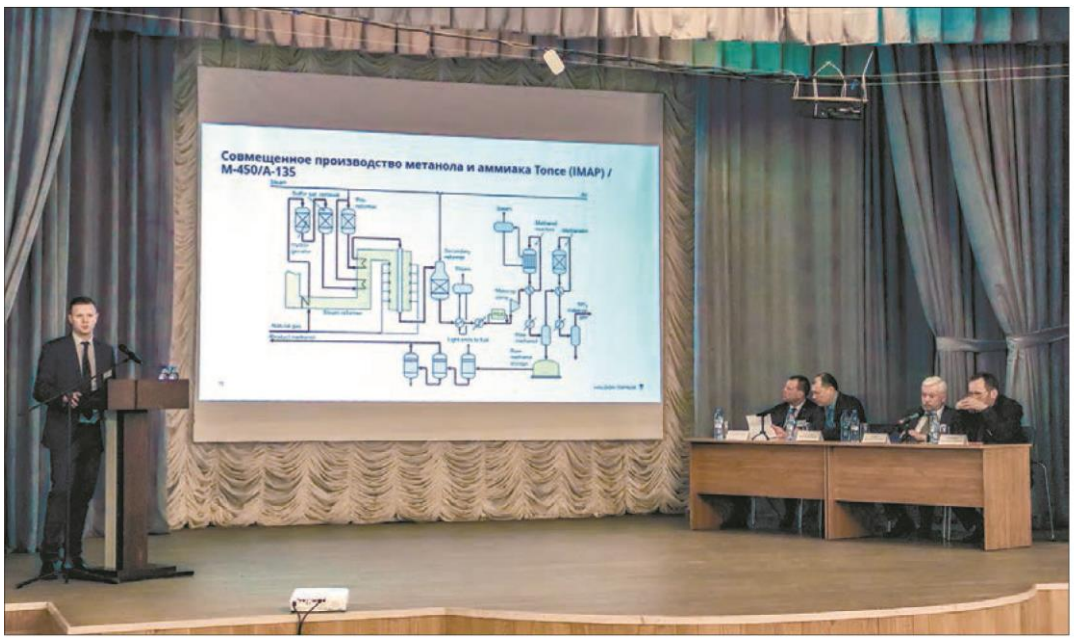
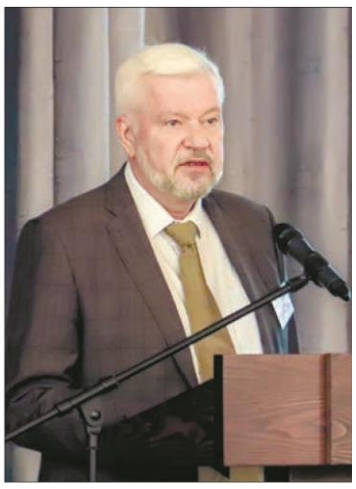
Shchekinoazot: resource efficiency as a development trend

The international conference "Mineral Fertilizers: Modern Trends in Energy and Resource Efficiency" was held at the community center in the settlement of Pervomaisky, Shchekino District. The event was organized by chemical company Shchekinoazot and international information research company Infochem.





Anatoly SURBA, Director General of OJSC Shchekinoazot, "Cooperation will be beneficial to all of us — companies, our teams, the industry and the whole country."

Techies should have no secrets from each other

The issue of energy efficiency is highly important to any industry today. Still, a short while ago the question of resource efficiency was almost akin to Hamlet's "To be or not to be?" in the chemical industry.

Old technologies and rising prices of raw materials (like gas and energy sources) made the products of post-Soviet chemical industry less competitive on the market. But time went by and technologies drastically changed. And most importantly, the approach of company staff — from management to production personnel — changed. Nowadays, the concept of resource efficiency includes not only elements of a "lean economy", but also measures aimed at reducing manufacturing impact on the environment.

The extent of the energy and resource efficiency problem is fully evidenced by the number of conference participants. Among them are representatives of major chemical companies. For example, MCC EuroChem delegated representatives of the head office and the largest enterprises, Novomoskovsky Azot and Nevinnomyssky Azot, to participate in the discussion. The conference also welcomed developers of environmental protection technologies, firms specializing in equipment supply and operation, production of new materials, specialists in the digital economy, etc. In total, executives and specialists from 66 organizations took part in the event. And all of them had their own goals and objectives. For example, Mikhail Shkirev, a representative of Haldor Topsoe (a partner and licensor of Shchekinoazot), spoke about the advantages of using comprehensive production units, such as Methanol-450/Ammonia-135, which was launched at Shchekinoazot in September. Advantages include not only cost reduction during capital construction, saving of raw materials and energy resources, but also the capacity to quickly respond to market needs.

