Chemical Information Resources for East Europe and CIS

CIREC MONTHLY NEWS

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

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Key pointers from this month's issue

Central Europe

MOL and PKN Orlen are both working on strategic plans for petrochemicals in order to diversify away from fuels and energy, increasing particularly the importance of Central Europe in propylene derivatives. Orlen group member Anwil in Poland is considering an expansion of its VCM plant at Wloclawek, and also an increase in fertiliser capacity. In Romania, the acquisition of Oltchim by Chimcomplex has been funded through Russian sources, through the European arm of the bank VTB which is not subject to EU sanctions. Polypropylene imports into Poland totalled 540,000 tons in the first nine months in 2018 against exports of 143,000 tons, whilst polyethylene imports amounted to 871,000 tons versus exports of 291,000 tons. In Serbia, refining group NIS has outlined aims to gain control of HIP-Petrohemija in full

Russian chemical production & domestic sales

Russian ethylene production totalled 2.426 million tons in the first ten months in 2018 against 2.348 million tons in the same period in 2017. The major change took place at Salavat where production rose from 254,800 tons to 318,300 tons. Russian plants produced 1.829 million tons of propylene in the first ten months in 2018 versus 1.685 million tons in the same period in 2017. SIBUR Tobolsk increased production from 246,000 tons in January to October 2017 to 330,600 tons in the same period 2018, whilst Gazprom neftekhim Salavat increased production from 100,800 tons to 136,700 tons. Methanol production in Russia increased by 10% in the first ten months in 2018 to 3.451 million tons. The largest rise was recorded by Azot at Novomoskovsk which increased by 24% to 244,100 tons, followed by Shchekinoazot which increased production from 429,400 tons to 451,000 tons and Tomet which increased from 639,200 tons to 714,400 tons.

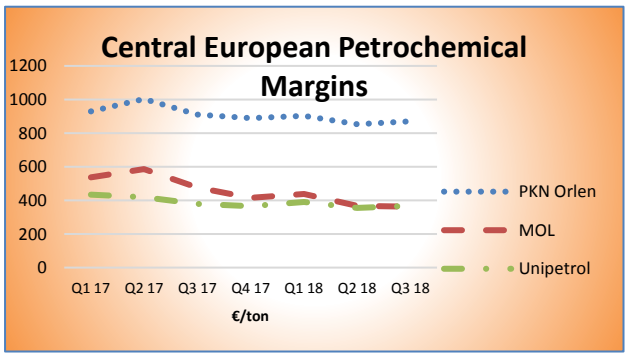
Russian chemical trade

Russian chemical and chemical product exports totalled 38.617 million tons in the first three quarters in 2018 against imports of 11.263 million tons. However, the country remains a net importer by value as import costs for January to September amounted to $32.0 billion against $18.4 billion. The average price of exported chemicals for the first three quarters was $477 per ton against the average import price of $2,842 per ton. Russian exports of paraxylene amounted to 126,000 tons in the first nine months in 2018 against 120,600 tons in the same period in 2017. Russia imported 25,300 tons of TDI in the first nine months in 2018, valued at $98.3 million. For the first three quarters in 2018 following increases in domestic consumption, propylene exports dropped by 35% to 85,800 tons.

Russian chemical projects

SIBUR aims to complete the DOTP project at Perm in mid-2019, whilst the construction of the maleic anhydride project at Tobolsk has been started with 2021 as the finish date. SIBUR's decision on the construction of the Amur Gas-Chemical Complex may be affected by changing perceptions of plastics and the impact on consumption. Curiously, Irkutsk Oil Company (INK) has invited SIBUR to take part as a minority partner in the Ust Kut gas-chemical and polymer project. The Ivanovo region has lost its construction project for a synthetic fibre plant, which was actively lobbied by the former leadership and positioned as the most important investment project for the region.

CENTRAL & SOUTH-EAST EUROPE



Central European petrochemicals

Petrochemical margins for producers in Central Europe declined in the third and fourth quarters in 2018 continuing the trend from the first half of the year. Crude price volatility in recent months, which may continue for the fisrt part of 2019, has affected margins and the ability of producers to set prices. In terms of feedstock supplies, PKN Orlen has expanded its sources over 2018 purchasing from Nigeria and Angola as opposed to Russian crude.

Polish Propylene Imports (unit-kilo tons)			
Country	**Q1 18**	**Q2 18**	***Q3 18***
Azerbaijan	1.9	2.0	2.5
Czech Republic	4.3	0.1	6.2
Germany	14.7	15.8	10.3
Russia	5.8	6.0	7.4
Ukraine	21.1	18.8	17.9
Hungary	3.1	4.6	3.3
Others	0.0	0.0	0.0
Total	51.0	47.2	47.6

Polish propylene imports,Jan-Sep 2018

Poland's imports of propylene totalled 47,600 tons in the third quarter in 2018 against 47,200 tons in the second quarter. Karpatneftekhim from Ukraine supplied 17,900 tons in the third quarter, folowed by Germany with 10.300 tons and the Czech Republic 6,200 tons.

In order to resolve the deficit in propylene supply in Poland, PKN Orlen is currently constructing a 100,000 tpa metathesis plant whilst Grupa Azoty is striving through its subsdiary PDH Polska to construct a 400,000 tpa propylene plant using propane dehydrogenation.

PDH Polska-selection of contractors

The selection of the general contractor for PDH Polska is planned for the first half of 2019, and the commercial commissioning of the installation at the end of 2022. On 14 November 2018, PDH received offers for the implementation of the investment at a fixed-price lump sum. The complex will consist of a trans-shipment and warehouse terminal, an installation for the production of propylene by the PDH method and an installation for the production of polypropylene with a logistics infrastructure.

The project entitled Polimery Police in northern Poland consists of the construction of a propane dehydrogenation plant (PDH) and a polypropylene plant. The documentation outlining conditions, criteria, etc, approved by the supervisory board of PDH Polska, has already been submitted to the potential tendering companies. PDH Polska is already in possession of two state-of-the-art licenses for the production of propylene in Oleflex technology from UOP and for the production of polypropylene from W R Grace & Co.

The next stage is to obtain financing offers, whilst talks are also being conducted with raw material suppliers and recipients of polypropylene. The main weakness of the propylene and polypropylene investments is that Azoty's tight performance in 2018 has tended to put restraints on financing possibilities for the projects. The EBITDA of Grupa Azoty will probably be the weakest in the full year for 2018 since the Polish chemical companies merged into one company. Moreover, no other investors have shown interest in joining Azoty for the propylene and polypropylene projects, and concerns have emerged over how Grupa Azoty finances PDH Polska and Polymery Police.

Polish Imports of Polypropylene Jan-Sep 2018 (unit-kilo tons)		
Product	***Imports***	***Exports***
Homopolymers	329.9	92.9
Copolymers	137.3	50.3
Others	73.0	0.6
Total	540.2	143.8

Polish polypropylene trade, Jan-Sep 2018

As shown in the table opposite, Poland's imports of polypropylene far outstrip exports, amounting to 540,200 tons in the first three quarters in 2018 against 143,800 tons. Basell Orlen Polyolefins currently represents the sole producer of polypropylene in Poland.

Polish Polyethylene Trade Jan-Sep 2018 (unit-kilo tons)		
Product	***Imports***	***Exports***
LDPE	299.6	53.1
LLDPE	161.6	47.7
HDPE	255.5	177.3
EVA	13.3	1.6
Ethylene-alpha-olefin Copolymers	102.5	6.4
Other types of polyethylene	39	4.4
Total	871.2	290.6

Polish polyethylene trade, Jan-Sep 2018

In addition to polypropylene imports outstripping exports around three-fold, Polish imports of polyethylene remain significantly higher than exports. In the first three quarters in 2018 imports of polyethylene totalled 871,200 tons versus exports of 290,600 tons. HDPE is the only polyethylene category where exports achieve relatively high numbers against imports, but there was still a deficit of 78,200 tons in the period January to September 2018.

Polish chemical feedstock trade, Jan-Sep 2018

Regarding feedstocks, butadiene imports into Poland totalled 73,024 tons in the first nine months in 2018, including 28,316 tons from Austria, 21,952 tons from Germany and 22,154 tons from Hungary. Propylene imports totalled 145,800 tons of which the largest supplier was Karpatneftekhim in Ukraine which shipped 57,800 tons. Although propylene oxide imports have dropped since the expansion of the PCC Rokita plant at Brzeg Dolny to 48,000 tpa, Poland still imported 14,768 tons in the first three quarters in 2018. The main source was from the Netherlands, accounting for 11,680 tons, followed by Belgium with 2,939 tons.

Polish TDI Imports, Jan-Sep 2018		
Country	***Qty (ktons)***	***Price per ton (€)***
Saudi Arabia	1.4	2903.2
Belgium	2.6	2537.1
France	1.2	3515.9
Netherlands	3.0	3081.6
South Korea	2.3	2956.1
Germany	17.9	2977.2
Hungary	23.2	3100.3
Italy	0.3	3277.1
Others	1.0	3050.0
Total/Av Price	52.8	3031.9

TDI imports into Poland totalled 52,800 tons in the first three quarters in 2018, at an average price of €3031.9 per ton. Main suppliers included Hungary, which provided 23,200 tons to the Polish market, and Germany which provided 17,900 tons.

Polish Methanol Imports (unit-kilo tons)			
Country	***Q1 18***	***Q2 18***	***Q3 18***
Germany	23.9	23.7	31.0
Norway	11.6	16.2	19.4
Russia	111.7	103.0	98.2
Venezuela	0	27.5	13.0
Others	39.6	6.8	19.6
Total	186.8	177.2	181.2

Methanol imports into Poland amounted to 181,200 tons in the third quarter in 2018 quarter against 177,200 tons in the second quarter. The noticeable change in 2018 was the purchase of 27,500 tons of methanol from Venezuela from April to June 2018 and another 13,000 tons from July to September.

MOL-Orlen competition in petrochemical investments

MOL and Orlen both are concentrating investments in petrochemicals over the next decade as part of their strategies to add value and to reduce dependency on the fuel and energy sectors. Both companies are competing primarily in Central Europe and thus may face competition from each other in some product areas. PKN Orlen is focusing primarily on expanding and developing its core product range whilst MOL is entering into a new range of propylene chain products where it sees opportunity for building market share. In terms of size, MOL wants to spend around $4.5 billion on petrochemicals over the next decade which is around four times larger than the investment programme of zl 8.3 billion announced by PKN Orlen.

During 2019 MOL is to decide what key project will be carried out after 2021, after the completion of the polyether polyols complex. The construction of the polyol complex and propylene oxide plant is being undertaken by ThyssenKrupp and is expected to last until the third quarter of 2021, MOL wants to implement

Orlen-Lotos takeover

Orlen has provided the European Commission with a package of preliminary analyses for the takeover of Lotos in which the group showed that the concentration of two refiners under one ownership does not threaten market mechanisms or competition. If the Commission's decision is taken in the first half of 2019, the process of taking over Lotos could be closed in the third quarter. In the first stage Orlen wants to purchase 32.99% of shares to be followed up with the second stage of a 66% offer. A more effective fuel company in Poland should emerge, which may be more able to meet the challenges faced by the Polish oil industry. The combined Orlen and Lotos also means greater stability and competitiveness of the Polish group on the international market.

