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To our readers: We are committed to you

Dear friends, Arkhangelsk Pulp and Paper Mill is proud to present its new media project **Bumazhnik Business**.

Designed to bring you the latest news on timber and woodworking industry in Russia and its land of Pomors, Bumazhnik Business will be focusing on progress in modernization, corporate social responsibility, environmental strategy and personnel policy of APPM and its subsidiaries, Pulp Mill Holding, and Titan Group – the businesses that are essential to the economic growth in Northern Russia.

The Mill and its newspaper

Arkhangelsk Pulp and Paper Mill operates as Russia's largest producer of container cardboard and pulp-based products and is Pomorland's backbone industry. With a large-scale refurbishment program, the mill is working to increase its output and product quality, while also reducing its environmental impact. It makes use of the best available technologies and operates an

integrated management system that relies on international standards for quality, environment and health.

In 2020, Arkhangelsk Pulp and Paper Mill turned 80 years old. Accompanying it through all these years has been its news outlet Bumazhnik, which traces its history to the early days of the mill. First published on June 1, 1936, the Bumazhnik is one of the oldest news outlet in Russia.

The Bumazhnik underwent repeated changes design-wise and idea-wise, but one thing remained constant – every week it brought thousands of its readers news about the mill, its teams, performance, plans, achievements and achievers. If put together, the many articles prepared by The Bumazhnik journalists would create an encyclopedia that could tell the history of the mill and entire Pomorland.

Towards a new stage

The Bumazhnik is entering a new stage in its history. As a quarterly edition from 2021 onwards, it will be bringing news to

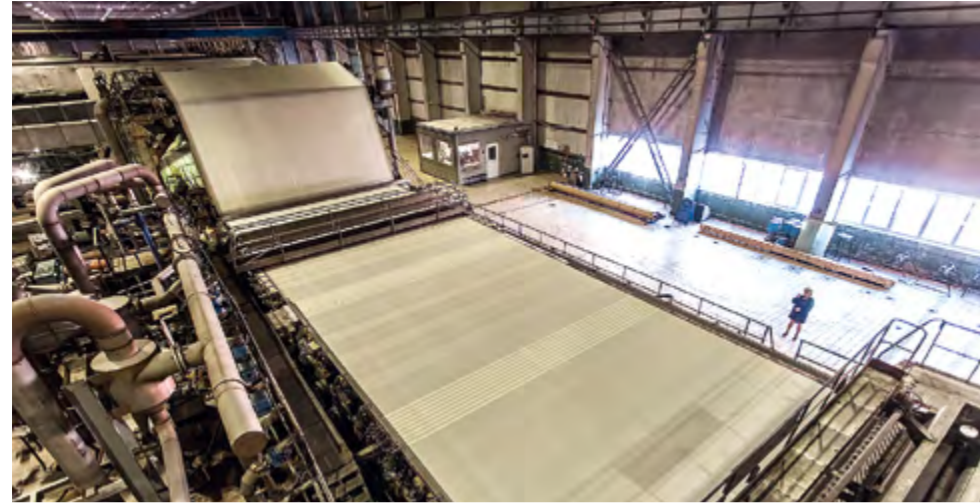
80
In 2020 Arkhangelsk Pulp and Paper Mill celebrated its 80th anniversary

a wide readership encompassing APPM's business and social partners, industrial associations, trade unions, state and local authorities, and, surely, job seekers and employees at Titan Group and Pulp Mill Holding. We are looking forward to a wider readership and attention of all readers.

We see our mission as being a quality publisher with up-to-date narratives. The topics we are going to cover span industrial development, economic activity, and social and environmental policy of this region. We hope that our publications will inspire more discussions, opinion and idea exchange, constructive proposals, as well as foster the analysis of trends and prospects among experts in the forest industry, government authorities and business community. We sincerely hope that this media project will gain attention from all professionals, enthusiasts and followers of APPM, its related industries and forest management here in the Pomorland and the entire country.



Proprietary information



sales growth, and consistent agenda towards reduced environmental impact.

APPM owes its increased capacity largely to the refurbishment program that has been in progress for quite a number of years. The year 2020 saw the completion of investment project titled "Reconstruction of Cardboard Production", listed by the RF Ministry of Industry and Commerce among high-priority forestry-related initiatives.

Objective necessity

One more important factor that has contributed to the increase in pulp yield is APPM being the parent company to Pulp Mill Holding, its prime investor and sole shareholder.

A vertically-integrated system, Pulp Mill Holding incorporates APPM's subsidiaries specializing in the production of corrugated packaging and sanitary products. They receive their feedstocks – cardboard and cellulose – directly from APPM. As Pulp Mill Holding continues to expand its current facilities and build new ones, it needs more pulp from APPM.

As a reminder, APPM Development Strategy 2025 envisages an investment of more than RUB 20 billion in retrofitting and upgrading. This implies that pulp production can be expected to be picking up at a faster rate in the future.

Proprietary information

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Since its launch in 1940,
APPM has produced a pulp yield
of 41 million tons

The mill produced its first batch of brown pulp as part of testing and adjustment of its digesters and acid making machine, which took place on August 27–28, 1940. That milestone is celebrated to date as the mill's birthday. At that time, the mill was put into operation to produce solely unbleached sulfite pulp.

Production Milestone

Arkhangelsk Pulp and Paper Mill has passed one more important milestone: since its launch in 1940, it has produced a pulp yield of 41 million tons. This figure sums up the 80-year-long history of operating the digesters and the pulping processes.

Pulp yield increased

As noted by APPM Director General Dmitry Zylev, with the recent launch of new facilities, the mill has, for the first time in its history, approached the annual pulp yield of one million tons, having produced 993,000 tons of pulp in 2020. The forecast for the current year is 1,012,000 t.

The performance as high as this ranks APPM among Russia's leading manufacturers of pulp and cardboard packaging. The company boasts an impressive customer loyalty, sustainable

A Gift to Arkhangelsk Schools

On March 11, Arkhangelsk City Administration hosted the ceremony of presenting the local schools with two-volume book about APPM and its history.

The first book in the dilogy is called The Birth of a Giant. 1934–1940 and is dedicated to the years of construction of the mill, being also a chronicle of Northern Russia's evolution in the 1930s. The second book, Time of Valor. 1941–1945, narrates about the fate of Pomoland and Arkhbum during the Great Patriotic War. The authors of this two-volume edition are AMMP employees Pavel Fasonov and Elena Zakharova.

"This two-volume book will be given to each of the fifty-one schools here Arkhangelsk as a gift," said Vladimir Beloglazov, Adviser to APPM Director General. "It is a product of APPM's social and educational project and we are going to distribute it among the libraries and schools. Both the books have been translated into English."

The dilogy marks APPM's contribution to social, historical and educational projects. It unveils some of the pages in the history of Arkhangelsk Pulp and Paper Mill, the land of Pomors and the country, serving as a good tool to instill

in younger generations a patriotic feeling. With reader-friendly contents and captivatingly presented historical accounts, the books have gained a wide readership among people of all ages, history enthusiasts and all those who would like to know more about their homeland.

"We would like to extend our gratitude to Arkhangelsk Pulp and Paper Mill for giving the school libraries these wonderful books," said Elena Yerykalova, Deputy Director at Arkhangelsk City Administration Department of Education. "It is important that these books have reached their younger readers in anticipation of May 9 and during the Children and Youth Book Week. I hope our future enrollees will find them inspiring: the history of the emergence of this giant mill can, indeed, cultivate in learners strong commitment to their homeland or desire to connect their lives with timber industry."

Notably, The Birth of a Giant won the Book of the Year Award from 2019 Arkhangelsk Regional Competition as the best book about



the Russian North, followed by another prize – the M.V. Lomonosov Award, established jointly by Arkhangelsk Government, Arkhangelsk Administration, and Lomonosov Inter-Regional Public Foundation – awarded to The Birth of a Giant and Time of Valor in 2020.

Proprietary information

Photo courtesy of newspaper archive

CURRENT TRENDS IN LOCAL FORESTRY PERFORMANCE

In 2020, Arkhangelsk Region has managed to maintain its target timber performance, having processed a total of 12 million cubic meters of round timber.

In the country's sectoral makeup, Arkhangelsk stands as a mighty wood processing center accounting for 8% in Russia's total output of sawn timber, 29% in fuel pellets, 26% in pulp yield and 17% in paper and cardboard output.

Compared to 2019, there has been an increase in the output of pulp, paper, and cardboard. Over the first nine months of 2020, the local pulp and paper industries paid RUB 2.9 billion in tax.

Despite the challenges of 2020, Arkhangelsk Region has seen a 10% increase in pulp yield, a 20% increase in cardboard, and a 3% increase in the output of commercial cellulose, whereas the figures for plywood, fuel pellets and paper remain at last year's level.

In value terms, the area's timber industries and pulp and paper mills have generated a profit of approximately RUB 125 billion.

The consistent growth in wood-based products output is largely spurred by industries' investment programs with the projects that are eligible for the government support as high-priority timber-related investment projects.



NARFU TO HOST TECHNOLOGY & INNOVATION ZONE

In his meeting with the Board of Trustees for M.V. Lomonosov Northern (Arctic) Federal University, Arkhangelsk Governor Alexander Tsybulsky came up with a proposal for a special economic zone to be set up within Technology & Innovation section of the emerging IT Park "Digital Arctic".

The Governor was quoted as saying that he sees it as a way to attract investment and give jobs to graduates.

The initiative suggests that the Technology & Innovation zone would be hosted by NARFU to function as a provider of training for IT-based economy and solutions for IT ecosystem for the Arctic, while also driving partnerships with IT leaders and NARFU's own digitalization processes.

The first stage of the initiative spans 2021–2024 and is projected to cost RUB 1.3 billion, of which RUB 1.1 billion would be sourced from federal budget and RUB 214.3 million are extra-budgetary funds.

Material provided by Arkhangelsk Governor and Government Press Service



Alexander Tsybulsky: The timber industry continues to be the pillar of Arkhangelsk Region's economy

The first interview in the first issue of Bumazhnik Business is with Arkhangelsk Governor Alexander Tsybulsky. We asked the area's leader about the situation in the forest industry, its current trends and prospects of development. The answers sound exhaustive, indeed.

