CIREC MONTHLY news

Chemical Industry Reporting for Russia, regional partners, and Central Europe

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Russia-Ukraine-Belarus-Kazakhstan-Uzbekistan-Azerbaijan
Czech Republic-Hungary-Poland-Romania-Serbia-Slovakia

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Key points from Issue 368

Central European petrochemical markets

- Second quarter margins rise to record levels for Central European petrochemical producers
- Propylene imports into Poland amounted to 98,200 tons in the first five months in 2021 against 55,500 tons in the same period in 2020. The rise was due to lower domestic production
- Polish TDI import costs rose s from €31.9 million in January to May 2020 to a total of €88.118 million in January to May 2021
- BorsodChem aims to produce more concentrated nitric acid at its Berente site for s part of the raw material base for polyurethane production
- Polypropylene prices in Poland jumped from €1545 per ton in the first quarter to €2020 in the second quarter whilst PET prices rose from €1042 to €1272. The price of recycled PET in Poland is currently around €1400 per ton which makes it more expensive than new production

Russian chemical production

- Russian ethylene production increased from 1.802 million tons in the first five months last year to 1.880 million tons this year whilst propylene was unchanged at rose from 1.299 million tons.
- Russian HDPE production totalled 831,000 tons in the first five months in 2021, 7% more than in 2020 when it totalled 761,100 tons
  Russia produced 1.827 million tons of methanol in the first five months in 2021 against 1.951 million tons in same period in 2020

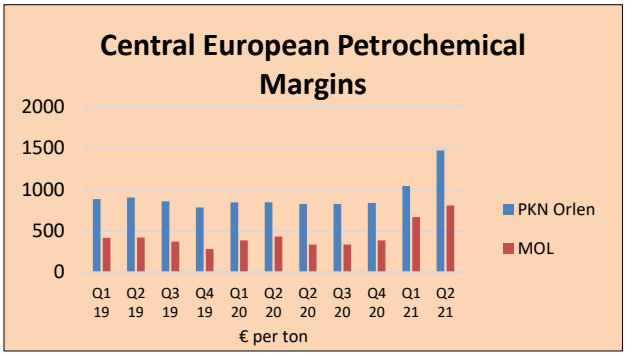
Russian chemical trade

- Export shipments of Russian paraxylene in the first five months in 2021 totalled 39,700 tons in the first five months in 2021 against 52,000 same period in 2020
- Russian TDI imports totalled to 24,300 tons in the first five months in 2021 against 16,831 tons in the first same period in 2020
- Reported producer export shipments of Russian methanol amounted to 801,000 tons in the period January to May 2021 against 757,600 tons in the same period in 2020
- Russian exports of synthetic rubber totalled 457,700 tons in the first five months in 2021 against 345,000 tons in the same period in 2020

Company/Project news

- The progress of the Amur Gas Chemical Complex (a jv between SIBUR and Sinopec) had achieved 19.5% of the investment schedule by the start of July
- Tatneft announces plans for PTA plant
- TAIF plans to increase the capacity of polypropylene production at Nizhnekamskneftekhim by building another plant of 400,000 tpa to add to the existing 180,000 tpa plant
- Lukoil aims to complete the FEED stage for petrochemical projects in Nizhny Novgorod and Bulgaria during 2021

CENTRAL and SOUTH EAST EUROPE

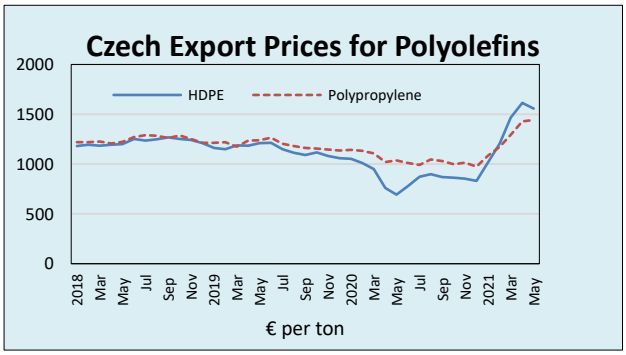


Central Europe-petrochemical margins

Both PKN Orlen and MOL recorded high petrochemical margins for the second quarter, driven partly by crude prices in addition to market dynamics related to increased demand. Higher petrochemical prices have taken time to feed through to product prices, hence allowing margins to achieve record levels for the petrochemical producers. Margins in June dropped for MOL but also PKN Orlen possibly indicating that raw material costs are being passed on to consumers.