8-10 strategic projects in the petrochemical segment. From 2019, the construction of the polyol complex will engage as much as 4-4,500 employees.

Anwil-VCM & fertiliser expansion

Anwil is considering expanding VCM capacity at Wloclawek. The company is developing a feasibility study for the modernisation of the plant for which offers were to be submitted by 7 December. The deadline for the study is set for 30 April 2019. The concept under consideration involves the addition of units including oxychlorination, distillation of EDC, cracking, purification of VCM and the use of process heat in the range as possible. New units are to be located next to existing production installations.

Anwil wants to increase its production capacity by approximately 50% and expand the product offer by four types of fertilisers. This will be possible due to the construction of a third nitrogen fertiliser production plant which is to be completed by the end of 2021. Launching a third fertiliser installation will increase the chemical company's production capacity from 966,000 tpa to 1461,000 tpa and will enrich the product portfolio with thick ammonium nitrate, ammonium nitrate sulphate, calcium ammonium nitrate and calcium ammonium nitrate with improved granule properties.

HIP Petrohemija ethylene modernisation and possible takeover by NIS

HIP Petrohemija at Pancevo is investing around €24 million of its own funds in investment projects in 2019, including the ethylene plant. Operational activities at the ethylene plant began on 3 December by which time 83% of new equipment had been ordered so far, which will be installed according to the requirements of the projects. The end of all activities in this business is expected in April 2020. The most difficult operations will be done during the overhaul planned for March and April 2019.

Serbian Chemical Exports (unit-kilo tons)		
Product	**Jan-Sep 18**	***Jan-Sep 17***
Polyethylene	89.0	84.4
Polypropylene	13.7	27.3
Styrene Butadiene Rubber	14.2	10.6
Methanol	91.4	93.8
Acetic Acid	66.4	70.0

Privatisation of HIP Petrohemija may take place in early 2019. Refining group NIS, owned by Gazprom Neft, NIS expects to receive at least a controlling stake but aims to acquire the entire state share (together with state-owned companies it owns 76%). NIS acts as a supplier of raw materials to the Pancevo cracker, and currently owns 21% of Petrohemija's shares. Part of the shares were given to NIS as a reimbursement of debt for raw materials.

HIP Petrohemija's capacities 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. Revenues in the first half of 2018 amounted to €155.4 million, whilst achieving an EBITDA of €5.7 million.

Polish PTA Exports (unit-kilo tons)		
Country	***Jan-Sep 18***	***Jan-Sep 17***
Belarus	13.2	19.8
Switzerland	1.0	4.3
Netherlands	3.8	3.6
Lithuania	7.9	0.0
Germany	227.1	256.6
Others	7.7	6.6
Total	260.7	291.0

Polish PTA exports, Jan-Sep 2018

Polish PTA exports totalled 260,700 tons in the first three quarters in 2018 against 291,000 tons in the same period in 2017. Exports to Germany dropped to 227,100 tons from 256,600 tons, and volumes shipped to Belarus dropped to 13,200 tons against 198200 tons. Exports in the first three quarter of 2018 comprised 68% of production undertaken by PKN Orlen at Wloclawek, rising from 62% in the same period last year.

Domestic demand for PTA until now has been driven by PET, but Grupa Azoty ZAK is now using PTA for plasticizer production and this could reduce the proportion of sales directed to export. Orlen's EBITDA for PTA sales in 2018 has been forecast at around zl 111 million.

Czech petrochemical exports,Jan-Oct 2018

Ethylene exports from Unipetrol totalled 64,400 tons in the first ten months months in 2018 from 56,300 tons in the same period in 2017. Almost all of the ethylene in 2018 was shipped to Bohlen in Germany. Propylene exports dropped in the first ten months to 17,400 tons from 22,200 tons, whilst imports of

propylene rose from 35,741 tons in January to October 2017 to 46,249 tons in the same period in 2018. Germany provided 27,212 tons to the Czech Republic in the first ten months last year, followed by Ukraine with 6,809 tons.

Czech Petrochemical Exports (unit-kilo tons)		
Product	***Jan-Oct 18***	*Jan-Oct 17*
Ethylene	64.4	56.3
Propylene	17.4	22.2
Butadiene	0.6	4.1
Benzene	27.6	16.9
Toluene	12.3	9.2
Ethylbenzene	102.7	105.7

Ethylbenzene exports from the Czech division of Synthos totalled 102,700 tons in January to October 2018 against 105,700 tons. Exports of phthalic anhydride from the Czech producer Deza totalled 13,362 tons in the first ten months in 2018 against 12,771 tons in the same period in 2017. Exports of DINP in the first ten months in 2018 amounted to 32,328 tons versus 28,672 tons.

Czech PVC Chain Trade (unit-kilo tons)		
	Jan-Oct 18	***Jan-Oct 17***
EDC Imports	73.9	0.9
PVC Imports	115.2	113.4
PVC Exports	102.3	83.0

Czech petrochemical imports, Jan-Oct 2018

Spolana has needed to import ethylene dichloride since January 2018 in order to produce VCM since the close of the mercury chlorine plant at Neratovice in late 2017. In the first ten months Spolana imported 73,900 tons of EDC, mostly from Germany. Due to the imports of EDC Czech PVC trade has remained unaffected by the chlorine plant closure, with exports rising to 102,300 tons in the first ten months in 2018 against 83,000 tons in the same period in 2017.

Czech TDI Imports (unit-kilo tons)		
Country	***Jan-Oct 18***	***Jan-Oct 17***
Belgium	2.0	1.8
Germany	3.6	3.0
Hungary	1.7	1.8
Poland	1.5	0.3
Slovakia	0.1	6.1
UK	1.3	1.9
Others	0.9	1.3
Total	11.2	16.2

Benzene imports into the Czech Republic dropped to 56,270 tons in the first ten months in 2018 from 51,981 tons in the same period last year. Methanol imports, usually supplied mainly from Germany and Russia, totallled 69,943 tons in January to October 2018 against 77,589 tons in the same period in 2017.

TDI imports into the Czech Republic totalled 11,200 tons in the first ten months of 2018 against 16,200 tons in January to October 2017. Imports were sourced last year from Germany, the UK, and Hungary. Maleic anhydride shipments totalled 2,302 tons in the ten months of 2017 against 2,126 tons.

Polish Chemical Production (unit-kilo tons)		
Product	***Jan-Oct 18***	***Jan-Oct 17***
Caustic Soda Liquid	271.4	290.1
Caustic Soda Solid	50.0	64.6
Ethylene	388.7	205.3
Propylene	249.4	407.8
Butadiene	44.9	288.5
Toluene	11.5	49.9
Phenol	35.4	17.2
Caprolactam	139.7	37.3
Acetic Acid	11.4	137.1
Polyethylene	289.2	19.9
Polystyrene	50.5	294.4
EPS	73.2	45.9
PVC	201.2	82.7
Polypropylene	226.0	240.8
Synthetic Rubber	224.5	229.7
Pesticides	44.8	81.4
Nitric Acid	1906.0	43.6

Oltchim, EU & Chimcomplex

The European Commission decided in December that Oltchim had received around €335 million of incompatible aid from Romania in the company's failed privatisation in September 2012 which must now be repaid. At the same time, the Commission has concluded that Chimcomplex does not benefit from past aid granted to Oltchim because they have acquired the assets on market terms. This means that the responsibility to repay the aid remains with Oltchim and that the new owners are not required to pay it back.

Chimcomplex Borzesti has financed the purchase of Oltchim through the Russian bank VTB, through its European branch in Frankfurt. Chimcomplex first contacted European and US banks to get financing for this deal, but they refused, so they turned to Russia. Credit Suisse is also involved in this deal alongside VTB. Chimcomplex is paying €128 million for Oltchim's most important assets. The asset packages have been transferred to Chimcomplex include chlorakali, oxo-alcohols, polyols, and VCM-PVC. Thus, Chimcomplex has taken over 60% of Oltchim, with remaining 40% remaining in state ownership remaining on sale until the spring of this year. The takeover of Oltchim will mean the establishment of the Romanian Chemical Company (CRC).

RUSSIA

Russian Chemical Trade Jan-Sep 2018 (unit-kilo tons)		
Product Category	***Exports***	***Imports***
Inorganic	5,945	4,279
Organic	4,620	1,045
Pharmaceuticals	28	116
Fertilisers	24,221	255
Cosmetics	121	250
Soap and detergents	326	426
Paints & lacquers	214	470
Protein substances, enzymes	15	181
Explosives	29	11
Photo chemicals	1	14
Other Chemicals	558	896
Plastics	1,482	2,605
Rubber	1,058	715
Total	38,617	11,263

Russian chemical trade balance 2018

Russian chemical and chemical product exports totalled 38.617 million tons in the first three quarters in 2018 against imports of 11.263 million tons. Despite the balance in weight in favour of exports, Russia remains a net importer by value as import costs for January to September amounted to $32.0 billion against export revenues of $18.4 billion. In effect, the average price of exported chemicals from Russia for the first three quarters in 2018 amounted to $477 per ton against the average import price of $2,842 per ton.

Pharmaceuticals and pharmaceutical intermediates represent the largest deficit sector for Russia's chemical industry balance, with imports amounting to $7.7 billion in the first three quarters in 2018 against exports worth only $512 million. The only sector in the chemical sector where exports dominated imports was fertilisers where export values totalled $5.65 billion in January to September against just $105 million of imports. To achieve the fertiliser export revenues Russian companies exported 24.2 million tons at an average price of $233 per ton. Despite Russia being a major exporter of synthetic rubber, with exports amounting to 1.058 million tons in the first three quarters against imports of 715,000 tons, the sector still incurred a deficit of $770,000 due to the higher prices of imports.

Of the product areas where Russia shows a large deficit, plastics is the most likely to see a change in the next three to five years. Exports of plastics were worth $2.3 billion in the first three quarters in 2018 against imports of $7.1 billion, but in view of the pending projects this deficit would be expected to come down. Paints is also a sector where the deficit of $1.2 billion in the first three quarters could come down as domestic companies increase production.

