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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Key points from this month's issue

Central European petrochemical markets

- PKN Orlen wants to spend about zl 8.3 billion in the next five years to not only tackle some of the product deficits in the Polish chemical industry but also to meet the expected growth in demand for petrochemical. The company intends to implement new investments in Płock and Wloclawek by 2023. Orlen Poludnie has decided to build propylene glycol installation allowing for further use of produced glycerine.

- Large Russian companies such as Gazprom and Lukoil remain interested to take over Petrohemija at Pancevo, but if the Russian oil and gas companies abandon the takeover for some reason, Serbia has plan B, counting on Chinese companies.

Russian chemical production

- Russia's output of chemical products rose by 2.4% in the first eleven months of 2018. Ethylene production rose 4.4% to 2.7 million tons, whilst benzene rose 3.4% to 1.278 million tons and caustic soda production rose 3.2% to 1.164 million tons. Russian propylene production totalled 1.995 million tons in the first eleven months in 2018, against 1.830 million tons in the same period in 2017.

- Russian polypropylene production dropped 2.6% in the first eleven months in 2018 to 1.24 million tons, whilst HDPE production increased 6.5% in the first eleven months in 2018 to 877,600 tons. Russian synthetic rubber production totalled 1.5 million tons in the first eleven months in 2018 against 1.170 million tons in the same period in 2017.

Russian chemical trade

- Russian exports of synthetic rubber increased to 840,300 tons in the first ten months in 2018 against 843,000 tons in the same period in 2017. Revenues from synthetic rubber exports dropped from $945 million to $846 million reflecting a fall per ton from $1839 to $1670. The highest value product category exported from Russia is halogenated butyl rubber (HBR). Volatility in raw materials prices for tyres and rubber goods has moderated since last year, but market is still prone to wild swings.

Russian chemical projects

- Nizhnekamskneftekhim has signed contracts with Haldor Topsoe to provide a license and engineering services for the new methanol production technology with a capacity of 500,000 tpa. Methanol is used by Nizhnekamskneftekhim in the production of formaldehyde, which is necessary to produce isoprene. Therefore, the new installation will reduce costs and improve the efficiency of production of isoprene rubber.

CENTRAL & SOUTH EAST EUROPE

PKN Orlen group-investments in petrochemicals

As part of its development programme of the petrochemical industry PKN Orlen wants to spend about zl 8.3 billion in the next five years to not only tackle some of the product deficits in the Polish chemical industry and also to meet the expected growth in demand for petrochemical. The company intends to implement new investments in Płock and Wloclawek by 2023.

Polish PTA Exports, Jan-Oct 2018		
Country	*€ million*	*Vol (ktons)*
Belarus	10.3	14.8
France	1.4	2
Netherlands	1.0	1.4
Lithuania	5.3	7.9
Germany	165.8	238.9
Italy	1.6	2.2
Switzerland	3.4	4.4
Others	2.6	3.3
Total	191.4	274.9

The last major investment undertaken by PKN Orlen in petrochemicals involved the paraxylene and PTA projects, at Plock and Wloclawek respectively, which were started seven years ago. The investments have turned out to be a project of significant success for the development of the Polish petrochemical industry, due to the scale of production, the use of innovative technologies and capital invested. PKN Orlen operates plants of 400,000. tpa of paraxylene and 600,000 tpa of PTA which places it in third place in Europe behind BP Chembel from Belgium and the Portuguese company Artlant.

PKN Orlen Chemical Production (unit-kilo tons)		
Product	*Jan-Nov 18*	*Jan-Nov 17*
Ethylene	419.9	451.0
Propylene	272.3	318.7
Butadiene	48.2	52.9
Phenol	38.7	41.1
Polyethylene	309.5	324.1
Polypropylene	246.4	253.4

Future investments in petrochemicals by Orlen are targeted on an increase of production capacities in monomers and derivatives from aromatics and olefins, such as phenol and propylene in addition to a cracker expansion. Production for many products has remained unchanged for many years, and there is considerable scope for building new facilities.

Orlen Południe-propylene glycol project

Fuel subsidiary Orlen Poludnie has decided to build propylene glycol installation allowing for further use of produced glycerine. Orlen Południe wants to build a glycol installation at the Trzebinia refinery where capacity will be around 30,000. tpa, covering the demand for this product in Poland. The project, estimated at over zl 200 million, will be implemented in the period 2019-21. The process of selecting the contractor is currently underway.

Polish Glycol Imports (unit-kilo tons)				
Product	*2015*	*2016*	*2017*	*Jan-Oct 18*
Ethylene Glycol	29.4	26.4	19.1	20.8
Propylene Glycol	15.1	18.3	20.3	19.2

Unipetrol-new energy source

Unipetrol wants to prepare a feasibility study for a new energy source at the Chempark Zaluzi plant. Offers in the proceedings regarding the feasibility study of the new power unit at Litvinov could be submitted by 25 January. Currently two power units operate in the Chempark Zaluzi complex, including the T 700 brown-coal power plant, which was put into operation in the early 1960s, and its current main devices which have been in operation for 20-30 years. The year 2027 is considered the end of the life of the T700 installation. A long-time cogeneration plant would require many investments to meet the limits of the directive on industrial emissions of the European Union, which will apply from 2029.

Czech Petrochemical Exports (unit-kilo tons)		
Product	*Jan-Nov 18*	*Jan-Nov 17*
Ethylene	67.4	62.2
Propylene	20.4	23.2
Butadiene	0.6	5.2
Benzene	30.9	16.9
Toluene	13.2	10.8
Ethylbenzene	114.7	117.7

Czech petrochemical exports, Jan-Nov 2018

Czech ethylene exports totalled 67,400 tons in the first eleven months in 2018 against 62,200 tons in the same period in 2017. Most of the ethylene is shipped to Germany by pipeline.

Exports of ethylbenzene, produced at Kralupy, amounted to 114,700 tons in January to November 2018 versus 117,700 tons. Propylene exports totalled 20,400 tons in the first eleven months in 2018 versus 23,200 tons in the same period in the previous year.

Czech PVC Chain Trade (unit-kilo tons)		
	Jan-Nov 18	Jan-Nov 17
EDC Imports	84.6	1.0
PVC Imports	127.9	125.9
PVC Exports	113.1	91.2

Spolana, EDC imports Jan-Nov 2018

Spolana imported 84,600 tons of EDC in the first eleven months in 2018 to compensate for the closure of the mercury electrolysis plant at Neratovice in November 2017. Exports of PVC actually increased in 2018, rising to 113,100 tons versus 91,200 tons in the first eleven months in 2017 whilst PVC imports were virtually unchanged.

Czech Organic Chemical Imports (unit-kilo tons)		
Commodity	Jan-Nov 18	Jan-Nov 17
Methanol	77.4	86.7
Isopropanol	3.2	3.2
N-Butanol	10.8	10.4
Other Butanols	0.3	0.3
2-EH	24.6	21.6
Ethylene glycol	8.7	8.7
Propylene glycol	4.9	8.7
Pentaerythritol	0.6	0.7
Glycerol	38.8	30.3

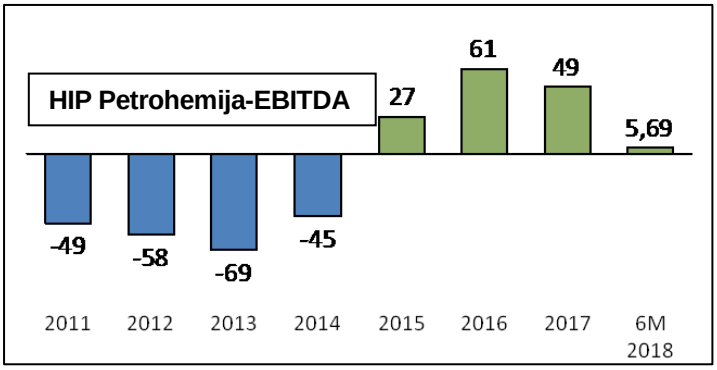
Czech chemical imports Jan-Nov 2018

Propylene inward shipments into the Czech Republic rose to 48,573 in the first eleven months from 40,370 tons in January to November 2017.

Propylene imports were sourced mostly from the EU, including Germany, Ukraine, Slovakia and Poland. For other monomers, butadiene imports into the Czech Republic dropped to 32,679 tons in the first eleven months in 2018 against 37,851 tons in the same period in 2017, whilst benzene volumes dropped slightly from 72,938 tons to 67,897 tons.

Regarding organic chemicals, TDI imports into the Czech Republic dropped from 14,100 tons in the first eleven months in 2017 to 12,158 tons. Germany increased TDI shipments in January to November 2018 to 4,030 tons. MDI imports rose from 25,828 tons to 28,251 tons in 2018, with the largest suppliers including Germany, Hungary and Belgium. Other sources of imports included China and UAE.

Czech inward shipments of methanol dropped to 77,400 tons in the first eleven months in 2018 against 86,700 tons in the same period in 2017. Oxo alcohol imports remained stable, with an increase recorded for 2-ethylhexanol (2-EH) to 24,971 tons from 21,620 tons in 2017. Imports of 2-EH in January to November 2018 were sourced mainly from Poland (16,994 tons), Germany (3,164 tons) and Russia (3,526 tons).



Privatisation of HIP-Petrohemija in 2019

Large Russian companies such as Gazprom and Lukoil remain interested to take over HIP-Petrohemija at Pancevo, but if the Russian oil and gas companies abandon the takeover for any reason, Serbia has a back-up plan counting on Chinese companies. The petrochemical company is a far more attractive proposition than a few years ago when it was faced by mounting debts and operational losses. After 47.7% of its debt was written off in 2017 and a part of its liabilities were converted into company shares, the company's profit in 2017 amounted to 40.4 billion dinars. Thus, in the past 12-18 months Petrohemija has wiped out most of its debts. Revenues in the first half of 2018 amounted to €155.4 million, whilst achieving an EBITDA of €5.7 million.

NIS owns 21% of HIP Petrohemija and NIS has been engaged increasing the operational efficiency of the company with which it has a strategic cooperation contract since 2011. Although NIS does not deal with petrochemical products directly, the connection with naphtha makes the interface between the two plants important. Thus, there are good reasons for uniting NIS and Petrohemija to be united under the same company as they both use the same energy source.

HIP Petrohemija-profile

HIP-Petrohemija is linked by pipeline between the petrochemical complex and the Pancevo oil refinery for the transport of semi-products. Other product pipelines include ethylene and propylene which

connect to the Romanian border and further to the Romanian producer Solventul which is now closed and has been dismantled. The length of the pipeline comprises about 65 km in Serbia and about 50 km through Romania, consisting of two parallel product pipelines:

Serbian Chemical Exports (unit-kilo tons)		
Product	**Jan-Oct 18**	***Jan-Oct 17***
Polyethylene	99.7	93.4
Polypropylene	14.8	12.3
Styrene Butadiene Rubber	16.0	11.3
Methanol	102.4	106.3
Acetic Acid	72.7	77.9

HIP Petrohemija's capacities include 200,000 tpa of ethylene, 85,000 tpa of propylene, 90,000 tpa of HDPE and 65,00 tpa of LDPE. The plant also produces C4-fraction, butadiene, MTBE and polyethylene pipes for water and gas.