Central European Petrochemical Margins 2021 (€ per ton)						
	Jan	Feb	Mar	Apr	May	Jun
PKN Orlen	889	1011	1232	1469	1492	1458
MOL Group	506.7	624.9	873.7	1035.8	1003.5	807.8

Packaging and construction provide the main outlets for plastic applications in Poland, taking around 60% of consumption. Whilst petrochemical producers have experienced two extremely favourable quarters for profits from petrochemicals plastics processors have been confronted with very high raw material prices. There is a confluence of factors explaining the current situation, including supply chain bottlenecks and reviving demand after many countries have modified their approaches to lockdown rules.



Czech polyethylene and polypropylene prices have risen sharply since the start of 2021, achieving €1614.5 per ton for HDPE in April and €1442.8 in May.

Polypropylene prices in Poland jumped from €1545 per ton in the first quarter to €2020 in the second quarter whilst PET prices rose from €1042 to €1272. The price of recycled PET is currently around €1400 per ton in Poland which makes it more expensive than new production.

PKN Orlen Production (unit-kilo tons)		
Product	***Jan-May 21***	***Jan-May 20***
Ethylene	99.4	200.1
Propylene	103.0	176.1
Butadiene	13.3	25.0
Toluene	5.3	4.5
Phenol	20.3	20.9
Polyethylene	67.3	147.9
PVC	72.6	116.5
Polypropylene	100.0	146.7
PTA	143	163

PKN Orlen in Poland has reduced petrochemical production at Plock which has affected the production of all the main polymers. Polyethylene production dropped from 147,900 tons in January to May 2020 to 67,300 tons in the same period in 2021 whilst polypropylene dropped from 146,700 tons to 100,000 tons.

Polish propylene imports, Jan-May 2021

Poland increased imports of propylene in the first five months this year due largely to lower production at Plock. Imports totalled 98,230 tons in the period January to May 2021 for a total cost of €80.150 million against 55,452 tons for €34.139 million.

Average prices for propylene imports rose from €616 per ton in January to May 2020 to €816 per ton in the same period this year. Germany supplied 48,500 tons in the first five months from no activity in the same period last year whilst imports from Ukraine dropped from 33,200 tons to 27,700 tons. Russia increased shipments to 15,500 tons from 9,500 tons.

Polish Butadiene Imports (unit-kilo tons)		
Country	***Jan-May 21***	***Jan-May 20***
Austria	15.2	15.7
Czech Republic	2.4	0.8
Germany	13.1	14.6
Hungary	20.6	10.2
Total	51.4	41.4

Polish butadiene imports, Jan-May 2021

Poland increased imports of butadiene in the first five months this year primarily due to lower production at Plock, rising from 41,400 tons to 51,400 tons in January to May 2021. Supply sources are divided mostly between Austria, Germany and Hungary.

Butadiene prices in Poland have undergone sharp changes over the past 18 months, falling from the peaks at the start of 2020 to the low points in the second quarter and then rising to higher-than-average numbers in May this year. Import costs for butadiene in May this year amounted to €742 per ton against €240 per ton in May 2020 after dropping from €791 in January 2020.

Synthos Production (unit-kilo tons)		
Product	***Jan-May 21***	***Jan-May 20***
Polystyrene	30.9	28.1
EPS	38.6	39.4
Synthetic Rubber	111.5	114.6

Synthos-production Jan-May 2021

Polystyrene production at Oswiecim increased for Synthos from 28,100 tons in January to May 2020 to 30,900 tons whilst EPS production dropped from 39,400 tons to 38,600 tons.

Synthos Dwory 7 is preparing to launch a new project to be carried out in cooperation with the Kraków Technology Park. The project involves installing a new production line for InVento expandable polystyrene, as well as upgrading its existing production line and boosting its capacity to produce more geopolymer additive as a raw material for InVento production. The project is estimated to cost around zl 130 million. Insulation products made of InVento technology offer excellent thermal insulation properties. Other advantages include full recyclability and a waste-free production process based on recycled raw materials.