"I came to talk to our business partners and discuss short-term goals and objectives," explained **Oleg KAPLAN, Sales Director of CHRIWA WASSERAUFBEREITUNGSTECHNIK in Eastern Europe and Russia.** "You need to know what your partners do. And it's not enough to just call them or discuss issues via email — it's really important to have face-to-face meetings."

Anatoly SURBA, Director General of Shchekinoazot, welcomed conference participants. He highlighted the importance of discussing technical and technological issues and pointed out that the collapse of the USSR resulted in the isolation of companies and the closing up of their engineering services.

"Operating in such isolation, we eventually discovered that we kept making the same mistakes," stressed Anatoly Konstantinovich. "Of course, there are commercial secrets that shouldn't be disclosed, but as for techies, I think we should not have secrets from each other, as cooperation will be beneficial to all of us — companies, our teams, the industry and the whole country."

Indeed, with the rapid development of technologies, constant emergence of new equipment and means of controlling technical processes, etc., the importance of constant interaction cannot be overstated. Sharing experience with colleagues and partners is also a form of resource efficiency or movement towards it.

About past and future

Next year, Shchekinoazot will celebrate its 65th anniversary. Many things have changed here during these years. Conference participants got acquainted with Shchekinoazot's history in the plant's museum. There were a lot of interesting pages in the history of Azot. Up to the second half of the eighties the plant successfully produced not only liquid ammonia but also urea — there were two production units here. Products were in high demand at the domestic market. They were also exported to around twenty countries (not only to socialist ones). Both production units were closed for environmental safety reasons. At that time many employees of the company — from general workers to managers — considered those reasons far-fetched. Still, the fact remains.

Since then, ammonium sulfate remained the only mineral fertilizer manufactured in Shchekino. The production unit was modernized under the company's development strategy, and from 2017 it started producing granulated ammonium sulphate. Demand has increased as the new form of this fertilizer allows to use it more rationally and get better results. The product is also exported to neighboring countries.

Over the past 14 years Shchekinoazot has implemented 16 investment projects of different complexity and invested over 882 million dollars in production. But the company is not going to rest on its laurels — it plans to implement new projects and invest billions.

The guests got acquainted with facilities constructed as part of the company's development strategy. A tour of the working site left a long-lasting impression on guests. Some of them had been there before. They said that along with the construction of new production facilities, existing facilities were repaired. Shchekinoazot really looks like a modern, world-class enterprise. And, in fact, it really is.

Up next is the new stage of the development program — some of the plant's projects are already at the implementation phase.

About fertility vitamins and some other issues

Nitric acid and ammonium nitrate production is among projects that will be implemented in the near future.

"It's a very promising project," said **Vyacheslav KURGANOV, Technical Director of Shchekinoazot.** "Its planned capacity is 270,000 tons of nitric acid and 340,000 tons of ammonium nitrate per year. Ammonium nitrate is a valuable fertilizer which is in high demand on the market. Its production is a new thing for us. Nevertheless, project deadlines are quite tight — production units should be put into operation within three years. We are now completing the project planning work and we hope to move to construction in summer.

Deadlines for the launch of ammonia and urea production are not that strict.

Boris SOKOL, President of Shchekinoazot, signed a respective contract in China on 15 March. The project will be implemented in collaboration with Haldor Topsoe (ammonia) and Stamicarbon, the world's leading developer of urea production technologies. Chinese partners will be responsible for engineering, supply and construction. This was announced by Shchekinoazot Director General.

"After the launch of the methanol production unit (M-500), we will become the largest producer of this substance in the country," said Anatoly Surba. "The nitric acid and ammonium nitrate production project will meet the demands of Russian consumers, and if everything goes well, we will enter the international market. And when we launch the production of ammonia and urea, we will export around 50 % of urea, thereby completing the task set by Vladimir Putin and Alexei Dyumin, Governor of Tula Region. The project is scheduled to be completed by 2024. The expected production capacity is 2,000 tons per day.

As for the environmental safety of the new facilities, they are hugely more efficient than the old ones.

"This is guaranteed by the use of cutting-edge technologies and full compliance with quite strict Russian legislation," says A. Surba. "I can say that there are no other companies in Russia that use such environmental-friendly technologies.

Nataliya ZELINSKA
Photo by Andrey TETERIN