Chemical Information Resources for East Europe and CIS

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MONTHLY NEWS

Chemical Industry News for Central Europe, South East Europe and Eurasia

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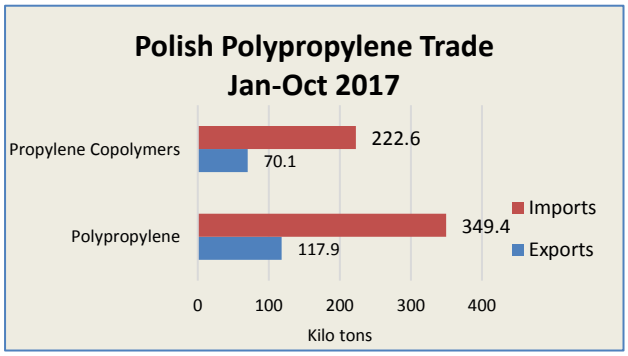
Central Europe

Russia

Other countries

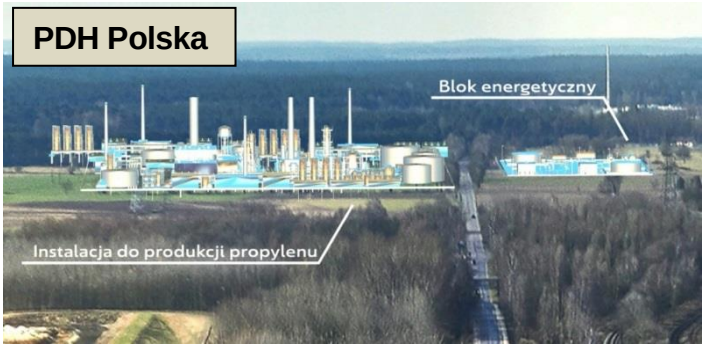
CENTRAL & SOUTH-EAST EUROPE



Grupa Azoty's polypropylene project

The construction of the polypropylene plant at Grupa Azoty's Police site has accordingly attracted interest from 30 banks from Europe, Asia and America. All the major Polish banks and financial institutions are reported to be interested in the Grupa Azoty project from China and Japan. The group assures that the total amount that banks would be willing to lend to the PHD Polska special purpose vehicle exceeds demand several times.

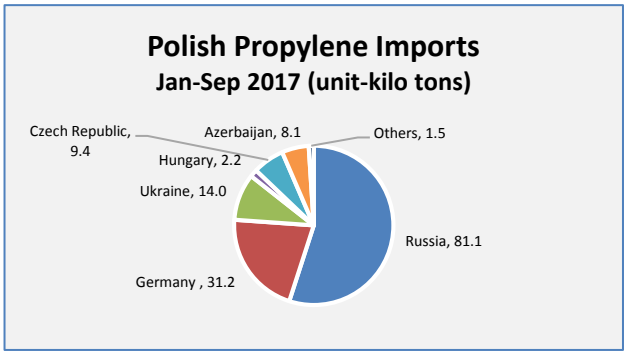
Polypropylene imports into Poland far outweigh imports. In the first ten months in 2017 imports of polypropylene totalled 349,400 tons against exports of 117,900 tons. Imports of propylene copolymers totalled 222,600 tons against exports of 70,100 tons.



Recent estimates say that the construction of polypropylene installation at Police is expected to cost about zl 5 billion. The investment will be built within the limits of the special economic zone near the existing chemical complex at Police. Construction is planned to start for 2019, and the commissioning of the installation for 2022.

Polish propylene imports, Jan-Oct 2017

Poland imported a total of 147,439 tons of propylene in the first ten months in 2017. Russia supplied 81,100 tons in January to October at an average price of €795 per ton, whilst Ukraine supplied 13,988 tons at an average price of €828. Karpatneftekhim supplied propylene from Kalush to Kedzierzyn in the south of Poland from around August onwards, and in the first few months of delivery proved to be the most expensive source.



Most of the propylene imported from Russia came from Kstovo in the Nizhniy Novgorod region, either from SIBUR-Kstovo's cracker or the refinery managed by Lukoil-NNOS. Karpatneftekhim is located less than 600 km from Kedzierzyn where most of the imported propylene is used for oxo alcohol production, whilst the distance from Kstovo in Russia to Kedzierzyn exceeds 2,000 km.

Other suppliers to Poland included Germany which shipped 31,177 tons at an average price of €723 per ton and the Czech Republic which shipped 9,426 tons at a price of €720. Germany has been replaced by Russia in the past couple of years as the main source of imports, whilst Czech imports were revived in 2017 after the modernisation of the Litvinov cracker.

PCC Rokita-propylene contract

PCC Rokita has signed a contract with Ruhr-Petrol GmbH for the supply of propylene, the estimated value of which is a net €13.95 million, i.e. approximately zl 58.2 million. The contract is valid for the whole of 2018 and includes the option of terminating the agreement in the event of Ruhr-Petrol's breach of material contractual provisions.

The contract is important for PCC Rokita as propylene is one of the key raw materials for the company's production. Propylene oxide capacity at Brzeg Dolny was expanded in 2016 to 50,000 tpa. Ruhr-Petrol is the leading supplier of propylene for the company.

PCC Rokita aims to start zl 250 million worth of investments in 2018. The group has secured funds for foams and a combined heat and power plant, in addition to the modernisation and expansion of the polyol production plant. PCC Rokita and Bank Gospodarstwa Krajowego signed two loans in the total amount of zl 87.35 million.

Polish PTA Exports (unit-kilo tons)

Country	*Jan-Oct 17*	*Jan-Oct 16*
Belarus	19.8	18.8
Russia	0.0	19.8
Switzerland	4.3	2.5
Netherlands	3.6	7.3
Lithuania	0.0	8.0
Germany	256.6	242.6
Italy	0.0	1.2
Turkey	0.0	8.9
Others	6.6	3.1
Total	291.0	312.4

Polish aromatic tradeJan-Oct 2017

Poland imported 109,868 tons of ethylbenzene in the period January to October 2017, and 81,821 tons of styrene. The Kralupy plant in the Czech Republic supplied 109,351 tons to Poland in the first ten months last year, thus providing the sole source of supply. Styrene was sourced mainly from Belgium 28,663 tons, the Netherlands 33,806 tons and Germany 9,472 tons.

Poland imported 19,406 tons of benzene in the first ten months in 2017 of which 6,927 tons were supplied from Slovakia and 10,928 tons from Hungary. Benzene exports from Poland totalled 170,376 tons in the period January to October 2017 of which 71,113 tons were shipped to the Czech Republic, 99,264 tons to Germany and 16,271 tons to Italy. Benzene production in Poland takes place at Plock and Kedzierzyn-Kozle.

Czech Petrochemical Exports (unit-kilo tons)

Product	*Jan-Nov 17*	*Jan-Nov 16*
Ethylene	62.2	2.4
Propylene	23.2	6.2
Butadiene	5.2	3.2
Benzene	16.9	11.6
Ethylbenzene	117.7	12.0

Czech petrochemical trade, Jan-Nov 2017

Ethylene exports from the Czech Republic totalled 62,300 tons in the first eleven months in 2017 against 2,400 tons in the same period in 2016. Germany was the main destination for ethylene from Litvinov, taking 57,400 tons, followed by Slovakia with 3,000 tons. Other large increases in 2017 included ethylbenzene which amounted to 117,700 tons in the first eleven months, nearly all of which went to Poland, against only 12,000 tons in the same period in 2016. Equally ethylene imports dropped in the first eleven months in 2017, to 2,900 tons from 124,200 tons in the same period in 2016, whilst propylene imports dropped from 125,800 tons to 40,400 tons.

Czech Petrochemical Imports (unit-kilo tons)

Product	Jan-Nov 17	Jan-Nov 16
Ethylene	2.9	124.2
Propylene	40.4	125.8
Butadiene	34.7	51.1
Benzene	72.9	76.4
Ethylbenzene	20.0	52.4

BorsodChem-TDI expansion

BorsodChem is undertaking plans to expand TDI production capacity at Kazincbarcika, responding to rising global demand for its T65 and T100 grades. This will be done by doubling capacity of its crystallisation unit. T65 and T100 are mainly used in the PU industry for producing flexible foams, coatings and adhesives. Work on the unit has already begun and commissioning is scheduled for the third quarter of 2018. BorsodChem currently has facilities for 300,000 tpa of MDI and 250,000 tpa of TDI at the site.

Serbian Chemical Exports (unit-kilo tons)

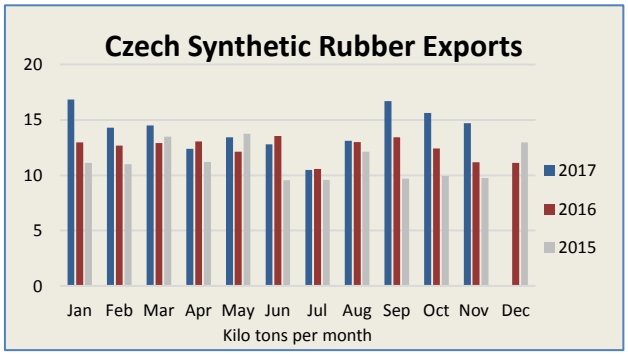
Product	*Jan-Aug 17*	*Jan-Aug 16*
Polyethylene	74.2	80.6
Polypropylene	15.4	9.5
Styrene Butadiene Rubber	9.3	9.2
Methanol	84.9	88.2
Acetic Acid	62.1	52.6

Last year a three-year €300 million co-operation agreement was signed between the Hungarian Development Bank (MFB), the China Development Bank (CDB) and BorsodChem to support development projects.

Synthos

Synthos wants to join South Korean producer Kumho Petrochemical in challenging a decision by the US to impose duties on imports of emulsion styrene butadiene rubber (E-SBR). In 2017, the US International Trade Commission (ITC) determined that E-SBR from Brazil, South Korea, Mexico and Poland was being sold into the country for less than its fair value.

ARLANXEO is also challenging the duties through its Brazilian and US subsidiaries. Synthos also wants to intervene in the ARLANXEO proceedings.



Synthos took over the Ribécourt plant in France in 2016 where the EPS capacity is 75,000 tpa. Synthos operates additional plants for EPS production at Breda, Wingles and Kralupy. With a total EPS capacity of just under 500,000 tpa, Synthos is the European market leader.

From its Czech plant at Kralupy Synthos exported 154,800 tons in the first eleven months in 2017 against 138,000 tons in the same period in 2016. The largest destination included Poland which took 22,300 tons in January to November, followed by the US with 15,500 tons and Canada 11,900 tons.

Oltchim-PVC production could restart following Chmcomplex takeover

Chimcomplex which is going through the process of becoming the new owner of Oltchim, states that it wants to restart PVC production on the Ramnicu Valcea platform which has been idle since 2008. Production was stopped following the cessation of ethylene production at the Arpechim plant at Pitesti. Since reaching agreement over Oltchim, Chimcomplex has pledged investments of around €70 million which are expected to be directed towards environmental problems over the next three years. In the second stage, from the third to the fifth year, the large-scale development of the Valcea platform will be carried out, and it is then that PVC production could be resumed. At present, Oltchim has 2,000 employees, of which 1,800 work at Valcea and 200 at Pitesti.