Russian Chemical Production (unit-kilo tons)		
Product	***Jan-Oct 18***	***Jan-Oct 17***
Caustic Soda	1,055.5	1,009.5
Soda Ash	2,868.0	2,870.0
Ethylene	2,430.0	2,342.0
Propylene	1,707.1	1,581.0
Benzene	1,158.4	1,121.0
Xylenes	487.9	438.4
Styrene	606.8	561.5
Phenol	163.0	182.5
Ammonia	14,700.0	13,700.0
Nitrogen Fertilisers	8,508.0	8,207.0
Phosphate Fertilisers	3,289.0	2,939.0
Potash Fertilisers	6,963.0	7,100.0
Plastics in Bulk	6,781.0	6,407.0
Polyethylene	1,799.0	1,647.0
Polystyrene	456.1	452.4
PVC	832.4	768.8
Polypropylene	1,242.0	1,195.9
Polyamide	141.0	131.6
Synthetic Rubber	1,363.0	1,306.0
Synthetic Fibres	140.8	141.0

Overall, Russia's trade deficit in chemical industry products could decline slowly in the next few years, partly due to increased domestic production but primarily due to the lack of meaningful growth in the economy. Lower oil and raw material prices may help to support Russian petrochemical producers in contrast to the difficulties lower revenues cause the government.

Russian chemical production, Jan-Oct 2018

Russian chemical production rose 2.3% in volume in the period January to October 2018. Primary forms of plastics production totalled 645,000 tons which was 5.8% up over the same period in 2017, including a 6.7% rise in polyethylene to 1.829 million tons. Polypropylene production rose 3% to 1.238 million, polystyrene rose 3.1% to 456,100 tons and PVC rose 6.6% to 832,400 tons.

For the whole group of polycarbonates, polyethers and polyesters, alkyd and epoxy resins Russian production rose 3.5% in January-October 2018 to 749,300 tons whilst polyamide production rose 5% to 140,900 tons.

Synthetic rubber production increased by 3.8% compared with the same period in 2017 and totalled 1.363 million tons.

Russian petrochemical projects

Irkutsk Oil Company-Toyo binding agreement on gas-chemical plant before start of 2019

Irkutsk Oil Company (INK) aims to sign binding documents with Toyo Engineering Corporation before the end of 2018 for the petrochemical project at Ust-Kut involving 650,000 tpa of polyethylene. INK and Toyo have since September 2018 been working towards a comprehensive engineering and procurement contract for the first unit of the polyolefin production plant and ethylene production plant from ethane produced from the INK fields. In addition to the gas-chemical complex INK has also signed contracts to construct a large helium plant.

INK invites SIBUR to participate in gas-chemical project

Irkutsk Oil Company (INK) has offered SIBUR to act as a partner in a project to create a gas and chemical complex at Ust-Kut. According to Russian press reports, INK has offered SIBUR a minority stake in the company, up to 25%. The companies could potentially conclude an off-take contract under which SIBUR buys polyethylene from the plant and sell it through its own channels. INK is negotiating to attract other minority shareholders but intends to retain more than 50%.

The advantages of involving SIBUR are from its experience in chemical and polymer markets both domestically and internationally. However, with SIBUR approaching the final stages of the ZapSibNeftekhim project at Tobolsk and still in the process of evaluating the prospective Amur Gas-Chemical Complex, it is not clear if this offer from INK will be of interest.

Previously Lummus was chosen by INK as the licensor of the ethylene cracker. The binding agreement with Toyo consists of an integrated contract for engineering and equipment purchase for the first unit of the plan which is the ethylene unit using the company's own ethane resources which gives it an advantage of many of its competitors. Preliminary negotiations have been held with potential buyers of finished products which could be able to acquire the entire volume of polyethylene produced at the plant.

The project is being implemented mainly with INK's own funds, with a small attraction of credit resources. To date, 44 billion roubles have been spent on the first and second stages although borrowing may be required at later stages of development. In order to increase the processing of raw materials and the production of commercial propane and butane by the end of 2019, it is planned to build three more gas installations at the Yaraktinsky and Markovsky fields with a total capacity of 18 million cubic metres per day. The third stage of INK's programme involves the construction of a polymer plant at Ust-Kut, which will produce LDPE and HDPE, and this is where finding partners such as SIBUR takes significance

Amur Gas-Chemical Complex could be scrapped in favour of recycling

SIBUR expects to complete a detailed study of the Amur Gas Chemical Complex project in 2019, after originally posting the end of 2018 as the deadline. Although there has been assumption that the detailed study represents more of formal approval than an objective analysis, the delayed decision on whether to go ahead indicates that SIBUR has still not fully committed to the project. Gazprom's investments into the fourth stage of the Amur Gas Processing Plant are closely correlated with the prospect of the gas-chemical complex being constructed, to which it could provide ethane supply by around 2024. In February 2018, SIBUR and Gazprom signed a preliminary contract for the supply of ethane for the gas chemical complex at around 2 million tpa.

According to preliminary estimates of SIBUR, investments in the Amur Gas Chemical Complex could amount to $6-7 billion. Capital costs involved in construction can be estimated within a defined range, whilst feedstock prices and global GDP predictions are more difficult to state. Future demand for polyethylene is the one variable which could be affected changing global attitudes towards plastics and subsequent usage and this could determine the outcome of SIBUR's decision.

The contract for ethane supply between SIBUR and Gazprom expires at a certain unspecified date if no investment into petrochemicals is made. If the contract expires without SIBUR reaching a decision Gazprom will be able to modify its investment plans into the gas processing plant. The Amur Gas Processing Plant of Gazprom, which will be built as part of gas supplies to China via the Power of Siberia gas pipeline, will become the main supplier of raw materials for the Amur Gas Processing Plant.

Since the project concept was first developed 4-5 years ago, significant changes have occurred in public perceptions of plastics and the impact on the environment and this key factor makes it more difficult to assess future demand for virgin polyethylene. If environmental issues are discounted, global demand for polyethylene could rise by several million tons annually, which would thus justify the investment into the Amur Gas Processing Plant. However, growth for polyethylene could easily be downgraded due to changing habits and usage. Rather than constructing new gas-chemical plants SIBUR could potentially prefer to invest in plastics collection and recycling. This may be too early and too speculative to state that this is SIBUR's direction of travel, but it does highlight a decisive factor in determining whether it makes sense to invest in the Amur Gas-Chemical Complex.

ZapSibNeftekhim-alpha olefins addition

SIBUR has conducted tests of a pilot plant for the production of alpha-olefins using its own technology for the ZapSibNeftekhim complex at Tobolsk. If the company decides to go ahead with constructing a new plant, alpha olefins production could be available by 2022. The technology has been tested out by SIBUR's research division NIOST at Tomsk.

Regarding project progress for ZapSibNeftekhim, design has been completed in full whilst by the end of November construction had achieved 89.1% of the schedule. The supply of materials and equipment had comprised 98.4% of the schedule whilst progress of work on the pyrolysis unit was 94.4%. Works on the installation for polyethylene production had amounted to 93% and polypropylene 98.4%.

The configuration of the ZapSibNeftekhim project involves the construction of pyrolysis plants with a capacity of 1.5 million tpa of ethylene (technology from Linde) and 500,000 tpa of propylene, 240,000 tpa of high margin by-products (butadiene, butene-1, MTBE, pyrobenzene). The project also envisages the construction of production of various grades of polyethylene with an aggregate capacity of 1.5 million tpa (technology-INEOS), installations for the production of polypropylene with a capacity of 500,000 tpa (technology-LyondellBasell). As progress move closer towards 100% completion the tasks can become more challenging and thus it may take longer to finish the last final stages.

Kazanorgsintez launch of new ethylene furnaces

Kazanorgsintez launched four new pyrolysis furnaces at the E-200 complex in the second half of November. The four new pyrolysis furnaces after commissioning should replace ten old obsolete furnaces that have been in operation for almost forty years. The modernisation of the kiln unit will increase the efficiency of existing production: increase the productivity of ethylene plants, enhance the safety of the process, and reduce production costs for Kazanorgsintez.

Kazanorgsintez-ethylene modernisation

- Four new cracker furnaces installed November 2018
- Replacing eight of the ten obsolete furnaces

The process on the new furnace units is fully automated. Other measures have been taken to ensure the industrial safety of the facility: pipelines for the supply of raw materials and fuel gas are equipped with high-speed shut-off valves, sensors for measuring pressure, temperature and flow, signalling devices for limiting pressures for the supply of raw materials.

The construction of new furnaces was carried out from May 2017 to November 2018 by Technip Benelux which also supplied the equipment. Eight out of ten old furnaces will be decommissioned and dismantled. Two furnaces will continue to work.

Russian petrochemical production & sales

Russian Ethylene Production (unit-kilo tons)		
Producer	***Jan-Oct 18***	***Jan-Oct 17***
Angarsk Polymer Plant	154.0	160.7
Kazanorgsintez	472.2	476.3
Stavrolen	261.9	222.0
Nizhnekamskneftekhim	501.7	505.8
Novokuibyshevsk Petrochemical	49.0	46.4
Gazprom n Salavat	318.3	254.8
SIBUR-Kstovo	317.3	306.1
SIBUR-Khimprom	47.0	40.9
Tomskneftekhim	215.4	230.8
Ufaorgsintez	89.6	104.7
Total	2426.3	2348.4

Russian ethylene & propylene production, Jan-Oct 2018

Russian ethylene production totalled 2.426 million tons in the first ten months in 2018 against 2.348 million tons in the same period in 2017. The major change took place at Salavat where production rose from 254,800 tons to 318,300 tons. This increase helping to reduce the impact of slightly lower production at Ufa, Tomsk, Kstovo and Angarsk.

Russian plants produced 1.829 million tons of propylene in the first ten months in 2018 versus 1.685 million tons in the same period in 2017. SIBUR Tobolsk increased production from 246,000 tons in January to October 2017 to 330,600 tons in the same period this year, whilst Gazprom neftekhim Salavat increased production from 100,800 tons to 136,700 tons.

Russian propylene production & consumption 2018

Gazprom neftekhim Salavat increased the processing of naphtha in 2018 at the expense of ethane, which made it possible to increase the yield of propylene at the pyrolysis unit. In addition, the Salavat complex switched to a two-year repair cycle, resulting in uninterrupted production throughout 2018.

Russian Propylene Production (unit-kilo tons)		
Producer	***Jan-Oct 18***	***Jan-Oct 17***
Angarsk Polymer Plant	90.4	88.9
Kazanorgsintez	30.9	32.3
Lukoil-NNOS	207.4	245.6
Stavrolen	103.8	93.0
Nizhnekamskneftekhim	253.3	240.8
Novokuibyshevsk	35.4	0
Omsk Kaucuk	33.4	13.5
Polyom	159.0	166.6
Gazprom n Salavat	136.7	100.8
SIBUR Kstovo	140.4	135.8
SIBUR-Khimprom	54.2	55.1
Tomskneftekhim	115.3	125.6
SIBUR Tobolsk	330.6	246.0
Ufaorgsintez	137.8	141.0
Total	1828.8	1685.0

The change in the composition of pyrolysis raw materials and an increase in the production of propylene at Salavat was prompted by increased demand for processing into oxo alcohols, acrylic acid and butyl acrylate. At other Russian propylene plants, Neftekhimya at Moscow increased production from 35,000 tons in the first ten months in 2017 to 99,000 tons in the same period in 2018. In 2017 a large-scale reconstruction was carried out at the Moscow Refinery, which is the main supplier of raw materials for Neftekhimya.