Slovnaft-weak oil product markets

Slovnaft is assuming that conditions in the oil markets will worsen in 2019 without much prospect for growth. As a result of market conditions, Slovnaft is implementing a number of small steps aimed at a systemic reduction of company costs in the unproductive sphere and, at the same time, to the increase in revenues in other product areas such as petrochemicals.

Slovnaft plans to continue investing in a long-term strategy, last year the company invested roughly €100 million of which around €30 went into general improvements in the refinery and petrochemical units. For the replacement of catalysts, chemicals and for the acceleration of processes in production facilities, Slovnaft spent €11 million in 2018. This year Slovnaft will start building a new oil tank and expanding the storage capacity of polypropylene, which will require nearly €16 million euros. Another major investment includes the construction of a cryogenic ethylene reservoir.

PCC Rokita-capital programme

The investment plan of the Capital Group PCC Rokita SA for the years 2018-2020 covers a range of projects with a total value of approximately zl 700 million. PCC Rokita is considering further development of membrane electrolysis capacity, whilst looking into building a research and development laboratory together with a scaling hall and a warehouse. PCC Rokita is also planning to modernize the combined heat and power plant.

The investment plans are coordinated to the modernisation of the infrastructure related to the distribution and transmission of electricity on the company's premises. Regarding finance, PCC Rokita and PCC Exol have been consistently obtaining financing for further development through public bond issues for several years. Both companies have now approved public bond issue programmes. The PCC Rokita prospectus with a value not higher than zl 300 million is valid until 25 June 2019. PCC Exol may issue bonds with a total value not higher than zl 200 million until 23 July 2019.

PCC Rokita announced in January that it was interested in obtaining a loan for investment projects from the European Investment Bank (EIB). Thus, if the company receives financing from the EIB, then it can either abandon the issue of corporate bonds or significantly reduce them.

Polish Methanol Imports (unit-kilo tons)			
Country	***Jan-Oct 18***	***Jan-Dec 17***	***Jan-Dec 16***
Belarus	7.1	7.3	13.7
Cyprus	33.5	0	0
Finland	25.2	91.5	0
Germany	91	98.7	66.2
Lithuania	3.2	2.7	1.2
Norway	55.7	89.6	42.1
Netherlands	0.2	0.4	25.5
Russia	353.1	276	310.0
Slovakia	9.2	1.4	0.5
Venezuela	46.3	75	0.0
Others	0.0	2.3	2.0
Total	624.5	644.9	461.2

Polish methanol imports and potential projects

Polish methanol imports totalled 624,500 tons in the period January to October 2018 against 644,900 tons for the whole of 2017 and 461,200 tons for 2016. Russia supplied 353,100 tons directly to Poland in the first ten months in 2018 against 276,000 tons in the previous year, whilst another 25,200 tons came from Finland.

Other key importers of methanol to Poland include Germany, supplying 91,000 tons in January to October 2018, followed by Norway with 55,700 tons and Venezuela with 46,300 tons. Cyprus emerged for the first time as a supplier in 2018, shipping 33,00 tons to Poland in January to October.

PGNiG is a major Polish methanol consumer. Methanol is supplied to two branches at Zielona Góra and Sanok, in addition to the supply of glycols (DEG, TEG, and MEG). Methanol supplies to PGNiG's sites comes mostly from two Polish traders Solvachem at Wroclaw and Brenntag Polska at Kedzierzyn Kozle. Poland currently lacks its own methanol production and relies completely on imports.

Grupa Azoty ZAK at Kedzierzyn had previously considered construction of a coal-based methanol plant for several years but shelved the project in 2015. More recently, Polish coal producer Polska Grupa Górnicza (PGG) has shown interest in the implementation of the coal gasification project and sees the chances of its commercial success. Prices for methanol are high enough to invest in coal gasification and syngas.

Polish Chemical Production (unit-kilo tons)		
Product	***Jan-Nov 18***	***Jan-Nov 17***
Caustic Soda Liquid	289.9	323.2
Caustic Soda Solid	53.5	71.9
Ethylene	419.9	451.0
Propylene	272.3	318.7
Butadiene	48.2	52.9
Toluene	12.3	18.2
Phenol	38.7	41.1
Caprolactam	152.6	152.0
Acetic Acid	11.9	22.6
Polyethylene	309.5	324.1
Polystyrene	55.1	50.8
EPS	81.3	90.2
PVC	222.2	269.3
Polypropylene	246.3	253.4
Synthetic Rubber	245.5	224.5
Ammonia (Gaseous)	2311.0	2516.0
Ammonia (Liquid)	113.7	89.6
Pesticides	49.0	47.3
Nitric Acid	2127.0	2151.0
Nitrogen Fertilisers	1823.0	1899.0
Phosphate Fertilisers	399.4	422.3
Potassium Fertilisers	379.8	391.1

Grupa Azoty Police, logistics

The Management Board of Grupa Azoty Maritime Port of Police and PKP Polskie Linie Kolejowe have signed an agreement regarding the creation of a direct railway connection with the port at Police. As part of the investment, a branch will be established, leading from the Police railway station to the port whilst a new track and traction network will be built. Currently, freight trains traveling on the Szczecin-Trzebież Szczeciński line to the port of Police are required to must pass through a station that is part of the chemical plant away from the port. After the construction of a new section of the track this will avoid this necessity.

Seaports are crucial for Grupa Azoty because it exports its products and imports raw materials. With large purchases and sales, Azoty understands that the developed port infrastructure allows the Police division and group to achieve high operational efficiency, with less cost.

Russia

Russian chemical production, Jan-Nov 2018

Russia's output of chemical products rose by 2.4% in the first eleven months of 2018. Ethylene production rose 4.4% to 2.7 million tons, whilst benzene rose 3.4% to 1.278 million tons and caustic soda production rose 3.2% to 1.164 million tons. Russian propylene production totalled 1.995 million tons in the first eleven months in 2018, against 1.830 million tons in the same period in 2017.

Russian Chemical Production (unit-kilo tons)		
Product	***Jan-Nov 18***	***Jan-Nov 17***
Caustic Soda	1,164.5	1,112.5
Soda Ash	3,138.0	3,157.0
Ethylene	2696.8	2598.2
Propylene	1,995.2	1,829.8
Benzene	1,270.4	1,238.0
Xylenes	487.9	493.4
Plastics in Bulk	7,455.0	7,054.0
Polyethylene	1,988.0	1,802.0
Polystyrene	502.6	499.1
PVC	923.3	856.8
Polypropylene	1,239.4	1.236.3
Polyamide	154.8	145.2
Synthetic Rubber	1,500.0	1,440.0

Russian polypropylene production dropped 2.6% in the first eleven months in 2018 to 1.24 million tons, whilst HDPE production increased 6.5% in the first eleven months in 2018 to 877,600 tons. Russian synthetic rubber production totalled 1.5 million tons in the first eleven months in 2018 against 1.440 million tons in the same period in 2017. Domestic demand for synthetic rubber has benefited last year from increased tyre production, in all categories of cars, lorries and tractors.

Russian caprolactam production rose to 356,300 tons in the first eleven months in 2018 against 318,600 tons in the same period in 2017. Kuibyshevazot increased production from 171,300 tons whilst SDS Azot at Kemerovo increased production from 100,200 tons to 112,800 tons.

Russia's large trade deficit in chemical industry products shows in aggregate terms no signs of falling, although the country maintains a huge surplus in fertiliser shipments. The largest deficit area relates to pharmaceutical intermediates and animal feed where Russia is heavily dependent on imports of amino acids such as lysine and methionine. Notwithstanding, there is investment progress underway in some of these product areas, attempting to tackle higher value import dependencies. However, moving from the feedstock base to advanced products represents the most difficult challenge for the Russian chemical industry.

Regarding current investments, SIBUR's ZapSibNeftekhim project is scheduled for completion in the next few months. The project is designed to support the development of local processing businesses in the Tobolsk region whilst also challenging domestic imports of HDPE, LLDPE and polypropylene. The plant capacities will enable a large amount of production to be exported helping to reduce to deficit in Russia's polymer and rubber trade where imports totalled $12.2 billion in 2018.

As for other large-scale polymer projects in Russia Nizhnekamskneftekhim is progressing with its 600,000 tpa cracker and polyolefin expansion. However, due to changing global perceptions towards plastics it is no longer assumed that demand for virgin polymer will to continue to rise unabated and it may become harder to justify new polyethylene plants.

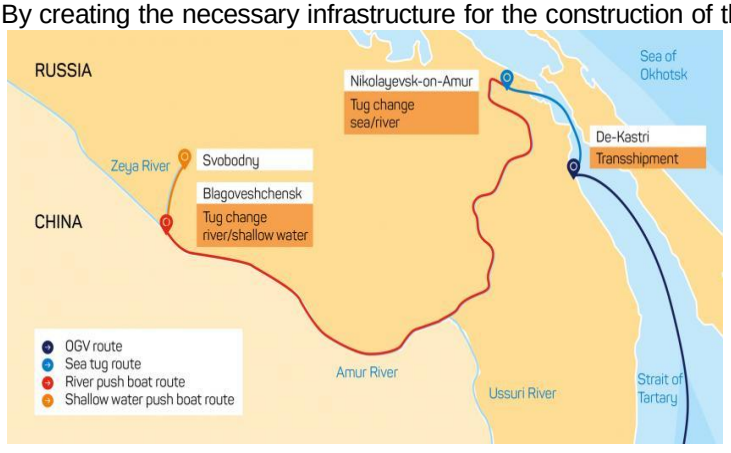
Russian Petrochemical Projects

Gazprom-Power of Siberia & Amur Gas Processing Plant

Whilst the bulk of the gas to be transhipped through the Power of Siberia gas pipeline is intended for the Chinese market, Gazprom will be able to direct one billion cubic metres of gas to the Amur Gas Processing Plant, another billion for use in the Amur Region and another billion for Gazprom's own needs at the Zeya compressor station.

Up to 38 billion cubic metres of gas per annum will be supplied to China through the Power of Siberia, which represents a long-term Russian policy goal, but as a direct side-effect it has allowed the construction of the Amur Gas Processing Plant near Svobodny. This plant will become the largest natural gas processing plant in Russia and the second largest in the world; it will reach the peak of its construction in 2019. At the end of 2018 the project had reached 24% of its schedule.