Oltchim Product Revenues (€ million)

	Jan-Sep 17	*Jan-Sep 16*
Petrochemicals	93.1	77.2
Chlorine division	32.2	25.7
Finished Products	2.2	3.4
Materials for construction	0.0	0.0
Sales to Pitesti	0.0	0.0
Oxo alcohols	22.7	11.5
Other	1.8	1.3
Total	152.0	119.1

By taking over Chimcomplex aims to create of the Romanian Chemical Company. The merger of Borzesti and Valcea platforms will comprise the core of the new chemicals company, where turnover of over one billion euros could be achieved. The nine asset packages put up for sale by the chemical plant included the caustic soda plant, the oxo-alcohol plant, polyols, PVC processing, the phthalic anhydride plant, wagons, etc.

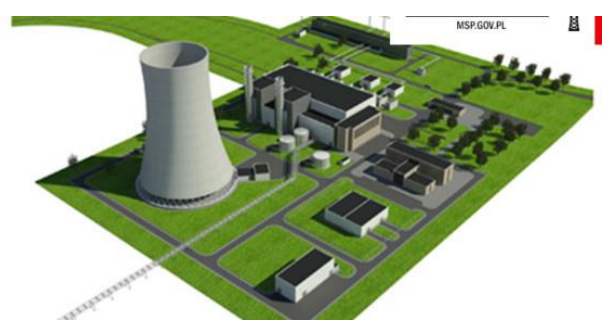
Anwil-Innochem, ethylene chlorination process

Anwil at Wloclawek has received more than zl 5 million in funding for the implementation of two projects increasing the efficiency of production in the field of plastics and nitrogen fertilisers. The first venture concerns the development of an innovative catalytic system that accelerates and deepens the ethylene chlorination reaction process. The second project aims to increase the efficiency of the method of direct ammonia synthesis from hydrogen and nitrogen.

Grupa Azoty ZAK-DOTP

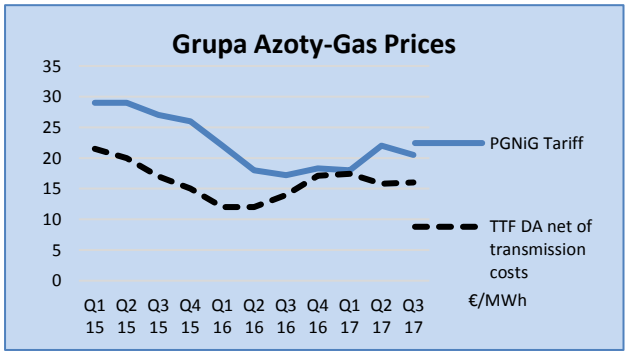
Grupa Azoty ZAK increased its capacity for dioctyl terephthalate (DOTP) by 15,000 tpa in 2017. Grupa Azoty ZAK has now become the largest producer of DOTP in Europe and the second largest for the feedstock 2-ethylhexanol (2-EH). Grupa Azoty ZAK is confident about the growth and longevity of DOTP as end markets are set to continue growing, especially in Asia.

Polish company Prymus at Tychy has entered into an agreement with Grupa Azoty ZAK for the purchase and sale of a plasticizer produced by the Azoty Zaphthalate group bis (2-ethylhexyl) sold under the trade name Oxoviflex. The contract is concluded for the whole of 2018; deliveries will take place in monthly batches. The estimated value of the agreement is zl 33 million. Prymus has been cooperating with Grupa Azoty ZAK since 2014.



Grupa Azoty coal power plants & chemical products

Grupa Azoty and Tauron continue to work on the coal gasification project at Kedzierzyn, valued between €400-600 million depending on the selected technology version. In 2017 Tauron and Grupa Azoty signed a letter of intent regarding the construction of a coal gasification plant for the production of chemical products. The current consumption of natural gas in the nitrogen fertiliser industry can be partially replaced by the synthesis gas obtained from coal gasification. The concept assumes the use of domestic hard coal mined by Tauron for production by Grupa Azoty, among others chemical products such as methanol and ammonia.



Grupa Azoty intends to announce a tender for a coal block contractor at Puławy with a capacity of approximately 100 MWe. The unit is to be heated with hard coal and would start in four years. The construction would start either late in 2018 or in 2019, and the trial run of the block would take place in November 2021, and its regular operation will start until the end of 2021.

Previously Grupa Azoty had planned to construct a gas power plant at Puławy with a capacity of 400 MWe gas and steam unit. However, in the spring of 2017, Grupa Azoty decided to abandon this investment and build a much smaller coal generation unit.

Polish Chemical Production (unit-kilo tons)

Product	*Jan-Nov 17*	*Jan-Nov 16*
Caustic Soda Liquid	323.2	278.6
Caustic Soda Solid	71.9	63.6
Ethylene	451.0	408.0
Propylene	318.7	308.9
Butadiene	52.9	49.5
Toluene	18.2	14.5
Phenol	41.1	36.4
Caprolactam	152.0	149.7
Acetic Acid	22.6	8.2
Polyethylene	324.1	288.8
Polystyrene	50.8	52.9
EPS	90.2	86.3
PVC	269.3	235.9
Polypropylene	253.4	220.1
Synthetic Rubber	224.5	202.1
Ammonia (Gaseous)	2516.0	2357.0
Ammonia (Liquid)	89.6	87.0
Pesticides	47.3	27.9
Nitric Acid	2151.0	2135.0
Nitrogen Fertilisers	1899.0	1771.1
Phosphate Fertilisers	422.3	424.9
Potassium Fertilisers	391.1	351.2

Azoty gas supply

Grupa Azoty is considering the possibility of reserving volumes from the LNG terminal at Swinoujście. Grupa Azoty is second in the EU in the production of nitrogen and multi-ingredient fertilisers, and products such as melamine, caprolactam, polyamide, oxo alcohols and titanium white also have a strong position in the chemical sector. PGNiG supplies high-methane gas to Grupa Azoty and gas from local sources under long-term contracts. Although Russia remains the largest gas supplier to Poland, the potential of LNG supplies from the US and a long-term contract looks extremely beneficial.

Fortischem Novaky ends chlorine production using mercury process

The chemical plant at Novaky in Slovakia stopped its mercury electrolysis plant on 12 December 2017 in line with legal requirements imposed by the Slovak government and EU. The announcement of the end of production together with the proposal for the inspection of the company was delivered to the Slovak Environmental Inspection (SIZP).

The use of mercury in the chemical plant was also addressed by the environmental department, which refused to grant it an exemption at the beginning of November. The most important investment for Fortischem in the current period is the construction of membrane electrolysis, which will completely replace the original mercury electrolysis used in the process of production of sodium hydroxide, hydrogen and chlorine. The key technological units for the new plant are being delivered and building and assembly work is underway, with the start of this new operation planned by Fortischem for 2018.

RUSSIA

Russian Petrochemical Projects

Russian Chemical Production (unit-kilo tons)

Product	*Jan-Nov 17*	*Jan-Nov 16*
Caustic Soda	1,112.5	1,025.0
Soda Ash	3,157.0	2,783.9
Ethylene	2,592.0	2,572.0
Benzene	1,238.0	1,123.8
Xylenes	488.8	516.4
Styrene	624.3	625.7
Phenol	201.5	203.2
Ammonia	15,200.0	14,700.0
Nitrogen Fertilisers	9,077.0	8,660.0
Phosphate Fertilisers	3,250.0	3,182.0
Potash Fertilisers	7,740.0	6,999.0
Plastics in Bulk	7,054.0	7,056.0
Polyethylene	1,802.0	1,933.0
Polystyrene	499.1	493.5
PVC	856.8	737.3
Polypropylene	1,317.9	1,236.2
Polyamide	145.2	142.4
Synthetic Rubber	1,440.0	1,342.7
Synthetic Fibres	154.6	138.1

Amur Gas Processing Plant-gas compressor units

Gazprom intends to create a hub for helium marketing and distribution to be synchronized with the construction of the Amur Gas Processing Plant (GPP) which should be put into operation in 2021. The Amur GPP will become the world leader in the production of helium up to 60 million cubic metres per annum. The processed gas will be supplied to China.

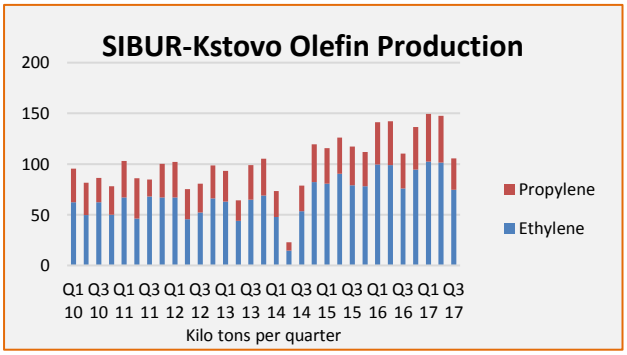
REP Holding has signed a contract with China Petroleum Engineering and Construction Corporation CPECC (a subsidiary of China National Petroleum Corporation CNPC) for the delivery of 12 gas-compressor units GPA-32 Ladoga as part of the project to build the Amur GPP.

Gas-pumping units GPA-32 Ladoga will be installed at the booster compressor station of the Amur Gas Processing Plant for the compression of natural gas. Units with a capacity of 32 MW are characterized by high efficiency (36%), a significant service life and low level of harmful emissions. The equipment manufactured will undergo complex tests at the production site of the Holding-Nevsky Plant, after which it will be sent to the site of the Amur GPP. Delivery of the first unit is planned already in December 2018, another 3 units within the first phase of the contract will be delivered in the first half of 2019.

Vnesheconombank-ZapSibneftekhim

Vnesheconombank has emerged as financial supporter for the project ZapSibNeftekhim. The Ministry of Economy has prepared a draft government decree that introduces changes to the passport for the construction of the ZapSibNeftekhim petrochemical complex (ZapSib-2). The document also stipulates the possibility of attracting up to $400 million in Vnesheconombank (VEB).

The Russian government approved the passport of this project after it was allocated funds of the National Welfare Fund (NWF) for its implementation. According to the approved project, the maximum amount of FNB funds directed to the project is equivalent to $1.75 billion, but not more than 157.5 billion roubles. Its total cost can reach up to $9.5 billion (excluding VAT). The Russian Direct Investment Fund (IPPI) together with international co-investors can provide $3.3 billion. SIBUR itself plans to invest up to $4.45 billion.



SIBUR-Kstovo increases ethylene capacity by 3.2%

At the end of 2017 SIBUR-Kstovo increased the capacity of ethylene production from 372,000 tpa to 384,000 tpa. The entire additional volume of ethylene will be sent to the main consumers of the Kstovo site, including RusVinyl for the production of PVC, and SIBUR-Neftekhim for the production of ethylene oxide and glycols at Dzerzhinsk. In February 2017 SIBUR increased pyrolysis capacity at Kstovo by 3.3% to 372,000 tpa. SIBUR-Kstovo also produces propylene which is sold either to the domestic market or exported.

Gazprom neftekhim Salavat-new gas processing complex

The gas processing complex in Bashkortostan on the basis of Gazprom neftekhim Salavat could begin to build in 2019. The project of the complex has already been approved by Gazprom. At the moment, there is a preparation of his feasibility study. Gazprom neftekhim Salavat intends to use natural gas into the production of polyethylene and plastics. Earlier it was reported that the implementation of the project could take from three to five years. Bashkortostan now consumes about 15 billion cubic metres of gas per annum, and the aim is to process between 2 to 5 billion cubic metres of gas. The issue of attracting Chinese companies as partners for the implementation of the project is being discussed.