In 2018, Russian propylene consumption increased in all refining segments, with the exception of polypropylene production. SIBUR Tobolsk reduced production of polypropylene by 25,000 tons over the first ten months as last year. Propylene consumption for cumene production rose in 2018 due to increased processing at Ufaorgsintez and could rise again if Omsk Kaucuk restarts its cumene plant in May and June 2019. Oxo alcohol production was also higher in 2018 at both Gazprom neftekhim Salavat and SIBUR-Khimprom. In 2018 the production of acrylonitrile, acrylic acid and propylene oligomers increased.

Russian Propylene Exports (unit-kilo tons)		
Producer	***Jan-Oct 18***	***Jan-Oct 17***
Lukoil-NNOS	57.8	67.0
SIBUR-Kstovo	23.6	43.5
Omsk Kaucuk	0.0	1.0
Stavrolen	12.4	5.0
Total	93.8	116.5

Russian propylene exports Jan-Oct 2018

The rise in consumption of propylene in the Russian domestic market in 2018 led to a reduction in the supply of product for export. For ten months, shipment of monomer to foreign markets decreased by 35% to 93,800

tons. The decrease in gross export volume was due to a reduction in the supply of propylene from SIBUR-Kstovo. From January to October 23,600 tons of monomer was shipped from the Kstovo plant to foreign markets, which is 43,500 tons less than in the same period last year.

The decline in export activity of SIBUR-Kstovo occurred due to a reduction in the production of propylene at the plant and an increase in internal supplies to the holding's plants. Under the conditions of a shortage of own production, shipments of propylene from SIBUR-Kstovo to SIBUR Tobolsk increased by 65% to 34,500 tons.

Russian Propylene Merchant Domestic Sales (unit-kilo tons)		
Company	***Jan-Oct 18***	***Jan-Oct 17***
Angarsk Polymer Plant	55.7	57.7
Omsk Kaucuk	1.3	2.1
SIBUR-Kstovo	100.1	75.8
Akrilat	5.0	1.4
Lukoil-NNOS	161.4	157.8
Tomskneftekhim	0.2	3.8
Gazprom neftekhim Salavat	7.9	0.0
SIBUR-Khimprom	0.2	0.0
Stavrolen	0.0	2.0
Tobolsk-Polymer	0.3	1.4
Total	332.0	302.1

Due mainly to the redirection of supplies of propylene SIBUR-Kstovo to the domestic market in 2018, the volume of monomer exports to Poland decreased threefold in the first three quarters to 21,800 tons. Shipments of propylene from Russia to the Belarusian company Polymir remained virtually unchanged and amounted to 30,700 tons.

Russian styrene production & exports Jan-Oct 2018

In the first ten months in 2018, Russia produced 612,100 tons of styrene which is 3% more than in the same period of 2017. Gazprom neftekhim Salavat increased styrene production by 9% to 167,000 tons in the first ten months in 2018, facilitating a rise in both domestic merchant market sales and export activity. Gazprom neftekhim Salavat has been the main producer to increase both domestic and export sales, followed by SIBUR-Khimprom at Perm where production increased from 94,700 tons to 117,900 tons.

Russian Styrene Production (unit-kilo tons)		
Producer	***Jan-Oct 18***	***Jan-Oct 17***
Nizhnekamskneftekhim	251.9	251.2
Angarsk Polymer Plant	28.7	29.6
SIBUR-Khimprom	117.9	94.7
Gazprom n Salavat	167.0	137.1
Plastik, Uzlovaya	46.7	48.8
Total	612.1	561.5

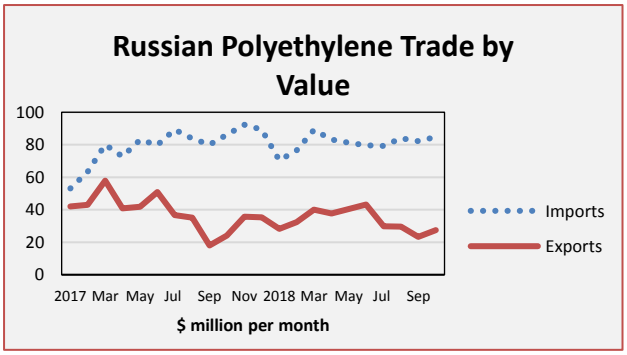
Bulk Polymers

Russian polyethylene production, Jan-Oct 2018

Russian production of HDPE totalled 799,000 tons in January-October 2018, 4.6% up on 2017 when production totalled 761,400 tons. Kazanorgsintez was the largest producer, amounting to 412,400 tons which was down 0.3% against the same period in 2017. Stavrolen at Budyennovsk increased production by 17% to 241,100 tons, whilst Gazprom neftekhim Salavat increased production by 33% to 100,900 tons.

Russian HDPE Production (unit-kilo tons)		
Producer	***Jan-Oct 18***	***Jan-Oct 17***
Kazanorgsintez	412.4	414.0
Stavrolen	244.1	206.7
Nizhnekamskneftekhim	41.6	64.7
Gazprom n Salavat	100.9	76.0
Total	799.0	761.4

Nizhnekamksneftekhim produced 41,600 tons of HDPE in the first ten months in 2018 against 64,700 tons in the same period in 2017. Polyethylene production in Russia increased in total by 3% over January-October 2018. LDPE production in Russia dropped 4% to 517,200 tons and LLDPE rose a third to 143,000 tons, all of which was produced by Nizhnekamskneftekhim. Regarding polyethylene trade, Russia remains a net importer



Russian polypropylene production, Jan-Oct 2018

Russian polypropylene production totalled 1.150 million tons in the first ten months in 2018 against 1.114 million tons in the same period in 2017. Scheduled repairs were carried out in October by Ufaorgsintez, Polyom, SIBUR Tobolsk and Stavrolen, when 75,700 tons was produced versus 118,800 tons in September. SIBUR Tobolsk

produced 373,600 tons of propylene polymer in January to October 2018, which is 11% less than the same period in 2017. SIBUR Tobolsk was forced to stop twice in 2018 for scheduled repairs.

Russian Polypropylene Production (unit-kilo tons)		
Producer	***Jan-Oct 18***	***Jan-Oct 17***
Ufaorgsintez	98.2	102.2
Stavrolen	92.3	85.1
Neftekhimya	111.0	86.7
Nizhnekamskneftekhim	179.9	175.3
Polyom	177.2	174.4
Tomskneftekhim	116.5	116.4
SIBUR Tobolsk	373.6	418.0
Total	1148.7	1113.8

Nizhnekamskneftekhim increased production in the first ten months in 2018 to 179,500 tons from 175,300 tons whilst Tomskneftekhim increased production slightly to 116,500 tons. Ufaorgsintez reduced production by 9.3% to 98,200 tons and Neftekhimya increased production by 28% to 111,000 tons.

Last year Neftekhimya suffered less interruptions from propylene supply. Stavrolen increased production by 8.5% to 92,300 tons. Regarding polypropylene trade by contrast to polyethylene Russian exports outstrip imports both by value and quantity although not significantly.

Russian PVC Production (unit-kilo tons)		
Producer	***Jan-Oct 18***	***Jan-Oct 17***
Bashkir Soda	207.3	204.4
Kaustik	77.3	71.2
RusVinyl	275.5	254.4
Sayanskkhimplast	224.8	212.5
Total	784.9	742.5

Russian PVC, Jan-Oct 2018

Russian PVC production rose by 7% in the first ten months in 2018 to 784,900 tons against 742,500 tons. RusVinyl produced 275,500 tons, 8% up whilst Sayanskkhimplast in the Irkutsk Oblast produced 224,800 tons against 212,500 tons. Bashkir Soda Company increased production at Sterlitamak by 5% to 207,300 tons, and Kaustik at Volgograd increased production from 71,200 tons to 77,300 tons.

PX-PTA chain

Russian Paraxylene Domestic Sales (unit-kilo tons)		
Producer	***Jan-Oct 18***	***Jan-Oct 17***
Gazprom Neft	49.4	71.6
Ufaneftekhim	99.6	80.6
Total	149.1	152.2

Russian paraxylene & PTA imports

Paraxylene sales on the Russian domestic market amounted to 149,100 tons in the first ten months in 2018 versus 152,200 tons in the same period in 2017. Ufaneftekhim increased sales from 80,600 tons to 149,100 tons in the first ten months in 2018, whilst Gazprom Neft at Omsk reduced shipments from 71,600 tons to 49,400 tons.

Gazprom Neft concentrated more on export activity in 2018, helping to increase Russian exports of paraxylene by 26,000 tons in the first ten months. Ufaneftekhim continues to sell most of its paraxylene to Polief, Kirishi exports almost all its production and Gazprom Neft does both. Regarding future supply, Taneko at Nizhnekamsk started construction of the aromatics complex earlier in 2018, which will eventually result in the construction of a 147,000 tpa plant for paraxylene which is intended to be integrated into PTA and PET production.

Russian Xylene Production (unit-kilo tons)		
Producer	***Jan-Oct 18***	***Jan-Oct 17***
Gazprom Neft	201.3	196.9
Kirishinefteorgsintez	101.2	102.9
Ufaneftekhim	185.5	133.9
Total	487.9	433.7

Russian exports of paraxylene amounted to 149,100 tons in the first ten months in 2018 against 152,000 tons in the same period in 2017. Finland increased its share of Russian paraxylene exports in the first nine months, rising from 83% to 98%. Belarus reduced purchases of paraxylene from Russia in January to September 2018, falling from 12% to 1.5%.

Polief PTA expansion and extended outage 2019

Polief has scheduled a four-month stoppage of the PTA plant in February 2019 to enable the modernisation process to be undertaken. During the scheduled shutdown the plant capacity at Blagoveshchensk is to be increased from 272,000 tpa to 350,000 tpa. SIBUR, which owns Polief, had previously indicated that the expansion of the PTA plant, would not require a full stoppage.

PTA production is expected to be resumed in June 2019, whilst new reactors for the plant will be started in August and possibly increased output could be seen by the fourth quarter. Production of PET by Polief will continue during the modernisation period. An estimated amount of 40,000 tpa of PTA has been arranged provisionally with Chinese suppliers to cover the extended outage.

If the shutdown period goes ahead as planned, Polief's paraxylene suppliers Ufaneftekhim and Gazprom Neft at Omsk are both expected to increase export activity in the first half of 2019. After the restart of the PTA plant, normal deliveries will be resumed but availability for paraxylene export should fall after the completion and commissioning of the PTA plant. Polief's paraxylene requirements are expected to rise subsequently from around 180,000 tpa to 235,000 tpa.

The Russian government board for developing single-industry towns such as Blagoveshchensk has approved SIBUR's decision to finance a project to modernise the existing production of PTA at Polief. The fund will provide the company with 1 billion roubles at 5% per annum for eight years. Investments in the project were previously estimated by the company at more than 6 billion roubles.