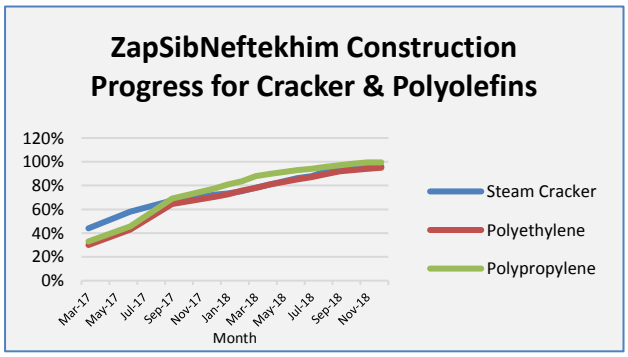
By creating the necessary infrastructure for the construction of the Amur Gas Processing Plant, Gazprom has set up the basis and equipment delivery routes that make it possible for SIBUR to consider constructing a gas-chemical complex should SIBUR decide to proceed. For the purpose of delivery of columns and other oversized and large cargoes, the Amur GPP was forced to acquire its own fleet of barges for transportation from the Pacific coast and to construct new railway stations linking to the Trans-Siberian Railway. This involves a twelve-kilometre railway stretch, a railway bridge across the Bolshaya Pera River, as well as an overpass crossing the regional highway.



The Zavodskaya station was built directly near the GPP site. The Zavodskaya-2 station is located next to the existing Ust-Per station. In the seaport of De-Kastri in the Khabarovsk Territory, construction materials and equipment were reloaded onto vessels of the river-sea class and the sent through the port of Nikolaevsk-on-Amur, before shipment along the Amur and Zeya rivers.

In 2018 Gazprom completed the main volume of construction of the linear part of the Power of Siberia gas pipeline. It continued the development of the Chayanda field, from which gas will come first to the Chinese market. The construction of the Amur GPP is carried out 15 kilometres from Svobodny in the Amur Region, on the banks of the Zeya River. In December 2018, 10,000 people worked on the GPP construction site, living in two camps for 7,500 and 3,500 people. In 2018, work began on the construction of the third and fourth technological lines. The total volume of building materials is over 4,500 tons of metal structures, 68,700 cubic metres of concrete poured, 38,200 piles.

The first stage of the Amur Gas Processing Plant (two technological lines) are intended to be commissioned by April 2021, and from 1 January 2025 the GPP is expected to reach its design capacity. The launch of the enterprise will enable production of up to 2.6 million tpa, 1.6 million tpa of liquefied hydrocarbon gases, up to 60 million cubic metres of helium per annum and up to 38 billion cubic metres of marketable gas.



ZapSibNeftekhim-progress end of 2018

By the end of December 2018, the progress of construction of the ZapSibNeftekhim complex had amounted to 92.5% in full, including 92.4% for construction. As for the production units, the cracker had achieved 96% of its project schedule by the end of 2018, polyethylene 95% and polypropylene 99.6%. As part of the whole complex 373 km of underground pipelines were laid which is 99% of the total amount of the project. In December a high-pressure steam line was blown to the ethylene and propylene turbine compressors, whilst the polypropylene plant remains the closest polyolefin unit to be completed.

Russian Ethylene Production (unit-kilo tons)		
Producer	***Jan-Nov 18***	***Jan-Nov 17***
Angarsk Polymer Plant	173.6	180.2
Kazanorgsintez	528.4	531.5
Stavrolen	290.2	232.5
Nizhnekamskneftekhim	555.3	559.0
Novokuibyshevsk Petrochemical	55.2	51.9
Gazprom n Salavat	350.3	286.5
SIBUR-Kstovo	353.1	341.4
SIBUR-Khimprom	52.2	45.9
Tomskneftekhim	238.7	254.6
Ufaorgsintez	99.9	114.8
Total	2696.8	2598.2

Russian Propylene Production (unit-kilo tons)		
Producer	***Jan-Nov 18***	***Jan-Nov 17***
Angarsk Polymer Plant	101.1	99.7
Kazanorgsintez	35.2	36.3
Lukoil-NNOS	225.5	267.7
Stavrolen	115.1	98.0
Nizhnekamskneftekhim	279.6	267.0
Novokuibyshevsk Petrochemical	39.4	0
Omsk Kaucuk	37.4	13.5
Polyom	172.3	181.5
Gazprom n Salavat	151.0	113.8
SIBUR Kstovo	156.3	151.4
SIBUR-Khimprom	60.5	61.5
Tomskneftekhim	128.0	138.6
SIBUR Tobolsk	341.2	246.0
Ufaorgsintez	152.6	154.8
Total	1995.2	1829.8

Russian petrochemical markets

Russian ethylene & propylene production, Jan-Nov 2018

Russian ethylene production rose to 2.697 million tons in the first eleven months in 2018 against 2.598 million tons in the same period in 2017. The largest rise was recorded by Gazprom neftekhim Salavat, increasing production from 286,500 tons to 350,300 tons and helping to compensate for reduced volumes at the crackers Tomsk, Ufa and Angarsk due to maintenance shutdowns. Production is expected to be boosted in 2019 by the start-up of the ZapSibNeftekhim complex at Tobolsk. In recent month, ethylene prices in Russia have been rising due to the rise in naphtha prices and the weakened rouble.

SIBUR-Kstovo is building a loading-loading ramp and gasoline storage park. Naphtha is the feedstock of the plant for the production of ethylene and propylene. The overpass and storage park will allow SIBUR-Kstovo to diversify the supply of raw materials.

Russian propylene production totalled 1.995 million tons in the first eleven months

in 2018, against 1.830 million tons in the same period in 2017. The largest increase was noted by Gazprom neftekhim Salavat which produced 151,000 tons against 113,800 tons, whilst overall SIBUR Tobolsk remained the largest producer followed by Nizhnekamskneftekhim.

Russian propylene sales, Jan-Nov 2018

Propylene sales on the Russian domestic market totalled 340,300 tons in the first eleven months in 2018, up from 336,400 tons in the same period in 2017. The rise was largely due to increased purchases from SIBUR-Tobolsk to supplement propylene production. SIBUR-Kstovo increased sales from 83,900 tons in January to November 2017 to 102,100 tons whilst falls were noted for Angarsk Polymer Plant and Lukoil-NNOS at Kstovo.

Propylene supply on the Russian domestic market has been tight since the start of the new year, following the trend in December. Production of propane-propylene fractions at the Moscow refinery has been idle due to the accident that occurred in mid-November. This has meant that the requirements for NPP Neftekhimya have been met by supplying propylene from Lukoil-NNOS and propane-propylene fractions from the Ryazan Refinery, Slavneft-YANOS and the Omsk Refinery.

Russian Propylene Domestic Sales (unit-kilo tons)

Company	*Jan-Nov 18*	*Jan-Nov 17*
Angarsk Polymer Plant	57.8	66.1
Omsk Kaucuk	1.3	2.1
SIBUR-Kstovo	102.1	83.9
Akrilat	5.0	1.4
Lukoil-NNOS	165.6	174.6
Tomskneftekhim	0.2	4.7
Gazprom n Salavat	7.9	0.0
Stavrolen	0.2	0.0
SIBUR Tobolsk	0.0	2.0
Ufaorgsintez	0.3	1.5
Total	340.3	336.4

In addition to Neftekhimya's feedstock disruptions, the production of propylene at SIBUR-Tobolsk was lower in December due to technical problems. The Moscow Refinery's catalytic cracking unit is not expected to be working again until February putting pressure on supply availability whilst SIBUR-Tobolsk still remains operating under full capacity.

Russian propylene exports dropped to 87,600 tons in the first eleven months in 2018, down from 106,600 tons in 2017. The drop was due to increased domestic sales. SIBUR Kstovo reduced exports from 40,500 tons in January to November 2017 to 19,400 tons.

Bulk Polymers

Russian polyethylene production Jan-Nov 2018

HDPE production in Russia increased 6.5% in the first eleven months in 2018 to 875,800 tons. Russia's largest producer Kazanorgsintez increased production by 1% to 465,500 tons, whilst Nizhnekamskneftekhim produced only 43,800 tons in the eleven-month period due its focus on LLDPE. Stavrolen at Budyennovsk increased HDPE production by 24% to 266,700 tons and Gazprom neftekhim Salavat increased production 30% to 109,000 tons. Production should rise significantly after the start-up of the ZapSibNeftekhim complex at Tobolsk in 2018.

Russian HDPE Production (unit-kilo tons)

Producer	*Jan-Nov 18*	*Jan-Nov 17*
Kazanorgsintez	465.5	480.2
Stavrolen	266.6	214.0
Nizhnekamskneftekhim	43.8	65.6
Gazprom n Salavat	100.9	83.7
Total	875.8	843.5

Russian Polypropylene Production (unit-kilo tons)

Producer	*Jan-Nov 18*	*Jan-Nov 17*
Ufaorgsintez	107.9	113.5
Stavrolen	99.6	92.3
Moscow NPZ	121.2	94.9
Nizhnekamskneftekhim	197.3	193.3
Polyom	195.2	187.0
Tomskneftekhim	128.8	116.4
SIBUR Tobolsk	389.4	483.2
Total	1239.4	1236.3

Russian polypropylene production, Jan-Nov 2018

Russian polypropylene production dropped 2.6% in the first eleven months in 2018 to 1.24 million tons. SIBUR Tobolsk produced 389,400 tons of polypropylene which is less than 16% down in the same period in 2017, whilst Polyom increased production by 4% to 195,200 tons. Nizhnekamskneftekhim produced 197,300 tons against 193,300 tons a year earlier and Tomskneftekhim produced 128,900 tons, similar to 2017. Ufaorgsintez produced 107,900 tons of polypropylene, 5% lower, Stavrolen produced 99,900 tons of polypropylene against 92,300 tons a year earlier. In November,

Stavrolen reduced production to 7,600 tons due to a short turnaround. The Moscow based producer Neftekhimya increased production in January to November 2018 by 28% to 121,200 tons.

Russian imports of polypropylene rose 8% to 173,700 tons in first eleven months of 2018, compared with 160,800 tons in the same period in 2017. Imports of homopolymers totalled 61,300 tons against 52,800 tons in the previous year, whilst block copolymer imports rose to 43,100 tons against 41,100 tons. Total imports of random copolymers in Russia comprised 32,500 tons in January November 2018, compared against 30,300 tons.

Russian PVC Production (unit-kilo tons)		
Producer	***Jan-Nov 18***	***Jan-Nov 17***
Bashkir Soda	229.7	219.9
Kaustik	84.5	79
RusVinyl	305.2	283
Sayanskkhimplast	251.6	238.7
Total	871.0	820.6

Russian PVC market, Jan-Nov 2018

Russian PVC production increased by 6% in the first eleven months in 2018 to 871,000 tons. In 2018 RusVinyl increased its capacity utilisation significantly, with production rising 8% to 305,200 tons. Sayanskkhimplast produced 251,600 tons of PVC against 238,700 tons a year earlier, whilst Bashkir Soda at Sterlitamak increased its production by 4% to 229,700 tons and Kaustik at Volgograd produced 84,500 tons versus 79,000 tons.