Omsk Kaucuk-infrastructure investments

Omsk Kaucuk has invested considerably on upgrading the infrastructure, updating the water supply network of the plant, which is an anchor enterprise of the Omsk petrochemical cluster.

In 2017, more than 5 km of water networks were installed in the polypropylene plant. Polyethylene and polypropylene pipes are supplied to Omsk Kaucuk. Omsk Kaucuk is in the process of completing the modernisation and repairs at the phenol and acetone plants which have been idle since the fire in 2014.

Tatarstan-raw material issues

Due to the shortage of petrochemical raw materials in Tatarstan some projects could be frozen or prevented from implementation, according to the main investment body Tatneftekhiminvest Holding. The most deficient positions have been identified including ethylene, laprol, isocyanates, and linear alkylbenzenes. These products are extremely necessary for large and small businesses. The projects that need to be considered in the near future depend on the further development of projects related to the operation of many enterprises.

Russian Ethylene Production (unit-kilo tons)

Producer	*Jan-Nov 17*	*Jan-Nov 16*
Angarsk Polymer Plant	180.2	104.5
Kazanorgsintez	531.5	477.7
Stavrolen	232.5	278.7
Nizhnekamskneftekhim	559.0	552.8
Novokuibyshevsk Petrochemical	51.9	57.6
Gazprom n Salavat	286.5	307.2
SIBUR-Kstovo	341.4	334.6
SIBUR-Khimprom	45.9	67.8
Tomskneftekhim	254.6	211.8
Ufaorgsintez	114.8	114.6
Total	2598.2	2507.4

TAIF and Tatneft as the largest suppliers of raw materials to the chemical industry in Tatarstan. Gaps in the product chain create bottlenecks in developing more advanced chemical products and thus the investment cycle is slowed as a result. Even at the bulk monomer stage Kazanorgsintez has faced ethylene shortages and has had to invest in new furnaces in order to address the question of supply. The major project for Tatarstan involves the 600,000 tpa ethylene cracker at Nizhnekamsk to be launched in mid-2022. The design phase of the EP-600 is expected to begin in early 2018 after the financial closure. As part of the new complex, Linde has been contracted to construct five furnaces each of 120,000 tpa capacity where the initial cycle of construction is scheduled for autumn 2018. The construction of petrochemical facilities is scheduled for early 2019 set to be completed by November 2021. Plant equipment is to be delivered on the Kama River by river barges, and then by truck to the construction site of the new complex.

Russian Propylene Domestic Sales (unit-kilo tons)

Company	*Jan-Nov 17*	*Jan-Nov 16*
Angarsk Polymer Plant	66.1	37.1
Omsk Kaucuk	2.1	2.4
SIBUR-Kstovo	83.9	94.1
Akrilat	1.4	0.4
Lukoil-NNOS	174.6	176.7
Tomskneftekhim	4.7	1.7
Gazprom neftekhim Salavat	0.0	0.8
Stavrolen	2.0	0.7
Tobolsk-Polymer	1.5	1.8
Total	336.4	318.4

Russian monomers

Russian ethylene-propylene production, Jan-Nov 2017

Ethylene production amounted to 249,800 tons in November 17% more than in October. The increase was due to the restoration of production at several plants after maintenance. Kazanorgsintez increased the production of monomer to 55,200 tons, which is twice as much as in October. In mid-November, ethylene was resumed at Stavrolen where the plant produced 10,500 tons against zero in October, whilst SIBUR-Kstovo increased production by 22% to 35,300 tons. The Kstovo plant has increased the production capacity for the production of ethylene to 384,000 tpa.

For the first eleven months of 2017, Russia produced 2.6 million tons of ethylene, or 2% more than in the same period in 2016.

Propylene production in Russia amounted to 144,800 tons in November 2017, 8% more than in October. Stavrolen resumed the production of olefins in November, producing 5,000 tons of propylene. Nizhnekamskneftekhim and SIBUR-Kstovo increased production to 26,200 tons and 15,600 tons respectively, which is 8% and 22% more than in October. Due to an emergency stop Lukoil-NNOS decreased olefin production by 17% to 22,100 tons. In the period January to November 2017 Russian plants produced 1.58 million tons of propylene, 2% more than in the same period in 2016.

Russian propylene & propane-propylene domestic sales, Jan-Nov 2017

Russian producers of propylene sold 34,200 tons on the domestic market in November, down on the previous month. Deliveries of monomer from Lukoil-NNOS decreased by 13% to 16,900 tons, whilst Angarsk Polymer Plant reduced shipments by 8% to 8,400 tons. Tomskneftekhim delivered 853 tons of monomer to Tobolsk-Polymer, whilst shipments to Tobolsk from SIBUR-Kstovo rose by 13% to 2,900 tons. In total, SIBUR-Kstovo sold 8,000 tons of propylene on the Russian market in November. In the first eleven months in 2017 sales of propylene in the Russian market totalled 335,500 tons which is 4% more than in the same period in 2016. Sales of propane-propylene fractions dropped 8% in January to November 2017 to 151,900 tons, largely due to increased sales of propylene monomer allowing larger volumes of fraction exports.

Russian Propylene Exports (unit-kilo tons)

Company	*Jan-Nov 17*	*Jan-Nov 16*
Lukoil-NNOS	78.7	64.1
SIBUR-Kstovo	56.5	47.4
Omsk Kaucuk	2.0	1.7
Angarsk Polymer Plant	0.0	1.9
Stavrolen	7.0	14.5
Total	144.2	129.5

Russian propylene exports, Jan-Nov 2017

Propylene exports from Russia amounted to 12,100 tons in November, 5% less than in October. An emergency stop at Lukoil's Nizhniy Novgorod refinery affected exports in November, dropping by 42% to 4,200 tons. At the same time SIBUR-Kstovo exported 8,000 tons of propylene, which is 31% more than in October. Belarus took 9,900 tons of Russian propylene in November. In the first eleven months in 2017 Russian companies sold 164,900 tons of monomer on foreign markets, which is 12% more than in the same period of 2016.

Russian Styrene Domestic Sales (unit-kilo tons)

Producer	*Jan-Nov 17*	*Jan-Nov 16*
Angarsk Polymer Plant	16.3	9.2
Plastik	16.1	1.3
Gazprom n Salavat	36.8	45.9
SIBUR-Khimprom	23.4	33.2
Nizhnekamskneftekhim	1.5	0.0
Total	94.2	89.7

Russian styrene, Jan-Nov 2017

Styrene sales on the domestic market amounted to 10,300 tons in November. SIBUR-Khimprom increased shipments to 4,000 tons, which is 35% more than in October. At the same time, deliveries of styrene from the Angarsk Polymer Plant and Gazprom neftekhim Salavat dropped to 1,900 tons and 4,300 tons respectively, 27% and 12% less than in October. The decrease in shipments was due to the low demand from dispersion producers and the availability of an export alternative. For the first eleven months in 2017 Russian domestic consumers purchased 90,000 tons of styrene, which is 5% more than in the same period of 2016.

Russian Styrene Production (unit-kilo tons)

Producer	*Jan-Nov 17*	*Jan-Nov 16*
Nizhnekamskneftekhim	277.7	275.2
Angarsk Polymer Plant	33.4	20.1
SIBUR-Khimprom	107.2	119.6
Gazprom n Salavat	153.3	162.0
Plastik, Uzlovaya	52.7	48.9
Total	624.3	625.7

In November, Russia produced 62,800 tons of styrene, which is 2% more than in October. SIBUR-Khimprom produced 12,500 tons of styrene or 23% more than in October. Plastik at Uzlovaya reduced production by 21% to 3,800 tons and Gazprom neftekhim Salavat reduced production by 10% to 16,200 tons. In the first eleven months in 2017 Russian styrene production totalled 623,900 tons against 621,000 tons in the same period in 2016.

Styrene consumption in Russia has been boosted in 2017 due to the growth in the production of butadiene-styrene rubbers and styrene-acrylic dispersions. In

2017, Voronezhsintezkaucuk and Sterlitamak Petrochemical Plant increased rubber production by around 10%, which proportionally affected the purchase of styrene. The volumes of styrene processing in the segment of dispersion output increased by 9%.

Bulk Polymers

Russian HDPE Production (unit-kilo tons)		
Producer	***Jan-Nov 17***	***Jan-Nov 16***
Kazanorgsintez	480.2	439.9
Stavrolen	214.0	248.9
Nizhnekamskneftekhim	65.8	117.9
Gazprom n Salavat	83.7	100
Total	843.7	826.8

Russian HDPE production, Jan-Nov 2017

In January-November 2017 HDPE production in Russia decreased by 9% and amounted to 824,300 tons against 906,800 tons in 2016. Kazanorgsintez increased production by 5% to 460,200 tons, Stavrolen reduced production by 14% to 214,900 tons and Gazprom neftekhim Salavat reduced production by 16% to 83,700 tons.

The low production at Salavat was due to the extended shutdown of capacities in July-August last year. Nizhnekamskneftekhim produced only 65,600 tons against 117,900 tons in the same period in 2015=6 due to increased focus on LLDPE.

Russian polypropylene, Jan-Nov 2017

In January-November 2017 imports of polypropylene increased by 4% to 160,800 tons against 154,800 tons. Homopolymer imports dropped to 57,200 tons against 68,400 tons, whilst block copolymers rose from 28,800 tons to 41,100 tons. In January-November imports of propylene copolymers amounted to 30,400 tons against 31,200 tons and other forms of polypropylene rose to 36,500 tons from 26,500 tons.

Russian Polypropylene Imports (unit-kilo tons)		
	Jan-Nov 17	***Jan-Nov 16***
Homopolymers	57.2	68.4
Block	41.1	28.9
Random	26.8	31.2
Other	31.6	26.4
Total	156.7	154.9

Russian polypropylene production increased by 2% in the first eleven months over the same period in 2016 to 1.273 million tons against 1,251 million tons. SIBUR Tobolsk increased production by 12% to 463,900 tons, which was made possible due to lack of an extended shutdown, whilst Nizhnekamskneftekhim reduced production by 3% to 193,300 tons. Polyom at Omsk increased production by 1% to 187,000 tons, whilst Tomskneftekhim increased production from 117,700 tons to 128,600 tons. Ufaorgsintez produced 113,500 tons against 111,700 tons. Neftekhimya (Kapotnya) reduced production by 20% to 94,900 tons due to maintenance work and Stavrolen reduced production by 11% to 92,300 tons.

Russian Polypropylene Production (unit-kilo tons)		
Producer	***Jan-Nov 17***	***Jan-Nov 16***
Ufaorgsintez	113.5	102.2
Stavrolen	92.3	92.9
Neftekhimya	94.9	107.9
Nizhnekamskneftekhim	193.3	180.4
Polyom	187.0	175.0
Tomskneftekhim	116.4	105.9
Tobolsk-Polymer	483.2	368.0
Total	1280.6	1088.5

Polyom at Omsk launched the third reactor in the production of polypropylene in December. A new gas-phase reactor was put into operation which will increase the volume of production of marketable products. The technical solution, which allowed to integrate the reactor into the polymerisation complex, was developed by Polyom together with licensor LyondellBasell. Equipment for project was manufactured by Nuovo Pignone. The capacity of the Polyom plant is 210,000 tpa. Propylene is produced at the separation node of the propane-propylene fraction unit belonging to Omsk Kaucuk and then sent to Polyom.