Recent performance

Alexander Vitalievich, how can you evaluate the performance shown by Arkhangelsk's timber sector in 2020 – the year of the pandemic?

Despite the economic disruption caused by the new coronavirus infection, the state of things in the local timber industry can be evaluated, based on its past year's performance, as stable.

The industries and the economies here and globally were, of course, forced to adjust their workflows and outputs in order to survive. Schedules had to be changed for the sake of people's health and the people had to start to work remotely (where possible). All senior employees had to stick to isolation precautions. But overall, the timber industries coped with the challenges quite all right and there has been no decline in their performance figures. Nor has there been any noticeable decrease in their output.

The output of sawn timber, plywood and fuel pellets is comparable to 2019, while that of pulp and paper has even increased.

Also, this past year has seen completion of some major investment projects to do with timber harvesting, which, in turn, has had a positive impact on the area's economy. One notable investment project is called Reconstruction of Cardboard Production and is run by Arkhangelsk Pulp and Paper Mill. ULK Group is setting up a mega saw mill, while Ilim Group's office in Koryazhma is busy upgrading its facilities. All this adds to the fact that the timber industry continues to be the pillar of Arkhangelsk Region's economy and the area's key employer.

The advice for the future

The recently established Forestry Board under Arkhangelsk Governor, what is its role in promoting the area's timber sector?

As you have probably heard, the area's government has undergone a number of structural changes towards inclusion of the industries. We now have, since this year, the Ministry for Economic Development, Research and Industry, which has these three domains approached from a completely different angle, and there has been an obvious need for this ministry. When endorsing it, I was driven by the need for better socio-economic strategy plan-

ning. This new ministry will be supervising investment performance, small and medium entrepreneurship, foreign economic activity, exports support coordination, research and scientific and engineering efforts. Its two core domains – research and industries – have until recently been represented nowhere in the local governance system, and it would be a gross mistake, I think, to neglect them if we are set to achieve better growth.

Notably, this conceptual change has helped to obtain the federal funding for the Arctic Research and Education Center – the facility established to generate synergy by combining the best developments in industry and science.

As to the Forest Council under the Governor, its role lies basically in developing proposals for dealing with the challenges the forestry development can be hindered by and to improve its regulatory and legal framework. Since the Council has among its members the CEOs of major timber companies and academics, it functions also as a venue for dialogue.

With the support from the state

How is the forest management likely to change in the area after the enactment of the Federal Law "Concerning the Amendments to the Forest Code of the Russian Federation"?

I think that this upcoming law are primarily designed to ensure the sound legal basis for qualitative and quantitative forest inventory, better traceability of wood and prosecution of illegal logging. I see it as a way to promote digitalization and transparency of the industry.

There has been a number of federal laws endorsed by the President in 2020 concerning the entrepreneurship in the Arctic Zone. What impact will these laws have on the development of timber sector in our region?

The answer already lies in your question, I think. The law deals with entrepreneurship, which means it aims at nothing but improvement of the climate for it in the Arctic. And the scope of benefits that comes with it is absolutely unprecedented – tax incentives, loan benefits, insurance reimbursement, non-tender procedure for land allocation. These benefits are what the Arctic areas have long been waiting for. Without them it would be simply unre-

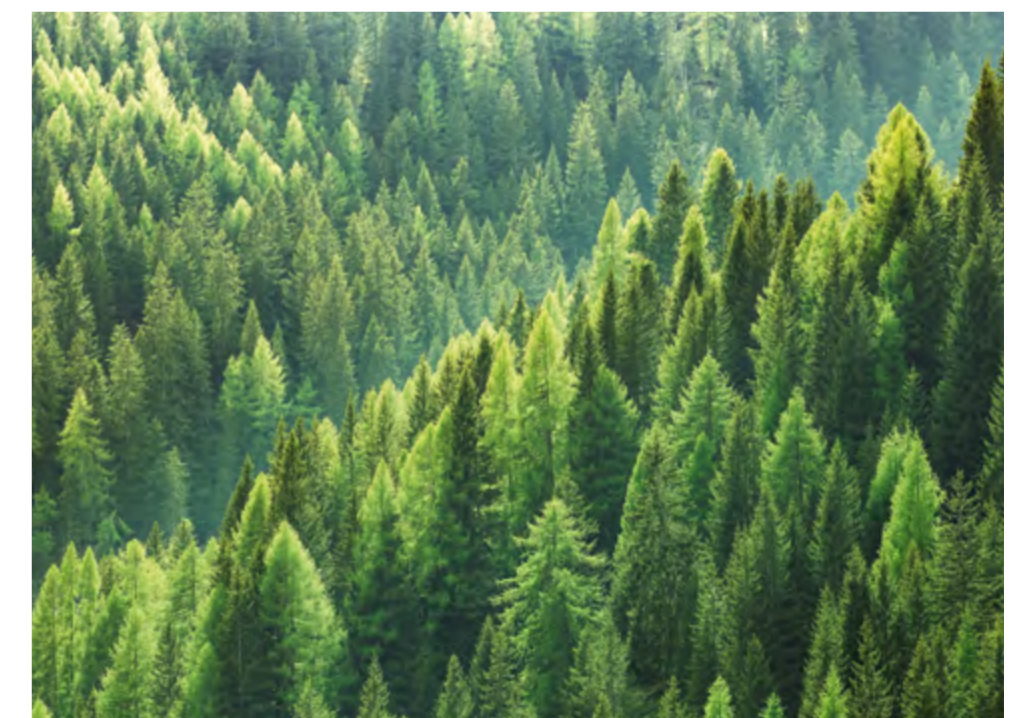
alistic to operate on equal footing with the areas with far more favorable climate and logistics.

We see more and more businesses apply for the RF Arctic Zone tax residency. And I must say that even those who don't will also benefit eventually from this federal law, as well as from the regional law that has been recently adopted to support tax residents of the Russian Arctic Zone.

One example is the investment project to be deployed in Novodvinsk – the town comprising the Arctic Zone – that deals with the production of organic chemicals. The project will be using as feedstock the waste turpentine being produced at Arkhangelsk Pulp and Paper Mill and involves construction of a special facility and subsequent purchase of the equipment for it.

It is one of the major projects on APPM's environmental agenda and can in parallel yield commercial gain: its products are going to be shipped to chemical manufacturers in Russia and abroad. Not only will it benefit the area's economy, it will contribute to environmental safety. Therefore, this new law on tax benefits for residents of the Arctic Zone will undoubtedly have some positive inputs into the timber sector as well.

We thank Arkhangelsk Governor and Government Press Service for contribution in preparing this article



На территории Арктической зоны – в Новодвинске – будет реализован новый инвестиционный проект, связанный с производством органических веществ



Vladimir Krupchak: Striving for shared benefit

Constant pursuit of development gives Arkhangelsk Pulp and Paper Mill and Pulp Mill Holding an undeniably strong competitive edge, allowing them to make social commitments, improve environmental technologies and maintain required safety margin. In this interview, Vladimir Krupchak, member of APPM Board of Directors and Pulp Mill Holding Director for Investment, talks about big plans and promising prospects.

currently in process to calculate the feasibility of its softwood and hardwood chip production and main workshop with facilities for cooking, washing, grinding, sorting, preparation of mass, production of cardboard, and warehousing. The project will have a

new workshop for causticization and regeneration of lime and subsequent preparation of white liquor for softwood pulping and hardwood semi-cellulose; an evaporation station; and a warehouse for imported chemicals. Its energy plant will consist of soda recovery boiler, a multi-fuel boiler unit that will be fired by wood waste and sewage sludge, and a turbine room.

To reduce its mill's environmental impact, the project is going to be installed with technologies for collection and combustion of low- and high-concentration gases from the pulping units and the evaporation train, as well as for treatment of the condensate. Treatment will also cover the flue gases of the soda recovery and multi-fuel boilers and the steam gases that are generated by the solvents in the soda recovery boiler.

The core of the project is the cardboard machine, which is to be assigned sequential number '3' and has the annual designed capacity of 700,000 tons. The product it will be making is wood-free kraftliner with the density range between 80 and 200 grams per square meter. This will be a wide-format cardboard machine with a reel-up width of 7,600 mm and average operating speed of 1,650 meters per minute.

The cardboard machine will have sections and departments for stock preparation – grinding, sorting, furnish treatment, and broke handling. Its wet end will be installed with modern twin-wire former with a hydraulic pressure box, while its pressing section will have two shoe presses. The dry end will have a soft calandrier; the reel is going to have automatic spool change. The heat recovery system design uses energy-efficient facilities with intermediate heat carrier.

Also, there will be two large-diameter slitter rewinders installed on Cardboard Machine 3 and an automatic transport and packaging line.

Notably, a project as big as this has not been undertaken by APPM since the 1970s when it was constructing its third phase.

How will this project benefit APPM?

APPM's cardboard project is very much in line with the global market's current trend towards a two-fold increase in cardboard demand by 2050.

At the same time, the existing Cardboard Machines 1 and 2 – with a total capacity of 550,000 t – are so far sufficient enough to meet both domestic and international demand.

Cardboard Machine 3 will be oriented mainly on the swiftly growing overseas markets and, in the first place, those in Asia. Once the project is up and running, our pulping capacity will increase to 1,600,000 tons per year.

What economic effect is project expected to generate for the Russian Federation?

Given that the euro exchange rate continues to fluctuate between RUB 80 and RUB 90 and the profit tax rate keeps at 20%, the 700,000 tons of kraftliner APPM will be exporting to markets globally will generate a revenue of more than RUB 2 billion per year.

We expect the project to create 371 jobs at APPM and 3,500 jobs within Titan Group's harvesting businesses. In addition, there will be a lot of work for our service contractors in Novodvinsk and other municipalities in Arkhangelsk province, both at the construction stage and when the facility is operating.

That said, Titan Group is launching its own investment project to improve the timber harvesting infrastructure across Arkhangelsk province (equipment, roads, sidetracks, bridges), which is tentatively estimated at RUB 14 bln and will generate additional RUB 1.4 bln in tax.