Aromatics

SIBUR, paraxylene, PTA & PET, Jan-Nov 2018

SIBUR's paraxylene purchases from Russian refineries amounted to 162,200 tons in the first eleven months in 2018 against 165,700 tons in the same period in 2017. Prices for paraxylene purchases from Ufaneftekhim and Gazprom Neft rose on average to €644 per ton in 2018 against €508 per ton in the same period last year.

Russian Paraxylene Domestic Sales (unit-kilo tons)		
Producer	***Jan-Nov 18***	***Jan-Nov 17***
Gazprom Neft	52.5	75.6
Ufaneftekhim	109.7	90.1
Kinef, Kirishi	0.0	0.0
Total	162.2	165.7

Regarding paraxylene exports, Russian shipments totalled 144,000 tons in the first eleven months in 2018 versus 124,000 tons in the same period in 2017. In 2018 around 95% of exports went to Finland against 70% in 2017. Last year exports to Belarus dropped from Russian refineries due to complications over Russia's tax manoeuvre, which resulted in a rise in shipments to Finland.

Russian PTA Imports (unit-kilo tons)		
Country	***Jan-Oct 18***	***Jan-Oct 17***
Belgium	1.6	27.2
India	5.7	30.0
China	120.7	68.8
South Korea	59.2	35.3
Poland	0.0	0.5
Thailand	15.0	23.6
Total	202.2	185.4

Russian PTA imports, Jan-Oct 2018

PTA imports into Russia in the first ten months in 2018 amounted to 202,200 tons against 185,400 tons in the same period last year. China increased shipments to 120,700 tons against 68,800 tons in January to August 2017 whilst India reduced deliveries from 30,000 tons to 5,700 tons. Thailand supplied 15,000 tons of PTA to Russia in the first ten months in 2018 versus 23,600 tons in the same period in 2017.

Russian benzene production-sales, Jan-Nov 2018

Russian benzene production totalled 1.221 million tons in the first eleven months in 2018 against 1.166 million tons in the same period in 2017. Rosneft's three plants produced a combined total of 135,900 tons in January to November 2018, rising from 113,300 tons in the previous year. Gazprom Neft at Omsk increased production from 73,500 tons versus 94,200 tons whilst the West Siberian Metallurgical Plant (Zapsib) increased production from 52,900 tons to 66,900 tons. The largest single producer of benzene in Russia remains Nizhnekamskneftekhim which produced 200,900 tons in the first eleven months in 2018 against 191,800 tons.

Regarding exports, shipments from Russia more than halved in the first eleven months, dropping from 141,000 tons from 56,4800 tons in the same period in 2017. Exports of petroleum-based benzene dropped from 71,000 tons in January to October 2017 to 24,000 tons in the same period in 2018. The fall in exports last year was due to a tighter supply/demand balance due to more outages taking place. Coal based exports

Russian Benzene Production (unit-kilo tons)		
Producer	***Jan-Nov 18***	***Jan-Nov 17***
Rosneft	135.9	113.3
Gazprom Neft	94.2	73.5
Lukoil	97.0	101.1
Magnitogorsk MK	51.0	51.9
Nizhnekamskneftekhim	200.9	191.8
Gazprom n Salavat	159.1	160.9
Kirishinefteorgsintez	63.4	59.1
Slavneft	66.1	66.7
Bashneft	86.1	66.6
Uralorgsintez	84.3	80.3
Zapsib	66.1	52.9
SIBUR	66.9	76.7
Others	50.2	71.5
Total	1221.1	1166.4

were also affected. Imports of benzene play an important part in balancing Russian domestic supply and demand. Ukrainian company Karpatneftekhim started supplying benzene to Russia in late December after a long spell of non-activity.

The three Russian caprolactam producers remain the largest domestic merchant consumers of benzene, followed by styrene and phenol producers. Purchases made by domestic producers totalled 667,700 tons in the first eleven months against 664,200 tons in the same period in 2017. Kazanorgsintez also increased purchases of benzene to support the increase in bisphenol A production.

Russian caprolactam production rose to 356,300 tons in the first eleven months in 2018 against 318,600 tons in the same period in 2017. Kuibyshevazot increased production from 171,300 tons whilst SDS Azot at Kemerovo increased production from 100,200 tons to 112,800 tons. Russia's smallest producer Shchekinoazot is modernising its cyclohexane plant which is produced by hydrogenation of benzene. In the spring of 2019, a new cyclohexane purification scheme is scheduled to be put into operation.

Russian Caprolactam Production (unit-kilo tons)		
Producer	***Jan-Nov 18***	***Jan-Nov 17***
Kuibyshevazot	192.8	171.3
Shchekinoazot	50.7	47.1
SDS Azot	112.8	100.2
Total	356.3	318.6

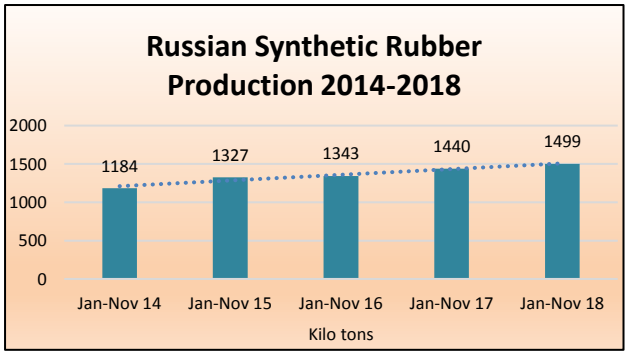
Synthetic rubber

Russian C4s, Jan-Nov 2018

C4 sales on the domestic market in Russia totalled 336,100 tons in the first eleven months in 2018 against 386,100 tons in the same period in 2017. Nizhnekamskneftekhim reduced merchant purchases due to increased internal production, falling from 169,500 tons in January to November 2017 to 132,500 tons. SIBUR Togliatti reduced merchant purchases of C4s from 170,600 tons to 158,100 tons and Omsk Kaucuk increased from 44,500 tons to 45,500 tons. C4 imports from Ukraine to Russia resumed In December. Karpatneftekhim supplied around 1,500 tons to Nizhnekamskneftekhim for the first time since January 2018 (4,300 tons).

Russian C4 Purchases (unit-kilo tons)		
Consumer	***Jan-Nov 18***	***Jan-Nov 17***
Omsk Kaucuk	45.5	44.5
Nizhnekamskneftekhim	132.5	169.5
SIBUR Togliatti	158.1	170.6
Sterlitamak Petrochemical Plant	0.0	1.5
Total	336.1	386.1

The largest domestic supplier of C4s in 2018 was SIBUR Kstovo which shipped 81,100 tons in January to November versus 86,600 tons in the same period in 2017. Most of the C4s from Kstovo were sent to Togliatti. The next largest supplier was Stavrolen, shipping 56,500 tons against 56,100 tons in January to November 2017. Imports of C4s were sourced mostly from Russia's regional neighbours, the largest source of which being Azerbaijan which shipped 23,100 tons to the Russian market in January to November 2018 against 22,100 tons in the eleven-month period in 2017.



Russian synthetic rubber production, Jan-Nov 2018

Russian synthetic rubber production totalled 1.5 million tons in the first eleven months in 2018 against 1.170 million tons in the same period in 2017. Domestic demand for synthetic rubber has benefited from increased tyre production, in all categories of cars, lorries and tractors. Synthetic rubber production in Russia has been rising steadily on an annual basis over the past five years, increasing by more than 25% over the amount produced in 2014. Whether it can

continue to increase production, however, remains questionable in view of competition from China and other sources. This is particularly relevant to the basic types of synthetic rubber.

At the same time production has risen consumption has also increased, totalling 699,100 tons for the first ten months in 2018 against 633,330 tons in the same period in 2017 and 491,550 tons for the corresponding period in 2016. Partly the rise in 2018 is attributed to a recovery after the significant falls in economic activity in 2015 and 2016, but partly due to new tyre production. Whereas increases in tyre production in the period 2019-2021 may not increase by the same ratio between 2016-2018, domestic producers of synthetic rubber may start looking towards non-tyre applications for generating market growth.

Russian Synthetic Rubber Exports (unit-kilo tons)		
Product	***Jan-Oct 18***	***Jan-Oct 17***
E-SBR	24.6	30.8
Block	25.6	29.6
SSBR	7.7	7.4
SBR	75.3	69.3
Polybutadiene	199.2	197.8
BR	106.9	108.0
HBR	111.6	109.3
NBR	26.5	21.7
Isoprene	232.6	252.1
Others	30.3	16.9
Total	840.3	843.0

In 2018 global consumption of natural and synthetic rubber increased by 3.2% to 29.3 million tons. In 2019, the trend will continue with demand forecast to increase by 2.5% to 30.03 million tons. In 2018 demand for synthetic rubber grew by 1.7%, global consumption reached 15.43 million tons. In 2019, demand will reach 2.4% to 15.8 million tons. The global demand for natural rubber in 2018 increased by 4.9% to 13.87 million tons. The forecast for 2019 includes a rise of 2.6% to 14.23 million tons.

Russian rubber exports, Jan-Oct 2018

Russian exports of synthetic rubber increased to 840,300 tons in the first ten months in 2018 against 843,000 tons in the same period in 2017. Revenues from synthetic rubber exports dropped from $945 million to $846 million reflecting a fall per ton from $1839 to $1670. The highest value product category exported from Russia is halogenated butyl rubber (HBR). Volatility in raw material prices for tyres and rubber goods has moderated since last year, but market is still prone to wild swings. The butadiene markets have been driven largely by trends in the ABS (acrylonitrile butadiene styrene) markets in Asia that have pushed prices to the point where rubber producers are not able to maintain positive margins.

Russian Synthetic Rubber Imports Jan-Oct 2018		
Country	***$ million***	***% share***
Germany	49.5	28.70%
South Korea	21.4	12.40%
Belgium	12.7	7.40%
China	11.8	6.80%
Japan	11.4	6.60%
France	9.9	5.80%
US	9.9	5.70%
Taiwan	8.9	5.10%
Czech R	7.4	4.30%
Others	30.1	18.20%
Total	173	100

In terms of revenues for Russian synthetic rubber exports in the first ten months in 2018, isoprene rubber provided the largest source of sales totalling $232.6 million. This was followed by polybutadiene, butyl rubber and halogenated butyl rubber. More detail of volumes and revenues for individual products is available on the CIREC website.

Russian synthetic rubber imports, Jan-Oct 2018

Imports of natural and synthetic rubber into Russia totalled 177,400 tons in the first ten months in 2018 versus 169,930 tons in the same period in 2017. The share of imports of synthetic rubber in Russian domestic consumption comprises roughly between 11-13%. More than half of synthetic rubber imports into Russia consist from styrene-butadiene and methyl-styrene-butadiene-methyl rubbers. The main suppliers of synthetic rubber to the Russian market are Germany and Korea, which accounted for over 40% of imports in the first ten months in 2018.