Russian PTA Imports (unit-kilo tons)		
Country	***Jan-Sep 18***	***Jan-Sep 17***
Belgium	1.6	22.6
India	5.7	27.4
China	110.4	66.8
South Korea	56.9	47.7
Poland	0.0	8.3
Thailand	15.0	18.2
Total	189.6	190.9

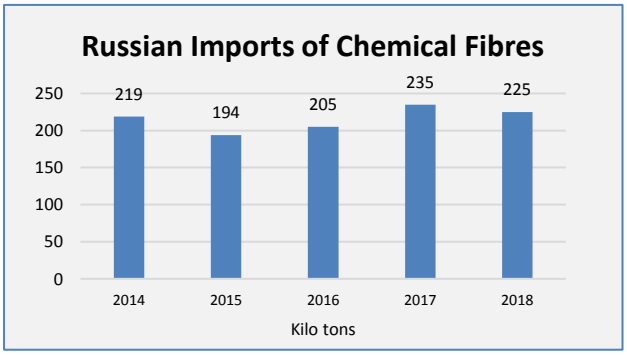
Russian PTA imports, Jan-Sep 2018

Russian PTA imports totalled 145,400 tons in the first seven months in 2018 against 145,600 tons in the same period in 2017. China supplied 75,600 tons in the first seven months against 58,700 tons last year, whilst India reduced shipments from 23,700 to 4,800 tons. Thailand reduced exports to 12,000 tons from 17,000 tons. Russian importers comprise almost exclusively Alko-Naphtha at Kaliningrad and the Senezh PET plant near Moscow.

Ivanovo Polyester Complex fibre project cancelled and relocated

The Ivanovo region has lost its construction project for a synthetic fibre plant, which was actively lobbied by the former leadership and positioned as the most important investment project for the region. The project has supposedly been transferred to Bashkortostan, which means in effect that there is no likelihood of Russia producing its own polyester fibres for some time.

The reason for the cancellation of the project at Vichuga in the Ivanovo region is predominantly due to the changes in the local administration and change in priorities. In early 2018, Russian state bank Vnesheconombank had a number of disagreements between the Ivanovo Polyester Complex and the lender of the project, and for their settlement. Moreover, it was publicly stated that the current leadership is not interested in creating large enterprises from the point of view of the prospects and directions of development of the region. The lack of interest and regional support of the project forced the shareholders of Ivanovo Polyester Complex, registered in Cyprus and thus quite murky ownership to change their position regarding Ivanovo region. They have subsequently to relocate the project in Bashkortostan, although a site is yet to be found.



The synthetic fibre project at Vichuga, Ivanovo Region, was first announced in 2011. The project, as then stated by the authorities, involves the production of polyester fibre with a volume of 175,000 tpa, as well as textile PET granules with a capacity of 30,000 tpa. The start of construction was announced for 2017, and by 2020 the company had to enter production facilities, however, the deadlines were later shifted.

Framework agreements had been concluded for the supply of about 65,000 tpa of MEG from SIBUR and Nizhnekamskneftekhim, whilst an agreement with the Korean company Posco Daewoo had been signed for around 155,000 tpa of PTA. The Ivanovo Polyester Complex was included in the Strategy for the Development of the Chemical and Petrochemical Complex up to 2030, and the updated version of the Strategy for the Development of the Textile Industry of

Russia until 2025. It is too early to gauge whether the prospects for building the polyester complex in Bashkortostan will be better.

Russian Benzene Production (unit-kilo tons)		
Producer	***Jan-Oct 18***	***Jan-Oct 17***
Rosneft	123.0	102.2
Gazprom Neft	87.6	64.9
Lukoil	91.6	96.5
Magnitogorsk MK	46.4	47.0
Nizhnekamskneftekhim	183.0	172.2
Novolipetsk MK	7.2	29.1
Gazprom n Salavat	143.7	144.0
Kirishinefteorgsintez	55.7	52.5
Slavneft	60.5	61.9
Severstal	30.5	27.3
Bashneft	78.8	58.1
Ural Steel	7.4	10.2
Uralorgsintez	76.2	72.0
Zapsib	60.2	46.4
SIBUR	63.4	67.9
Total	1115.2	1052.3

Aromatics

Russian benzene production, Jan-Oct 2018

Benzene production in Russia totalled 1.115 million tons in the first ten months in 2018 against 1.052 million tons in the same period in 2017. Rosneft plants at Angarsk, Ryazan and Novokuibyshevsk increased production to 123,000 tons versus 102,200 tons in the same period in 2017, whilst the largest individual producer in Russia Nizhnekamskneftekhim increased production from 172,200 tons to 183,000 tons after expansion in 2017.

Gazprom Neft at Omsk also increased production in January to October 2018, rising to 87,600 tons against 64,900 tons in the same period in the previous year.

Supply of benzene for merchant purchase on the Russian market showed clear signs of tightness towards the end of 2018. Stavrolen at Budyennovsk encountered an unscheduled shutdown in October affecting domestic supply. SIBUR-Kstovo also was forced to stop benzene production in November for around ten days, whilst Ufaneftekhim reduced production over the month. In addition, Gazprom neftekhim Salavat did not sell benzene to third-party consumers due to repair work in the pyrocondensate processing unit.

Russia's largest merchant consumer of benzene Kuibyshevazot continues to import product to supplement purchases from domestic producers. The first batches of 360 tons of benzene were shipped from Karpatneftekhim at Kalush to Kuibyshevazot in October, totalling 1,300 tons for the whole month. Kuibyshevazot is the only importer of benzene for synthesis in the Russia, expecting to purchase around 190,000 tons for 2018 which could rise to 220,000 tons in 2019. From January to October 2018, the company increased import purchases of the product to 11,300 tons from 9,700 tons for the same period in 2017. Of these, 10,600 tons of petroleum benzene shipped were the Atyrau refinery in Kazakhstan.

Russian Caprolactam Production (unit-kilo tons)		
Producer	***Jan-Oct 18***	***Jan-Oct 17***
Kuibyshevazot	178.3	154.4
Shchekinoazot	45.8	42.0
SDS Azot	106.4	89.6
Total	330.5	286.1

Rises in caprolactam production in 2018 provided the main stimulus to increased benzene merchant purchases on the Russian domestic market in 2018. As a result of higher domestic consumption benzene exports from Russia dropped from 130,800 tons in January to October 2017 to 56,000 tons in the same period in 2018.

Russian Toluene Domestic Sales (unit-kilo tons)		
Producer	***Jan-Oct 18***	***Jan-Oct 17***
Novopiletsk MK	0.0	0.1
Slavneft-Yanos	12.8	12.8
Severstal	3.6	3.7
Lukoil-Perm	22.5	15.5
Gazprom Neft	57.7	66.0
Zapsib	2.6	12.0
Kinef, Kirishi	28.5	24.2
Gazprom n Salavat	0.1	1.8
Others	1.7	2.6
Total	129.3	138.6

Russian caprolactam, Jan-Oct 2018

Russian caprolactam production totalled 330,500 tons in the first ten months in 2018 against 286,100 tons in the same period in 2017. Kuibyshevazot increased caprolactam production from 154,400 tons to 178,300 tons in January to October 2018, whilst increases were also recorded for Azot at Kemerovo and Shchekinoazot.

Of the three producers Azot at Kemerovo exports nearly all its caprolactam, Shchekinoazot around 84% and Kuibyshevazot the smallest at no more than 17%. Kuibyshevazot processes caprolactam into polyamide where production is rising and thus exports may fall further in 2019.

Russian toluene & orthoxylene, Jan-Oct 2018

In the first ten months in 2018 sales of toluene on the Russian domestic merchant market totalled 129,300 tons which is 14% less than in the same period in 2017. Gazprom Neft and Kirishinefteorgsintez were the two largest suppliers, with the main consumers distributed amongst the producers of fuels, paints and explosives.

Russian orthoxylene domestic sales dropped from 132,300 tons in the first ten months in 2017 to 116,400 tons in the same period in 2018. Kamteks-Khimprom reduced purchases of orthoxylene to 64,000 tons from 72,000 tons in January to October 2017. Gazprom neftekhim Salavat reduced purchases of orthoxylene from 9,080 tons in the first ten months in 2017 to 8,490 tons in the first ten months last year.

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

Producer	*Jan-Oct 18*	*Jan-Oct 17*
Novokuibyshevsk Petrochemical	40.6	33.8
Kazanorgsintez	4.8	13.1
Ufaorgsintez	42.6	42.0
Borealis	8.5	5.8
Total	96.5	94.7

Russian phenol, Jan-Oct 2018

Phenol sales on the Russian merchant market totalled 96,500 tons in the first ten months in 2018 against 94,700 tons in the same period in 2017. Kazanorgsintez reduced merchant sales in order to increase production of bisphenol A, although this was compensated by an increase in domestic shipments from the Novokuibyshevsk Petrochemical Plant from 33,800 tons to 40,600 tons. Novokuibyshevsk Petrochemical Company, which is owned by Rosneft, is the only phenol producer of the three in Russia that has no internal processing, and thus sells product to either to domestic or export markets.

For 2019 the Russian phenol market is expected to see important changes as the Titan Group plans to launch start-up operations on phenol-acetone production at Omsk Kaucuk at the end of May or mid-June 2019. The updated capacity will increase the production of phenol to 90,000 tpa and acetone to 56,000 tpa. The start of production was scheduled for the end of 2018, but the deadlines for entry were shifted.

After the restart of the phenol and acetone plants at Omsk, Titan intends to concentrate on other projects such as processing of acetone into isopropanol. The project involves the creation of an isopropanol plant with a capacity of 30,000 tpa at Omsk Kaucuk. The third stage of the Titan's strategic programme is focused on the construction of a bisphenol A plant, with a capacity of 118,000 tpa, followed by the construction of a plant for epichlorohydrin. This production unit is intended to use a renewable resource waste glycerol raw material for further processing into epichlorohydrin. The combination of all these processes will provide an opportunity to create the production of liquid and solid epoxy resins with a capacity of 115,000 tpa and compositions based on them with a capacity of 20,000 tpa.

Russian Synthetic Rubber Exports (unit-kilo tons)

Product	*Jan-Sep 18*	*Jan-Sep 17*
E-SBR	22.1	28.3
Block	22.6	26.3
SSBR	6.6	6.9
SBR	67.9	61.3
Polybutadiene	180.1	178.8
Butyl Rubber	94.4	95.3
HBR	100.9	96.9
NBR	24.0	18.8
Isoprene	213.6	227.3
Others	27.0	9.1
Total	758.4	749.0

Synthetic Rubber

Russian synthetic rubber exports, Jan-Sep 2018

Export volumes for Russian synthetic rubber in the first nine months in 2018 totalled 758,400 tons against 749,000 tons in the same period in 2017. Average product prices dropped in the first nine months from $1786 per ton to $1690 per ton. By product category, isoprene rubber exports totalled 213,600 tons in January to September 2018 against 227,300 tons. Isoprene rubber prices fell to $1423 per ton in 2018 from $1625 in January to September 2017.