The shipping route for future produce of APPM's new cardboard machine is likely to use the deep-water area of the sea port of Arkhangelsk, once it is in place. Its cargo transshipment terminal will have a capacity of 3 million tons per year. Considering the sharp growth in Asian markets' demand for cardboard, there is a need for regular line via the Northern Sea Route that runs along Chukotka and Kamchatka. All this only adds to the relevance of Cardboard Machine 3 project and its being in line with the strategic interests of Arkhangelsk and the Russian Federation's goals with regard to Arctic development, as set out by the President and the RF Government.

Gas plan becomes a reality

No less ambitious is APPM's plan to upgrade its energy utilities and to switch to gas. Could you please comment on it?

Installation of gas seeks to withdraw the obsolete boiler equipment and to improve the environmental situation. As a cleaner-burning fossil fuel, gas will allow us to achieve a cardinal reduction in our environmental load and to stabilize greenhouse emissions. This plan forms an integral part

of APPM's Environmental Efficiency Improvement Program. It is scheduled for completion in 2029 and its capex sums up to RUB 5.7 billion.

Our main source of air emissions is Combined Heat and Power Plant 1, which supplies energy to APPM and the community of Novodvinsk. The primary objective is to make APPM more energy-efficient by converting CHP-1 fuel balance from coal to natural gas.

APPM is soon finalizing the design part of the work to install the on-site pipeline and to switch CHP-1, lime causticization and regeneration sections, and the newly constructed evaporation train to gas.

The first to be converted to natural gas, with fuel oil as a back-up fuel, are the lime kilns in the lime causticization and regeneration sections. These will be followed by CHP-1 Boiler Units 5, 6, 9 and 10, and the non-condensable gas burners of CHP-2.

Next, we will dismantle the coal-fired CHP-1 Boiler Units 11, 12 and 13 and put in their place new gas/oil units. Should there be need for one more gas unit – in place of pulverized coal Boiler 14 – we'll have it installed as well.

Once the mill is converted to gas and the emissions such as coal ash, sulfur dioxide, nitrogen oxides, fuel oil ash and soot are reduced, its harmful air emissions will reduce by 23,000 tons per year. As to wastewater discharge, its annual volume will be decreased by nearly 192,000 tons. There will be no further disposal of ash and slag waste. Along with that, there will be better cost-efficiency as the negative environmental impact fee will be lower.

According to our estimates, switching to gas will lead to a more stable equipment performance, minimal possible downtime, and a cardinal reduction in repair pool once all morally and physically outdated equipment is replaced.

In the line of APPM's projects, the 'gas project' that you have just outlined is the most investment-intensive but is clearly not the only one. Am I right?

You are absolutely right. The projects I spoke about earlier are only one part of the mill's development agenda. Our Development Strategy 2025 envisages an investment into technical refurbishment of more than 20 billion rubles. In 2021 alone, the spending stands at nearly six billion.

The core tasks for 2021 include commissioning of CHP-1 Turbo Generator 7. Once it is in place, APPM will be able to replace its other turbo-generating sets by installing, first, the 30 MW Turbo Generator 6 and then the 60 MW Turbo Generator 8.

Most of our refurbishment plans revolve around pulp production technology. Its refurbishment will cost us RUB 26.8 billion and will lead to a 70,000- to 80,000-ton increase in the capacity of APPM's third-phase facilities. We are considering alternatives to our current pulp-drying machine and the auxiliary equipment. Our plan is to start, in 2021, an oxygen-alkaline delignification system to ensure the increase in our daily capacity rate to 1,300 tons. Next to be replaced are the transport and packaging line and Vacuum Evaporators 3 and 4.

One more project we are currently working on relates to fluff pulp, a product with a wide range of absorbent applications. The number of fluff pulp producers globally is limited to 25 only and all of them are based abroad. If APPM gives this project a go, it will become Russia's first producer of fluff pulp and will be able to process its own feed into another product with high added value – exactly the goal of the Russian Federation's import substitution campaign.

The potential of APPM has as a pro-

ducer and supplier of pulp products is huge. For this potential to be reached, the group members need to come together for maximum synergy.

Pulp Mill Holding increases its focus on environment

APPM operates a number of subsidiaries, which, too, form part of Pulp Mill Holding as a vertically-integrated system. How would you assess their current performance?

Our corrugated packaging manufacturer, Arkhbum (JSC), has recently completed a series of modernization projects with a total value of RUB 6.8 billion. Its premises in Podolsk now operate an upgraded corrugator and two BOBST processing lines, while the premises in Voronezh have been fully modernized and reached their design capacity. Arkhbum's facilities in Istra have been expanded with Istra-2, another BHS corrugator and two newly installed processing. In Ulyanovsk, our emerging production of corrugated cardboard packaging – with a capacity of 192 mln m² per year – has been recognized as a particularly significant regional investment project and is scheduled for commissioning in April 2021. Arkhbum Tissue Group (LLC), which is based in Kaluga Region, has started its first-phase facilities producing sanitary and hygienic products.

There are more projects underway within Pulp Mill Holding and we know that they have among their goals better environmental performance. Can you tell more about them?

There is, indeed, one more line of projects being pursued by Pulp Mill Holding, which relates to paper and paperboard packaging for consumer sector and recycled cardboard as a material for corrugated packaging.

Pulp Mill Holding has recently established its new member, Arkhbum-Upak LLC (Kolomna, Moscow Region), which has as its core business the production of paper packaging and cardboard containers and has been designed to be a producer of paper bags as an environmentally friendly alternative to plastic packaging. Arkhbum-Upak uses as feedstock the produce of Arkhangelsk Pulp and Paper Mill. Its kraft bags are high-quality, wood-free products with excellent physical and mechanical properties.

The equipment Arkhbum-Upak is installed with is of Japanese and Italian manufacture and includes printing machines, conversion lines and related auxiliary units to produce 140 to 540 mm wide bags and bags with twisted or flat handles. Arkhbum-Upak boasts cutting-edge servo-driven printing equipment that allows it to tailor product parameters to the most sophisticated of the customer needs.

Arkhbum-Upak's current output stands at 4,800,000 paper bags per month. There is a plan to move it to another site so as to increase its month-



700
Cardboard Machine 3 has a designed capacity of 700,000 tons of cardboard products per year

Creating the future today

Where do you think businesses need to level up in order to remain competitive?

They need to level up their flexibility. This means the ability to respond to changes on the market, upgrade production capacity, diversify the product line, build capacity for advanced processing in order to create high added value products. And in doing so, businesses should enjoy better support on the side of the regional authorities, in the first place. Once they have their support, they stand a better chance of enjoying the federal support measures to the fullest extent possible.

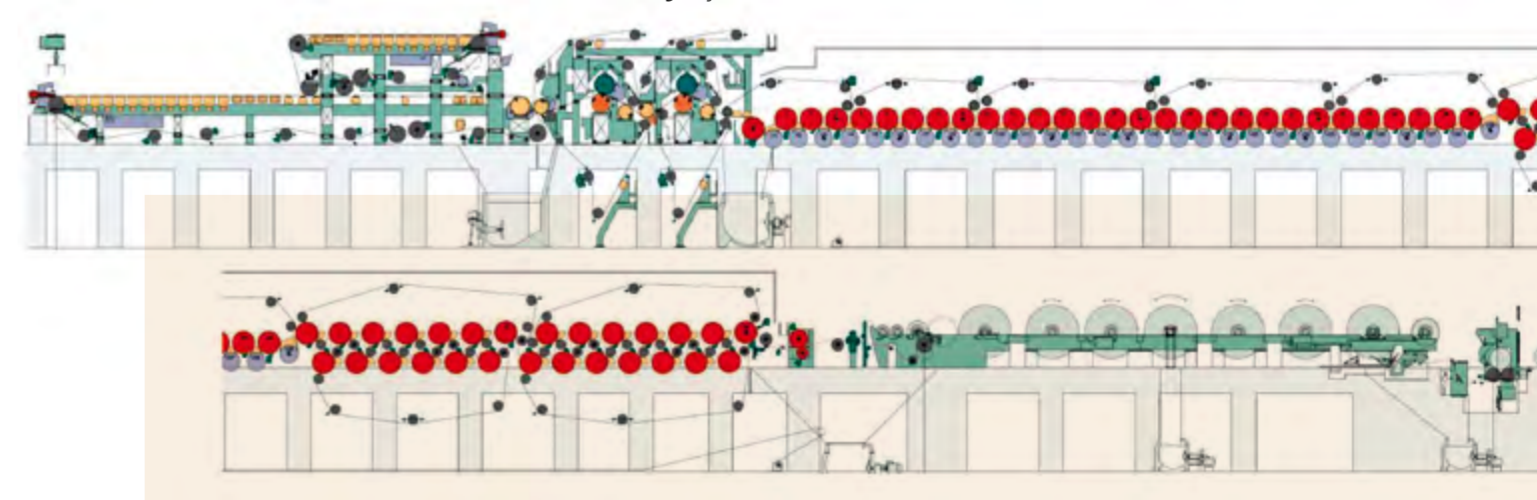
At the end of the day, our efforts are meant to lead us to new milestones, which mean also improved well-being in the territories of our presence, new jobs, import substitution, and additional tax revenues. One important side effect is also favorable social environment. With regard to their corporate social responsibility, APPM, Pulp Mill Holding and Titan Group increase their focus on projects that can lead to tangible contributions to local growth and living standards.

It is shared prosperity that Arkhangelsk Pulp and Paper Mill and its subsidiaries ultimately seek. Therefore, APPM's better resilience to the challenges of our time is in the joint interest of the country, society, areas of its presence, employees and their family members.

Thank you very much for the interesting conversation, Vladimir Yaroslavovich. We wish you every success in this constructive work!

Proprietary information

Tentative design of APPM Cardboard Machine 3



1
APPM's emerging pulp facility and Cardboard Machine 3 will receive an investment of around EUR 1 billion

ises of the former sulfite production plant which was shut down in the 1990s. The existing infrastructure – access roads and railway, water intake and treatment facilities – are still in satisfactory condition. Once they are renovated, they will form an infrastructure sufficient to ensure the operation of our new cardboard project. Plus, we have highly skilled staff and long-term production traditions.