Russian synthetic rubber producer news

Titan at Omsk has been facing pressure from Chinese producers he global rubber market, which has affected sales and production at Omsk Kaucuk. Production at Omsk was reduced to 45,000 tons in 2017 against 89,000 tons in 2016 due mainly to Chinese competition. China, having built the last three rubber plants, has also introduced anti-dumping measures on importers which increases the competitiveness of its products in relation to foreign suppliers. As a result of Chinese competition Titan is engaged in developing other types of products at Omsk Kaucuk outside of rubber. The main project involves the modernisation of the cumene plant, as part of the modernisation of the phenol and acetone units to be followed by other

projects. Titan is assessing a project for the production of butyl-n-vinyl ether which is used in the manufacture of aviation oils. In January-September 2018, revenues of Omsk Kaucuk amounted to 4.33 billion roubles, which is 9% higher than in 2017. Net profit for the same period increased by 20 times up to 218 million roubles.

TAIF and Tatneft have as yet been unable to agree on 2019 synthetic rubber sales from Nizhnekamskneftekhim to the tyre manufacturer Nizhnekamskshina due to problems over pricing. Last year Tatneft accused TAIF of unreasonably overestimating the price of rubber by 10–27%. Tatneft's Nizhnekamskshina tyre plant consumes at a maximum of 57,000 tpa of synthetic rubber but was unable to reach agreement on deliveries and prices from Nizhnekamskneftekhim. A roadmap for the joint development of catalysts for petrochemistry will be formed between the chemical holding SIBUR and Tatarstan. The parties may hold a series of meetings in 2019 to exchange production experience in polyolefins and synthetic rubber.

Russian Methanol Production (unit-kilo tons)

Producer	*Jan-Nov 18*	*Jan-Nov 17*
Shchekinoazot	508.8	487.2
Sibmetakhim	790.2	808.5
Metafrax	1065.5	1002.0
Akron	114.3	108.0
Azot, Novomoskovsk	244.2	198.4
Angarsk Petrochemical	12.4	11.3
Azot, Nevinnomyssk	108.1	113.1
Tomet	798.0	722.7
Ammoni	201.6	195.5
Totals	3843.0	3646.7

Methanol

Russian methanol production Jan-Nov 2018

Russia produced 3.843 million tons of methanol in January to November 2018 against 3.647 million tons in the same period in 2017. Metafrax increased production to 1.066 million tons from 1.002 million tons whilst Sibmetakhim reduced production from 808,500 tons to 790,200 tons. Tomet at Togliatti increased production to 798,000 tons from 722,700 tons. Shchekinoazot increased production to 508,800 tons against 487,200 tons and is expected to see the largest rise in 2019.

Russian methanol export sales, Jan-Nov 2018

Russian methanol exports totalled 1.622 million tons in the first eleven months in 2018 versus 1.443 million tons in the same period in 2017. Volumes were generally higher in 2018 due to higher methanol pricing. Metafrax surpassed Sibmetakhim last year, shipping 445,700 tons of methanol against 360,200 tons in the same period in the preceding year whilst Sibmetakhim exported 412,700 tons in the first eleven months in 2018 against 404,600 tons. Following the expansion of capacity Shchekinoazot increased exports from 299,500 tons to 356,100 tons.

Russian Methanol Exports (unit-kilo tons)

Producer	*Jan-Nov 18*	*Jan-Nov 17*
Azot Nevinnomyssk	2.5	0.0
Azot Novomoskovsk	142.6	123.8
Akron	13.6	36.2
Metafrax	445.7	360.2
Sibmetakhim	412.7	404.6
Tomet	243.6	202.4
Shchekinoazot	356.1	299.5
Ammoni	5.0	16.0
Total	1621.8	1442.8

Russian producers increased exports by 16% in November 2018 after the restart of the Sibmetakhim plant at Tomsk. A total of 175,000 tons of methanol was exported in November which was 24,600 tons more than in October. Sibmetakhim increased exports in November by 31,500 tons to 45,700 tons. Also, in November Ammoni at Mendeleevsk resumed export shipments after an eight-month gap, which was partly helped by its main domestic customer Nizhnekamskneftekhim reducing purchases due to accumulated reserves.

Regarding port activity, 100,700 tons of methanol were shipped through the Finnish ports in November. Producers using the Finnish ports included Sibmetakhim (44,600 tons), Ammoni (3,300 tons), Metafrax (37,600 tons) and Tomet (15,000 tons). In addition, methanol exports to Poland increased by 3,900 tons to 26,900 tons. This was due to the growth in deliveries through the Belarusian-Polish Bruzgi-Kuznitsa border crossing, where the Vilaris terminal is located.

Russian methanol domestic sales, Jan-Nov 2018

Domestic sales of methanol in the Russian market amounted to 1.486 million tons in the first eleven months in 2018 against 1.384 million tons in the same period in 2017. Tomet at Togliatti was the largest supplier providing 494,400 tons against 438,500 tons in the same period in 2017. Metafrax reduced shipments to 270,000 tons from 355,800 tons whilst Ammoni increased deliveries from 99,600 tons to 136,100 tons. In

terms of consumers Nizhnekamskneftekhim reduced purchases to 214,500 tons in January to November 2018 from 222,500 tons in 2017 but remained the largest domestic purchaser.

Russian Methanol Domestic Sales (unit-kilo tons)		
Producer	***Jan-Nov 18***	***Jan-Nov 17***
Azot Nevinnomyssk	20.1	25.6
Azot Novomoskovsk	122.3	85.2
Metafrax	270.0	355.8
Sibmetakhim	379.1	311.7
Tomet	494.4	438.5
Shchekinoazot	60.5	64.2
Ammoni (Mendeleevsk)	136.1	99.6
Others	3.5	3.6
Total	1486.0	1384.1

SIBUR Togliatti was the second largest consumer, taking 133,800 tons in the first eleven months in 2018 versus 114,800 tons in 2017. Both Nizhnekamskneftekhim and SIBUR Togliatti use methanol in the isoprene monomer and MTBE processes. Other important consumers include Kronospan and Metadynea which buy around 10,000 tons and 7,000 tons per month respectively.

Nizhnekamskneftekhim, methanol project agreed with Haldor Topsoe

Nizhnekamskneftekhim has signed contracts with Haldor Topsoe to provide a license and engineering services for the new methanol production technology with a capacity of 500,000 tpa. Methanol is used by Nizhnekamskneftekhim in the production of formaldehyde, which is necessary for the production of isoprene. Therefore, the new installation will reduce costs and improve the efficiency of production of isoprene rubber.

Nizhnekamskneftekhim wants to expand its synthetic rubber production and at the same tine be fully integrated in terms of raw materials. At present the company relies on Russian methanol producers for supplies, including locally based Ammoni at Mendeleevsk.

Russian Methanol Consumption (unit-kilo tons)		
Consumer	***Jan-Nov 18***	***Jan-Nov 17***
Nizhnekamskneftekhim	214.5	222.3
SIBUR Togliatti	133.8	114.8
Uralorgsintez	60.1	64.9
SIBUR-Khimprom	15.6	13.9
SIBUR Tobolsk	41.9	47.7
Ektos-Volga	52.5	50.3
Omsk Kaucuk	70.4	77.6
Novokuibyshevsk NPZ	40.3	62.7
Uralkhimplast	23.0	20.5
Slavneft-Yanos	16.7	15.7
Others	737.7	714.4
Total	1406.0	1384.8

The contract with Haldor Topsoe was concluded with Nizhnekamskneftekhim's holding group TAIF, using the same technology as Ammoni at Mendeleevsk. The contract for the development of design and working documentation for the new plant was obtained by the Research and Design Institute of Urea and Organic Synthesis Products (NIIK) from Dzerzhinsk. The implementation period will be about three years.

Possessing its own methanol production adds the very first link in the chain for Nizhnekamskneftekhim, closing the entire cycle to produce synthetic isoprene rubber. Previously, the company invested 4.5 billion roubles in a new formaldehyde plant. The plans of Nizhnekamskneftekhim are to increase the volume of rubber production to 1 million tpa through an increase in the production of isoprene and butyl rubbers and the development of industrial production of divinyl-styrene rubber.

The methanol plant capacity of 500,000 tpa to be constructed at Nizhnekamsk will be sufficient to meet current demand of the company of around 250,000 tpa, with room for growth after expansion of the rubber facilities. There is a small possibility of a surplus being shipped to the merchant market. Ammoni's capacity at Mendeleevsk is 230,000 tpa is not enough to meet all of the demand for methanol at Nizhnekamskneftekhim.

Regarding technology options, the Novosibirsk Scientific and Technological Center Plasma had offered TAIF its own methanol process non-equilibrium cold plasma technology. The claim was that the production of methanol using low-temperature plasma will be three times cheaper than the usual Fisher-Tropsch method. However, TAIF still preferred traditional and more expensive foreign technologies.

Skovorodino methanol project update

Negotiations regarding the Skovorodino 1 million tpa methanol project in the Amur Oblast are yet to be concluded. In December 2018, it became known that the deadlines for the project moved to 2018-2021.

The plant is intended to occupy a site of 46.2 hectares, including the methanol synthesis plant with supporting systems, including the air separation unit and the storage of commercial methanol. The amount of investment in the project will amount to 44.3 billion roubles.

The raw material for the plant will, as for the Amur Gas Processing Plant, be gas from the Power of Siberia Russian-Chinese gas pipeline. Production of 1.2 million tpa of methanol will require around 1 billion cubic metres of gas per annum.

Russian Far East methanol projected consumption (unit-kilo tons)			
Regions		2013	2025
Buryatia, Irkutsk & Khabarovsk	Woodworking industry	560	720
Chayanda, Kovykta	Hydrate formation	20	60

Whilst the main focus of the Skovorodino plant is towards export activity in China, the domestic market in the Russian Far East is also of significance. Growth will be achieved due to increased demand from the woodworking industry in Buryatia, the Irkutsk Region and the Khabarovsk Krai (+160,000 tons). To a lesser extent methanol consumption will be boosted through start of operation of the Chayanda, Kovykta and other fields and the use of methanol to prevent hydrate formation in field pipelines (+40,000 tons).

Russian Butanol Production (unit-kilo tons)		
N-Butanol		
Producer	***Jan-Nov 18***	***Jan-Nov 17***
Angarsk Petrochemical	27.8	31.0
Azot	14.8	14.0
Gazprom n Salavat	61.4	46.5
SIBUR-Khimprom	36.9	34.2
Total	141.0	125.7
Isobutanol		
Producer	***Jan-Nov 18***	***Jan-Nov 17***
Angarsk Petrochemical	14.4	14.4
Gazprom n Salavat	35.6	23.5
SIBUR-Khimprom	49.2	36.1
Total	99.1	74.1

The current uncovered demand for methanol in the Chinese province of Heilongjiang, which is next to the Russian border and could be served with products from the plant at Skovorodino, is 300-450,000 tpa. Similar current the demand for the East Coast of China is estimated at several million tons per annum, all of which creates large market opportunities for methanol plants constructed in the Russian Far East.

