

ВР (см. также «ТАИФ» решает  
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# НЕФТЬ И КАПИТАЛ

АНАЛИТИЧЕСКИЙ ЖУРНАЛ

ИЗДАЕТСЯ С 1994 ГОДА



## «Газпром» собирает последние камни

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ИЗДАЕТСЯ С 1994 ГОДА

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# Oil and Capital

July 2006

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«...» и «...») ей удалось привлечь кредиты на достаточно выг  
финансовую поддержку проектов «Газпромнефтегаз» оказывает  
апреля 2006 года Министром экономики Татарстана Чош  
твенно

# «Kazanorgsintez» started the process of imported product replacement

The enterprise develops modern grades of polyethylene manufacture

*«Kazanorgsintez», the largest polymer manufacturer in Russia, will complete the improvement of ethylene and high density polyethylene production units by the end of the year. This provides the significant increase of their capacity and diversification of manufactured products. The commodity classification will bear a number of polyethylene types of linear and bimodal structure, possessing high consumer characteristics and not manufactured in Russia at present. These polyethylene types are used in manufacturing of packing films, polyethylene pipes and different consumer goods. At the same time «Kazanorgsintez» develops the scheme of polyethylene reprocessing both at its own capacities and at small-size enterprises, which are being established at present in different regions of Russia and CIS with «Kazanorgsintez» participation.*



At the end of 2004 «Kazanorgsintez» OJSC and «TAIF», its controlling company, declared about the beginning of strategic development program up to the year 2010, including a number of investment projects, supposing the development of large-capacity manufacturing lines of products, which have not been produced in Russia before that (see «Gone to growth» in «NiK» №1-2, 2005). This program will be carried out in two directions: improvement of operating production units and building of new production capacities. The fulfillment of the program will result in more than three-fold growth of output (in money terms up to 37 billion rubles per year) and five-fold growth of profit (to \$470 mln). At present two projects of ethylene and high-density polyethylene (HDPE) production modernization are on the finishing line.

### First link

The modernization of ethylene manufacture, the first link of the «Kazanorgsintez» polyethylene production chain, will have been completed by the end of the year. In its frames, there have already been reconstructed the operating thermal decomposition furnace



*At present two modernization projects of production – ethylene and HDPE polyethylene – are in the homestretch.*

and a new super modern furnace of the German company Linde put into operation. As a result, the ethylene production capacity will be increased from 435 thousand to 635 thousand tons a year. It is enough for production of 600 thousand tons of polyethylene per year. The deficient 660 thousand tons of polyethylene for production of planned volumes for the first stage of program realization will be bought at «Nizhnekam-

skneftekhim» and «Salavatnefteorgsintez» and supplied to Kazan by the ethylene pipeline connecting these enterprises.

As for ethane, the raw material for ethylene production, it will be delivered from Minnibayevsky GPP of «Tatneft» (now – 83 thousand tons a year, in future – up to 145 thousand tons a year) and from the plant «Orenburggasprom», which has already completed its reconstruction of installations for ethane

### The Republic supports

The total level of the first stage investments of the «Kazanorgsintez» development program until the year 2008 inclusively amounts to \$775 million, including the cost of the HDPE and ethylene production modernization amounting to \$190 million and \$147 million respectively. The financing is made both from internal and borrowed funds. Credits for two projects are granted by Sberbank of Russia and ABN AMRO Bank of Holland.

The company intends to minimize expenses, using different financial schemes, including leasing and delays of payment. Besides, due to quite high ratings awarded to it by the leading worldwide agencies (Standart&Poors and Fitch Ratings awarded «Kazanorgsintez» the ratings «B-» and «B»), it could obtain credits on beneficial enough terms.

The financial support of «Kazanorgsintez» projects is granted also by the Tatarstan government. Thus, in April, 2006, the Ministry of Economy and Industry of the Republic (in accordance with the Law of Tatarstan «On investment activity») considered reasonable to grant taxation benefits for property and profits to the enterprise in the part, transferred to the republican budget. Marat Mukhametshin, Deputy Director of «Kazanorgsintez» for economy and finance issues, says – «Taxation benefits for property and profits, obtained additionally as a result of investment projects realization, is established at the rate of about 4% (it amounts to one sixth part of the total sum of the tax), the taxation benefit on the newly installed property – 2.1% (more than nine tenth of the total sum of tax)». These preferences are determined beginning from the second quarter of the current year and will be in force within five years.



separation after fire in summer 2004, and beginning from May 2006 renewed its delivery to Kazan in full volume (approximately 400 thousand tons per year). So, «Kazanorgsintez» for the last two years running serious problems with ethane supplies, might at last breathe a sigh of relief. This, by the way, doesn't cancel its intentions to diversify the source of raw materials supply. In particular, it is going to conclude a long-term contract with TNK-BP (see also «TAIF» settles the raw materials problem» in «NiK» №6, 2006).