Russian PVC, Jan-Nov 2017

Imports of PVC to Russia amounted to 46,900 tons in the period January to November 2017 against 123,900 tons in the same period in 2016. Russian producers managed to increase export volumes by 44%, whilst China reduced shipments from 95,700 tons to 42,800 tons. European producers reduced shipments from 6.400 tons to 3,500 tons. Exports of PVC by contrast have risen, totalling 77,900 tons in the first eleven months in 2017 against 54,000 tons in 2016.

Russian PVC Production (unit-kilo tons)		
Producer	***Jan-Nov 17***	***Jan-Nov 16***
Bashkir Soda	219.9	226.1
Kaustik	79.0	72.8
RusVinyl	283.0	256.4
Sayanskkhimplast	238.7	119.8
Total	820.6	675.1

Russian PVC production increased by 17% in January-November 2016, and amounted to 820,500 tons against 701,200 tons in 2016. RusVinyl increased production by 3% to 283,000 tons, which is 3% up whilst Sayanskkhimplast produced 238,700 tons against 119,800 tons in the same period in 2016. Bashkiria Soda produced 219,900 tons against 226,000 tons, whilst Kaustik at Volgograd produced 79,000 tons against 80,400 tons in 2016.

Russian polycarbonate, Jan-Nov 2017

Imports of polycarbonate rose in January-November 2017 by 32% from 7,200 tons to 9,500 tons. Imports from Covestro in 2017 amounted to 3,900 tons against 3,100 tons whilst SABIC shipped 3,500 tons against 2,000 tons in January to November 2016. The share of injection moulds in the total volume of polycarbonate granulate imports comprised 66% (6,200 tons), extrusion grades 29% (2,700 tons), and grades for blowing 5% (500 tons). For export, Russia shipped 10,600 tons against 13,200 tons in January to November 2016. For the whole of 2016, Kazanorgsintez produced 70,900 tons of polycarbonates, 5% higher than in 2015. Consumption of extrusion polycarbonate in the Russian market increased in 2016 by 5% to 62,100 tons.

Russian Paraxylene Domestic Sales (unit-kilo tons)		
Producer	***Jan-Nov 17***	***Jan-Nov 16***
Gazprom Neft	75.6	54.2
Ufaneftekhim	90.1	97.6
Kirishinefteorgsintez	0.0	0.0
Total	165.7	151.7

Paraxylene-PET chain

Russian PX-PTA markets

Domestic sales of paraxylene increased in the first eleven months in 2017 to 165,700 tons from 151,700 tons in the same period in 2016. Whilst Ufaneftekhim reduced domestic sales from 90,100 tons to 97,800 tons in January to November 2017Gazprom Neft at Omsk increased sales from 54,200 tons to 75,800 tons.

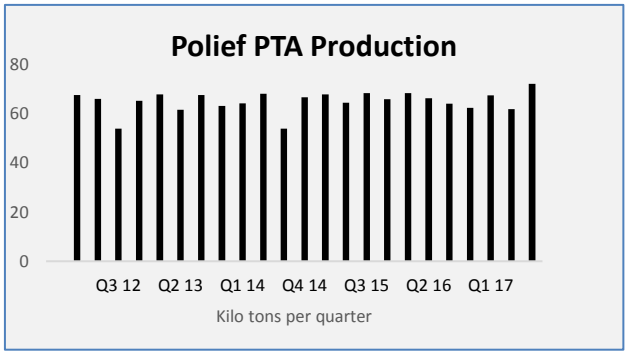
Paraxylene exports from Russia increased from 64,800 tons in the period January to November 2016 to 84,900 tons in the same period in 2017. The major change came from Kirishinefteorgsintez which shipped 53,200 tons to foreign markets in the first eleven months in 2017 against 13,900 tons in the same period in 2016.

Russian PTA Imports (unit-kilo tons)		
Country	Jan-Oct 17	Jan-Oct
Belgium	27.0	27.4
India	34.8	2.1
China	74.6	29.4
South Korea	31.6	36.9
Poland	9.5	19.8
Thailand	29.1	0.3
Turkey	1.0	0.0
Total	207.6	115.9

PTA imports into Russia totalled 175,300 tons in the first eight months in 2017 against 110,300 tons in the same period in 2016. The largest supplier in 2017 has been China which shipped 74,600 tons to the Russian market against 29,400 tons in the same period in 2016. India also increased shipments to Russia in 2017, rising from 2,100 tons in January to November 2016 to 34,800 tons. South Korea reduced shipments to the Russian market to 31,600 tons from 36,900 tons.

Polief to expand PTA capacity

Polief at Blagoveshchensk plans to increase the production of PTA by 28% by June 2019, from 272,000 tpa to 350,000 tpa. The exact cost will be known closer to the end of the project. The company expects to partially replace the Russian market of PTA imports, which is currently worth about 230,000 tpa.



At the end of December, SIBUR almost tripled the authorized capital of Polief from 332.94 million roubles. up to 966.57 million roubles. PTA production by Polief totalled 201,523 tons in the first three quarters in 2017 against 196,758 tons in January to September 2016. Paraxylene purchasing costs for SIBUR decreased by 1.4% to

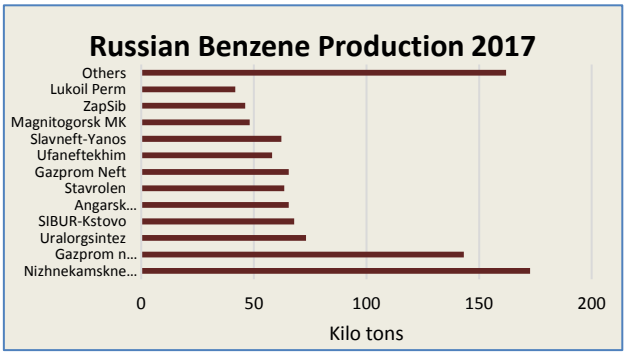
5,079 million roubles in the first three quarters, despite higher purchasing volumes. Paraxylene is supplied to Polief either from Ufaneftekhim or Gazprom Neft at Omsk.

Russian MEG, Jan-Nov 2017

MEG exports from Russia rose 13% in November over October to 9,360 tons. SIBUR accounted for 5,280 tons in November, followed by Nizhnekamskneftekhim with 4,000 tons. Belarus accounted for 78.5% of Russian MEG exports in November, followed by Kazakhstan 11%, Lithuania 7%, Ukraine 3%, Uzbekistan 0.3%, and Finland 0.2%. In the first eleven months in 2017 Russian MEG exports totalled 122,500 tons which was 10.2% up on 2016. Imports rose by 57% to 47,380 tons. SABIC has been one of the major suppliers over the past year.

Domestic sales of MEG in November rose by 14.4% to 11,380 tons. SIBUR-Neftekhim shipped 7,940 tons, 4.1% more than in October, whilst Nizhnekamskneftekhim increased shipments by 55.2% to 3,250 tons. Kazanorgsintez shipped 56 tons of MEG in November, 12% more than in October. Regarding consumers Polief bought 7,500 tons of MEG in November which was 9.8% more than in October. Obninskorgsintez purchased 1,000 tons, 80.4% more, whilst BaltTechProm reduced purchases by 54.6% to 352 tons. In the first eleven months in 2017 Russian domestic shipments of MEG totalled 127.700 tons which was 5.1% up on 2016.

Aromatics



Russian benzene sales, Jan-Nov 2017

Benzene sales on the Russian domestic market amounted to 53,800 tons in November which is 7% lower than in October. The decrease in the shipments was due mainly to the resumption of phenol production at Ufaorgsintez which resulted in a decline in sales by 2.8 times to 2,100 tons. The Ryazan refinery supplied 3,500 tons of aromatic raw materials to the domestic market, 45% higher due to built-up inventory, whilst another 4,800 tons and 4,300 tons of benzene were shipped from Gazprom neftekhim Salavat and West Siberian MK respectively.

Russian Benzene Exports (unit-kilo tons)

Producer	*Jan-Nov 17*	*Jan-Nov 16*
Altay-Koks	12.4	2.9
Chelyabinsk MK	9.4	7.7
Gazprom Neft	4.5	0.6
Gazprom neftekhim Salavat	3.9	0.0
Koks	11.7	11.7
Magnitogorsk MK	13.6	17.1
Moskoks	5.9	8.7
Nizhniy Tagil	3.5	3.4
Novolipetsk MK	1.2	1.9
Kirishinefteorgsintez	24.3	0.0
SIBUR-Kstovo	13.7	0.0
Slavneft	9.4	0.7
Severstal	3.1	1.7
Stavrolen	15.9	0.0
Ufaneftekhim	0.9	0.0
Uralorgsintez	5.0	0.0
Ural Steel	3.6	6.6
Total	142.0	63.1

SIBUR-Kstovo and Kirishinefteorgsintez increased domestic sales by 10% and 19% respectively to 4,800 tons and 4,300 tons. In the first eleven months of 2017, Russia sold 574,000 tons of domestic benzene for synthesis and nitration, which is 2% more than in the same period of 2017.

Benzene exports from Russia amounted to 4,500 tons in November which is 2% more than in October. SIBUR-Kstovo increased shipments by 31% to 2,000 tons whilst Kirishinefteorgsintez reduced supplies by 17% to 2,500 tons. For the first eleven months in 2017 Russian refineries and petrochemical plants exported 89,700 tons. Supplemented by crude benzene exports the total for Russia in the period January to November 2017 was 142,000 tons against 63,100 tons the same period in 2016.

Benzene imports dropped 18% in the period January to November 2017 to 11,000 tons. In November the Atyrau refinery shipped 489 tons to Russia in November whilst Ukrainian plant Zaporozhkoks shipped 511 tons to Kuibyshevazot.

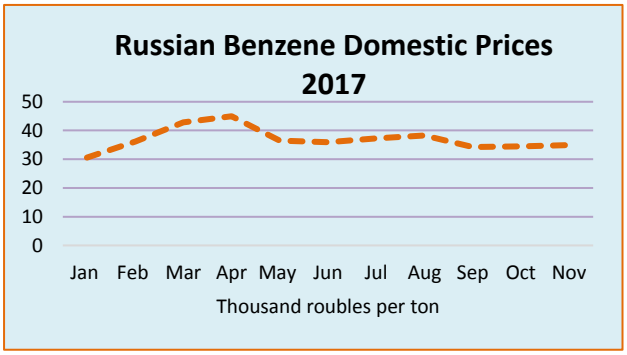
Russian benzene export overview, Q1-Q3 2017

Until 2017 the benzene market in Russia had been characterized over the previous decade by shortages due mainly to the lack of economic and tax incentives to develop aromatics from oil refineries. The prerequisites for change were made three years ago in 2014 following the introduction of the tax maneuver created by the Ministry of Finance. The introduction of tax maneuver directly affected the interests of petrochemical enterprises, encouraging greater export activity in both naphtha and aromatic hydrocarbons (including benzene).