Organic chemicals

Russian butanol production Jan-Nov 2018

Russian butanol production amounted to 240,100 tons in January to November 2018 against 199,800 tons in the same period in 2017. The share of n-butanol in gross production in comprised 58%, and isobutanol 42%. Last year producers increased the production of isobutanol significantly and slightly increased the production of normal butanol. Overall Gazprom neftekhim Salavat increased butanol production to 97,000 tons from 70,000 tons, whilst SIBUR-Khimprom increased to 86,100 tons from 70,300 tons.

Russian domestic butanol sales, Jan-Nov 2018

Butanol sales on the merchant domestic market amounted to 52,100 tons in the first nine months in 2018 against 53,100 tons in the same period in 2017. The largest consumers remain Akrilat at Dzerzhinsk, Dmitrievsky Chemical Plant and Volzhskiy Orgsintez.

Russian Butanol Domestic Sales (unit-kilo tons)		
Producer	***Jan-Nov 18***	***Jan-Nov 17***
Gazprom n Salavat	9.1	8.1
SIBUR-Khimprom	24.6	29.4
Angarsk Petrochemical	15.7	13.2
Azot Nevinnomyssk	2.6	2.4
Totals	52.1	53.1

Akrilat purchased 16,600 tons of butanols in January to November 2018, unchanged from 2017, whilst Dmitrievsky Chemical Plant purchased 12,100 tons against 12,300 tons. Most of Akrilat's purchases are taken from SIBUR-Khimprom, which accounted for 100% of shipments from August to November. SIBUR-Khimprom also supplies butanols to other consumers including Volzhsky Orgsintez, Roshalsky Plant of Plasticizers and Kazanorgsintez. Total merchant sales from the SIBUR-Khimprom plant at Perm amounted to 24,600 tons in the first eleven months

Russian Organic Chemical Exports (unit-kilo tons)		
Product	***Jan-Oct 18***	***Jan-Oct 17***
N-Butanol	36.8	14.0
Iso-butanol	28.6	15.0
2-EH	21.3	17.6
Pentaerythritol	9.4	9.0
Phenol	14.0	9.7
Ethylene Oxide	11.2	12.9
Formaldehyde	16.0	18.1
DEG	11.4	17.5
MEG	27.7	40.6
Acetone	20.5	33.4
Acetic Acid	26.2	31.4
VAM	26.0	30.0
Butyl Acetate	18.8	21.0
Acrylic Acid	17.4	9.5
Esters of Acrylic Acid	57.0	32.1
Phthalic Anhydride	56.5	52.6

in 2018 against 29,400 tons in 2017. Gazprom neftekhim Salavat shipped 9,100 tons against 8,100 tons, with most of the butanols being directed internally to the production.

Gazprom neftekhim Salavat sells merchant butanols mostly to Volzhsky Orgsintez and Dmitrievsky Chemical Plant.

Russian organic chemical trade, Jan-Oct 2018

Russian exports of 2-ethylhexanol (2-EH) rose in the first ten months to 21,300 tons against 17,600 tons in the same period in 2017, whilst both n-butanol and isobutanol exports increased. 2-EH exports from Russia are expected to fall in 2019 as domestic demand increases following the start-up of the SIBUR DOTP plant at Perm.

Acetone exports from Russia dropped from 33,400 tons in January to October 2017 to 20,500 tons in 2018, partly due to the lower production of phenol. Pentaerythritol exports from Metafrax amounted to 9,400 tons in the first ten months, representing around 50% of production at the sole Russian producer Metafrax.

Russian Organic Chemical Imports (unit-kilo tons)		
Product	***Jan-Oct 18***	***Jan-Oct 17***
Ethylene glycol	41.4	41.2
Propylene glycol	21.9	21.9
Acetic Acid esters	14.1	11.9
Isopropanol	14.7	13.4
Maleic anhydride	5.4	4.6
DINP	20.8	21.9
DOP	6.3	1.2
Phthalic anhydride	11.6	4.7
PTA	207.7	188.5
TDI	40.5	36.0
Lysine	77.8	77.9
Amino acids	23.8	25.0
Methionine	23.0	24.2

Regarding imports of organic chemicals, inward shipments into Russia were similar in the first ten months in 2018 to the same period in 2017. The largest organic chemical imported into Russia is PTA, where shipments totalled 207,700 tons in the first ten months in 2018 against 188,500 tons.

However, the most valuable imports in terms of cost comprise isocyanates and pharmaceutical intermediates. Some of these products include lysine, amino acids and methionine.

Russian TDI imports, Jan-Oct 2018

Russian TDI imports totalled 37,400 tons in the first ten months in 2018 at a cost of $147.3 million against 36,000 tons in the same period in 2017 at $109 million. Prices per ton averaged $3933 in 2018 against $3028 in 2017. Imports from Saudi suppliers totalled 7,200 tons in the first ten months in 2018 replacing volumes in 2017 imported from the US and South Korea. Prices started to drop below $4,000 per ton in July and August which set the directional tone for the remainder of 2018 and start of 2019.

Russian TDI Imports Jan-Oct 2018		
Country	***Vol (ktons)***	***$ million***
Hungary	6.8	25.3
Germany	16.3	59.1
Italy	0.1	1.3
China	0.3	5.7
South Korea	1.6	6.6
Lithuania	0.0	0.7
Saudi Arabia	7.2	25.2
UK	0.1	2.0
US	2.8	13.1
Japan	1.7	6.8
Others	0.4	1.4
Total	37.4	147.3

Russian TDI consumers are benefiting from supply/demand factors, although somewhat offset by currency factors. In Asia market prices have been falling in October and November, particularly from China, whilst Japan reduced export shipments due to lower demand in the past couple of months.

TDI and MDI prices have fallen an estimated 2-3% since the third quarter last year which is expected to resolve the cost pressure of PU/TPU plants and affecting producer margins. In addition to lower demand for TDI, new plants coming on stream could add to price pressure. This includes the 300,000 tpa plant by Wanhua Chemical

at Shandong, which could be up and running soon. Thus, it would need a large rise in demand to overcome supply-side concerns which should benefit import dependent countries such as Russia where purchases relate closely to affordability.

Eurasian Imports of MDI (unit-kilo tons)		
Country	***Jan-Oct 18***	***Jan-Oct 17***
Belgium	17.0	18.6
Hungary	5.6	4.5
Germany	15.9	35.6
Spain	0.3	2.1
Italy	0.1	1.6
China	20.1	3.8
South Korea	1.6	24.4
Netherlands	30.9	0.1
Poland	0.1	0.1
Saudi Arabia	25.9	0.2
Turkey	0.4	0.0
Japan	1.9	1.4
Others	0.0	15.0
Total	119.8	107.4

Russian & Eurasian MDI imports, Jan-Oct 2018

MDI imports into the Eurasian Customs Union in the first ten months in 2018 totalled 119,800 tons against 107,400 tons in the same period in 2017. Most of the imported MDI was bought by Russian consumers, although Belarus accounted for around 12-13% of inward shipments. Import costs for the first ten months in 2018 for the Eurasian Customs Union totalled $257.1 million against $212.1 million in the same period last year.

The higher costs were due partly to the higher volumes and the higher average prices which jumped from $2184 per ton for January to November 2017 to $2564 per ton in the same period in 2018. The major change in supply in 2018 came from Saudi Arabia which shipped 25,949 tons in the first ten months against 200 tons in the period January to October 2017, whilst imports from Germany dropped from 31,900 tons to 13,260 tons. The largest supplier this year for the first ten months was the Netherlands, shipping 30,900 tons all of which went to Russia.

Russian Polyol Imports by Country ($ million)		
Country	***Jan-Oct 18***	***Jan-Oct 17***
Netherlands	68.6	59
Saudi Arabia	29.1	0
Germany	15.2	16.9
China	17.9	16.2
Belgium	11.5	11.4
Poland	10.8	8.7
South Korea	8.8	6.8
Italy	5.2	5.9
Estonia	5.8	3
Others	18.1	16.1
Total	191	144

Russian & Eurasian polyol imports, Jan-Oct 2018

Russian polyol imports amounted to 94,940 tons in January to October 2018 from a total of 102,664 tons imported into the Eurasian Customs Union area. Russian imports jumped 12% in the first ten months across various polymer and liquid grades. Russian import costs for polyols rose to $191.1 million for the first ten months compared to $143.8 million in the same period in 2017, the increase due to a rise in both volume and price.

The main supplier to the Russian market remains the Netherlands which accounted for more than a third of shipments in January to October 2018, although proportionally lower than in 2017. Saudi Arabia has been a new entrant to the Russian market in 2018, consistent with other products such as isocyanates, and accounted for 15% of import shipments in the first ten months last year. Imports from Saudi amounted to 19,300 tons in the period January to October 2018 against zero in 2017.

Titan's BOPET project at Pskov

The Titan-Polymer plant at Pskov is scheduled for launch in March 2019, after construction and commissioning has nearly been completed. Titan-Polymer was registered on 14 February 2018 for the implementation of a project to produce PET granules and products from them (BOPET films). The investment project Titan-Polymer will be implemented in four stages, the first of which includes two lines of biaxially oriented polyethylene terephthalate film (BOPET) with a capacity of up to 70,000 tpa. Longer-term, Titan plans to develop a large industrial complex for the production of PET of up to 170,000 tpa. The project is intended for the special economic zone Moglino in the Pskov region.

Ukraine

Ukrainian polymer imports, Jan-Nov 2018

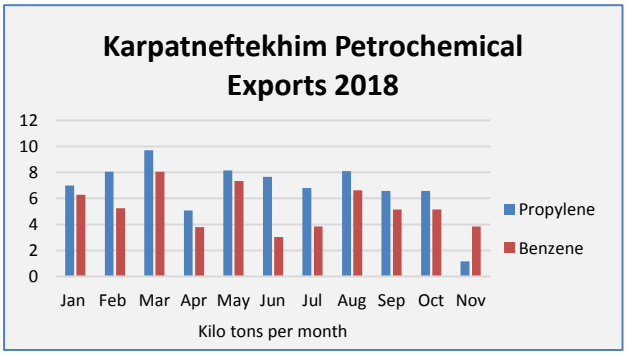
Imports of PVC into Ukraine decreased by 35% in the first eleven months in 2018 compared to the same period in 2017 and amounted to 61,600 tons. The main reason is the growth in production at Kalush. Imports from the US dropped to 35,900 tons against 47,900 tons, whilst imports from Europe dropped to 24,400 tons against 31,500 tons.

Ukrainian Polyethylene Imports (unit-kilo tons)		
Product	***Jan-Nov 18***	***Jan-Nov 17***
LDPE	69.0	72.1
LLDPE	68.3	60.6
HDPE	70.3	89.4
Ethylene Vinyl Acetate	14.5	14.2

Imports of polyethylene into the Ukrainian market dropped in the first eleven months of 2018 by 2% to 222,100 tons. HDPE imports totalled 70,300 tons compared to 89,400 tons in January to November 2018 whilst LDPE rose 12% to 69,000 tons. LLDPE imports rose to 68,300 tons in January-November 2018 versus 60,600 tons in January to November 2017. Imports of other PE grades, including ethylene-vinyl-acetate (EVA), totalled 14,500 tons compared to 14,200 tons.

