainable development principles. To make sure that suppliers comply with the Code, TENEX plans first to conduct a survey and then comprehensive audits. Once the Code is approved in September, it is expected to be gradually introduced in TENEX's procurement processes.

The results of the pilot projects will be of great use for other nuclear companies planning to make changes to their business processes. NL

To the beginning of the section

Consumers Demand Energy Autonomy

The US power generation trends impact the entire global energy market. Knowing these trends gives better insight into the processes that shape the future of power industry.

In its 2018 sustainability report, the US-based company Exelon identified six trends that it believed were shaping the power market.

US View

Trend One: accelerating technology deployment. First and foremost, this has to do with various energy transmission and distribution systems. **"For example, technology has enabled two-way power flows so that local generation, such as rooftop solar, can supplement central generation capabilities,"** the report explains.

Trend Two: evolving consumer expectations. Customers are seeking greater control over the impacts their energy consumption has on the environment. **"This includes interests in energy efficiency, active management of home energy usage and deploying local generation in homes and businesses,"** the report says. However, these interests may, alongside environmental concerns, be prompted by the need for energy cost reduction as their economic consequence is a decrease in power consumption.

Trend Three: low natural gas prices. **"The expansion of shale gas drilling technologies in the United States has dramatically increased the availability of domestic**

supply, resulting in low natural gas prices and thus, greater use of natural gas for power generation". Lower gas prices have led to a reduction in the price of electricity supplied by gas-fired power plants.

Trend Four: growing interest in clean generation. Exelon believes that consumers are **"interested in the use of cleaner generation technologies and options to buy or deploy clean energy"**. The major consumer concerns are climate change, ozone depletion, toxic emissions in the air, and water usage.

Trend Five: continued deployment of local generation resources. These include decentralized wind generators, solar farms and small fuel cells for households and offices. **"Increased customer demand, lower costs and access to diverse technologies are driving this trend,"** the report notes. The authors believe that the development of decentralized generation can make power supply systems more reliable and sustainable.

Trend Six: flat to low demand growth. **"After steady growth in load through the 20th century, power suppliers are seeing flat to very low growth in demand in recent years, due in part to deployment of energy efficiency programs,"** the report says. This trend is a fundamental change from the previous decades when market growth was much stronger.

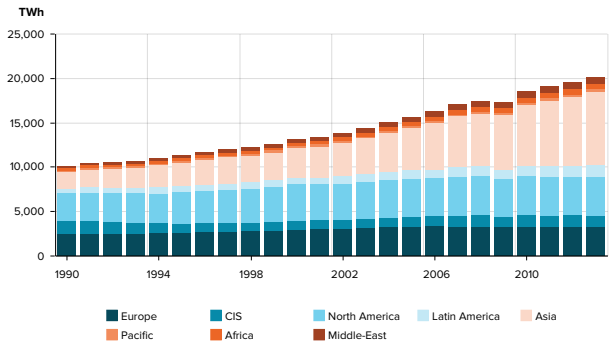
Trends and Projections

But is it really true that electricity demand has stopped growing? What does it generally depend on? Is it driven by environmental concerns and consumption trends (trend

for lower consumption vs. sweeping electrification of everyday life)? Once these questions are answered, it will be possible to predict what types of power plants will be built in the future and where they will most probably appear.

The 1990–2018 statistics presented in Global Energy Statistical Yearbook 2019 show that North America's electricity consumption hit a peak of 4,465 TWh in 2007 and dropped during the financial crisis.

DYNAMICS OF ELECTRICITY CONSUMPTION, 1990-2018



Afterwards, it started growing slowly to exceed the pre-crisis levels only in 2018 (4,499 TWh). However, it is yet uncertain if this growth will become a lasting trend. In 2018, it was caused by an abnormally

cold winter followed by a hot summer in the USA. **"In the United States, after stable consumption in recent years, demand jumped by nearly 4% to a record level of almost 4 000 TWh, 17% of the global total. The majority of the growth was attributable to a hotter summer and a colder than average winter, which increased power demand in buildings,"** says the International Energy Agency (IEA) in its report (Global Energy & CO_2 Status Report, 2018).

An independent information & consulting firm specialising in the global energy and carbon markets, Enerdata, also notes that electricity consumption owes its growth to the residential sector which involves the use of household appliances and air-conditioning units. **"Electricity consumption in the United States, which dipped by 1% in 2017, recovered in 2018 (+2.2%). Most of this increase came from the residential sector (+6.2%), mainly due to an increased electricity consumption for appliances (representing around half of the electricity consumption) and air-conditioning,"** says its Global Energy Statistic Yearbook 2019. According to the US Energy Information Administration, the US households in 2018 accounted for 42% and 43% of electricity and gas consumption respectively. This means that, if the US weather is going to be mild in 2019, electricity consumption in the residential sector may fall again, affecting the overall consumption level.