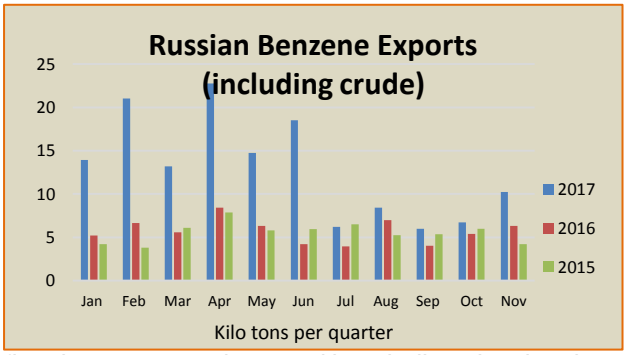
Due to changes in hydrocarbon prices since 2014 the attractiveness of processing naphtha in pyrolysis plants has grown, and petrochemical producers have received additional incentives to increase the production of benzene. The increase in exports of benzene from Russia last year thus resulted from a combination of factors, including a rise in production and fall in consumption.

Russian Benzene Market (unit-kilo tons)		
	Jan-Sep 17	***Jan-Sep 16***
Production	919,1	109%
Export	80,9	—
Import	9,3	106%
Consumption	**847.6**	**99%**

Of the consumption volumes only caprolactam producers demonstrated growth in the first three quarters in 2017 increasing benzene purchases by 11% to 256,000 tons. The share of caprolactam in the consumption of benzene increased to 30%.



At the same time the consumption of benzene for the production of ethylbenzene decreased by 3%, to 412,000 tons which was due to longer preventive maintenance. Moreover, due to modernisation at Rosneft's facilities in 2017, benzene consumption in cumene production decreased by 13%, to 157,000 tons. The purchase of benzene in the nitrobenzene production segment has been declining for the third year in a row due to a decrease in demand for a high-octane N-methylaniline additive.



Russian exporting benzene producers

In Russia there are seventeen plants producing benzene for synthesis and nitration of which eight engaged in export activity in 2017. The largest supplier of the product to foreign markets in 2017 was the Kirishinefteorgsintez plant which shipped 22,700 tons of benzene in the first three quarters in 2017.

SIBUR exported 18,200 tons of benzene from Kstovo cracker and Chaikovsky complex in the first three quarters in 2017 (the Chaikovsky plant has since been sold) whilst SIBUR-Khimprom reduced exports by 13,600 tons. Other exporters in the first three quarters in 2017 included Stavrolen which exported 15,400 tons, whilst increased production enabled Gazprom neftekhim Salavat to export 11,300 tons in the first three quarters.

More than 70,000 tons of Russian benzene was exported through the Baltic terminals to the Netherlands, Great Britain and China. About 10,000 tons of the product was shipped to Belarus, which allowed Grodno Azot to avoid a significant reduction in the production of caprolactam in conditions of a decrease in the production of benzene at Belarusian refineries.

Russian benzene consumption, Q1-Q3 2017

For the first three quarters in 2017 benzene sales on the Russian domestic market amounted to 536,900 tons against 563,200 tons in the same period in 2016. Imports of benzene from Ukraine rose 13% in January to September 2017 to 26,000 tons of benzene to Russia. Uralorgsintez has been the largest seller on the Russian domestic market in 2017, shipping 63,400 tons in the first three quarters which

Russian Benzene Consumers (unit-kilo tons)		
Consumer	**Jan-Nov 17**	**Jan-Nov 16**
Kuibyshevazot	142.5	115.3
Azot Kemerovo	99.9	83.8
Shchekinoazot	58.2	49.4
Kazanorgsintez	50.3	65.2
Khimprom	0.5	0.7
IS laboratories	0.1	6.4
Togliattikaucuk	0.0	3.5
Omsk Kaucuk	9.6	25.7
Chelyabinsk MK	0.0	5.2
Nizhnekamskneftekhim	34.0	37.8
Novolipetssk	0.0	5.4
Samarorgsintez	40.5	40.9
Zapsib	41.3	45.4
SIBUR-Khimprom	80.0	86.7
Promsintez	12.9	13.0
Tumazi Carbon Plant	0.6	1.5
Ufaorgsintez	6.9	9.0
Uralorgsintez	72.8	59.7
Zavod im Ya M Sverdlova	14.1	12.1
Exports	141.0	50.5
Totals	805.2	717.1

was 2.4% down on the same period in 2016. Gazprom Neft at the Omsk Refinery reduced the volume of supplies by 16.5% to 59,900 tons for nine months.

Russian benzene market outlook

Benzene production in Russia is forecast to grow by around 2-3% in 2018, partly due to increases by Gazprom neftekhim Salavat. The Salavat complex increased benzene production by 12% in the first three quarters in 2017 to 138,600 tons, the rise due to increased naphtha processing.

Regarding domestic consumption Titan intends to resume the production of phenol and acetone at Omsk Kaucuk in October, using around 7-8,000 tons of benzene per month. With the launch of production at Omsk Kaucuk, the demand for benzene in the Siberian Federal District could rise to 20-21,000 tons per month.

Gazprom neftekhim Salavat plans to increase the output of benzene by about 50,000 tons in 2018. The rise is possible due to an increase in the processing of naphtha and a reduction in processing of NGL and ethane. Naphtha processing is favoured to tax deductions which make it more profitable than NGL or ethane.

Russian Toluene Domestic Sales (unit-kilo tons)		
Producer	***Jan-Nov 17***	***Jan-Nov 16***
Novopiletsk MK	0.1	0.3
Slavneft-Yanos	14.9	21.3
Severstal	4.8	6.6
LUKoil-Perm	23.0	25.3
Gazprom Neft	81.2	78.7
Zapsib	12.1	2.7
Kinef, Kirishi	29.9	28.1
Gazprom Neftekhim Salavat	1.9	0.3
Others	2.6	0.0
Total	170.5	163.2

Russian toluene, Jan-Nov 2017

Domestic toluene deliveries to Russian consumers by rail in November amounted to 16,970 tons, 14% more than in October. Gazprom Neft accounted for 57% of deliveries (9,630 tons), Lukoil-Permnefteorgsintez 23% (3,820 tons), Kirishinefteorgsintez 10% (1,770 tons), Slavneft-Yanos 6% (930 tons), and Severstal 4% (620 tons). Manufacturers of explosives increased purchases of toluene in November over October by almost 2.6 times to 2,150 tons (13% of Russian consumption), whilst paint and varnish manufacturers reduced the volume of purchased raw materials by 30% to 2,500 tons.

Manufacturers of motor fuels and additives increased purchases of toluene by 16% to 7,210 tons (42%). In addition, 180 tons of toluene was bought by companies using it as a solvent in the production of rubbers, 3,430 tons producers of other products, and 1,490 tons from trading companies. In the period January to November 2017 sales of toluene on the domestic market totalled 170,590 tons which was 4% up on 2016.

Russian Xylene Production (unit-kilo tons)		
Producer	***Jan-Nov 17***	***Jan-Nov 16***
Gazprom Neft	222.1	224.5
Kirishinefteorgsintez	113.1	115.2
Ufaneftekhim	153.6	176.8
Total	488.8	516.4

Russian orthoxylene, Jan-Nov 2017

Russian orthoxylene sales amounted to 13,900 tons in November which is 6% less than in October. Gazprom Neft shipped 5,460 tons, Ufaneftekhim 5,170 tons and Kirishinefteorgsintez 3,270 tons (24%). Kamteks-Khimprom reduced purchases by 16% to 7,620 tons whilst Gazprom neftekhim Salavat reduced volumes by 19% to 1,050 tons.

Dmitrievsky Chemical Plant purchased 300 tons, whilst Russian manufacturers of paint and varnish materials increased volumes of purchased orthoxylene in November by 4% to 2,720 tons.

Manufacturers of fuel, agrochemistry, pharmaceutical and other products purchased 2,220 tons. In the first eleven months in 2017 sales of orthoxylene to the domestic market amounted to 147.600 tons which is 21% more than in the same period in 2016.

Russian Orthoxylene Domestic Sales (unit-kilo tons)

Producer	*Jan-Nov 17*	*Jan-Nov 16*
Gazprom Neft	74.2	39.8
Ufaneftekhim	49.7	47.1
Kirishinefteorgsintez	22.2	29.9
Total	146.2	116.8

Exports of orthoxylene from Russia amounted to 5,500 tons in November which is 25% more than in October. The largest volumes of the product were shipped from Ufaneftekhim 3,230 tons (59% of the total Russian exports). Kirishinefteorgsintez reduced deliveries in November to foreign markets by 46% to 2,210 tons (40%). The main direction of shipments of Russian orthoxylene in November was Finland (taking 93% of gross exports, or 5,120 tons). In addition, 330 tons (6%) was delivered to Ukraine. In the first eleven months in 2017 orthoxylene exports amounted to 71,240 tons which is 23% less than in the same period in 2016.

Russian phenol, Jan-Nov 2017

Phenol sales on the domestic market amounted to 9,200 tons in November, 3% less than in October. Ufaorgsintez reduced its sales volumes in the domestic market by almost 20% to 3,200 tons, while Kazanorgsintez increased sales by 35% to 1,400 tons. Novokuibyshevsk Petrochemical Company, which is owned by Rosneft, increased merchant sales by 2% over October to 4,600 tons.

Regarding consumers, 84% of sales or 7,700 tons in November went to manufacturers of phenol-formaldehyde resins. Metadynea is the major producer in this field, owned partly by Metafrax. Kuibyshevazot resumed purchases of phenol in November, using phenol as a back-up feedstock for caprolactam production. The domestic producer of alkylphenols Nizhnekamskneftekhim purchased 470 tons in November, or 5% of the total product sold on the domestic market. The main Russian producer of antioxidants, Sterlitamak Petrochemical Plant purchased 905 tons of phenol, rising 60% over October.

Russian Phenol Market Sales by Supplier (unit-kilo tons)

Producer	*Jan-Nov 17*	*Jan-Nov 16*
Novokuibyshevsk PC	42.6	41.6
Kazanorgsintez	12.3	11.9
Ufaorgsintez	44.1	60.8
Borealis	4.1	0.4
Total	103.1	103.2

Reconstruction at Omsk Kaucuk is scheduled to be completed in 2018, involving a doubling of phenol capacity based on the latest benzene alkylation technology. Similarly, to Ufaorgsintez where work is underway on the cumene process Omsk Kaucuk intends to change the aluminium chloride catalyst to a new catalyst. Production of phenol and acetone was decommissioned by Omsk Kaucuk in March 2014 due to a major accident.

Phenol exports from Russia amounted to 1,400 tons in November, 10% more than in October. Belarus took 417 tons of phenol and Turkey 335 tons. Purchases of Russian phenol by consumers in Poland, Latvia and Slovakia were less significant: 19% (280 tons), the latter purchased 15% (220 tons), and the third 11% (165 tons). Novokuibyshevsk Petrochemical accounted for 967 tons of exports or 67%, followed by Ufaorgsintez shipping 471 tons or 33%.

Kuibyshevazot-Production (unit-kilo tons)

Product	*Jan-Sep 17*	*Jan-Sep 16*
Polyamide-6	109.1	106.8
High Tenacity Tech Yarns	8.6	9.3
Caprolactam	142.2	146.0
Ammonia	411.1	355.6
Urea	214.5	214.0
Ammonium Nitrate	450.3	456.7
Ammonium Sulphate	345	362.4

Kuibyshevazot-Gazprombank

Kuibyshevazot has agreed a credit line with Gazprombank for 10 billion roubles at 11%. The term of availability of credit means is 60 months from the date of signing the contract. The loan is provided for refinancing loan debt to third-party credit institutions for loans granted for financing investment projects, for the formation of authorized capital of third parties.