There will be new jobs in Novodvinsk and more tax revenues coming to the budgets of all levels.

The project itself will consist of several workshops and process lines. Work is

Pulp Mill Holding: The bonding power

Arkhangelsk Pulp and Paper Mill, JSC is well known both in Russia and abroad – not only as a major manufacturer of cardboard, pulp, paper and copybooks, but also as the parent company within vertically-integrated Pulp Mill Holding, APPM's investor and sole shareholder. Here is how this extensive group makes use of its potential.

Apart from APPM, Pulp Mill Holding comprises:

Arkhubum, JSC

One of the Russia's leading manufacturers of corrugated cardboard and corrugated packaging with five production sites – Istra-1, Istra-2, Podolsk, Voronezh, Ulyanovsk

Arkhubum, LLC

A logistics provider and a major regional railway operator, Arkhubum LLC owns a fleet of rolling stocks and diesel locomotives

Arkhubum Tissue Group, LLC

A producer of paper substrate and sanitary products under the brand name of Soffione

Arkhubum-Pack LLC

A paper-based consumer packaging manufacturer

Kyiv Cardboard and Paper Mill (Private Joint-Stock Company)

A manufacturer of containerboard, corrugated packaging, paper substrate and sanitary products under the brand name of Soffione

ARKHBUM Liner, LLC

An emerging cardboard recycler (testliner and fluting)

Pulp Mill Holding functions as a single entity that uses the best available technologies and advanced processing methods. All of its projects are investment-intensive, socially oriented and conducive to new jobs and tax revenues. The financial and operational performance of its member companies puts Pulp Mill Holding on a par with industry leaders that boast some of the most sophisticated technologies in Europe. Pulp Mill Holding has an intense agenda with major focus on construction and expansion of its process and energy capacity and product line.

Each member company commits to three essential goals:

- high quality of products and services for end users
- local socio-economic growth in the areas of presence
- environmental benefits through resource-saving technologies and recycling

The products of Pulp Mill Holding member companies are FSC-certified, which evidences their timber legality compliance. Harvesting operations are conducted in compliance with the international and national environmental frameworks.

Trademark License code: FSC-Coo2853



Pulp Mill Holding GmbH (headquartered in Vienna, Austria) operates in Russia and Ukraine as a producer of pulp, paper, cardboard, sanitary products, and packaging.

ARKHANGELSK PPM ARKHBUM, JSC ARKHBUM, LLC ARKHBUM TISSUE GROUP, LLC ARKHBUM-PACK LLC KYIV CARDBOARD AND PAPER MILL (PRIVATE JOINT-STOCK COMPANY) ARKHBUM LINER, LLC

About Arkhubum Tissue Group

Launched in 2018, Arkhubum Tissue Group (LLC) is based in Vorsino Industrial Park, Kaluga Region, right near Moscow Ring Road and hence Central Federal District – the country's core consumer of tissue products. The company produces paper towels and toilet paper under its own brand Soffione.

Lines of success

Arkhbum Tissue Group's operational facilities comprise tissue paper making machine by Andritz AG (Austria); two packaging lines by TMC; two palletizers, pallet wrapper and automatic loaders by Elettric 80 (Italy). In 2021, the company launched Soffione napkin production line by OMET (Italy) worth 2 million euros and capable of producing 150 million napkins per month.

April will keep Arkhubum Tissue Group busy conducting warranty tests on its third converting line (Futura, Italy) with a capacity of 230 million conditional toilet paper rolls and paper towels per year – the packaging machine by Plus line (Italy), robot palletizer and automatic loaders by Elettric 80 (Italy), and pallet wrapper by Bema (Italy). All of these facilities

are currently under operational testing and expected to lead to Arkhubum Tissue Group increasing its share on the Russian market of pulp-based sanitary products to 10%.

Awaiting its commissioning is also the finished-products storage area for the second- and the third-stage facilities.

Production picks up

As emphasized by Vladimir Krupchak, Pulp Mill Holding Director for Investment, as one of Russia's largest producers of high-quality pulp APPM seeks to break into more domestic markets.

"Our FSC-certified* pulp is a semi-finished product for further conversion by Arkhubum Tissue Group into a high added value product," says Vladimir Krupchak. "This means, first-

Arkhbum JSC: A symphony of success

With an output of approximately one billion square meters of corrugated packaging, Arkhubum, JSC is Russia's leader in the industry. The company has its premises in the localities near Moscow, Voronezh and Ulyanovsk.

Arkhbum JSC's corrugated plants produce three- and five-layer corrugated cardboard products – half-slotted containers, flat and rotary die-cutting corrugated boxes – of standard or tailored size, with four-color flexographic printing and multi-point gluing options. Components such as partitions, inserts, liners and sleeves can be manufactured separately.

Arkhbum JSC sees its current goal as increasing its production capacity and product quality. The premises are installed with the technologies by well-known European manufacturers such as BHS (Germany), BOBST (Switzerland), Martin (France), Duecker (Germany), among others.

"Arkhbum JSC is working to deliver high-quality corrugated packaging by developing novel packaging solutions for all types of consumer goods," says Arkhubum JSC Director General, Irina Sherstneva. "We offer an extended range of additional services such as sample design and trial batch, shipper box structural design, die-cutting forms and photopolymer clichés."

Among the customers for the company's FSC-certified, environ-



mentally-friendly corrugated packaging are companies of the leading manufacturers, agro-industrial and food industries operating on domestic and global markets.

"Arkhbum JSC is a swiftly growing company with high-quality corrugated packaging and its components as its core products intended for food and non-food industries," says Vladimir Krupchak, a member of APPM Board of Directors JSC.

Arkhbum JSC sees its current goal as increasing its processing capacity and breaking into Southern Russia's market, which has the largest concentration of corrugated packaging consumers. Within the vertically-integrated Pulp Mill Holding, Arkhubum JSC draws synergy from its intense interaction with the economic and production agendas of the member companies.

Alexey Vtoryi,
Arkhbum JSC Deputy Director for Construction:

"In the early 2021, the construction and installation works at Ulyanovsk plant entered their final stage. The installation of the corrugated cardboard machine by BHS went parallel to that of aspiration system by Nestro (Germany) and included mounting of filters, separator, pipelines, chain conveyor, underground transport conveyor, shredder and press. Electrical installation works went parallel to installation of the corrugated cardboard transport and storage system."

* Trademark License code: FSC-Coo2853

ARKHBUM JSC PRODUCTION PREMISES



Podolsk

Arkhbum's production site in Podolsk, Moscow Region was launched in 2001. Its annual output stood at more than 140 million m² of high-quality freight packaging with a wide range of application. Following the recent technical upgrade, the capacity has been increased to more than 180 million m² of corrugated products per year.



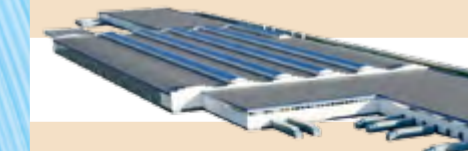
Istra (Istra-1 and Istra-2)

The premises in Istra, Moscow Region had their first-phase facilities commissioned in 2013. The two sites have the current output of up to 400 million m² of corrugated packaging per year (BHS 5- and 3-ply corrugated cardboard). Following the installation of the second phase (Istra-2), the output has seen a major increase.



Voronezh (Europak LLC)

Started in 2019, the Voronezh premises are located in Maslovsky Industrial Park (Voronezh Region) and have an annual output of about 200 million m² of five-layer corrugated cardboard (corrugator by Fosber (Italy)). The Voronezh site has been established to facilitate Arkhubum's expansion into southern markets with the country's highest concentration of corrugated packaging consumers.



Ulyanovsk

Arkhbum's facilities in Ulyanovsk are scheduled for commissioning in April 2021. Their installation expenditure sums up to RUB 2.5 billion, of which 1.4 billion is the cost of the equipment. The first-phase facilities comprise five-layer corrugated cardboard machine by BHS (Germany), process lines by Bobst FFG-618 (France) and Bobst Expercort 1.6 (Switzerland). They have a monthly capacity of 16 million m² of corrugated packaging and corrugated cardboard (annual capacity: 192 million m²).

* Trademark License code: FSC-Coo2853

ly, that there is now a sustainable consumer of APPM's side products and there will be more tax revenues. Secondly, any increase in our process capacities, and hence demand in wood, will lead to new jobs in the municipalities of Arkhangelsk Region, as well as more harvesting businesses and improved regional infrastructure, etc."

Arkhbum Tissue Group's second- and third-phase facilities are currently in their preparatory stage, each estimated to cost RUB 8.5 billion. Once the second-phase facilities are in place, the company's capacity will increase to 140,000 tons per year, while the third-phase part will increase it further to 210,000 tons. The staff size will increase to 535 and 685, respectively.

The focus on increased capacity and competent marketing strategy has yielded fruit. The 2020 sales performance looks more than impressive, with a record increase of 682% (sanitary products and paper), where sanitary products account for 357%.

Soffione products are selling well in the Russian Federation, the countries of the former Soviet Union, Eastern and Western Europe. Underway is an investment program designed to make the company better prepared to meet the rapidly growing demand in HoReCa segment.

Soffione: Synonymous with comfort

A sanitary products brand of Arkhubum Tissue Group, Soffione is not just a charming Italian word. It's about quality. Soffione can be found in the stores of such large retail chains as Pyaterochka, Magnit Cosmetics, Maxi, Fix Price, Perekrystok and Dixie, among others. By choosing Soffione, we make a useful purchase and support domestic manufacturer.

The sanitary product portfolio of Arkhubum Tissue Group is synonymous with naturalness, safety and softness. One small detail: the fragranced types of Soffione toiled paper have the fragrance applied to cardboard core. All Soffione sanitary products use as their basic ingredient 100% virgin pulp processed by new Italian equipment. This trademark is covered by a number of quality certificates and ISEGA certificate for safety.