Enerdata's findings generally confirm Exelon's conclusion that, despite the 2018 consumption growth, power consumption in North America (where the United States account for the bulk of it) remains flat. Marginal changes are also seen in Europe and the CIS. In these countries, which have matured or are in the process of maturing into post-industrial economies, massive construction of new generating capacities is hardly possible due to the lack of demand. Their new power plants will be built to replace the retiring capacity.

Consequently, competition is possible between different energy sources that could potentially be used as a replacement. Public interest in clean power generation may be a decisive factor behind the choice of energy source. Clean energy sources will be more preferable from the political point of view. The fiercest competition is expected between different clean sources once the dichotomy between clean and dirty energy becomes irrelevant.

Evidence shows that the consumption of energy (both primary and secondary) grows along with the economy. However, the two evolve at a different pace, with GDP rising faster. According to Enerdata's Global Energy Trends 2019, the G20 economies (accounting for about 80% of energy consumption and over 80% of CO_2 emissions) have been growing at slightly above 3% per annum since 2010 (following the recovery from the global economic collapse caused by the US banking crisis). In 2017–2018, the growth was at 3.8% while energy consumption increased by 2.1%. The fact that power

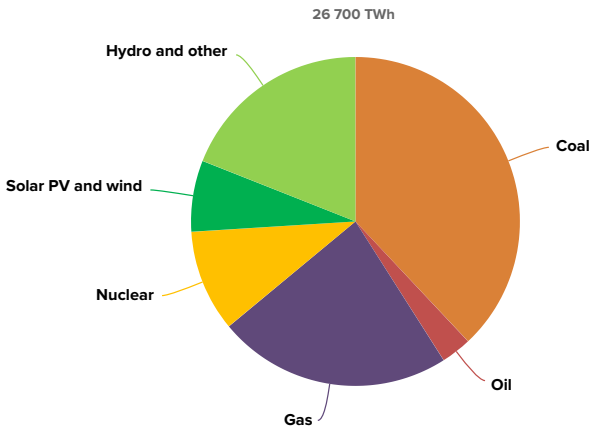
consumption falls behind economic growth is partly attributable to energy efficiency, the importance of which was noted by Exelon. According to Enerdata, the energy intensity of economies (i.e. a ratio between energy consumption and GDP) averages 1.5% per annum.

The problem is that, following the period of downturn in 2015–2016, the CO_2 emissions began rising concurrently with the 2017–2018 growth of global economy and energy consumption. Last year, emissions produced by G20 countries rose by 2.2%; this year's growth stands at 1.7%. In 2018, carbon emissions increased for the first time in three years in the OECD countries that are most often associated with efforts to reduce emissions.

The IEA reports that coal now dominates the energy generation mix, accounting for 38% of total power output in 2018 (26,700 TWh). The annual growth in power generation at coal-fired power plants reached 258 TWh (out of 900 TWh across all energy sources). **"The highest increase in coal power generation took place in China, followed by India,"** the IEA statement says.

"Still, generation from coal- and gas-fired power plants also rose considerably to meet higher electricity demand, driving up CO_2 emissions from the sector by 2.5%. Emissions from power generation reached nearly 13 Gt, or 38% of total energy-related CO_2 emissions last year," the IEA notes.

INTERNATIONAL ELECTRICITY GENERATION MIX, 2018



The share of gas-fired generation amounted to 23% of the global consumption. In 2018, the G20's gas consumption grew by 4.8% against the previous year, showing the highest growth rate over the past decade. According to Enerdata, the gas demand was 2,732 billion cub m in 2017 and reached 2,860 billion cub m 2018, with the USA accounting for 80 billion cub m. Both Enerdata and the IEA rank the United States among the major CO_2 emitting countries. **"The United States alone grew by more than 70 Mtoe (more than 1% of OECD's TPES): natural gas represented more than two thirds of such growth, mostly driven by power generation and residential consumption,"** the IEA report states.

The link between growing gas consumption and higher emissions is not a local phenomenon but an overall trend which has emerged because **"low-carbon energy**

sources did not keep pace with gas growth, resulting in a 0.5% increase in energy-related carbon dioxide emissions". Enerdata concludes sadly: **"Global economy has not yet started to cut its CO_2 emission."**

According to the IEA, nuclear and renewable power plants should become the main sources of clean energy. **"While renewables are expected to continue to lead, nuclear power can also play an important part along with fossil fuels using carbon capture, utilization and storage. Countries envisaging a future role for nuclear account for the bulk of global energy demand and CO_2 emissions,"** says the IEA's report Nuclear Power in a Clean Energy System. In 2018, nuclear made up only 10% of total energy output, while solar and wind accounted for 7%. However, a positive sign is that renewable and nuclear energy generation had showed the fastest growth in 2018 – 449 TWh (+7%) and or 87 TWh (+3.3%) respectively.