Export sales of butyl rubber from Russia dropped slightly from 95,300 tons to 94,400 tons January to September 2018, whilst exports of halogenated butyl rubber (HBR) rose to 100,000 tons against 96,900 tons. Export prices of butyl rubber averaged $1788 per ton in the first three quarters in 2018 and for halogenated butyl rubber at $2290 per ton from $2046 per ton in the same period in 2017. Regarding export destinations, China was the largest recipient of Russian rubber shipments in the first nine months this year accounting for 10.2%, followed by Poland with 10.1% and India with 9.9%. Other leading markets included India, Hungary, Poland, and Mexico.

SIBUR Togliatti Synthetic Rubber Exports Jan-Sep 2018		
Product	***Vol (kilo tons)***	***Price Per Ton ($)***
Isoprene Rubber	16.2	1331.7
Butyl Rubber	40.8	1692.8
SBR	30.1	1354.0
Total	87.0 ktons	1508.5 per ton

SIBUR Togliatti, rubber exports 2018

SIBUR Togliatti increased synthetic rubber exports to 87,000 tons in the first three quarters in 2018 against 79,500 tons in the same period in 2017. The project for the technical re-equipment of the production of isoprene at Togliatti is at the final stage, costing 2.3 billion roubles and expanding capacity as a result. In 2017, SIBUR Togliatti produced 182,500 tons of rubber, sent 566 million roubles for environmental protection measures, and 130 million roubles for labour protection and industrial safety. Energy saving programs have had an effect in reducing the specific consumption of resources per ton of production by 4.5%.

Nizhnekamskneftekhim synthetic rubber exports,Jan-Sep 2018

Nizhnekamskneftekhim exported 446,900 tons of synthetic rubber in the first three quarters in 2018 against 443,000 tons in the same period in 2017. Revenues from rubber exports dropped in 2018 to $778 million versus $799 million in January to September 2017, signifying a fall in average prices from $1803 per ton to $1742 per ton.

Nizhnekamskneftekhim Synthetic Rubber Exports Jan-Sep 2018		
Product	***Vol (kilo tons)***	***Price Per Ton ($)***
Isoprene Rubber	161.4	1448.6
Butyl Rubber	54.4	1823.4
HBR	100.9	2329.2
Polybutadiene	129.6	1617.3
Others	0.7	1428.6
Totals	446.9 ktons	1741.8 per ton

The largest category of rubber exports from Nizhnekamsk is isoprene rubber, which amounted to 161,400 tons in the first three quarters in 2018 against 162,000 tons in the same period in 2017. Nizhnekamskneftekhim is responsible for almost all Russian exports of halogenated butyl rubber, rising to 100,900 tons in the first three quarters in 2018 against 96,900 tons in the same period in 2017.

Nizhnekamskneftekhim is currently completing commissioning works at the isoprene monomer plant which will result in an increase in capacity to 330,000 tpa in order to support the expansion of capacity for isoprene rubber. At the first stage a formaldehyde production unit with a capacity of 100,000 tpa was built and another 250,000 tpa of formaldehyde is required before the isoprene modernisation can be completed by 2020. At the second and third stages, the reconstruction of the production of isoprene and isobutylene is envisaged.

Russian Methanol Production (unit-kilo tons)		
Producer	***Jan-Oct 18***	***Jan-Oct 17***
Shchekinoazot	451.0	429.4
Sibmetakhim	705.2	723.5
Metafrax	964.5	901.0
Akron	89.2	82.9
Azot, Novomoskovsk	244.1	198.3
Angarsk Petrochemical	3.3	2.2
Azot, Nevinnomyssk	96.8	101.9
Tomet	714.4	639.2
Ammoni	182.0	175.9
Totals	3450.6	3254.2

Nizhnekamskneftekhim commissioned a new isobutylene production plant in 2018, raising capacity by 160,000 tpa. At the plant Nizhnekamskneftekhim isobutylene is obtained from the isobutane fraction by the method of dehydrogenation.

Methanol & related products

Russian methanol production & sales, Jan-Oct 2018

Methanol production in Russia increased by 10% in the first ten months in 2018 to 3.451 million tons. The largest rise was recorded by Azot at Novomoskovsk which increased by 24% to 244,100 tons, followed by Shchekinoazot which increased production from 429,400 tons to 451,000 tons and Tomet which increased from 639,200 tons to 714,400 tons.

Demand for methanol on the Russian domestic market has strengthened slightly in 2018, with domestic sales totalling 1.309 million tons in the first ten months versus 1.245 million tons in the same period in 2017. Ammoni at Mendeleevsk increased domestic sales in January to October from 89,300 tons to 135,800 tons, Azot at Novomoskovsk increased from 75,500 tons to 110,700 tons and Tomet increased shipments from 394,100 tons to 444,200 tons. These increases overrode the fall in sales by Metafrax, dropping from 320,000 tons in the first ten months to 244,100 tons.

Russian Methanol Domestic Sales (unit-kilo tons)		
Producer	***Jan-Oct 18***	***Jan-Oct 17***
Azot Nevinnomyssk	17.0	24.0
Azot Novomoskovsk	110.7	75.5
Metafrax	244.1	320.0
Sibmetakhim	300.0	282.3
Tomet	444.2	394.1
Shchekinoazot	53.9	56.4
Ammoni (Mendeleevsk)	135.8	89.3
Others	3.5	3.4
Total	1309.2	1245.0

Nizhnekamskneftekhim remains the largest individual buyer of merchant methanol on the Russian market, even if it had reduced purchases from 206,500 tons to 197,700 tons in the first ten months in 2018. SIBUR Togliatti increased purchases from 102,700 tons to 120,900 tons, whilst Novokuibyshevsk Petrochemical Company reduced inward shipments from 57,400 tons to 35.100 tons.

Russian methanol plant news

Metafrax has ordered 100 tank cars for transportation of methanol to add to the existing 400 units. The tank car model 15-6880 is equipped with a running gear with an axle load of 25 ton-force, has an increased carrying capacity of 73 tons and a boiler capacity of 88 m3. Due to such technical characteristics, an additional increase in loading into each car can be up to 2 tons in comparison with the most common typical analogue on the network, while maintaining the standard length of the tank, which increases the efficiency of methanol transportation.

Thus, an additional 160 tons of cargo can be transported in one train of 80 cars manufactured by UWC. This means that it is possible to reduce the need for a fleet of tanks and reduce the cost of initial-final operations. The service life of the tank is 32 years compared to 24 years for counterparts. As part of the business development strategy, the company intends to significantly increase its production and sales by 2030.

The Russian Direct Investment Fund (RDIF) and Indorama Corporation have discussed purchase of a stake in the fertiliser and methanol producer Ammoni at Mendeleevsk, which continues to record losses. The main reason for the problems is the high debt burden of the currency loan combined with unfavourable market conditions in the fertiliser sector. The owners of Ammoni, include Tatammonium (52.9%), Tatarstan Venture Fund (24.3%), and VEB (22.8%), with the state corporation being the largest creditor of the company.

Organic chemicals

Russian N-Butanol Production (unit-kilo tons)		
	Jan-Oct 18	***Jan-Oct 17***
Angarsk Petrochemical Company	24.5	28.4
Azot, Nevinnomyssk	13.1	12.5
Gazprom neftekhim Salavat	53.6	40.4
SIBUR-Khimprom, Perm	34.3	29.9
Total	125.5	111.2
Russian Isobutanols Production (unit-kilo tons)		
	Jan-Oct 18	***Jan-Oct 17***
Angarsk Petrochemical Company	13.0	13.0
Gazprom neftekhim Salavat	31.9	15.3
SIBUR-Khimprom, Perm	44.2	31.7
Total	89.0	65.2

Russian butanol production, Jan-Oct 2018

In the first ten months in 2018 Russian normal butanol production amounted to 125,500 tons, versus 111,200 tons in the same period in 2017 whilst isobutanol production rose from 65,200 tons to 89,000 tons.

In the first ten months in 2018 Russian sales of butanols on the domestic market amounted to 50,100 tons against 52,100 tons in the same period in 2017. The share of n-butanol in the total supply was 86%, and isobutanol 14%. Akrilat remained the largest consumer of butanols on the domestic market, taking 15,700 versus 16,600 tons in January to October 2017, whilst Dmitrievsky Chemical reduced inward shipments from 12,300 tons to 11,000 tons. Akrilat purchases most of its butanols from SIBUR-Khimprom, whilst Dmitrievsky Chemical Plant buys largely from Angarsk.

Regarding domestic demand for butanols and other organic solvents the Russian market for dispersions has been affected in 2018 by rising monomer prices. Foreign producers have not changed their import prices into the Russian market significantly, despite the presence of higher raw material prices and this has made competition harder.

Gazprom neftekhim Salavat is considering the launch of the production of styrene-acrylic dispersions at its subsidiary Acryl Salavat. The division operates 80,000 tpa of acrylic acid, 80,000 tpa of butyl acrylate and 35,000 tpa of glacial acrylic acid. The most logical use of butyl acrylate will be its

processing into styrene-acrylic dispersions for usage in paint and varnish, pulp and paper, textile industry, in the manufacture of adhesives, nonwovens, and dry construction mixtures.

Russian Butanol Consumption (unit-kilo tons)		
Consumer	***Jan-Oct 18***	***Jan-Oct 17***
Akrilat	15.7	16.6
Dmitrievsky Chemical	11.0	12.3
Plant of Synthetic Alcohol	0.8	1.8
Volzhskiy Orgsintez	7.1	6.7
Roshalsky Plant of Plasticizers	2.5	1.4
Others	13.0	13.7
Total	50.1	52.5

In August 2018, Gazprom neftekhim Salavat signed a memorandum of intent with the Chinese company Yixing Danson Science & Technology Co for a license for superabsorbents SAP manufacturing technology.

The raw material for the new production unit will be glacial acrylic acid and a 50% caustic soda solution. It is assumed that the superabsorbent polymers will be produced in the process of polymerisation in solution (gel polymerisation). These products are currently not produced in Russia and the market is served 100% by imports. The Salavat complex will include two SAP lines of 25,000 tpa, although there is no project schedule timeline specified.

Russian Phthalic Anhydride Production (unit-kilo tons)		
Producer	***Jan-Oct 18***	***Jan-Oct 17***
Gazprom n Salavat	10.5	8.0
Kamteks	70.9	75.9
Total	81.4	83.9

Russian phthalic anhydride production Jan-Oct 2018 & future prospects

Russian production of phthalic anhydride amounted to 81,400 tons in the period January to October 2018 against 83,900 tons in the same period in 2017. Kamteks-Khimprom increased production from 75,900 tons to 70,900 tons whilst Gazprom neftekhim Salavat increased production from 5,700 tons to 8,000 tons.