210
Arkhbum Tissue Group's sanitary products output is to increase to 210,000 tons per year

Milestones

APPM: Jubilee year and performance



Arkhangelsk Pulp and Paper Mill shares its milestone achievements, strategies and future plans. Despite the pandemic and what it has brought about, APPM manages to stay committed to its industrial agenda, environmental action plan and increased social responsibility

A success strategy

APPM is 80 years old – an impressive milestone marked by new achievements and new ideas, said APPM General Director, Dmitry Zylev. Over the eight decades of its operation, the mill has earned itself a notable place on the country's wood processing market. The mill sells to more than 75 countries. Contingent on the mill's performance is the economic wellbeing of the entire land of Pomors. With the recent launch of new facilities, the mill has, for the first time in its history, approached the annual cooked pulp output level of one million tons.

In 2020, APPM's net profit amounted to approximately RUB 4.4 billion, and there has been a slight decrease in profits due to the difficult economic situation caused by the coronavirus pandemic. The forecasts suggest that it will pick up again, slowly, as the markets will be recovering and with them global economy and purchasing power. The 2021 net profits are projected to be higher than in 2020.

Investing in the future

The period between 2000 and 2020 saw APPM implementing a refurbishment program that cost as much as RUB 60 billion and was aimed at in-

creased production, enhanced product quality and reduced environmental impact.

The year 2020 saw completion of the investment project titled "Reconstruction of Cardboard Production", which lasted for 12 years. Classified by the RF Ministry of Industry and Commerce as a high-priority project within timber sector, it unfolded in stages that involved upgrading of Cardboard Machine 1; complete modernization of Cardboard Machine 2; launching of a semi-chemical pulp production flow; upgrading of first and second black-liquor recovery boilers at Thermal Power Plant 1; installation of coal-fired Boiler Unit 9 at Thermal Power Plant 2; construction of a cooling stack; and extensive reconstruction and commissioning of the evaporation train. Along with that, the mill has extended its fleet of harvesters, trunks and special-purpose machinery.

The year 2020 was marked by one more important event – the commissioning of a new-generation evaporation station, a project that took longer than three years. The ceremony was attended by RF Minister of Industry and Commerce, Denis Manturov, and Arkhangelsk Governor, Alexander Tsybulsky.

The productive experience gained by APPM, the regional government and the Russian Ministry of Industry and Commerce through their partnership suggests that further projects of the mill can be granted state support and use no less effective mechanisms. This project has yielded a significant increase in the output of pulp-based products and the capacity for ligno-board and corrugated cardboard.

Pursuing common well-being

As a principal employer and mainstay of its home area, APPM stays committed to its obligations before customers and partners even during the coronavirus pandemic. The mill's ambitious policy of technical re-equipment and economic expansion has once again been validated by its sustainable performance during these turbulent times.

For the entire world, the economic consequences of the pandemic have been extremely severe. Unfortunately, our country has been affected by the lockdown, too, when elementary freedom to move had to be curtailed and economic operations suspended. Many people lost their jobs.

"Despite these disturbing trends, Arkhangelsk Pulp and Paper Mill continues to operate successfully," says Olga Savvina, APPM Administrative Director. "Wages continue to be paid on a regular basis, making the em-



Denis MANTUROV, RF Minister of Industry and Commerce:

The 2008–2020 investment project "Reconstruction of Cardboard Production" is a good example of collaborative efforts on the side of industry, regional authorities and federal ministry.

The successful performance of APPM and its subsidiaries is prerequisite to the well-being and economic growth in the areas of its presence. Completely aware of this fact, APPM's management and sole shareholder – Pulp Mill Holding – have their focus not only on technical modernization but also increased social responsibility.

ployees feel secure about their future. Jobs come with decent social package and benefits."

The CSR expenditure totals more than RUB 365 million annually. Past December, the collective agreement currently in force was extended for another three years and has been recognized as one of the best in the industry in terms of benefits and social security.

APPM's social package is literally the best available in the timber industry. Its 20+ options offer health improvement opportunities; voluntary medical insurance; financing of children's summer recreation trips; vacation packages for veteran workers; among others. Tangible allocations are being made to employee training, prevention of morbidity, occupational safety and reduction of job-related risks.

Since 2016, APPM has been co-financing the Young Family Housing Program that has provided funding to 60 families of its employees.

Doing good

"We contribute to the economic growth here in the Arctic region by investing in the social infrastructure in Novodvinsk and the facilities for its community," says Dmitry Zylev. "APPM has always been a socially-oriented business. We continue to provide sponsorship and charitable assistance to those who need it."

The mill is sponsoring the program called "APPM to Children's Sports" (and involves funding of the children's sports clubs). The charitable assistance it has provided to social institutions and public facilities in Novodvinsk and the area's other municipalities in 2020, totals around RUB 70 million. Also, it has initiated and maintains the public initiative program called 4D, that helps social projects in Novodvinsk and entire Primorsky District become a reality.

In March 2020, Pulp Mill Holding joined the medical and social assistance programs in all the regions of its presence. These programs are still ongoing. APPM alone has set up a whole system to provide financial aid to healthcare facilities, having allocated more than 40 million rubles to re-equipping hospitals and purchasing personal protective equipment for coronavirus disease, of which 15 million rubles have been spent on the protection of employees (a wide range of preventive means).

The mill lays significant focus on training. Especially active are its cooperative ties with M.V. Lomonosov Northern (Arctic) Federal University (NArFU) and Novodvinsk Industrial Vocational School, the latter delivering training in industrial worker jobs.

There have been updates to APPM's human resources strategy until 2030: now the career guidance program covers also kindergartens. One current project designed to popularize careers in the industry and engineering is called "The future of Arkhangelsk Pulp and Paper Mill" and seeks to enhance the mill's human capacity.

Pavel Fasonov

Special guest

March 4, 2021, Novodvinsk Town Council voted for the candidates for the post of town executive. For the second time in a row, the post went to Sergey Andreev, an executive with huge experience in business, public governance and local administration. In this interview, Sergey Andreev reflects on his previous term as mayor and what growth points exist in paper-making town.



Press dossier

Sergey Fedorovich Andreev

- Work history:
- Arkhangelsk City Council, Budget Committee Chair
- Arkhangelsk Mayor's Office, Municipal Property Fund, Department of Finance
- Arkhangelsk Pulp and Paper Mill, CFO, Administrative Director
- Deputy Chief of Staff – Head of Department for Monitoring and Enhancing of Public Governance under the Governor of Arkhangelsk Region and the Government of Arkhangelsk Region
- Director at Novodvinsk Industrial Vocational School
- Mayor of Novodvinsk since 2016

Sergey Andreev: Let's make Novodvinsk a liveable place

A complex structure

Sergey Fedorovich, how do you assess the current situation in the paper-making town?

Novodvinsk is a town with prolific present and promising future. It has its own industries and is working to upgrade its service sector. Its larger businesses – Arkhangelsk Pulp and Paper Mill (JSC) and Arkhbum (LLC) – are implementing extensive refurbishment programs, and, what is more, Novodvinsk boasts SME-friendly infrastructures. We have land for new prospective projects with the possibility of connection to the electricity and heating grids. And it's been the third time over the recent years that we are recognized the region's best-performing town in terms of municipal governance and management.

Efforts are being channeled to expand Novodvinsk's education services system. There are schools delivering training in popular majors, parents are no longer queuing for places in kindergartens, work is in process to finalize the design concept for a new, bigger secondary school. Also, there are now more sporting facilities in town and we are working to repair the roads and are building the new housing for residents waiting to be rehoused from dilapidated flats. Every year, we have dozens of young families awarded with new housing thanks to the support from Arkhangelsk Pulp and Paper Mill and the dedicated federal program.

Economically and administratively, Novodvinsk is a complex structure. It has its own unique features and a good potential for development.

Communities of a shared future

Novodvinsk and Arkhangelsk Pulp and Paper Mill are closely intertwined. How would you describe their current relations?

APPM is Novodvinsk's largest employer and its future is therefore crucial to the well-being of this town. The role APPM plays in the life of the community cannot be underestimated. Recipients of its support are many and include cultural and sporting events, schools and pre-school facilities in need of repairs, and the municipal hospital. As the municipality's largest employer, APPM is actively supporting training providers, while also allocating large amounts of money to the social facilities in Novodvinsk.

4
March 4, 2021, Novodvinsk Town Council voted for the candidates for the post of town executive. The post went to Sergey Andreev

22
Repairs will be done on 22 kilometers of public roads by 2024. The 2020 road repair spending totaled more than RUB 80 million and 83 million more will be spent on roads this year

APPM's management and majority shareholder came up with the idea of private initiative competition called 4D, which seeks improvement of the social infrastructures in the paper-making town and few other municipalities in Primorsky District. This competition has already given way to more than one hundred projects in the area of sports, education, health improvement, and mass cultural events.

Arkhangelsk Pulp and Paper Mill plays an important role as the town's provider of heating, energy, and wastewater treatment services. Unlike other municipalities, ours announces hot water outage only once a year and for not longer than two weeks – the time period need for hydraulic testing.

Work is in progress to connect the mill to gas as a sustainable, relatively cost-efficient and environmentally-friendly fuel, and Novodvinsk will only benefit from this. Once gas distribution station is in place in Novodvinsk, pipelines can be laid to supply gas to urban facilities.

These are just a few examples of our mutual cooperation, and there are more projects that can and should be built on it, especially given the mill's strong commitment to social responsibility. As a local economic mainstay, APPM pays great attention to the needs of the community no matter the field they pertain to.

Goals and achievements

For many municipalities, issues such as repair of roads, communications, dilapidated housing remain high on the agenda. How high are they on the agenda of Novodvinsk?

Currently, our contractor Seti (JSC) is working to replace the utility pipelines – the project costing around RUB 170 million. The majority of pipes are going to be replaced before 2024 with new ones that are high-performance and durable and will ensure a cardinal reduction in heat loss.

Also, Novodvinsk lists high on Arkhangelsk Region's dilapidated housing program. We have 23 multi-family dwellings that have been classified as dilapidated and whose occupants will be rehoused. It is an issue that we are working on continuously. There are currently two newly built housing projects – one in Frontovoykh Brigad Street and the other in Dobrovolsky Street – that are waiting to be commissioned and receive occupants waiting to be rehoused. Once these two are completed, the municipality

will build one more block of flats to rehouse all the remaining dilapidated dwellings and finally get done with this problem.