Synthetic Rubber

Russian C4s, Jan-Nov 2017

C4 sales on the Russian domestic market amounted to 28,900 tons in November, 31% more than in October. Kazanorgsintez sold 3,500 tons, 2.7 times more than in October, whilst Stavrolen shipped

Russian C4 Supplies (unit-kilo tons)		
Supplier	*Jan-Nov 17*	*Jan-Nov 16*
Angarsk Polymer	24.3	20.7
Krasnoyarsk SR	0.5	0.4
Kazanorgsintez	35.6	34.9
Stavrolen	56.1	68.4
SIBUR-Kstovo	86.6	76.6
Tomskneftekhim	76.2	56.9
Ufaorgsintez	26.7	23.5
Naftan (Belarus)	21.8	39.3
SANORS	0.1	0.1
Azerkhimya	22.3	19.6
Shell	7.9	0.0
Iran	9.9	0.8
Turkey	3.8	0.0
Karpatneftekhim	14.6	0.0
Total	368.0	341.2

3,000 tons to Nizhnekamskneftekhim. In addition, SIBUR-Kstovo and Tomskneftekhim delivered a total of 16,400 tons to SIBUR-Togliatti, which is 17% higher. In the first eleven months of 2017, domestic consumers purchased 304,000 tons of C4s which is 4% more than in the same period of 2016.

Russian producers of butadiene increased imports of C4s in November to 9,600 tons, which is 15% more than in October. The increase in imports is due to the growth in production in Azerbaijan. In November, Azerkhimya shipped 3,800 tons of C4 fractions to Russian plants. Omsk Kaucuk increased purchases of C4s by 37% up to 2,900 tons (of which 2.400 tons of the product of Azerkhimya).

In addition, Nizhnekamskneftekhim bought 6.700 tons of the fraction in November, which is 6% more than in October. For the first eleven months in 2017 Russian imported purchased 81,300 tons of C4s.

Efremov Synthetic Rubber Plant-modernisation

Efremov Synthetic Rubber Plant is completing the modernisation of the production of low-molecular rubbers, and the production of high molecular weight rubbers. Thus, the refrigeration compressor station of polyisobutylene and the polymerisation of isobutylene is being re-equipped.

Russian Synthetic Rubber Exports (unit-kilo tons)		
Category	*Jan-Oct 17*	*Jan-Oct 16*
E-SBR	30.8	21.3
Block	29.6	28.9
SSBR	7.4	6.9
SBR	69.3	61.5
Polybutadiene	197.8	187.8
Butyl Rubber	108.0	109.7
HBR	109.3	100.3
NBR	21.7	24.7
Isoprene Rubber	252.1	216.3
Others	16.9	50.5
Total	843.0	808.0

Work under the project development of polyisobutylene production has been fully completed. In the course of the repair, the re-equipment of the dehydration unit was completed for ethanol with the organisation of the unit for the reception, storage and transfer of ethylene. The main products of EZSK are SKD polybutadiene rubber, as well as high molecular weight and low molecular weight polyisobutylene.

In August 2016, an agreement was signed between the government of the Tula Region and the Efremov Institute of Synthetic Rubber. Under the agreement Tatneft had to invest 1.5 billion roubles in the production of isobutylene on the EZSK base.

Russian synthetic rubber exports, Jan-Nov 2017

Russian exports of synthetic rubber totalled 843,000 tons in the first ten months of 2017 against 808,000 tons in the same period in 2016. Revenues for synthetic rubber exports jumped from $1039 million to $1484 million, thus reflecting on average price of more than double in 2017. Isoprene rubber sales totalled 252,100 tons in the first ten months of 2017 against 216,300 tons whilst polybutadiene shipments rose from 187,800 tons to 197,800 tons.

Russian Methanol Production (unit-kilo tons)		
Producer	*Jan-Nov 17*	*Jan-Nov 16*
Shchekinoazot	476.5	405.1
Sibmetakhim	806.1	617.7
Metafrax	1003.0	877.0
Akron	92.4	63.3
Azot, Novomoskovsk	218.8	265.4
Angarsk Petrochemical	2.4	0.6
Azot, Nevinnomyssk	112.9	100.5
Tomet	700.3	543.3
Ammoni	193.5	102.4
Totals	3606.0	2975.2

Methanol & related products

Russian methanol production Jan-Nov 2017

Methanol production in Russia dropped 5% in November to 351,700 tons, the decline due to some maintenance at Tomet. Demand for methanol at Togliatti has been affected by the shutdown of one of the urea-formaldehyde

concentrate plants belonging to Togliattiazot. Tomet reduced production by 20% in November to 61,200 tons. Less significant decreases in November were recorded by Azot Novomoskovsk, Ammoni, Metafrax (2% each) and Shchekinoazot by 1%.

Azot at Novomoskovsk produced 20,500 tons of methanol in November, Ammoni 17,700 tons, Metafrax 102,000 tons and Shchekinoazot 47,000 tons. Azot Nevinnomyssk Azot and Akron stabilised capacity utilisation in November, producing 11,000 tons and 9,300 tons respectively. Sibmetakhim increased production by 1% in November to 82,000 tons.

Russian Methanol Exports (unit-kilo tons)

Producer	*Jan-Nov 17*	*Jan-Nov 16*
Azot Novomoskovsk	123.8	158.1
Akron	36.2	1.8
Metafrax	360.2	352.0
Sibmetakhim	404.6	396.8
Tomet	202.4	156.1
Ammoni	16.0	0
Shchekinoazot	299.5	312.1
Total	1442.8	1377

Russian methanol exports Jan-Nov 2017

Exports of methanol from Russia totalled 1.442 million tons in the first eleven months in 2017 against 1.377 million tons in the same period in 2016. Sibmetakhim and Metafrax increased exports in 2017 whilst Shchekinoazot and Azot at Novomoskovsk reduced shipments. Ammoni at Mendeleevsk started exporting small volumes last year. Average prices for Russian methanol exports jumped to $281 per ton this year against $161 per ton in 2016.

Russian methanol domestic sales, Jan-Nov 2017

Sales of methanol on the Russian domestic market rose 4% in November over October to 139,000 tons. Tomet, Metafrax and Sibmetakhim accounted collectively for 79% of total sales on the market. Tatarstan producer Ammoni supplied 10,300 tons to the domestic market in November, increasing sales by 27% over October, whilst Shchekinoazot reduced shipments by 15% to 7,800 tons. Sibmetakhim supplied 29,500 tons in November, Tomet 44,300 tons and Metafrax 35,800 tons.

Russian Methanol Domestic Sales (unit-kilo tons)

Producer	*Jan-Nov 17*	*Jan-Nov 16*
Azot Nevinnomyssk	25.6	28.0
Azot Novomoskovsk	85.2	83.5
Metafrax	355.8	367.4
Sibmetakhim	311.7	292.6
Togliattiazot	438.5	363.4
Shchekinoazot	64.2	79.4
Ammoni (Mendeleevsk)	99.6	75.9
Others	3.6	22.9
Total	1384.1	1313.1

Azot at Novomoskovsk and Azot Nevinnomyssk reduced sales to 9,700 tons and 1,800 tons respectively. Methanol consumption in the Russian domestic market rose to 1.384 million tons in the first eleven months in 2017 against 1.313 million in the same period in 2016. Nizhnekamskneftekhim remains the largest consumer in Russia, using methanol for the production of MTBE, isoprene rubber and formaldehyde.

Shchekinoazot M-500 methanol project

As part of the implementation of the investment project Methanol M-500 Shchekinoazot is beginning the procedure for the Environmental Impact Assessment (EIA). The company is obliged to conduct a study of the impact of the projected facility on the environment before deciding on the feasibility of the project and the start of the relevant work. The Environmental impact assessment is designed to fulfill the nature, intensity, degree of danger of the impact of any type of planned activity on the state of the environment and public health.

After the commissioning of the project Methanol M-500, the company plans to increase the shipment of methanol both to the domestic market and to the external market. According to the stated intention, the site of the planned construction of the Methanol M-500 facility is located on the area of the existing enterprise of Shchekinoazot, in the southeast part of the industrial site.

Metafrax-Mitsubishi Heavy Industries

Mitsubishi Heavy Industries (MHI) has transferred a license for the technology of carbon dioxide (CO2) capture to Metafrax. The technology called KM CDR Process will be used at the new chemical plant being constructed by Metafrax. KM CDR Process involves the use of an advanced absorption solution (developed by MHI in cooperation with the energy company Kansai Electric Power), which significantly reduces energy costs. The license for the technology of CO2 recovery will receive the Swiss design firm Casale.

Previously, Metafrax started cooperation with Casale in terms of designing, logistics and construction in the production of ammonia, CO2 capture, and the establishment of enterprises for the production of urea and melamine. The construction of the plants is planned by Metafrax to be completed in 2021, including the capacity of 1200 tons per day. Casale will grant a sub-license to Metafrax.

Metafrax will synthesize ammonia by combining excess hydrogen from a methanol plant with nitrogen, which is obtained with the help of a newly constructed air separation plant. The CO2 extracted from methanol plant emissions will be used for the production of urea and melamine. From the new complex Metafrax will produce 894 tons of ammonia per day, 1,725 tons of urea and 40 tons of melamine. MHI says that the CO2 capture technology can be used in the production of methanol and dimethyl ether, in capturing and storing CO2 produced by the thermal power plants, as well as to increase the oil recovery by injecting CO2.

Russian Organic Chemical Exports (unit-kilo tons)

Product	*Jan-Oct 17*	*Jan-Oct 16*
N-Butanol	14.0	60.2
Iso-butanol	15.0	22.2
2-EH	17.6	29.8
Pentaerythritol	9.0	6.9
Phenol	3.5	7.3
Ethylene Oxide	12.9	13.7
Formaldehyde	18.1	24.6
DEG	17.5	41.6
MEG	40.6	48.7
Acetone	33.4	20.4
Acetic Acid	31.4	22.1
VAM	30.0	25.9
Butyl Acetate	21.0	8.4
Butyl Acrylate	32.1	7.8
Phthalic Anhydride	52.6	36.3

The project to build a complex for the production of melamine, urea, ammonia at Gubakha os worth more than €700 million. Loan agreements for a period of 13 years have been signed between Metafrax and Gazprombank. The financial resources are provided in the form of several loans under the guarantee of incomes, which Metafrax will receive after the start of production.

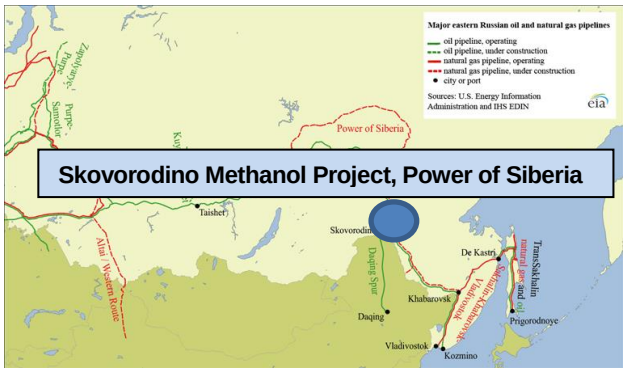
Metafrax is implementing several investment projects that are part of the company's development strategy. Work on the construction site, which will host the complex, was launched in November. Without Gazprombank's support, they might be in question. The Swiss company Casale SA will develop a detailed project, supply equipment and manage its construction for 408 million euros. Contracts worth 33.5 billion roubles for the construction of all auxiliary infrastructure on a turn-key basis and the construction of the main technological facilities of the plant were signed with NIIK at Nizhny Novgorod and Uralenergostroi at Sverdlovsk.