Russian Acrylonitrile Exports (unit-kilo tons)		
Country	***Jan-Sep 18***	***Jan-Sep 17***
Turkey	103.0	61.7
India	9.2	0.0
Netherlands	0.0	21.5
Hungary	0.5	7.2
Others	0.0	15.7
Total	112.7	106.1

The Russian market for phthalic anhydride is undergoing changes in regard to both import competition and future consumption patterns, which should affect Kamteks-Khimprom directly. The import competition has emerged from Belarus where a second line for phthalic anhydride production (with a capacity of 29,000 tpa) was opened on 15 September 2017 at Lida.

Regarding demand patterns, domestic consumption of phthalic anhydride is expected to fall in 2019 following the launch of the new SIBUR plasticizer production plant, dioctyl terephthalate (DOTP), with a capacity of 100,000 tpa. In order to combat lower phthalic consumption Kamteks-Khimprom will almost certainly have to increase exports and compete with the Belarussian producer Lakokraska which is already on the European market.

Russian & Eurasian Organic Chemical Exports (unit-kilo tons)		
Product	***Jan-Sep 18***	***Jan-Sep 17***
N-Butanol	29.5	13.0
Iso-butanol	28.6	12.7
2-EH	19.5	17.3
Pentaerythritol	8.4	8.1
Phenol	12.7	9.2
Ethylene Oxide	9.8	11.9
Formaldehyde	14.0	15.5
DEG	10.8	16.7
MEG	25.6	40.1
Acetone	18.2	29.4
Acetic Acid	25.6	24.5
VAM	24.3	27.9
Butyl Acetate	16.7	19.3
Phthalic Anhydride	17.1	9.1

Russian acrylonitrile exports Jan-Sep 2018

Russian acrylonitrile exports totalled 127,500 tons in the first three quarters in 2018 against 106,100 tons in the same period in 2017. The sole producer Saratovorgsintez purchased 139,000 tons of propylene produced by Saratovorgsintez in the first three quarters against 121,000 tons in January to September 2017.

Russian organic chemical trade, Jan-Sep 2018

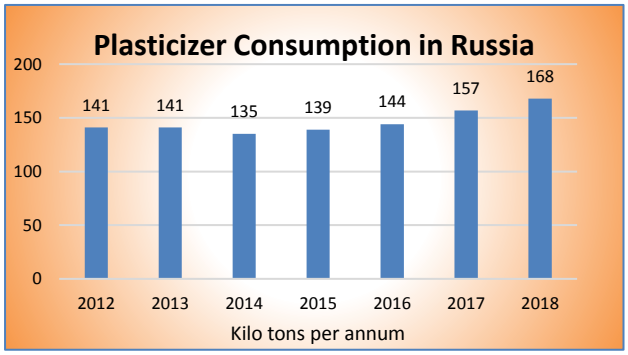
Butanol exports from Russia increased in the first nine months in 2018, although remain lower than the volumes recorded prior to the start-up of the Salavat acrylic acid complex in 2017. Normal butanol export shipments rose

to 21,000 tons versus 10,900 tons in the first nine months in 2017, whilst isobutanol volumes increased from 10,800 tons to 22,500 tons.

Exports of 2-ethylhexanol (2-EH) amounted to 14,300 tons in the first nine months in 2018, down from 16,600 tons in 2017. Phthalic anhydride exports totalled 35,800 tons in January to September 2018, up from 30,900 tons, whilst butyl acetate shipments dropped to 11,900 tons from 23,500 tons. Pentaerythritol exports from Russian stayed the same as in 2017 at 6,500 tons.

SIBUR-DOTP plant could start in 2019

The start of the production of DOTP at the Perm site of SIBUR could take place in the first half of 2019. Production capacity at the new plant is being designed at 100,000 tpa using technology is licensed by the Korean company Aekyung. NIPIGAZ was chosen as the general designer and construction, installation and commissioning are all functions being performed by Russian contractors.



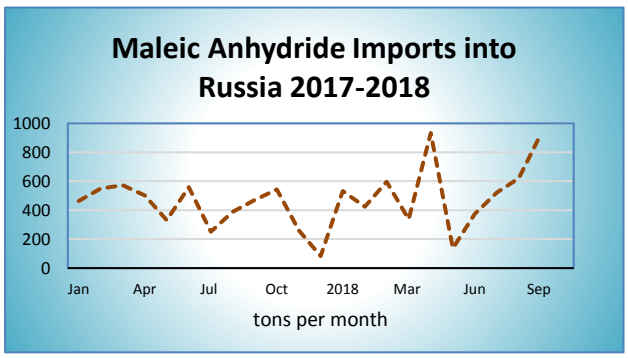
Completion of plant construction and start-up of commissioning at the facility were scheduled for December 2018, whilst the launch of production is scheduled for the second quarter in 2019. About 70% of the production from the new plant is planned to be sold on the domestic market, and 30% to be delivered to the European market. The Russian market of plasticizers has been estimated at 168,000 tons for 2018. In 2012-2014, the consumption of plasticizers in Russia remained at the level of 141-142,000 tons before dropping to 135,000 tons.

Currently DOP is the leading plasticizer in usage in Russia, accounting for 90,000 tons or 55.3% whilst DINP takes 57,000 tons or 33.6%. Currently around 40% of imports are imported into Russia, mostly DINP. The main Russian producers of plasticizers include Kamteks-Khimprom (40% of total production), Gazprom neftekhim Salavat (33%) and Neftekhimprom (21.2%). These companies mainly produce DOP plasticizer.

Plasticizers in the Russian Federation are used in the production of floor coverings (31%), cable plastics (29.4%), wallpaper (13.6%). In fourth place is the segment of roofing PVC membranes (7.5%), while consumption growth in this segment is still hampered by the widespread use of traditional bitumen waterproofing.

SIBUR-maleic anhydride plant construction starts

SIBUR has started construction on a new plant for the production of maleic anhydride at Tobolsk. The plant capacity is being designed to produce 45,000 tpa of maleic anhydride based at SIBUR Tobolsk based on butane feedstock. Commissioning of the plant is scheduled for 2021. Conser has been selected as the licensor. By using advanced technology and unique equipment, the negative impact on the environment is restricted



At present, maleic anhydride is not produced in Russia although was previously produced at Novomoskovsk and Tambov. In addition to replacing imports, SIBUR Tobolsk aims to export maleic to East and West Europe. Integration into a single Tobolsk enterprise will allow the new production to operate at a high level of competitiveness due to its close proximity to the raw materials flows and the use of the existing plant-wide infrastructure.

Russian institute NIPIGAZ was involved in the development of working documentation. It is planned to attract Russian contractors, including from the Tyumen region, to perform construction and installation works. In 2018 the government of Tatarstan

reported its readiness to cooperate with Germany in setting up production of maleic anhydride with a capacity of 45,000 tpa. However, there may not be room for two projects in Russia when domestic demand amounts to only around 6-7,000 tpa.

Most large-scale European consumers of maleic are set up to purchase liquid maleic which is notoriously difficult to transport over long distances. The alternative option would be to export maleic in flake or other solid forms which could be bought by smaller consumers, but only around 10% of the global market is served by this type of product. The production facilities of SIBUR Tobolsk include the central gas fractionation unit, butadiene, isobutylene, MTBE and polypropylene production capacity with a capacity of 500,000 tpa.

Other products

Russian TDI Imports Jan-Sep 2018		
Country	***Vol (ktons)***	***$ million***
Hungary	6.3	23.8
Germany	13.7	52.0
Italy	0.1	1.3
China	0.1	4.9
South Korea	1.5	6.4
Lithuania	0.0	0.7
Saudi Arabia	6.5	23.4
UK	0.1	2.0
US	2.2	11.3
Japan	1.6	6.5
Others	0.4	1.4
Total	32.4	133.8

Russian TDI-MDI imports, Jan-Sep 2018

Russia imported 32,400 tons of TDI in the first nine months in 2018, valued at $98.3 million. Around 25% of supplies came from Germany, followed by Hungary and Saudi Arabia. TDI costs totalled $133 million for the first three quarters, with prices softening in the second half of the year after high numbers recorded in the first half of 2018.

MDI imports into the Eurasian Customs Union totalled 116,000 tons in the first nine months in 2018, against 105,400 tons in the same period in 2017. Most product was delivered to Russia. The major change in supplies in 2018 came from the increase in deliveries from Saudi Arabia, rising to 30,600 tons against only 100 tons in the same period in the previous year. The Netherlands accounted for 29,000 tons of MDI imports in the first three quarters in 2018 against only 100 tons in the same period in 2017. By contrast, Germany reduced deliveries to Russia from 35,600 tons to 14,300 tons.

Eurasian Imports of MDI 2018 (unit-kilo tons)		
Country	***Jan-Sep 18***	***Jan-Sep 17***
Belgium	14.9	16.6
Hungary	4.9	4.5
Germany	14.3	35.6
Spain	0.2	2.1
Italy	0.1	1.6
Canada	0.0	14.1
China	17.9	3.8
South Korea	1.3	24.4
Netherlands	29.0	0.1
Poland	0.0	0.1
Lithuania	0.1	0.0
Mexico	0.0	0.1
Portugal	0.2	0.6
Saudi Arabia	30.6	0.1
UK	0.1	0.2
Turkey	0.4	0.0
France	0.0	0.2
Japan	1.8	1.4
Total	116.0	105.4

Bashkir Soda Company-titanium dioxide and zirconium oxychloride

Bashkir Soda Company plans to start production of titanium dioxide pigment and zirconium oxychloride. The project entitled Titan may require about $900 million investment. As a source of raw materials Bashkir Soda is considering deposits of titanium-zirconium sand in Kazakhstan. At Sterlitamak Bashkir Soda intends to install a plant for the processing of ilmenite concentrate and the production of titanium dioxide. Zirconium oxychloride is intended to be produced in Kazakhstan.

Bashkir Soda intends to establish plants for the production of 25,000 tpa of zirconium oxychloride and 100,000 tpa of titanium dioxide. Approximate launch dates are set at 2024-2026. Zirconium oxychloride is used in the electronics, aerospace industry, the production of high-temperature ceramics, modern refractory materials and in the manufacture of special glass. The only manufacturer of this product in the Russian Federation is the Rosatom Chepetsky Mechanical Plant in the Udmurtia region in the Urals.

Korund-Cyan opens new plant for sodium cyanide

Korund-Cyan at Dzerzhinsk started a new plant for the production of sodium briquetted cyanide at the end of November. Investments amounted to about 3 billion roubles where the capacity has been designed to produce 30,000 tpa. With the launch of the second stage,

the company will be able to produce about 70,000 tpa of cyanide salts. The technology supplier for the second line was EPC Engineering & Technologies GmbH, which has been funded through VTB.

Ukraine

Ukrainian Polymer Imports (unit-kilo tons)		
Product	***Jan-Oct 18***	***Jan-Oct 17***
PVC	57.1	89.0
LDPE	62.6	55.4
LLDPE	61.5	54.3
HDPE	63.1	81.1
Ethylene Vinyl Acetate	12.7	13.2

Ukrainian polymer imports, Jan-Oct 2018

Imports of PVC to Ukraine declined by 36% in the first ten months of 2018 compared to the same period of 2017 and amounted to 57,100 tons against 89,000 tons. Imports from the US amounted to 34,000 tons against 44,600 tons in January to October 2017, whilst imports of European PVC to Ukraine amounted to 21,800 tons against 29,400 tons.