"If we are to be serious about climate change we should also be serious about the solutions. Transitioning to a low-carbon economy that meets the energy needs of the global community presents a daunting task. But it is a challenge that must be met, and one that can only be met by using the full potential of nuclear energy," the World Nuclear Association says confidently.

Small and Autonomous

Stand-alone power systems, which Exelon identified as a trend, are most commonly associated with renewable energy sources (particularly, the report takes rooftop photovoltaic systems as an illustration). Nevertheless, small modular reactors (SMR)

are also capable of supplying clean off-grid energy and thus replacing diesel generators.

Although these facilities are not meant to be installed in each household, they can provide heat and electricity to remote settlements with medium power demand where connection to power grids, never mind heating networks, would take too much time and money.

SMRs have been under development in Rosatom for several decades. There are several reactor types in Rosatom's portfolio that small capacity nuclear power plants (NPP) could possibly be equipped with, but the new generation water-pressured RITM-200 reactors are currently considered as the flagship technology. Six reactors of RITM-series have been successfully installed on the state-of-the-art icebreakers Arktika, Sibir and Ural.

The Akademik Lomonosov floating nuclear power plant boasts competitive advantages of renewable energy sources: it is mobile, flexible and autonomous, and allows for generating power on-site. The plant can be towed from one location to another and

supply heat and power to a small settlement, town or a mid-size production facility. With the experience gained while constructing the floating nuclear power plant, the lead times of similar projects can be reduced to four years or less, enhancing their cost efficiency as well. Small modular reactors are also unique for their long service lives (several decades) and independence from the external environment.

Rosatom is now considering several locations for first of a kind SMR NPP siting: the Suroyam deposit in the Chelyabinsk Oblast, the Baim deposit in the Chukotka Autonomous Area, and several sites in the Republic of Sakha (Yakutia).

At the Eastern Economic Forum held in Vladivostok on September 4–6, Yakutia's government signed an agreement with Rosatom on a site survey for building a small modular reactor. At the moment, Rosatom has three lines of business in SMR construction – on-shore reactors built by RAOS, floating power plants made by AEM (Atomenergomash, Rosatom power engineering company), and off-shore facilities developed by NIKIET.

The first Rosatom SMR NPP is expected to be constructed in Russia and be online already in 2027.

So far, the installation of SMRs has not become as routine as construction of wind or solar farms. It should kept in mind, however, that the development of renewable energy sources has come a long way, involving the acquisition of competences, financial support from government and international bodies, and active lobbying. If the SMR projects are delivered as consistently, this will help prove that these facilities can support the infrastructure of investment projects and improve the living conditions in the areas that need stable off-grid power supply.

To the beginning of the section

INFOGRAPHICS

Back to contents

Floating nuclear power plant “Akademik Lomonosov”

TECHNICAL CHARACTERISTICS

70
MW — ELECTRIC POWER

50
GCAL/H — THERMAL POWER

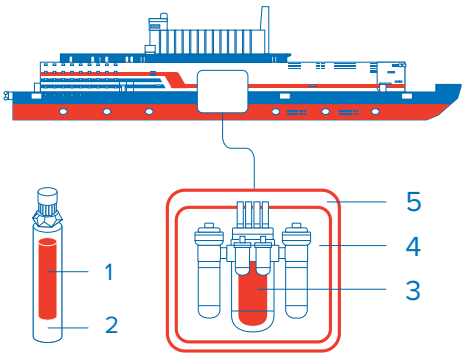
40
YEARS — SERVICE LIFE

21560
TONS — DISPLACEMENT

144
METERS — LENGTH

30
METERS — BEAM

SAFETY SYSTEMS



Implementation of the defense in depth, providing of an optimal combination of active and passive safety systems, strengthening of the properties of internal self-defense.

LOCALIZING SAFETY BARRIERS

1 — a fuel composition
2 — a shell of fuel assembly
3 — a first circuit
4 — a reactor containment
5 — a safety fence

NUMBER OF STAFF

375
A TOTAL NUMBER OF STAFF

ABOUT
75%
OF STAFF WORKS ON A SHIFT BASIS

ABOUT
2 month
SHIFT DURATION

LOCATION OF FNPP IN PEVEK

EQUIPMENT LAYOUT