Metafrax-logistics

At the general meeting of shareholders of Metafrax held on 15 December 2017, the issue of reorganising Metafrax with the merged of the road company Gubakhatransport. The road company is the only carrier of products and supplies of raw materials for Metafrax and has accordingly become a participant in the production and technological process of the enterprise. It is for this reason that a decision was made to purchase Metafrax's shares of the company.

According to Metafrax production cannot develop without the development of the railway infrastructure. Thus, the company decided to purchase the shares of Gubakhatransport so that in the current year the design institute could start implementing the complex project for the development of the railway infrastructure. Both the company's ways and the way of Gubakhatransport will be involved in the project in 2018 and 2019 which will see some important changes to the logistics network for Metafrax.

The structure of Gubakhatransport includes a track section, nine diesel locomotives, a depot for servicing locomotives, and track machinery. The company is located on the site of Gubakha and Ugleuralskaya station. The main activity of Gubakhatransport is the supply-cleaning of wagons, shunting works, as well as maintenance and repair of railways.



Skovorodino methanol project

A feasibility study for the methanol project at Skovorodino carried out jointly with the Chinese partners and will soon be completed. The company Tehnolizing owns the oil terminal at

Skovorodino in the Amur Oblast in the Russian Far East, but due to falling oil transhipment volumes the group decided to restructure the business and look to start producing methanol. The facility could also include plans for the production of MTBE. The project capacity of the new methanol is expected to be around 1.2 million tpa.

The raw material for methanol production will be supplied by from the Power of Siberia gas pipeline which goes through Skovorodino. Deliveries of gas to China through the Power of Siberia are expected to begin in 2019, although it is unclear at this stage what volumes will be off taken. Most of the methanol to be produced at the new plant at Skovorodino is intended to be exported to China, and any surplus targeted on the domestic market in Russia. The project cost is valued at 38 billion roubles.

Russian N-butanol Exports (unit-kilo tons)

Producer	*Jan-Nov 17*	*Jan-Nov 16*
Gazprom n Salavat	3.2	56.6
SIBUR-Khimprom	6.9	5.7
Angarsk Petrochemical	3.2	0.5
Azot Nevinnomyssk	1.8	0.7
Dmitrievsky Chemical Plant	1.3	0.8
Total	16.3	64.4

Russian Isobutanol Exports (unit-kilo tons)

Producer	*Jan-Nov 17*	*Jan-Nov 16*
Gazprom n Salavat	8.6	5.8
SIBUR-Khimprom	8.5	18.9
Angarsk Petrochemical	0.4	0.0
Dmitrievsky Chemical Plant	0.1	0.1
Total	17.4	24.9

Organic chemicals

Russian butanol exports, Jan-Nov 2017

Exports of butanols from Russia amounted to 4,710 tons in November 41% more than in October. The share of n-butanol comprised 45% and isobutanol 55%. Gazprom neftekhim Salavat shipped 1,980 tons of butanols in November (42% of Russian exports), SIBUR-Khimprom 1,780 tons (38%), and Angarsk Petrochemical Company 880 tons (19%). In the first eleven months in 2017 Russian exports of normal butanol dropped from 64,400 tons in January to November 2017 to 16,300 tons. Gazprom neftekhim Salavat reduced exports from 56,600 tons to only 3,200 tons following the introduction of the acrylate complex at the start of 2017. Isobutanol exports dropped from 24,900 tons in January to November 2016 to 17,400 tons in the same period in 2016.

Russian butanol production Jan-Nov 2017

Butanol production in Russia rose 45% in November over October to 23,410 tons. The share of n-butanol in the gross volume of butanols production in November 2017 was 62%, and isobutanol 38%. Following maintenance Gazprom neftekhim Salavat increased production by 22% in November over October to 9,230 tons (40% of the Russian total). SIBUR-Khimprom increased production volumes by 44% to 8,640 tons (37%). Angarsk Petrochemical Company increased production 3.3 times as compared to October to 4,050 tons (17%).

Russian Butanol Domestic Sales (unit-kilo tons)

Producer	*Jan-Nov 17*	*Jan-Nov 16*
Gazprom n Salavat	8.1	23.9
SIBUR-Khimprom	29.4	33.2
Angarsk Polymer Plant	13.2	1.6
Azot Nevinnomyssk	2.4	4.2
Others	0.0	0.0
Totals	53.1	56.1

Azot Nevinnomyssk increased the production of n-butanol in November by 12%, to 1,490 tons (6%). In the first eleven months in 2017, butanols production in Russia amounted to 204,020 tons which is 1% less than in the same period in 2016.

Russian butanol domestic sales Jan-Nov 2017

SIBUR-Khimprom increased domestic sales of butanols by 28% in November compared to October, to 3,900 tons and Angarsk Petrochemical increased shipments by 20% to 1,500 tons. At the same time Gazprom neftekhim Salavat reduced shipments by almost 2.6 times to 470 tons. Azot at Nevinnomyssk did not ship alcohols to the domestic market in November.

Akrilat purchased 2,250 tons of butanols in November 11% up on November whilst Dmitrievsky Chemical Plant reduced volumes by 13% to 840 tons (14%). Volzhsky Orgsintez purchased 830 tons, 14% up. In the first eleven months in 2017 Russian domestic shipments of butanols dropped 8% to 53,100 tons.

Russian phthalic anhydride, Jan-Nov 2017

Exports of phthalic anhydride from Russia amounted to 3,870 tons in November which is 5% more than in October. The largest volume of production in November 2017 was exported to India (23% of the total supplies from Russia), Egypt (19%), Poland (12%), Nigeria (9%), China (8%), UAE (7%), Pakistan (7%) and Romania (5%). In the first eleven months in 2017, phthalic exports amounted to 44,930 tons which is 36% more than for the comparable period of 2016.

Russian Phthalic Anhydride Production (unit-kilo tons)

Producer	*Jan-Nov 17*	*Jan-Nov 16*
Gazprom n Salavat	9.1	7.9
Kamteks-Khimprom,	84.0	66.5
Total	93.1	74.4

The production of phthalic anhydride in Russia increased by 11% compared to October to 9,180 tons. Kamteks-Khimprom increased the output by 14%, to 8,100 tons whilst 1,070 tons of phthalic anhydride (12%) was produced at Gazprom neftekhim Salavat, 4% less than in October. In the period January to November 2017 the production of phthalic anhydride in Russia amounted to 93,080 tons which is 25% more than in the same period in 2016.

Russian Chemical Imports by value ($ million)

Product Group	*Jan-Nov 17*	*Jan-Nov 16*
Organic & inorganic chemicals	4,565.4	3,707.6
Pharmaceuticals	9,501.3	7,854.6
Cosmetics	2,771.0	2,275.4
Soap and detergents	1,192.1	1,059.3
Polymers and Rubber	10,128.4	8,370.4
Others	4,925.9	4,766.9
Total	33,084.2	28,034.2

Salavat acrylate complex-new derivative plants

In the proximity of the acrylate complex at Salavat, a number of new small plants could be established to produce low-tonnage chemical products. This may include the production of moisture-absorbing materials, acrylic paints and other products should be opened in the region within 3-5 years. One of the important problems of development of low-tonnage chemistry is a long chain of dealers between the producer and the consumer of petrochemical raw materials.

Belarus

Chemical production Belarus, Jan-Nov 2017

LDPE production in Belarus totalled 56,400 tons in January-November 2017 which was 39% less than in the same period in 2016. Azot at Grodno increased methanol production in the first eleven months to 76,500 tons against 63,700 tons, whilst increasing caprolactam production to 101,500 tons against 100,700 tons. Polyamide production at Grodno dropped slightly in January to November 2017 to 94,000 tons against 94,700 tons in the same period in 2016, whilst the production of fibres rose from 33,900 tons to 35,400 tons.

Belarussian PTA Imports (kilo tons)

Country	*Jan-Oct 17*	*Jan-Oct 16*
Belgium	6.052	0
Poland	16.3	20.1
Russia	5.7	2.2
South Korea	28.5	21.1
Portugal	0.0	1.0
Thailand	0.0	1.1
Turkey	1.0	0.0
Others	2.978	0
Total	60.6	45.4

Mogilevkhimvolokno PTA imports

Mogilevkhimvolokno imported 60,800 tons of PTA in the first ten months in 2017 against 45,400 tons in the same period in 2016. South Korea supplied 28,500 tons in January to October 2017 versus 21,100 tons in 2016. The company's strategy is aimed at reducing DMT in the production process for polyester fibres and increasing PTA which needs to be imported. Mogilevkhimvolokno can currently produce 138,250 tpa of DMT, 105,000 tpa of PET for the textile industry and 80,000 tpa food PET. The capacity for production of polyester fibres is rated at 67,000 tpa.

Belarussian Organic Chemical Exports (unit-kilo tons)

Product	*Jan-Oct 17*	*Jan-Oct 16*
Acyrolonitrile	41.4	29.1
Caprolactam	7.4	6.5
Phthalic anhydride	20.0	18.3
Methanol	17.4	28.0

Belarussian polymer imports, Jan-Oct 2017

Imports of polypropylene into Belarus totalled 80,800 tons in the first ten months in 2017, against 79,200 tons in the same period in 2016. The demand for all types of polypropylene rose in 2017, with the greatest increase was in copolymers of propylene. Imports of homopolymers amounted to 58,700 tons against 51,200 tons in January to October 2016, of which Russia supplied around 88%. Imports of copolymers in the period January to October 2017 rose to 21,000 tons from 20,400 tons in 2016.

Belarussian Polymer Imports (unit-kilo tons)		
Product	*Jan-Oct 17*	*Jan-Oct 16*
PVC	28.5	24.3
Polypropylene	80.8	79.2
LDPE	33.8	15.1
LLDPE	29.8	32.4
HDPE	41.5	37.4

PVC imports in Belarus totalled 28,500 tons in the first ten months in 2017 against 25,300 tons in the same period in 2016. The main reason for the rise has been in the increase demand from window manufacturers. Belarussian polyethylene imports decreased by 2.2% in the first ten months of 2017. LDPE imports rose from 15,100 tons to 33,800 tons, HDPE imports rose 3.1% to 41,500 tons whilst LLDPE imports fell from 32,400 tons to 29,800 tons.

Ukraine

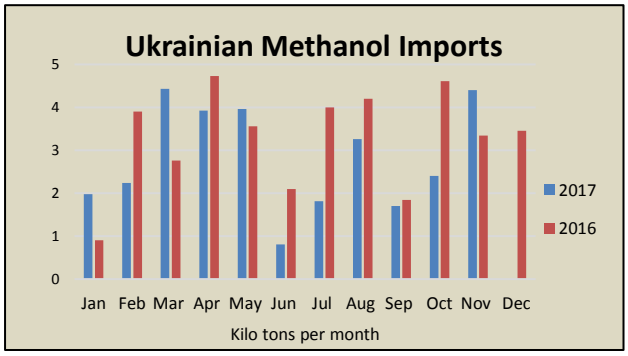
Ukrainian Polymer Imports (unit-kilo tons)		
Product	*Jan-Nov 17*	*Jan-Nov 16*
PVC	94.8	100.5
LDPE	61.4	58.2
LLDPE	52.4	60.6
HDPE	89.4	112.8
Ethylene Vinyl Acetate	14.2	13.1
PP	112.4	108.9

Ukrainian polymer imports, Jan-Nov 2017

In January-November 2017, imports of PVC to the Ukrainian market decreased by 5% compared to the same period of 2016 and amounted to 94,800 tons against 100,500 tons in 2016. The main reason for the reduction in external supplies is the resumption of its own production after a long period of inactivity. The resumption of its own production in July after several years of downtime at the base of the Karpatneftekhim allowed to reduce dependence on external supplies of PVC. In January-November 2017, North American resin imports amounted to 47,900 tons against 54,500 tons in the same period in 2016, whilst European supplies fell to 31,500 tons against 37,900 tons in January to November 2016. For eleven months, Russian PVC resin supplies amounted to 13,400 tons against 7,300 tons in the same period in 2016.