Ukrainian Polypropylene Imports (unit-kilo tons)		
Category	***Jan-Nov 18***	***Jan-Nov 17***
Homo	93.2	83.8
Block	12.2	11.9
Random	15.3	12.8
Other	2.1	3.9
Total	122.8	112.4

In the first eleven months in 2018 polypropylene imports to the Ukrainian market amounted to 122,800 tons, against 112,400 tons in the same period 2017. Homopolymer imports rose to 93,200 tons from 85,800 tons, block copolymers amounted to 12,200 tons versus 11,900 tons and random copolymers rose to 12,400 tons against 10,100 tons. Other grades remained unchanged at 1,700 tons.



Karpatneftekhim PVC production, Jan 2019

Production of PVC and caustic soda by Karpatneftekhim at Kalush was restored quickly after an accident that occurred on 12 January. The accident took place after a gas mixture ignited at the unit for ethylene and polyethylene.

Karpatneftekhim currently exports propylene, benzene and C4s to Russia. The complex possesses an ethylene production capacity of 250,000 tpa, PVC 300,000 tpa, caustic soda 200,000 tpa and polyethylene 100,000 tpa.

Belarus

Belarussian Petrochemical Production (unit-kilo tons)		
Product	***Jan-Oct 18***	***Jan-Oct 17***
Ethylene	60.2	52.6
Propylene	38.6	32.9
Benzene	96.6	95.7

Belarussian petrochemical production, Jan-Oct 2018

Ethylene production at the Polymir plant in Belarus totalled 60,200 tons in the first ten months in 2018 against 52,600 tons in the same period in 2017. Propylene production at Polymir rose from 32,900 tons to 38,600 tons whilst benzene production at the Naftan division rose from 95,700 tons to 96,600 tons.

Belarussian Acrylonitrile Exports (unit-kilo tons)		
Product	***Jan-Oct 18***	***Jan-Oct 17***
Russia	2.2	1.4
Hungary	4.6	1.1
India	3.7	2.0
Iran	3.1	3.1
Netherlands	2.1	12.6
Romania	0.0	0.1
Turkey	22.1	15.1
UAE	0.0	0.2
Others	0.0	1.6
Total	37.7	37.1

Propylene imports totalled 42,195 tons in the first ten months in 2018 against 42,206 tons in the same period in 2017. Azerbaijan supplied 2,011 tons of propylene to the Belarussian market in January to October 2018, whilst Russian supplied the remainder. Average prices for propylene imports rose to $988 per ton against $756 in the same period in 2017. Propylene is imported into Belarus to provide feedstock for acrylonitrile production.

In the aromatics sector, Belarus reduced imports of benzene from 10,857 tons in January to October 2017 to 3,033 tons in the same period in 2018. Toluene imports rose to 4,857 tons versus 4,492 tons. Belarussian imports of orthoxylene in the first ten months in 2018 amounted to 20,542 tons against 8,784 tons in the same period in 2017. Imports were driven in 2018 by increased demand from Lakokraska at Lida where phthalic anhydride production has risen significantly. Whilst imports of orthoxylene have risen, the

opposite trend has been seen for paraxylene where imports dropped to 8,941 tons in the period January to October versus 34,203 tons in the same period in 2017.

Belarussian acrylonitrile exports, Jan-Oct 2018

Acrylonitrile exports from Belarus totalled 37,700 tons in the first ten months in 2018 to 37,100 tons in the same period in 2017. Turkey was the main market for Belarussian acrylonitrile, accounting for 22,062 tons in the first ten months. Average prices for acrylonitrile exports increased to $1697 per ton from $1324 per ton in 2017.

Belarussian Organic Chemical Exports (unit-kilo tons)		
Product	***Jan-Oct 18***	***Jan-Oct 17***
Acrylonitrile	37.7	37.1
Caprolactam	7.8	7.4
Phthalic anhydride	37.0	20.2
Methanol	19.1	15.3

Belarussian organic chemical trade, Jan-Oct 2018

Phthalic anhydride exports totalled 37,011 tons in the first ten months in 2018 against 19,950 tons in the same period in 2017. The rise in exports has been facilitated by the increase in capacity at Lida. The main destinations for Belarussian phthalic anhydride exports included Russia, India and Columbia. Methanol exports have increased this year from Belarus, totalling 19,053 tons in the first ten months versus 17,081 tons in the same period last year.

Belarussian MDI Imports (unit-kilo tons)		
Country	***Jan-Oct 18***	***Jan-Oct 17***
Russia	2.0	2.9
Belgium	3.4	4.6
Hungary	1.9	2.3
Germany	4.5	4.5
Saudi Arabia	3.5	0.9
Others	2.6	1.7
Total	17.8	16.9

Methanol imports increased to 79,930 tons in the first ten months in 2018 against 36,562 tons in the same period in 2017. Russia has accounted for nearly all imports in 2018, with average prices rising to $331 per ton against $290. Imports have increased due to higher domestic consumption.

Belarussian MDI imports, Jan-Oct 2018

MDI imports into Belarus totalled 17,812 tons in the first ten months in 2018 against 16,938 tons in the same period in 2017. Germany was the largest source of imports in January to October 2018 to 4,454 tons against 4,504 tons, followed by Saudi Arabia, Belgium, Russia and Hungary. MDI from Russia was supplied from import sources. Average prices over the period January to October 2018 amounted to $2,585 per ton against $2,553 per ton in 2017. Total import costs amounted to $46.041 million in the first ten months against $31 million.

Belarussian polymer & rubber trade, Jan-Oct 2018

Imports of polypropylene into Belarus increased to 82,900 tons in first ten months in 2018, up 5.6% on the same period in 2017. Homopolymer imports rose 8.8% to 57,200 tons, whilst propylene copolymers were unchanged at 25,700 tons. Belarussian exports of LDPE totalled 55,830 tons in January to October 2018, down from 60,747 tons. Polyethylene imports into Belarus rose slightly in the first ten months of 2018 to 117,900 tons against 113,000 tons. LLDPE imports were unchanged at 31,500 tons, HDPE imports rose 10.4% to 46,072 tons whilst LDPE dropped 15% to 14,000 tons. Imports of PVC into Belarus decreased in the first ten months of 2018 by 0.7% to 28,300 tons. Russian producers took 88% of the Belarusian PVC market.

Belarussian Polymer Imports (unit-kilo tons)		
Product	***Jan-Oct 18***	***Jan-Oct 17***
PVC	54.8	50.8
Polypropylene	82.9	83.2
LDPE	14.0	31.7
LLDPE	31.5	29.8
HDPE	46.1	38.5
Polystyrene	56.0	52.8

Polyamide exports from Belarus totalled 59,325 tons in the first ten months in 2018 against 54,889 tons in the same period in 2017. Exports comprised 57% of polyamide production at Grodno in 2018, with the remainder consumed captively by the Khimvolokno division of Azot and the other domestic fibre producer Khimvolokno at Svetlogorsk. Azot at Grodno exports polyamide to a wide range of destinations, the two largest of which are currently China and Belgium. Exports to China totalled 19,542 tons in the first ten months in 2018 against 19,960 tons in the same period in 2017, and to Belgium 12,327 tons against 10,271 tons.

Synthetic rubber imports into Belarus totalled 35,022 tons in January to October 2018 against 35,602 tons in the previous year, with Russia providing around 80% of supplies. The largest category imported into Belarus is isoprene rubber, totalling 13,038 tons in January to October 2018 against 11,240 tons in the

previous year. Butyl rubber is also important, totalling 6,684 tons for the ten months in 2018 against 6,365 tons in 2017. Both for isoprene and butyl rubber Russia is almost the exclusive source of supply.

Belarussian PTA imports, Jan-Oct 2018

PTA imports into Belarus totalled 22,900 tons in the first ten months in 2018, versus 60,600 tons in the same period in 2017. Imports from South Korea dropped to 5,324 tons in January to September 2018 from 28,300 tons, whilst imports from Poland slipped slightly from 16,300 tons to 12,700 tons. PTA prices averaged $815 per ton in the first ten months against $761 per ton in the same period in 2017.

Belarussian PTA Imports (kilo tons)		
Country	***Jan-Oct 18***	***Jan-Oct 17***
Russia	1.2	5.7
Belgium	0.5	6.1
South Korea	5.3	28.3
Poland	12.7	16.3
Others	2.2	4.2
Total	22.9	60.6

Mogilevkhimvolokno launched the production of polyester fibres at the end of December 2018. The capacity of the new plant is 50,000 tpa, including 35,000 tpa of PET. The commissioning of this complex will ensure a complete transition to modern technology for producing polyester from PTA. The second stage of the project involves the construction of interconnected PET continuous polycondensation plants with a capacity of 80,000 tpa, fibre production lines, and an additional polycondensation plant and yarn production.

The new production unit at Mogilev was put into operation five months earlier than the standard terms, which brought the company savings of about $ 6-7 million. Annual income from sales could be about $9-10 million. The main task is to reach the designed capacity as quickly as possible, which is supposed to be done already in the first half of 2019. The first 120 tons of output have been shipped to Russia.

The second phase of the project is planned for 2020-2024, including the modernisation of existing PET production with its transfer to the use of PTA as a raw material instead of DMT with the subsequent production of polyester fibres (including bicomponent) and nonwoven materials. This project is estimated at about €120 million, and the commissioning of new production facilities is expected in 2023-2024. Mogilevkhimvolokno can produce 138,250 tpa of DMT, 105,000 tpa of PET-textile and 80,000 tpa of food-grade PET. The capacity of polyester fibres is 67,000 tpa.

The Belarusian National Biotechnology Corporation-Minsk project

The Belarusian National Biotechnology Corporation (BNBK) has begun the construction of a full-cycle agro-industrial production complex near Minsk with a total value of almost $750 million. The project has started this year involving the Chinese group CITIC, which has attracted finance from a variety of sources. The project includes enterprises for the production of essential amino acids designed to process 250,000 tpa of wheat to produce 64,700 tpa of lysine, 5,900 tpa of L-threonine, and 1,300 tpa of L-tryptophan. The company's products are planned to be used both in the domestic market and shipped to Russia, Ukraine, EU and China.

Central Asia/Caucasus

SOCAR OGPC Petrochemical Capacities (unit-ktpa)	
Product	Capacity (ktpa)
Propylene	130
Benzene	42
Polyethylene	600
Butylene-1	32
Hexene-1	21

SOCAR-OGPC, engineering design completed

SOCAR has completed the initial engineering and design of a new gas processing and polymer complex (OGPC) in the Garadagh district of Baku. The complex is to be located at Sangachal based on a site of 305 hectares, of which 250 hectares will be allocated solely for construction. The cost of the project, according to initial estimates, is about $4 billion.