Imports of polyethylene into the Ukrainian market decreased by 2% in January to October 2018 and amounted to 200,200 tons against 204,500 tons. HDPE imports dropped from 81,500 tons to 63,100 tons, LDPE rose 13% to 62,600 tons and LLDPE imports rose from 54,300 tons to 61,600 tons. Imports of other types of polyethylene, including EVA, amounted to 12,700 tons against 13,200 tons.

Karpatneftekhim restarted production on 10 December after starting scheduled maintenance on 1 November. The shutdown affected all production sites of the plant, as well as facilities such as the gas distribution station Kalush-2, and the ethylene pipeline Kalush-Tiszaujvaros. The PVC plant shut on 5 November and had been resumed on 7 December and the HDPE plant restarted 10 December. Regarding feedstock shipments, Karpatneftekhim purchased 430,000 tons of naphtha in January-October 2018 and 94,000 tons of LPGs. Deliveries were made from the Volgograd refinery (323,000 tons) and Lukoil's Perm refinery (14,500 tons). Part of the raw material was shipped by Belarusian enterprises.

Azot Grodno Production (unit-kilo tons)		
Product	***Jan-Oct 18***	***Jan-Oct 17***
Methanol	67.4	69.3
Caprolactam	101.0	91.7
Polyamide primary	92.7	84.2
Polyamide filled	10.8	9.6
Ammonia	892.4	874.1
Urea	857.1	846.8
Fertilisers	643.1	631.8
Fibres	35.5	31.8

Other feedstock deliveries have included naphtha deliveries through Odessa from places such as Bourgas. The bulk of LPGs was sent through Belarus from Russia, including suppliers Nizhnekamskneftekhim, Omsk Kaucuk and Tatneft. Also, a small supply of liquefied Gas was sent to Karpatneftekhim from the Mazeikiu Orlen Lietuva refinery in Lithuania.

Belarus

Belarussian polymer trade, Jan-Sep 2018

In the first nine months of 2018 imports of polypropylene to Belarus increased by 4.3% to 75,200 tons. Homopolymer imports rose 6.8% to 51,400 tons, whilst imports of propylene copolymers amounted to 23,900 tons against 24,100 tons in 2017. For the first nine months of 2018 imports of polyethylene into Belarus decreased by 10.6% to 83,100 tons from 93,000 tons in the same period in 2017. LDPE imports remained unchanged at 28,500 tons whilst HDPE imports rose by 12.7% to 41,100 tons. LLDPE imports fell from 28,400 tons to 12,700 tons.

Belarussian Acrylonitrile Exports (unit-kilo tons)		
Product	***Jan-Sep 18***	***Jan-Sep 17***
Russia	2.0	1.4
Hungary	4.0	1.1
India	3.7	2.0
Iran	3.1	3.1
Netherlands	0.0	12.6
Romania	0.0	0.1
Turkey	22.1	15.1
UAE	0.0	0.2
Others	0.0	1.6
Total	34.9	37.1

Regarding export activity, Belarus shipped 72,037 tons of polyethylene in the period January to September 2018 versus 62,502 tons in 2017. Most of the polyethylene exported consisted of LDPE. PET exports dropped from 53,415 tons in January to September 2017 to 20,123 tons in the same period in 2018.

Polyamide exports from Belarus totalled 53,435 tons in the first nine months in 2018 versus 48,545 tons in January to September 2017. The largest market for Belarussian polyamide exports was China, consuming 17,542 tons against 17,540 tons in the same period in 2017. Russian polyamide imports from Belarus dropped to 5,567 tons in January to September 2018 against 5,923 tons in the same period in 2017.

Belarussian organic chemical trade, Jan-Sep 2018

Belarussian acrylonitrile exports totalled 34,900 tons in the period January to September 2018 against 37,100 tons in the same period in 2017. The largest destination for Belarussian exports was Turkey, accounting for 22,100 tons versus 15,100 tons in the previous year. Average prices for Belarussian acrylonitrile exports rose to $1748 per ton in the first nine months this year against $1322 per ton in 2017.

Belarussian Methanol Market (unit-kilo tons)		
	Jan-Sep 18	***Jan-Sep 17***
Production	59.2	61.2
Exports	15.4	11.2
Imports	71.0	35.8
Balance	114.8	85.8

Phthalic anhydride exports from Belarus rose from 17,257 tons in January to September 2017 to 34,707 tons in the same period in 2018, with average prices rising from $922 per ton to $904 per ton. Belarus exported 10,659 tons of phthalic anhydride to Russia in the nine months in 2018 against 7,721 tons. Russian consumers paid slightly more than the average price, importing Belarussian phthalic at $905 per ton. The second largest destination in the first quarter this year was India, taking 6,182 tons at $884 per ton.

In other areas of chemical trade, methanol export shipments amounted to 15,378 tons in January to September 2018 against 11,161 tons in the same period in 2017. Average methanol export prices rose to $327 per ton in the first nine months against $305 last year. Methanol imports into Belarus totalled 71,033 tons in the first nine months, at $327 per ton, against 35,789 tons in the same period in 2017 at $289 per ton. Methanol consumption in the first nine months totalled 114,800 tons against 85,800 tons in the first nine months in 2017.

Belarussian MDI Imports (unit-kilo tons)		
Country	***Jan-Sep 18***	***Jan-Sep 17***
Russia	1.9	2.6
Belgium	3.0	4.1
Hungary	1.7	2.1
Germany	3.8	4.3
Saudi Arabia	3.3	0.6
Others	2.3	1.1
Total	15.9	14.8

PTA imports into Belarus in the first nine months dropped sharply against 2017, dropping to 14,040 tons from 40,653 tons last year. Ethylene glycol imports dropped to 20,300 tons from 52,300 tons in the first nine months in 2017.

Belarussian MDI imports, Jan-Sep 2018

MDI imports into Belarus totalled 15,879 tons in January to September 2018 at an average price of $2,640 per ton against 14,749 tons at $2,482 per ton in the same period in 2017. Saudi Arabia increased shipments to Belarus to 3,312 tons in the first three quarters in 2018 against 553 tons, whilst Germany reduced shipments to 3,831 tons from 4,258 tons and Belgium reduced to 2,960 tons from 4,054 tons.

Belarussian aromatic imports from Russia 2019

Russia may be forced to reduce the supply of benzene and toluene to Belarus in 2019 in which case Belarusian companies will need to reorient supplies from Europe. Orthoxylene and paraxylene shipments from Russia are not expected to face problems.

Belarussian PET Raw Material Imports (unit-kilo tons)		
Product	***Jan-Sep 18***	***Jan-Sep 17***
Paraxylene	7.7	21.4
PTA	20.3	52.3
MEG	45.3	56.6

Under provisional agreement Grodno Azot will be able to receive 15,300 tons of benzene in 2019, which is half the amount which had been requested. Azot wants more benzene in order to increase production of caprolactam or polyamide-6 in 2019, and therefore will be forced to purchase additional benzene from Europe. Toluene imports will also be affected, used in special coatings for road markings, and additional supplies could be purchased from Slovnaft at Bratislava.

Mogilevkhimvolokno to launch polyester fibre plant

Mogilevkhimvolokno hoped to launch production of polyester fibres before the end of 2018 with a capacity of 50,000 tpa. The production of polyester fibre by direct moulding is to be undertaken as part of the first

phase of the project Polyester Production Complex. The new line for the production of chemical fibres is based on the existing chemical shop No. 2 of organic synthesis. Also, the new production will ensure the production of PET in the amount of 35,000 tpa. The total investment in the project exceeded $50 million.

Belarussian PTA Imports (kilo tons)		
Country	***Jan-Oct 18***	***Jan-Oct 17***
Russia	1.2	5.7
Belgium	0.5	6.1
India	1.0	1.0
China	0.0	2.0
South Korea	5.3	28.5
Latvia	2.0	0.0
Poland	12.7	16.3
Turkey	0.2	1.0
Total	22.9	60.6

The second phase of the project is planned for the timeframe 2020-2024, and includes the modernisation of the existing PET production facility and the transfer from DMT to PTA. This will be followed by the production of polyester fibres (including bicomponent fibres) and non-woven materials. Mogilevkhimvolokno is capable of producing 138,250 of DMT, 105,000 tpa of textile PET and 80,000 tpa of food grade PET.

Central Asia/Caucasus

Shurtan Gas Chemical Complex-expansion

Uzbekneftegaz plans to increase polyethylene capacity of the Shurtan Gas-Chemical Complex to 280,000 tpa by 2021 and polypropylene by 100,000 tpa. The project will use technologies licensed by CB & I Lummus and Chevron. At the moment, Enter Engineering is developing a detailed project, and considering the possibility of attracting project financing. Shurtan Gas Chemical Complex is capable of processing up to 4 billion cubic metres of raw gas per annum and producing 125,000 tpa of polyethylene granules, 100,000 tpa of liquefied gas, and 100,000 tpa of gas condensate.

Uzbekistan-MTO project

Itochu Corporation is evaluating an investment into methanol to olefins (MTO) processing project in Uzbekistan. Itochu has offered to establish a mutually beneficial partnership with Uzbekneftegaz regarding MTO-1 and MTO-2 projects. In October 2018 Air Products was commissioned by Uzbekneftegaz to prepare a preliminary project for the production of 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.

Uzbek Polyolefin Exports to Russia (unit-kilo tons)		
Product	***Jan-Oct 18***	***Jan-Oct 17***
Polyethylene	99.4	72.3
Polypropylene	16.5	15.4

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 possibly 100,000 tpa of ethylene-propylene rubber. Other potential facilities could include 100,000 tpa of PET, and 100-150,000 tpa of ethylene glycol.

Atyrau refinery-paraxylene sales start

The Atyrau refinery in Kazakhstan reported on 6 December that it had started to ship paraxylene from its 496,000 tpa plant which had hitherto been idle since its completed construction in 2014-2015. The refinery stated that paraxylene will now be produced and sold on a continuous basis. One reason for starting production in December was the rise in international pricing in 2018, jumping 29% at the start of the year to around $950 towards the end. Starting production at Atyrau also seems justifiable due to supply/demand considering the closure of the Mississippi plant in the US owned by Chevron-Phillips. In 2017, the company produced 8,900 tons of benzene, and in the first nine months of 2018, 9.400 tons were already produced.

Relevant Currencies

Czech crown. Kc. $1= 22.4. €1 = 25.4: Hungarian Forint. Ft. $1 = 279.2 €1 = 322.2: Polish zloty. zl. $1=3.70. €1 =4.28; Ukrainian hryvnia. $1 = 31.4 €1 = 26.9: Rus rouble. $1 = 66.3 €1= 76.6

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