Then, there is the national project "Safe and High-Quality Roads". Repairs will be done on twenty-two kilometers of public roads by 2024. In 2020 our road repair spending totaled more than RUB 80 million and we are going to use the additional RUB 83 million this year to use the additional RUB 83 million this year to bring our roads into a proper state.

I must say we did a good job so far getting ourselves heard at the regional level and getting supported. Novodvinsk has an intense agenda, with new construction projects, one being the nine-storey block of flats for which we need to find and prepare the site. And there is the site of totally obsolete building of Novodvinsk orphanage and nursing home that needs to be demolished and redeveloped as a school. High on the agenda are also water pipelines, shore stabilization and gas infrastructure development. Our efforts will bear fruit in a few years' time but it is essential that they are started today.

Investment and profit

What is being done to attract investment to Novodvinsk and to support SMEs?

After Novodvinsk joined the national project "Small and Medium Enterprises," its performance in this area has been consistently improving. According to the Federal Tax Service data for 2019, the number of the self-employed has risen to 935 from 785 in 2018. This increase could have been even higher if it wasn't for the pandemic, but once the threat of the coronavirus is gone, there will be every reason to believe there will be further increase.

We are working to create as favorable climate for urban investment as possible. One source of investment opportunities for us is Greater Arkhangelsk – the agglomeration bringing together Arkhangelsk, Severodvinsk and Novodvinsk. And since Novodvinsk has a status of an Arctic area, its businesses are eligible for additional federal and regional support.

Interviewer: Pavel Fasonov.
Photo courtesy: editorial archives

365
APPM's CSR expenditure totals more than RUB 365 million annually

Hot topic

Russian Forestry Industry: The way to the future

In this interview, Mikhail Klinov, Deputy Head of the Russian Federal Forestry Agency (RosLeskhoz), reveals new trends and prospects for the development of the Russian forestry industry.



Russia's Forestry Sector Strategy

Mikhail Yuryevich, tell us about the updated Strategy for Forestry Development 2030. Are there any major changes?

The Strategy provides for the transition to intensive forest management – the model that has been tested in a number of forest-covered Russian regions, including Arkhangelsk, and has proven effective in Russia and abroad. The Strategy strengthens the role of public forestry institutions with regard to afforestation. Positive changes can be expected also in forestry planning and management. There is a plan to have all the economically accessible forests inventoried by 2030.

Further, the Strategy enshrines the guarantee for timber-dependent investment projects to be provided with raw wood. This is especially relevant for inter-regional initiatives, when forest supply may not be sufficient in one region but is ample in another.

In general, the updates seek a better balance between the interests of wood-based industries and forest management. Now, the responsibility for forest protection and afforestation will be shared by all the actors in forest relations. Sustainability, as a principle of forest management, is now seen as

what should be maintained in the first place. There isn't an investor or a timber harvesting business, I believe, who wouldn't want their forest resources to be inexhaustible and available at all times for conversion into wood- or paper-based products.

Digitalization and transformation

What changes can timber sector expect after the enactment of the Federal Law Concerning the Amendments to the RF Forest Code?

This federal law results from last year's September meeting that discussed possible ways to enhance the timber sector and to combat illegal harvesting and trade, and it has been drafted in pursuance of the instructions from the Russian President.

The law, the full official name of which reads Federal Law Concerning the Amendments to the Forest Code of the Russian Federation and Certain Legislative Acts of the Russian Federation with Regard to Legal Regulation of the Forest Relations, provides for three different dates for entry into force of its provisions – the date of its official publication, 1 July 2021, and 1 January 2023.

In a nutshell, it is about digitalization, drastic transformation and increased

transparency to be achieved through sector-specific IT systems. The Federal Information System will be expanded to include tools for tracking every single movement of the timber from the moment it is cut to warehousing to transportation to processing into end products, to marketing among domestic buyers, to exporting from the Russian Federation.

At the initial experimental stage, the system will be tested in two pilot regions, Arkhangelsk and Irkutsk, and involve a number of responsible forest users, including Arkhangelsk Pulp and Paper Mill (JSC), Sawmill 25 (JSC) and Titan Group. Subsequently, the registration in the system will be made obligatory for all forest users in Russia.

Then, there is a newly instituted power and authority to conduct local forest surveys – by using mainly remote sensing technologies and drones. There will be regions in the Russian Federation for which it will be obligatory to have chief federal forest ranger services, meaning that the forests in these regions will be supervised and monitored directly by the Federal Forestry Agency.

Forest lessees will now be responsible for firefighting measures within the forest blocks leased to them. And it is my firm belief that responsible businesses will perceive this new responsibility not as extra burden but what leads to better firefighting preparedness within their forest blocks.

It should be noted that pursuant to the instructions of the President of the Russian Federation, there has been elaborated the Action Plan for Forestry Development and Combating Illegal Forest Harvesting and Trade, approved by Deputy Prime Minister Victoria V. Abramchenko in October 2020. The measures on this Action Plan have entered their active implementation phase and are being supervised by the federal executive authorities.

Proprietary information

Press dossier

Mikhail Yuryevich Klinov,
PhD (Economics), Deputy Head of
the Russian Federal Forestry Agency

- Date and place of birth: 22 February 1958, Petrozavodsk.
- 1980-1996: succession of managerial positions within the timber sector and forest management in Yaroslavl Region.
- 1996-2000: Deputy Head of the Russian Federal Forestry Service.
- 2000-2004: Deputy Director, Department within the RF Ministry of Industry, Research and Technology.
- 2004-2006: Deputy Director General at Kholdingovaya Kompaniya Vologodskiy Lesopromyshlenniki (Vologda Timber Producers Group).
- 2006-2008: Deputy Director General at Partner LLC, Deputy Director General at Krona Holding.
- 2008-2014: Director, Department within RF Ministry of Industry and Commerce, Adviser to RF Minister of Industry and Commerce.
- 2014, and presently: Deputy Head of the Russian Federal Forestry Agency (Rosleskhoz).

2030
The time horizon for
the Russian Forestry
Development Strategy
is 2030

In the Arctic Zone

Nikolay Krotov, APPM Director for Liaison with State Authorities, tells about the state support available to entrepreneurship in the Arctic zone. Eligible for it are also timber industries:

Attracting more investment

The Law Concerning State Support for Entrepreneurship in the Arctic Zone of the Russian Federation, adopted by the State Duma, provides for the legal framework and the procedures for conducting business operations in the Russian Arctic and obtaining state support. This law seeks to provide an environment conducive to increased investments, more jobs, improved infrastructure and increased transport

accessibility in the Russian Arctic areas.

Eligible for the state support are businesses meeting the following criteria:

- tax residency in a municipality within the Russian Arctic Zone;
- investment project capex of minimum RUB 1,000,000;
- eligible for the support are also projects pursuing the activities that the applicant has never engaged in.

The law defines "Arctic entrepreneurship" as spanning a variety of industries, including any timber industry operating in Arkhangelsk Region, be it a wood waste processor or a wood-based products manufacturer.

APPM joins projects

Let me give you an example of Techservice, the company operating

in Novodvinsk, which is a Russian Arctic area. Techservice is working on an investment project that deals with organic chemicals and involves the installation at Arkhangelsk Pulp and Paper Mill of a dedicated facility to convert turpentine – one of APPM's industrial waste products – into organic chemical compounds. This project forms an integral part of APPM's program to reduce its environmental impact.

One more project that has APPM as a partner is run by M.V. Lomonosov Northern (Arctic) Federal University. It uses sludge as a material for cultivating planting material and seedlings. If sludge should prove feasible for this purpose, technologically and economically, we will most likely start a subsidiary and establish it as an "Arctic" business with all benefits that come with this status.

Also, in view of its upcoming conversion to natural gas, Arkhangelsk



Pulp and Paper Mill has prepared a package of documentation for obtaining government incentives as per RF Government Decree 297 dd. March 18, 2020 – the legal instrument for extending subsidies to infrastructure and investment projects in the Arctic Zone.

Proprietary information

Modernization

Striving for renewal

The past few years saw APPM implementing an extensive re-equipment program that resulted in commissioning of cutting-edge facilities and introduction of the best available technologies. Here are some of the landmark projects and the role they play in the mill's future development.

Semi-chemical pulping

Commissioned in 2015, the semi-chemical pulping facility is installed with the technology by Andritz. This modern and largely unique production complex uses green liquor and has a daily capacity of 1,000 tons of semi-chemical pulp.

Its commissioning has led to better cost-efficiency of paper- and cardboard-based ingredients for corrugated packaging, improved product performance, and cardinaly reduced prime cost, achieved also through lower consumption of wood.

The pre-installation phase required the mill to upgrade its CHP-1 compressor station (supplied by Sweden's Atlas Copco) and to lay new liquor lines connecting the cardboard and the pulping sections.

CHP-1 Multi-Fuel Boiler 8 and Boiler Unit 9

Multi-Fuel Boiler 8 is fueled by the bark and wood wastes being produced by the chip yard, as well as sewage sludge coming from the biological treatment plant. The start-up of this boiler has been of great environmental effect, as wood wastes and sludge no longer have to be landfilled. One more benefit entailed by it is the upgraded sludge drying system at the biological treatment plant.

2020 witnessed the commissioning of coal-fired, high-pressure Boiler Unit 9 at CHP-1. With an hourly capacity of 220 tons of steam, this boiler uses a highly efficient combustion system minimizing harmful air emissions. Its furnace is installed with modern burners by Germany's Steinmüller Engineering GmbH, which, too, ensure high-quality fuel combustion and low harmful emissions (particularly, nitrogen oxides).

Cardboard machinery upgrade

Modernization of Cardboard Machines 1 and 2 was key focus of the mill's investment project "Reconstruction of Cardboard Production" and has led to a cardinal increase in quality performance and more effective operational scheduling of cardboard produce.

Thus, Cardboard Machine-2 underwent a deep retrofit that installed it with new forming zone, press section, two-layer approach flow system, cardboard tube preparation system, transport and packaging line, slitter re-winder, calender roll, and reel section. Upgraded are also the dry end and the heat recovery system. Its modernization completed, Cardboard Machine 2 was put into operation in May 2019 to produce linerboard paper and cardboard. It now has an increased cardboard density range of 80 g/m² to 275 g/m².