Currently, negotiations are underway with foreign investors on construction. Initial engineering and design (FEED) of the complex has already been completed. The complex will produce 9.1 billion cubic metres of gas, 130,00 tpa of propylene, 42,000 tpa of benzene, and 600,000 tpa of polyethylene. In addition, 32,000 tpa of butylene-1 and 21,000 tpa of hexene-1 obtained will be used for the internal needs of the complex. Technologies from Technip, Axens, Sinopec Tech and Univation will be used.

SOCAR intends to send part of propylene from the planned gas chemical complex (SOCAR GPC) to SOCAR Polymer, which will increase polypropylene output from 184,000 tpa to 210,000 tpa by 2022. The

company plans to start construction of the gas chemical complex at the end of 2018 and the beginning of 2019.

Azerkimya production targets 2019

Azerkimiya plans to increase chemical production in 2019 by 35-40%. In 2018, Azerkimiya produced 337,000 tons of such products as polyethylene, ethylene, propylene, liquid and heavy pyrolysis resin, butane-butylene fraction and absolute isopropanol. From September 2018 propylene is no longer exported but transferred to SOCAR Polymer for the production of polypropylene. Starting in January 2019, part of the ethylene will also be sent to SOCAR Polymer as a raw material to produce low-pressure polyethylene. .

SOCAR Polymer-polyolefin exports

SOCAR Polymer exported nearly 4,400 tons of polypropylene to Turkey in December, totalling 6,000 tons for 2018. The first batch of polypropylene was exported to Turkey on 5 October. At the first stage, SOCAR Polymer's production capacity will be 120,000 tpa of polyethylene and 184,000 tpa of polypropylene. The volume of exports of the plant, according to forecasts, this year will be 15,000 tons. By 2021, the total capacity can reach 570,000 tons of products.

The plant will produce 19 types of products from polypropylene and 12 types of products from high density polyethylene. The products will be used in the food and medical industries, as well as in agriculture and car manufacturing. The supplier of raw materials for the plant is Azerkimiya. After switching to full capacity, the plant will purchase 23 tons of propylene per hour from Azerkimiya.

SOCAR-new urea plant starts

SOCAR commissioned its new urea plant in January, located in the Sumgait Chemical-Industrial Park. The design capacity of the complex is 1,200 tons of ammonia and 2,000 tons of urea per day. SOCAR will be able to supply customers with 650-660,000 tpa of urea. About two thirds of the products are planned to be exported to the Turkish market, which is expected to generate revenue of $160 million. Domestic demand is rated at 150,000 tpa which could rise to 200,000 tpa following the start-up of the new SOCAR plant.

The complex includes three production sites: the production of ammonia, urea, and urea granules. The company's need for natural gas is estimated at 450 million cubic metres per annum. Samsung Engineering acted as the general contractor for the project. Stamicarbon and Haldor Topsoe were selected as licensors of urea and ammonia production.

Azerbaijan-propylene oxide & PVC project assessment

The Azerbaijani government is assessing a potential project for the construction of a plant for the production of propylene oxide, using methanol as a feedstock. The investment proposal has been prepared for the Sumgait Chemical Industrial Park where the cost of the project has been estimated at $100 million.

The Azerbaijan Export & Investment Promotion Foundation (Azpromo) has proposed to set up production of PVC and has prepared an investment proposal for the Sumgait Chemical Industrial Park. Most PVC resin is imported by Azerbaijan. The fund is of the opinion that the rise in prices for imported PVC makes this project attractive. The cost of the project is estimated at $80 million.

Kazakh paraxylene exports using Kulevi terminal in Georgia

Kazakhstan's paraxylene started to be exported through SOCAR's Kulevi terminal in Georgia in December and will increase in 2019. Paraxylene in petrochemical tanks is transported from the Atyrau refinery to the Kazakh port Kuryk, then onto Azerbaijan's Alat port via the ferries of Azerbaijan Caspian Shipping Company and exported by tankers to SOCAR's Kulevi terminal in Georgia.

Kazakhstan has rented 300 petrochemical tanks from Russia to transport such type of products. A railway pier has been constructed in the region where Atyrau oil refinery is located. At the same time, 10,000 tons of benzene are also expected to be transported on a monthly basis which is intended for export to Russia. Benzene at the Atyrau refinery is produced at the catalytic reformer CCR, which is part of the complex to produce aromatic hydrocarbons.

Between 10,000-11,000 tons of paraxylene were shipped using the above route in December. This figure is expected to rise to 30,000 tons from January, which could mean around 400,000 tons in total being exported throughout 2019. In late October 2018, the Atyrau oil refinery

finally started industrial production of paraxylene by launching Paramax technology with a capacity of 496,000 tpa. The Kulevi terminal has two reservoirs with the capacity of 20,000 cubic metres for each and a 10,000-ton reservoir for benzene.

Atyrau petrochemical complex-Malaysian vessel contract

KNM Group from Malaysia has won a 40 million-yuan (RM24 million) contract from China National Chemical Engineering Co (CNCEC) to supply vessels for the construction of an integrated petrochemical complex at Atyrau in Kazakhstan. It is not clear when the petrochemical complex will be completed by CNCEC which won an EPC contract in December 2015 for the construction of the project valued at $1.795 billion.

The project for the construction of an integrated gas chemical complex at Atyrau assumes implementation in two phases. The first will be launched polypropylene production capacity of 500,000 tpa and the second with a polyethylene capacity of 800,000 tpa and butadiene with capacity to be decided.

Kazakh Polymer Imports (unit-kilo tons)

Product	*Jan-Sep 18*	*Jan-Sep 17*
HDPE	78.1	69.7
LDPE	13.7	16.0
LLDPE	7.2	5.2
PVC	33.7	41.7
Polypropylene	25.4	24.8

Kazakh polymer imports, Jan-Sep 2018

Imports of PVC into Kazakhstan dropped 19% in the first three quarters in 2018 to 33,700 tons against 41,700 tons. Polypropylene imports amounted to 25,400 tons versus 24,800 tons, of which homopolymer shipments increased 19% to 18,000 tons. Polypropylene exports from Kazakhstan was unchanged at 18,400 tons. Imports of polyethylene into Kazakhstan grew in January-September 2018 by 9% to 99,300 tons compared to 91,400 tons. HDPE imports exceeded 78,100 tons in the first nine months of 2018, up by 12% whilst LDPE imports dropped 17% to 13,700 tons. LLDPE imports rose from 5,200 tons to 7,500 tons.

Uzbek chemical investments

Uzbekistan is planning to establish a major gas chemical complex based on the deposits in the Karakalpakstan area, as part of a cluster that intended to supply polymers to local plastics processing plants which are yet to be developed. The country plans to construct the new unit which will have a 1.3-1.5 billion cubic metres of gas processing capacity, using methanol to olefins technology.

The cluster, using the methanol to olefins technology, could provisionally include capacities for polypropylene of up to 250,000 tpa of polypropylene, 100,000 tpa of PET and ethylene vinyl acetate, 100,000-150,000 tpa of ethylene glycol, and 100,000 tpa of ethylene-propylene elastomer. The €3.85 billion project, still in the early stages of planning, is being led by Uzbekneftegaz and has already received interest from TAIF in Tatarstan.

Uzbekistan-GTL project

Enter Engineering Pte Ltd, a subsidiary of Gazprombank, and Uzbekneftegaz have signed an EPC contract to expand the capacity of the Shurtan Gas Chemical Complex. The capacity expansion project involves processing synthetic naphtha from a GTL plant under construction and developing new types of polyethylene and polypropylene.

Uzbekistan aims to commission a plant in 2019 to produce liquid fuel using GTL technology at the Shurtan Gas Chemical Complex. The total investment in the project is estimated at $3.6 billion, involving capacities of 311,000 tpa of aviation kerosene, 743,000 tpa of diesel fuel, 431,000 tpa of naphtha and 53,000 tpa of liquefied gas. Haldor Topsoe is the licensor of synthesis gas technology. In addition to the Danish company, licensing agreements for the project were signed with Sasol (South Africa) and Chevron (USA). The construction contractors are Hyundai Engineering Co and Hyundai Engineering and Construction Co., (South Korea), Enter Engineering. (Singapore). At the same time the Shurtan Gas-Chemical Complex polyethylene capacity is being increased from 125,000 tpa to 500,000 tpa.

Ustyurt Gas-Chemical can process 4.5 billion cubic metres of natural gas annually, followed by polyethylene of various densities (387,000 tpa), polypropylene (83,000 tpa) and naphtha (102,000 tpa). In 2017, more than 1.8 billion cubic metres of ethane and commercial gas were sent to the main gas pipelines from Ustyurt Gas-Chemical, and more than 87,500 megawatts of electricity were transferred to the power system of the Uzbekenergo. Pyrolysis distillate from the Ustyurt Gas-Chemical Complex was sent to produce gasoline at the Bukhara refinery.

Air Products-Uzbekistan MTO project

Air Products has been commissioned by Uzbekneftegaz to prepare a preliminary project to produce olefins using MTO technology. A framework agreement was signed in October under which Air Products will analyse preliminary costs within three months. Uzbekneftegaz is considering two options for implementing the project, processing one billion or

one and a half billion cubic metres of natural gas per annum, followed by the production of methanol and the production of olefins.

Uzbekneftegaz envisages plans to build a new gas chemical cluster with a preliminary cost of $4.25 billion based on a public-private partnership. The cluster will include a gas chemical complex using MTO technology, as well as about ten polymer processing plants with production of up to 300,000 tpa of finished products. The gas chemical complex will process up to one and a half billion cubic metres of gas and produce 200-250,000 tpa of polypropylene, and 100,000 tpa of ethylene-propylene rubber. Other facilities could include 100,000 tpa of PET, and 100-150,000 tpa of ethylene glycol.

Navoiazot plans to commission the production of PVC, caustic soda and methanol in Sept 2019

Navoiazot in Uzbekistan aims to start its new chemical complex in September 2019. The aim this year is to produce 17,500 tpa of PVC, 12,900 tons of caustic soda and 52,500 tons of methanol. The design capacity of the new plant includes 100,000 tpa of PVC, 71,800 tpa of caustic soda and 300,000 tpa of methanol.

The cost of construction of the new production faculties is more than $500 million, of which $60.3 million came from the company's own funds $66 million through loans from the Uzbekistan Reconstruction and Development Fund and $373.8 million in loans from China's Eximbank. Construction work is being carried out by a consortium of Chinese companies China CAMC Engineering and HQC (Shanghai). In addition to the above projects, Navoiazot is implementing a project for the construction of an ammonia plant with a capacity of 660,000 tpa and urea with a capacity of 577,500 tpa. The total cost of the project is $985 million, and construction is scheduled for completion by 2020.

Relevant Currencies

Czech crown. $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 = 28.1 €1 = 32.6: Rus rouble. $1 = 67.6 €1= 76.8

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