Imports of polyethylene to the Ukrainian market decreased in January to November by 5% compared to 2016 and amounted to 225,700 tons against 238,700 tons in the same period in 2016. Imports of HDPE totalled 89,400 tons against 112,900 tons, LDPE totalled 61,400 tons, which is 2% more than in 2016 and LLDPE rose from 53,400 tons to 60,600 tons. Imports of other types of polyethylene, including ethylene vinyl acetate (EVA), amounted to 14,200 tons against 12,100 tons. In January-November 2017 polypropylene imports to the Ukrainian market grew by 3% to 112,400 tons against 108,600 tons.

Polymer demand in Ukraine has been revived to some extent through improved economic conditions and some investment. In 2016 the market for LDPE rose by 4% over 2015 which was the year when the country faced major economic problems. LDPE consumption is expected over the next few years to rise at relatively slow rates mainly due to increased demand for other grades of polyethylene,



Ukrainian methanol imports, Jan-Nov 2017

Ukraine imported 4,400 tons of methanol in November against 2,400 tons in October. The share of Russian companies' products accounted for 86% of all methanol imports to Ukraine, or 3,800 tons, while Azot at Grodno 14% or 625 tons. Russian methanol sales to Ukraine were distributed between Metafrax and Akron, which resumed deliveries, as well as Shchekinoazot and Tomet.

Ukrainian trade companies reduced purchases of imported methanol in November and bought about 165 tons of product abroad (4% of total imports). At the same time, the leaders in terms of imports were domestic gas producers, which in November purchased 3,000 tons (70%), increasing volumes compared to October, almost 10 times. Domestic producers of formaldehyde and its derivatives (KarpatSmol at Kalush) accounted for 27% of total imported methanol in November, purchased 1,200 tons of products, which was 18% down compared to October.

Cherkassy Azot

Cherkassy Azot (part of Ostchem) has resumed the production of ammonia and urea after an overhaul was completed aimed at restoring the resource of technological equipment, ensuring its efficient operation in the production process. The first to launch operations proceeded shop A-5 for the production of ammonia. The next step was the launch of the shop M-2 for urea production, which is already out on the daily production of the product. Also, the launch of the ammonia shop enabled the company to increase daily production of ammonium nitrate up to 2,800 tons.

Azot specializes in the production of nitrogen fertilisers, caprolactam, ion-exchange resins. The capacity of Azot for ammonia is 962,700 tpa, ammonium nitrate 970,000 tpa, urea 660,000 tpa and 500,000 tpa. From 2011 to 2016, the holding invested 790 million hryvnia in Azot, of which 456 million was spent on capital repairs. In May 2017 a three-month repair was completed in the workshop for the production of urea M-2.

Ukrainian chemical imports, Jan-Nov 2017

Imports of phthalic anhydride to Ukraine amounted to 279 tons of which 257 tons were delivered from Belarus and the remainder from Austria. For the first eleven months of 2017, imports of phthalic anhydride into Ukraine rose 6% to 4,000 tons.

DOP imports into Ukraine amounted to 374 tons in November against 481 tons in October. Deza supplied 72% of DOP in November, followed by Boryszew (28%). In the first eleven months of 2017, the import of dioctyl phthalate to Ukraine amounted to 3,810 tons which is 8% less than in the same period of 2016.

Central Asia/Caucasus

Turkmenistan polypropylene 2017

The level of utilisation of polypropylene production capacities in the Turkmenbashi complex of oil refineries (TKNPZ) was 93.5% last year. TKNPZ produced 84,100 tons of polypropylene in 2017, 2% higher than in 2016. TKNPZ exported 74% of polypropylene production which amounted to 62,300 tons. Inventory at the end of the year decreased by 31% against 2016, amounting to 2,900 tons. Total domestic consumption for polypropylene in Turkmenistan was estimated at 18,900 tons.

Turkmenistan Polypropylene Market 2017

- Production, 84,100 tons (+2% vs 2016)
- Exports, 62,300 tons
- Domestic Consumption, 18,900 tons

Turkmenistan petrochemical project update

Work on the construction of gas chemical complex for the production of polyethylene and polypropylene at Kiyanly is well ahead of deadlines. At present, commissioning works are carried out at the main process units: gas separation, ethane cracking, production of high-density polyethylene and polypropylene.

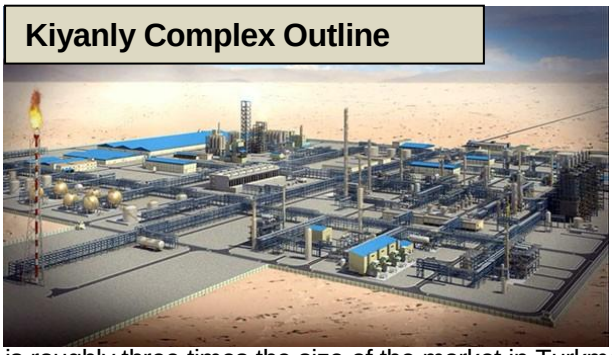
Investments in the project are estimated at more than $3.4 billion. The partners are Japanese Toyo Engineering, a consortium of South Korean companies LG International Corporation and Hyundai Engineering Corp. Ltd. License agreements were signed with Toyo (Japan), Ineos (UK), Lummus (USA), and Grace (USA). The facilities of the complex are planned to process 5 billion cubic metres of gas per annum and produce 386,000 tpa of polyethylene and 81,000 tpa of polypropylene.

Kiyanly Petrochemical Plans
Annual Capacity

- Gas processing, 5 billion cubic metres
- Polyethylene, 388,000 tons
- Polypropylene, 81,000 tons
- PVC, 100,000 tons
- Styrene-butadiene rubber, 80,000 tons
- Polystyrene, 45,000 tons
- Caustic soda, 82,000 tons
- Hydrochloric acid, 10,000

As part of comprehensive measures to develop the economy, it is planned to build a plant at Kiyanly for PVC, polypropylene, polyethylene, ethylene, caustic soda, hydrochloric acid, chlorine.

Kiyanly Complex Outline



According to preliminary estimates, Kiyanly plant will be able to process up to 5 billion cubic metres of natural gas per annum. The launch of the enterprise is scheduled for the end of September 2018 preceded by the launch of ethylene facilities.

The opening of the production plants for PVC and caustic soda is scheduled for 2024. The PVC plant is being designed at a capacity of 100,000 tpa which is roughly three times the size of the market in Turkmenistan. Thus, the country will seek to export around 70,000 tpa of PVC to the Russian and other markets.

Construction of a large-scale petrochemical complex on the Caspian coast in Kiyanly started in 2013. As of the beginning of October 2017, 63% of all planned works had been completed and 97% of the equipment is shipped. The country aims at strengthening the development of the gas and chemical industry in the next ten years by implementing numerous projects in this area. Essentially it is planned to reconstruct a natural gas processing plant and launch production of liquefied gas at the Bagaja deposit in Lebap province and build a gas and chemical complex with the capacity of 80,000 tpa of styrene-butadiene rubber and 45,000 tpa of polystyrene.

Kazakh polymer imports, Jan-Nov 2017

Imports of PVC into Kazakhstan decreased by 6% in January to November 2017 compared to the same period in 2016 and amounted to 48,100 tons against 51,000 tons. China supplied 92% of shipments to Kazakhstan in January to November 2017 whilst Russia supplied around 4,000 tons.

Kazakh Polymer Imports (unit-kilo tons)

Product	*Jan-Nov 17*	*Jan-Nov 16*
HDPE	86.0	66.1
LDPE	19.7	15.7
LLDPE	6.3	4.2
PVC	48.1	52.9
PET	52.0	51.5
Polypropylene	30.9	28.2

Imports of polyethylene into Kazakhstan increased by 27% in the period January to November 2017 compared to 2016 and amounted to 112,000 tons. HDPE imports rose 31% to 86,000 tons, LDPE rose 13% to 19,700 tons, and LLDPE rose 25% to 6,300 tons. In January-November last year, imports of polypropylene into Kazakhstan increased by 28% to 30,900 tons. Imports of polypropylene homopolymers rose from 15,300 tons to 18,900 tons in the period January to November 2017 whilst imports of propylene copolymers rose to 12,000 tons against 8,800 tons. Exports of polypropylene also grew by 20% in January to November 2017 to 18,600 tons.

Shymkent-ETBE, MTBE & polypropylene

Construction of a plant for the production of ETBE, MTBE and powder polypropylene is under consideration at Shymkent in southern Kazakhstan. The project involves the processing of liquefied hydrocarbon gas, which will be produced by the Shymkent refinery after its modernisation, and the production of ETBE and MTBE and powder polypropylene. The project will promote the development of a petrochemical cluster in the region, production of various types of polymer products from polypropylene.

Thus, the new enterprise will provide raw materials for the production of polypropylene pipes, bags and even utensils. Part of the product will be used by local entrepreneurs, and the other part will be exported to Russia, China and Turkey. The project budget is 28 billion Tenge (more than $84 million). At the same time, 20 billion Tenge will be provided by the Development Bank of Kazakhstan, and 8 billion Tenge will be allocated from own funds.

Azerbaijan Chemical Production (unit-kilo tons)

Product	*Jan-Dec 17*	*Jan-Dec 16*
Ethylene	96.1	103.9
Polyethylene	93.2	98.3
Propylene	48.5	52
Propylene captive	37.6	41
Isopropanol	11.885	8.992
Methanol	265.8	117.9

Azerbaijan-chemical production 2017

The monetary value of the production of chemical goods in Azerbaijan comprised 503.2 million manat which is 16.5% more than in 2016. Last year, 48,500 tons of propylene was produced (37,600 tons of commodity propylene), 93,200 tons of polyethylene, and 96.100 tons of ethylene. Production of propylene and ethylene decreased by 7.2% against 2016 and polyethylene dropped by 7%. During 2017 nitrogen production in Azerbaijan and amounted to 23,220 thousand cubic metres. Other products included 198.5 tons of iodine, 3.5 million cubic metres of oxygen, 11,885 tons of isopropanol, and 265,800 tons of methanol tons. The production of paint and varnish products totalled 9,817 tons, and other organic solvents and diluents 11,839 tons.

Relevant Currencies

Czech crown. Kc. $1= 20.852. €1 = 27.444: Hungarian Forint. Ft. $1 = 229.253. €1 = 310.141: Polish zloty. zl. $1=3.016. €1 =4.14 Ukrainian hryvnia. $1 = 226.4 €1 = 29.6: Rus rouble. $1 = 61.2 €1= 69.0

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