Chlorine-free bleaching

In 2019, APPM's Phase 3 facilities started to use as main bleaching agent hydrogen peroxide instead of sodium hypochlorite. All the pulp being produced here gets bleached using elemental chlorine free (ECF) technology.

This technology has given APPM a stronger competitive edge on the markets, which are known to be increasing their quality and environmental standards for bleached kraft pulp.

CHP-2 evaporation train for cardboard production

2020 witnessed APPM launching its new evaporation train, installed with the technology by Valmet. This facility ensures safe evaporation of red and black lye even under maximum production rates for semi-chemical and sulfate pulping. It has an hourly capacity of 600 tons of evaporated moisture.

The evaporation train has three fire-tube boilers for combusting the non-condensable gases that are formed during semi-chemical pulping and by the evaporation train itself. The boiler emissions are treated by the gas treatment facility with designed purification degree of 99.9%.

Soon-to-be-launched CHP-1 Turbine Unit 7

Turbine Unit 7, which is currently under construction, consists of a steam turbine and a turbo generator that converts the kinetic energy of steam into electrical energy. The steam turbine PT-60-8.9/1.9 is manufactured by Ural Turbine Plant (member of ROTEC Holding) and the turbo generator TF-60N-2UZ by Novosibirsk-based ELSIB Research and Manufacturing Association (PJSC).

This 60 MW unit is installed with advanced diagnostic system PRANA, developed by ROTEC (JSC) and designed to monitor the steam turbine. The hydrogen-cooled generator has been replaced with an air-cooled version as a more fire-safe choice. The launch of this crucial facility is scheduled for 2021.

The above projects are just a few of the many targets listed in APPM's re-equipment program. The ongoing modernization wouldn't be possible without the strenuous effort on the side of the mill's employees, design engineers and contractors. Ahead is the next stage of development with more investment-intensive and rewarding projects.

2020
2020 witnessed APPM
launching its new
evaporation train,
installed with the
technology by Valmet



Partners

The Titan of the Pomorland

In the north-western part of Russia, Titan Group is one of the largest suppliers of raw wood. With enterprises sharing a staff of 11,000+, Titan operates in Arkhangelsk and beyond and acts as general supplier of APPM.

5.7
5.7 million m³
Titan Group's annual allowable cut

In the thick of the tasks

Titan has as its core business forest harvesting and woodworking. Its non-core activities span tourism, accommodation business and development. In April 2020, Titan Group entered the RF Ministry of Industry and Commerce List of Systemic Companies.

With annual allowable cut of 5.7 million m³, Titan harvests more than 4 million m³ per year. Its afforestation efforts involved planting of more than 17 million seedlings over the recent years. Fire and forest protection measures are carried out on a regular basis.

Titan's geography of operations comprises the municipalities in Arkhangelsk Region and one locality in Vologda Region. Its harvesting sector is made up by:

- Karpogory Unit
- Pinega Unit
- Ust'-Pokshenga Unit
- Lukovetsky Unit
- Svetlozero Unit
- Belomorskaya Splavnaya Kompaniya LLC
- Velsk Unit
- Konosha Unit
- Shalakusha Unit
- Dmitrievsky Unit
- Syamzha Unit
- Verkhnyaya Toima LPKh LLC

All the timber being produced by Titan Group is FSC-certified. Titan received its first Forest Stewardship Council certificate in 2005. It currently holds nine forest management certificates covering the area of 3.55 million hectares.

Alexey Kudryavtsev,
Titan Group Director General:
"As a swiftly and successfully growing group of companies and APPM's general supplier of raw wood, Titan makes a tangible contribution to the socio-economic growth in the areas of its presence."

2
2 million m³
Titan Group's total sawn timber output



Titan maintains strict compliance with the Forest Code, the legislation of the Russian Federation, and the environmental regulations from organizations such as Greenpeace and the World Wildlife Fund concerning intact forest landscapes and sustainable forest management.

For residents and guests

Titan Group engages also in commercial real estate and accommodation business. One player on Arkhangelsk's development market is Titan-Development – a provider of full range of services pertaining to development, maintenance and sale of commercial real estate in the area.

Titan's brand identity builds on the traditional Pomor hospitality. Its accommodation services comprise two hotel complexes.

Dvina Hotel
Dvina Hotel is synonymous with comfort, convenience and accommodation services for business travelers and tourists.

Suburban hotel and tourist complex Malye Karely
A perfect getaway from city hustle, Malye Karely is located in a picturesque nook of northern nature in the suburban part of Arkhangelsk.



On economic and environmental side

As a responsible processor of the wood harvested in northern forests, which are known for their unique ecological value, Sawmill 25 stays committed to sustainable management and rational use of natural resources.

As emphasized by Dmitry Krylov, Sawmill 25 Director General, in upgrading its production capacity the sawmill seeks not only economic benefits but also reduced energy consumption, lowest possible emission levels and reduced environmental risks. Sawmill 25 is working to minimize its environmental impact by making its technologies eco-friendly.

In performing its activities, Sawmill 25 is governed by relevant statutory environmental provisions. It maintains partnership relations with environmental NGOs including Greenpeace and WWF. Sawmill 25 is a member of the Russian Association of Environmentally Responsible Forest Users and holds FSC Chain of Custody Certificate.

to process 2 million m³ of wood annually. Its output of sawn timber products stands at 850,000 m³ and wood pellets at 200,000 tons. The annual turnover is around EUR 114 million.

The company's consistent pursuit of product quality has earned it customer recognition and a reputation as a highly reliable manufacturer.

With customers in Germany, Netherlands, Belgium, France, Great Britain, Ireland, Switzerland, Denmark, Egypt, among others, the geography of sales has seen a consistent increase. Sawmill 25 is selling also to the domestic market.

All export-oriented products are shipped by sea from the company's own berths on-board the ships of two long-standing partners – Northern Shipping Company, JSC and Wijnne&Barend's (Netherlands).

Sawmill 25: A future-oriented business

Wood processing industry is represented within Titan Group by Sawmill 25, JSC.

North-Western Russia's largest wood processing industry, Sawmill 25 is keeping abreast of the technology. Its core business lies in the production of export-oriented kiln-dried sawn wood products and wood pellets, the latter being an environmentally friendly biofuel, with industrial chips as an associated product.

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Sawmill 25 sells to 13 countries

Expanding the geography

Sawmill 25, JSC operates three production sites with a capacity allowing it

Social responsibility

Caring for the people

Responsible for APPM's social commitments, BYT (JSC) operates as a unique subsidiary. Its social mission is of great importance in the life of Novodvinsk and land of Pomors.

Health Center Zhemchuzhina Severa (Pearl of the North)

Located in the riverine park near the Northern Dvina, Zhemchuzhina Severa (Pearl of the North) occupies a nicely illuminated building with capacity for 176 guests.

Its health-improvement service range is diverse and includes:

- popular types of massage
- hydrotherapy (Charcot's douche, circular douche, underwater massage treatment, vortex footbath, mineral baths using water from the on-site well)
- oxygen cocktails
- physical therapy
- nutritional therapy, salt therapy, herbal therapy
- physiotherapeutic procedures using electromagnetic, light and heat treatment (laser therapy, paraffin therapy, magnetic therapy, electrotherapy, pressotherapy)
- ozone therapy
- rehabilitation program for COVID-19 survivors

Zhemchuzhina Severa offers its guests special health-improving programs that follow the statutory standards and patient's medical history.

In October 2016, the center started kinesiotherapy services according to Dr. Bubnovsky – a method for treating musculoskeletal disorders using the system developed by this renowned therapist. The Bubnovsky method is practiced by health care facilities all over the country. The Novodvinsk's center is the first to offer kinesiotherapy to residents of Arkhangelsk Region. Its services have enjoyed popularity right from the start.



Olga SAVVINA,
APPM Administrative Director:

APPM's current social commitments span a whole range of tasks. Its interaction with the community has been productive so far, marked by caring attitude to the employees and residents and unfolding through a multi-faceted social support package.

Children's Island

In the summertime, Zhemchuzhina Severa operates the eponymous children's health camp. Its services can be enjoyed not only by the children of APPM and subsidiaries' employees but all the younger residents of Novodvinsk and other municipalities in Arkhangelsk Region.

With focus on health improvement, the camp delivers its services as per the program called "Bumazhny Boom" (Paper Boom). The recreational and artistic part of the program is delivered using the resources of BYT Community Center – concerts, contests and art studios dealing with performing arts, painting and applied arts.

The camp offer five meals a day. Each session has the duration of 18 calendar days and capacity for up to 210 children.

Community Center – Palace of Culture

BYT Community Center – Palace of Culture can be rightly called the heart of Novodvinsk's cultural life. Over the years of its existence, it has grown into a full-fledged recreational venue with diverse opportunities for cultural experience.

The Palace of Culture has a cinema hall with 562 seats. Equipped with modern sound and lighting technologies, its stage has repeatedly hosted Russian and world-known pop stars. It also has six permanent amateur performance teams.

The exhibition hall (the Mirror Hall) displays art and paintings of various genres, functioning also as a recreation venue on public holidays when it is converted into a 150-seat hall. There is also a smaller concert hall called Etan-celle with 120-seat capacity.

Vodoley Swimming Pool

One of the most popular destinations among residents and visitors of Novodvinsk, Vodoley (Aquarius) offers a warm and cozy atmosphere, hospitality and setting that attracts its ever increasing number of customers. With swimming coaches, the pool is a child-friendly facility.

This pool has four 25-meter-long lanes and offers a diverse range of services:

- dry swimming hall
- gym with a complete set of weight machines, cardio equipment and sporting accessories
- sauna, equipped with plunge tub made of larch and relaxation room with DVD and karaoke
- infrared sauna and hairdresser's parlor



Dvina Sports Center

Dvina is a full-function sporting center. Its facilities are used also by municipality- and region-level sporting competitions. Floorball, mini-football and boxing classes are offered to children on a gratis basis.

