

human vital activity security systems, and security systems for industrial electronics. Russian companies have a lot of assets for success in this area, including technological and manufacturing potential and intellectual capital, which must be used effectively and enlarged.

Technopolis XXI: How much financing will the program get and what are its quantitative target indicators?

Mr. Yakunin: The overall budget of the State Program in 2013-2025 amounts to 517 billion rubles. This includes 178 billion from the federal government and about 340 billion from off-budget sources.

The implementation of this program should lead to the qualitative modernization of the electronics industry:

- The share of Russian companies on the domestic market in priority segments will surpass 40 percent
- The share of Russian companies on the global market will double
- The productivity of labor in the industry will grow considerably (by a factor of 6)
- 15,000 new highly productive jobs will be created

Technopolis XXI: What public instruments will be used to attain these targets?

Mr. Yakunin: I should single out several key moments.

The State Program envisages a gradual transition from direct public support of individual companies to creating the conditions for the sector's development. This is the goal of the first stage of realization of the State Program (2013-2015). During the second stage (2016-2020), we will begin to provide active assistance for launching new projects. Then, during the third stage (from 2021 on), we will shift to supporting the growth of production.

In accordance with this approach, the State Program will gradually lower public financing from 19 billion rubles in 2013 to 11 billion in 2025. At the same time, the total investments in the sector (thanks to the assets of private companies), far from declining, will grow from 27 billion rubles in 2013 to almost 45.5 billion in 2025.

As to indirect institutional support for the sector, its main components are the accumulation of scientific and engineering results in the domain of basic technologies and the support of their commercialization, the creation of a modern infrastructure for the sector, the development of public-private partnership mechanisms, and the creation of favorable conditions for doing business and attracting private investments.

One of the main mechanisms for attaining these goals should become electronic industrial clusters. The latter can create conditions for the development of electronic plants and the growth of cooperation. They will organize modern shared infrastructure, research and technological facilities, and a specialist training system. Today, we are working on creating over 20 such clusters in Moscow, St. Petersburg, Saratov, Novosibirsk, and other places.

This approach of lowering public investments, implementing a cluster policy, attracting small and medium enterprises, and creating a competitive environment is fully in keeping with WTO norms and takes into account both the new risks and the new opportunities resulting from Russia's membership in the World Trade Organization.

As to companies that are already operating on the market today, we will continue to improve their conditions for doing business and will begin to actively introduce statutory and technical regulations and provide support for export.

CONSOLIDATE THE POSITIONS OF RUSSIAN TECHNOLOGIES

**Interview with A. SHAKUN,
General Director of JSC SIE Neftehim**



Technopolis XXI: The Russian government awards in science and technology were bestowed at a ceremony in Moscow on December 20, 2012. The recipients included developers from SIE Neftehim that were selected for inventing the isomerization technology for producing new-generation automotive gasolines. Why was your development selected?

Mr. Shakun: Each development nominated for the Russian government award must combine a world-class scientific invention with broad and successful practical assimilation. From the start, such demands call for pooling efforts between research and industrial teams. Naturally, the scientific foundations of the Isomalk-2 isomerization technology for light gasoline fractions were developed by JSC

SIE Neftehim. The first Russian patent confirming the appearance of a new technology in international oil refinement was awarded in 2000. It was followed by a series of patents in Russia and in other countries. Already in 2003, the development was introduced with great success at the major Russian refinery JSC Ufaneftelim.

Today, we understand that the subsequent broad introduction of the new technology in Russia and abroad took place thanks to its very rapid first introduction. Nevertheless, all the subsequent projects also took place in an atmosphere of very high competition from leading Western engineering companies. The industrially confirmed advantages of the Russian development over foreign counterparts apparently served as the main argument in favor of the award.

Our latest technology was created at a time when Russia entered the international race for producing high-quality automotive gasolines. Russian oil companies got the possibility of competitively selecting between foreign technologies and the Russian development. Clients of the Isomalk-2 technology now include the refineries JSC Surgutneftegaz, TNK-BP, JSC Bashneft, JSC Lukoil, and JSC Gazpromneft. The introduction of the technology made it possible to launch or greatly expand the production of automotive gasolines of the EURO-4 and EURO-5 standards.

Our largest and most successful project at JSC Gazpromneft-Omsk Oil Refinery led JSC Gazpromneft to nominate our work for the Russian government award in science and technology. Today, the Isomalk-2 technology continues to be introduced in Russia and other countries.

Technopolis XXI: The introduction of this technology is an example of a successful innovative process in which Gazpromneft-Omsk Oil Refinery, JSC RNPk, Ufaneftelim, TNK-BP Management, Gazpromneft, and Neftehim Oil Refinery participated. How were work, responsibilities, and functions allocated?

Mr. Shakun: As I have already said, its broad introduction would have been impossible without close and creative work between science and industry.

Each individual project and each construction of a new Isomalk-2 complex called for new technical solutions. This explains the fairly broad geographical provenance of the members of the team that got the award. It includes specialists from several Russian oil refineries and oil companies. The allocation of work, functions, and responsibilities was fairly simple: everyone did his own work in close collaboration with the other members. JSC SIE Neftehim developed the basic projects and produced and delivered the Si-2 catalysts, while the refineries and oil companies in the person of their engineers and scientists saw to the detailed engineering, equipment, and construction of the plants.

Although all the links are complicated in this chain, the problems were solved thanks to presence of highly qualified specialists.

Technopolis XXI: The government awards in science and technology are given for the accomplished broad introduction of totally new technologies. In other words, Isomalk is a project of the past for you. What are you working on now?

Mr. Shakun: I cannot agree that Isomalk-2 is a project of the past for JSC SIE Neftehim. After all, we are working on new contracts in Russia, the CIS, and other countries. This technology will continue to meet with demand for many years to come. For the successful and smooth implementation of new projects, we have even become stockholders in the catalyst plant JSC Promkataliz, where the technology's foundation (the Si-2 catalyst) is produced.

Nevertheless, we do confine ourselves to isomerizing pentane-hexane fractions. There are still many processes in Russian oil refinement where foreign developments still predominate. It is necessary to change this situation radically. Russian technologies should be present in all areas on a competitive basis.

It's a good thing that this vision also exists in a number of oil companies, including JSC Gazpromneft. Today, we and Gazpromneft are making joint studies of the effectiveness of our latest technology for isomerizing C7 fractions.

This development can radically change the situation in the production of high-quality automotive gasolines. Today, standards on the content of aromatic compounds and benzene in automotive gasolines are constantly getting stricter, while existing technologies are insufficient for producing the whole line of products conforming to contemporary standards. Our new technology is designed to solve this problem. Of course, we will also work in other areas that will appear as environmental, technological, and economic problems arise in production. Together with other scientific and engineering organizations, we must work hard to consolidate the positions of Russian technologies.