At the same time, there were resumed negotiations between «Orenburggasprom» and «TAIF» concerning the construction of the installation for separation ethane by technology by «TAIF» at Orenburgsky helium plant, providing high (up to 90%) level of its separation. «TAIF» Director General Albert Shigabutdinov means to conclude the agreement by the end of the year.

The next step in the increasing of ethylene production volumes (up to 1.2 million tons a year) will be the construction of a new large-capacity ethylene and propylene production unit, directed at the alternative types of resources utilization: ethane, straight-run gasoline and kerosene. The project will cost \$800 million. It should start, by Shigabutdinov's evaluation, at the end of the current year. Commencement of this production unit will give an opportunity to increase the total output of polyethylene up to 1.05 million tons a year.

By 2010, the assortment of Kazan polyethylene are to cover the whole range of types and grades, available at the world market.

### **New polymers: for the first time in Russia**

The modernization of HDPE production unit will be completed practically simultaneously with the upgrading of the ethylene complex. It will provide for the

increase of capacities of two or three operating lines for polymerization from 70 thousand to 220 thousand tons a year (each of them), and also the development of new grades of polyethylene – linear and bimodal ones (some additional volumes of ethylene will be required). The basis of this project is the Unipol technology (in 2004 «Kazanorgsintez» bought at American Univation Technologies the license for designing, building, manufacturing and selling the linear and bimodal structure polyethylene with the total capacity 440 thousand tons a year in all countries of the world). Thus, taking into account the third line with the capacity of 70 thousand tons a year, the general capacity of the enterprise for HDPE will be 510 thousand tons a year. The total production capacity of polyethylene of low and high density by the end of the year will amount to about 700 thousand tons a year.

The reconstruction of two reactors was carried out during the first stage of modernization completed in November of the previous year. It provided the increase of the capacity up to 300 thousand tons a year and a possibility to manufacture a linear polyethylene, used for production of up to 200 thousand tons of packing films a year. Besides, the infrastructure, providing the HDPE production was completely renewed.

During the second stage, which must be completed by the end of the current year, the capacity of HDPE production unit will be increased for 210 thousand tons a year more and the manufacture of bimodal polyethylene (PE-100) meant for production of polyethylene tubes and films will be started.

Shigabutdinov estimates the volume of the imported linear and bimodal polyethylene today to Russia as about 200 thousand tons a year. Thereby, Kazan production unit might cover not only



all these demands, but also stimulate the development of domestic processing of these polymers.

As it was told «NiK» by the Deputy Director General for production and development issues at «Kazanorgsintez» Vladimir Kudryashov, at present the output of linear polyethylene amounted to about 2 thousand ton per month. Small volumes may be explained by the fact that a demand is still «not promoted». However, Kudryashov has no doubt that in the nearest future a demand in linear polyethylene will be increased in geometrical progression.

The production of final goods unit from this raw material requires 20-25% less, than from HDPE of traditional grades, and this more than compensates for its higher cost, with its quality characteristics (durability, water-tightness and etc.) tenfold higher.

By the way, due to the Unipol technology the delayed response of the consumer is not critical for the manufacturer: the whole product line of HDPE is produced in the same reactors; shifting from one grade to another takes not more 8 hours, required for loading of corresponding copolymers of ethylene and catalysts. Thus, HDPE manufacturing is running in its total volume at the expense of the traditional grades.

### **Tubing business**

Apart from the development of new types of polyethylene the strategic target of «Kazanorgsintez» includes the organization of their processing. It is carried out in two directions. The first one offers the fundamental modernization of its own polyethylene tubes production (see «Story with extension»). The second one envisages the development of the network of enterprises in Russia and CIS with specialization in polyethylene processing.