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APPM's annual expenditure on BYT facilities stands at over RUB 20 million

Dvina offers the following sporting facilities:

- two sports halls with balconies for spectators, fitted with modern equipment
- football field with grass surface and basketball court
- hockey court
- gym
- climbing wall
- gymnastics, martial arts and boxing premises

Uyut Hotel

Located in the downtown part of Novodvinsk, Uyut sets itself apart by hospitable atmosphere and attentive personnel. It is a popular accommodation among the guests of Novodvinsk and has a café.



Innovation

Let the seedling center Be!

APPM is planning to set up an innovation-driven seedling nursery that stands every chance of becoming Russia's leading selection center.



The seedling nursery will be located in Novodvinsk in the place of former greenhouse facility. Its designed capacity is 9 million seedlings per year. Guiding the research & methodology part of the project will be M.V. Lomonosov Northern (Arctic) Federal University.

At the confluence of science and production

In their recent meeting, two flagship members of PomorInnovaLes Innovation-Driven Forestry Cluster in Arkhangelsk Region – APPM and Titan Group – have drafted their joint R&D agenda that builds of the expertise of M.V. Lomonosov Northern (Arctic) Federal University.

The meeting focused largely on the afforestation tasks to be attained with-

in Titan's leasehold (1.3 million hectares as of early 2021).

The initiative to create the seedling nursery complex has been supported by APPM's shareholder and investor Pulp Mill Holding. Its first stage involves setting up, in Novodvinsk in the place of former greenhouse facility, of a selection and seed center – an asset crucial to the mill's sustainability.

"Titan Group are engaging actively in the afforestation on their forest blocks by allocating substantial funding for its purposes," said APPM Director General Dmitry Zylev. "We have cooperative ties with NARFU as a provider of research-based expertise in cultivating seedlings with improved hereditary properties using innovative technologies."

From cup to forest

In the course of their dialogue, the researchers and the timber industries have drafted the main lines of their R&D cooperation. The major focus lies on cultivation of the planting material with improved hereditary properties, use of innovative technologies, sludge

and seaweed as ingredients for planting substrate, and biodegradable containers for the planting material.

In addition, the projected selection and seed center in Novodvinsk is going to house a laboratory and department of NARFU Higher School of Natural Sciences.

As promising research field, microcloning is being pursued by Arkhangelsk-based research community already now. In the coming years, and supported by APPM, the project's research team will be working on fast-growing planting material with enhanced performance and the best hereditary qualities of northern wood. The team are honing their skills by using adornment plants and farming cultures as their test material.

"We endeavor to produce a large bulk of planting material in controlled growing conditions," comments Ksenia Vashukova, Associate Professor at NARFU Department of Biology, Ecology and Biotechnology.

Before being planted in the forests, the cloned trees will first be growing in Novodvinsk. Partnering the project are Titan Group and PomorInnovaLes In-

novation-Driven Forestry Cluster in Arkhangelsk Region.

A renewable resource

Forests are Pomorland's green wealth. A renewable resource, they should be used rationally and protected with due care. Before the cloned seedlings are planted on-site, they will spend two years maturing, placed in specially developed containers, a know-how of the mill and NARFU. The material for these containers is wastes from pulp and paper industry and local algae factory. Once planted, these biodegradable containers will serve as fertilizers for the seedlings.

"This line of work is just the right fit for the newly established Research and Education Center – The Russian Arctic: New materials, technologies and research methods," continues Rector of M.V. Lomonosov NARFU, Elena Kudryashova. "We see it as a highly promising area of joint activities. Not only will it help the industries process the northern bio-resources, it will help restoring them."

Elena Zakharova

For the record

Protecting the green assets

In cooperation with APPM, Titan Group have come up with Roadmap for High Conservation Value Forests, a document that forms an integral part of the agreement with WWF Russia with participation of FSC Russia.

With timeline until 2028, the HCVF Roadmap covers 24 forest blocks in Titan's leasehold. The Roadmap envisages expansion of the current state natural landscape reserves and establishment of more protected natural areas. Further, the Roadmap lists activities to be undertaken towards more

effective conservation and reduced load on intact forests. One of them keeps Titan busy zoning its forest block according to the intensity of forest management.

October 1, 2019 saw the enactment of Arkhangelsk Government Resolution to officially establish Dvina-Pinega Nature (Landscape) Reserve of regional significance. Of its total area of 302,000 ha, 162,000 ha are the contribution from Titan Group, Sawmill 25 (JSC) and Arkhangelsk Pulp and Paper Mill (JSC).

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Elena Kudryashova, Rector of M.V. Lomonosov NARFU

"The first steps have already been taken. There is a premise at NARFU to function as a dedicated department and to host initial experiments," said Elena Kudryashova. "This line is work is prerequisite to the expediency of the developments in question before they become mass-produced."

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APPM's seedling nursery has a designed capacity of 9 million seedlings per year

Environment

Saving nature

Lower environmental impact and increased environmental standards are all part of APPM's business strategy and an integral element of its social responsibility.

Environmental Efficiency Improvement Program

The period between 2012 and 2020 saw Arkhangelsk Pulp and Paper Mill channel into its environmental agenda and best available technologies a total of over RUB 15 billion. The 2020 environmental expenditure summed up to RUB 1.1 billion.

According to the information from Vladimir Krupchak, a member of APPM Board of Directors and Pulp Mill Holding Director for Investment, the mill's goals towards enhanced environmental efficiency and cleaner production, as prescribed by BAT standards, are reflected in relevant Environmental Efficiency Improvement Program (EPIP), duly approved by the RF Ministry of Industry and Commerce.

With timeline until 2030, EPIP is expected to lead to an "ecological transformation" to ensure a 45% to 55% reduction in APPM's pollutants discharge into the Northern Dvina River, measured according to a dedicated set of parameters. With regard air emissions, APPM continues its efforts towards a tangible reduction in sulphur-containing compounds emission, scheduled to be achieved by 2023.

"The program lists more than 20 environmental protection measures," said Vladimir Krupchak. "Its funding is estimated at RUB 18.2 billion."

One key item on the Environmental Efficiency Improvement Program is installation of gas, designed to switch APPM's fuel balance from fossil coal to less carbon-intensive natural gas. As a result, there will be zero slag and ash dump and hence a cardinaly reduced discharge of wastewater into the river, which, in turn, is bound to improve the environmental situation. The 'gas project' is scheduled to be completed in 2029 and costs RUB 5.7 billion.

Another capital-intensive project deals with oxygen-alkaline delignification and seeks removal of lignin from high-yield semi-finished products. Its expenditure is estimated at RUB 5.5 billion. In parallel, it involves refurbishment of the gas treatment systems and the condensate treatment on the evaporation facilities (expenditure estimated at RUB 1.5 billion).

Low-carbon strategy

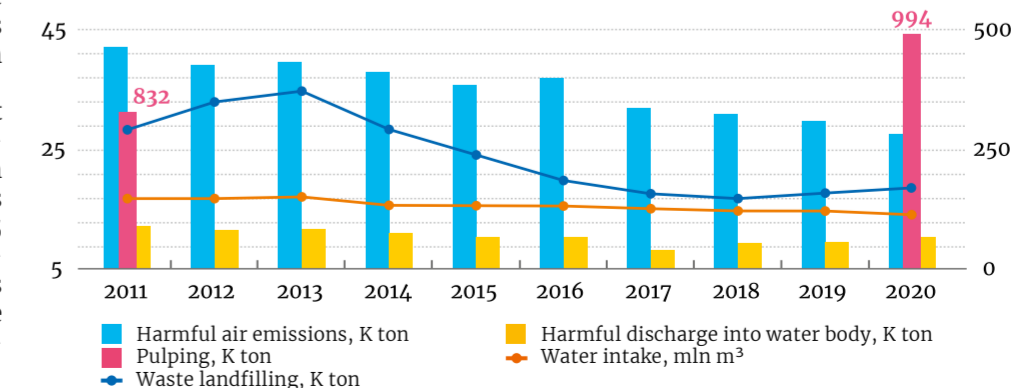
"We analyze and verify our performance against the target values on an annual basis, working to improve GHG emissions management," comments Nikolay Kostogorov, APPM Chief Operations Officer and Senior Assistant Director. "The mill is working to achieve reduced emission levels it has set for itself and has so far been successful in decreasing its carbon footprint."

In 2020, as in the previous year, APPM ranked highest among all Russian companies according to The Carbon Disclosure Project (CDP). The report it submitted for CDP's independent assessment has scored A ("Leadership") in CDP's Climate Change rating. A ranking as high as this puts APPM among CDP's top 18 environmentally responsible pulp and paper mills globally.

As noted by APPM Chief Ecologist, Yevgenia Moskaliyuk, the recognition of the mill's current environmental performance evidences the efficiency of its climate-related decision-making.

Apart from that, Arkhangelsk Pulp and Paper Mill filed an official statement with SBTi (Science Based Targets initiative), informing of its intention to incorporate the research-based GHG emission targets, as set out in Paris Agreement, into its corporate low-carbon strategy until 2030.

APPM: pulping increase vs. environmental performance



Water consumption, discharges and emissions go down

Being a party to the water use agreements, Arkhangelsk Pulp and Paper Mill (JSC) has the right to utilize its designated section of the Northern Dvina River for the purposes of water intake, economic operations within the designated water area, and discharging of wastewater. Its actual water consumption and discharge are found to be within the permissible volumes.

APPM's air emissions are regulated by the emission permits issued by RosPrirod-nadzor Northern Inter-Regional Office for the entire period of construction and operation of its facilities; environmental impact statement obligation; and reporting obligation (applicable to producers of wastes of Hazard Class 1, 2 and 3).

With an increase in APPM's annual pulping volume by 14.1% over the past five years, its intake of the Northern Dvina River water has decreased by 14%, followed by a 11.7% reduction in the specific pollutants discharge and a 25.6% reduction in total harmful air emissions.

One important indicator evidencing the mill's commitment to its environmental agenda is the significant reduction in methyl mercaptan and hydrogen sulfide emissions – by 49% and 80%, respectively, compared to 2016. According to RosHydromet, concentrations of these two substances in the air above Novodvinsk meets the maximum permissible levels.

Over period from 2011 to 2020, the mill has achieved a 43.5% reduction in its waste landfilling.

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APPM's 2011–2020 environmental expenditure sums up to over RUB 15 billion