This year «Kazanorgsintez» has already commenced the realiza-



### **A story with continuation**

The industrial production of HDPE tubes at «Kazanorgsintez» began in 1980. Originally the imported raw materials were used, and since 1984, after commencement of the first HDPE production line, the plant has started to use its own raw materials. Today tubing capacities of «Kazanorgsintez» amount to 50 thousand tons a year, its share at the domestic market of polyethylene tubes in 2005 was 22%. Until the recent time they used to produce a few dozens of dimension type gas, water and sewage tubes with diameters from 10 mm to 1.2 m, as well as polyethylene fittings PE-63 and PE-80. However, starting from 2006, PE-63 was taken out of production because it became outdated and did not meet the world standard requirements. It will be replaced by the type PE-100, where bimodal polyethylene belongs as well.



tion of a three year program of its own tubes production line modernization; it envisages to carry out the replacement of 29 operating extrusion lines for 13 more modern and high productive lines by 2009». On the areas released at the expense of this replacement there will be installed some additional equipment. The bimodal polyethylene will become the raw material for the renewed complex. The quality of Kazan tubes as a result is expected to reach a new level.

In May «Kazanorgsintez» signed a contract with Batenfeld, Germany for delivery of the first two extrusion lines with capacity of 1,150 kg per hour each for manufacturing of pipes 315-500 mm and 630-800 mm in diameter. Their installation will be completed by the end of the year, and will coincide with the bimodal polyethylene production commencement. This is the reason why experimental-industrial production will start practically immediately, and the full-scale production – only after certification of pilot lots, envisaging 10 thousand hours of tests, whereupon the new pipes will appear at the market.

At the same time, we consider the possibility of pipes manufacture organization directly at the construction sites with the help of mobile extrusion units, which will manufacture pipes and lay them directly into trenches. Such technologies are in the worldwide practice, and in Russia with its extensive areas they are especially urgent. This method could exclude the necessity to join and weld the tubes as well as solve the problem of their transportation for long distances. It is not only expensive but in some cases even detrimental. Kudryashov told that transportation of pipes has an acceptable profitability in radius up to 600 km, but in radius up to 800 km and more they are already economically inefficient.

«Kazanorgsintez» considers that one of the advanced lines of piping business development is the organization of average diameter tubes and pipes for the cross-country gas pipelines production (until the present time they manufactured tubes for transportation of low pressure gas – municipal gas nets in Tatarstan are furnished with these tubes for 80%).

The most complicated thing in this business is to reach a cost value, allowing them to compete the metal tubes – meanwhile polyethylene ones are considerably more expensive. However, Shigabutdinov is sure, that the technology, permitting to solve this problem is already available: «It will require about three years to cope with this task. After that we will be ready to offer «Gasprom» and the oilmen the pipes by price similar to the prices of metal pipes». The rest parameters, considers the head of «TAIF», the pipes of bimodal polyethylene are competitive already today. The service life is more than 100 years (for metal ones it is 20 years). Resistant to corrosive medium, they do not rust and do not need the additional antirust covering. They are lighter and withstand very high pressures. If our work is successful and we begin to compete with metallurgists, there will appear a great many-billion demand in bimodal polyethylene. But the extent of gas pipelines belonging only to «Gasprom» according to our information amounts to about 150 thousand km. They in due time will require changes. Besides, the construction of a new pipeline has already been actively carried out», Shigabutdinov told «NiK». Alongside realization of tubing projects, «Kazanorgsintez» is going to promote organization of a network of private enterprises, specializing in tubes manufacturing in Russia and the CIS countries. As it was mentioned, the program of tubes manufacturing modernization en-

visages termination of low-output tubing lines operation. However, the tubes, manufactured at these capacities have their own consumers. That is why it has been decided not to dismantle these productions, but to transfer them together with all their equipment to small-size business, which due to their flexibility might form a stock of orders and provide their profitability. There are more than enough interested volunteers. It may be explained by the fact that «Kazanorgsintez» provides long-term (5 – 10 years) guarantees for supply of corresponding HDPE grades.

Apart from that, «Kazanorgsintez» has already begun creation of new enterprises networks, specializing in manufacturing polyethylene tubes in different regions of Russia, near the pipe lines (operating and under construction). The first enterprise of such a kind was a tubing plant with the capacity of 15 thousand tons a year in Novomoskovsk («Kazanorgsintez» owns 26% of shares). Agreements on the establishment of similar productions were reached in Leningradsky and Orenbursky regions.

As for linear polyethylene, Kudryashov thinks its processing at «Kazanorgsintez» is not specified. It will be sold at the market and delivered on the basis of long-term agreements to the enterprises, specializing in processing of polymers. Kudryashov appreciates prospects of linear polyethylene market as really attractive ones. He possesses information, that at present the global demand in it exceeds 32 million tons a year, the annual growth up to 2010 will be more than 8%. In accordance with this tendency the program of development of «Kazanorgsintez» plans the construction of a new plant for linear and bimodal polyethylene manufacturing with the capacity more than 350 thousand tons a year.