Synthos Synthetic Rubber Capacity (unit-kilo tpa)			
Company	***Location***	***Capacity***	***Type***
Trinseo	Schkopau	180	SBR
Trinseo	Schkopau	50	S-SBR
Synthos	Kralupy	90	NdBR
Synthos	Oswiecim	275	SBR
Synthos	Oswiecim	275	EBSR
Synthos	Oswiecim	90	S-SBR

Synthos imported 46,693 tons of styrene monomer in the first five months this year versus 57,494 tons in the same period in 2020. Ethylbenzene imports increased from 29,426 tons to 52,945 tons. Reliance on feedstock purchases for Synthos can been seen as advantageous in terms of being able to maximise the gains from price fluctuations but disadvantageous regarding levels of integration. Thus, Synthos remains exposed to supply-chain disruption. Synthos at the Oswiecim complex produces 120,000 tpa of styrene and 105,000 tpa of foamed polystyrene.

Synthos Exports of ESBR Jan-May 2021		
Country	***Vol***	***€ million***
Brazil	7.7	9.6
China	3.3	4.5
France	1.5	2.0
Hong Kong	1.4	1.7
Hungary	1.1	1.4
India	12.0	15.9
Italy	2.0	2.8
Japan	2.0	2.9
Germany	2.3	3.2
Romania	1.8	2.2
South Africa	3.0	4.2
Thailand	1.7	2.2
Turkey	3.9	5.2
Others	11.2	15.1
Total	54.9	72.8

In the rubber division a fire at the Oswiecim rubber complex in January affected production in the first quarter which has meant that synthetic production dropped in the first five months to 111,500 tons from 114,600 tons in the same period last year.

Synthos currently sources approximately 35% of butadiene from its joint venture with Unipetrol and, on average, half of its styrene supply from its Czech Republic-based subsidiary, Synthos Kralupy, and its Poland-based subsidiary, Synthos Dwory. A further 19% of butadiene is supplied by Unipetrol's parent, PKN Orlen. The acquisition of Trinseo's synthetic rubber division is expected to have a major influence on feedstock contract negotiations for Synthos.

Synthos exported a total of 137,728 tons of synthetic rubber in the first five months in 2021 for €189.814 million against 85,636 tons in the same period in 2020 for €190.877 million. EBSR exports amounted to 54,900 tons in January to May 2021 for a value of €72.8 million against 45,463 tons in 2020 for 88.240 million. The main markets for EBSR from Synthos this year included India with 12,000 tons, Brazil with 7,700 tons and China 3,300 tons.

Polish PTA exports Jan-May 2021

PTA exports from Poland dropped from 173,700 tons in the first five months in 2020 to 169,000 tons in the same period this year. Germany remained the main customer for Polish PTA, taking 145,500 tons in the first five months. Lithuania was the second largest destination for PTA export shipments. Average prices for Polish PTA exports in the first five months this year amounted to $588 per ton. Revenues from PTA exports amounted to €168.978 million in January to May 2021.

Polish PTA Exports (unit-kilo tons)		
Country	***Jan-May 21***	***Jan-May 20***
Belarus	3.7	13.1
Germany	145.5	138.6
Lithuania	14.3	6.1
Switzerland	2.0	3.5
Turkey	0.0	1.9
Others	3.6	10.6
Total	169.0	173.7

PTA imports into Poland in the first five months this year totalled 29,054 tons, the largest share of which came from the Netherlands. In addition to rising PTA imports this year Poland has increased imports of paraxylene from 9,496 tons to 31,068 tons.

Czech petrochemical trade, Q1 2021

Deza plasticizer plant shutdown

Agrofert subsidiary Deza is undertaking a planned stoppage of its plasticizer plant from 26 July until 10 August. Maintenance will focus on the production of diisononyl phthalate (DINP). The plant's capacity is 12,000 tpa. For five months of 2021, Deza supplied 1,150 tons of DINP to the Russian market, and to the Ukrainian market 1,897 tons of DINP and 92 tons of DOP to the Ukrainian market. Last year Deza's net profit fell by around a quarter to Kc 702 million due to a range of factors including competition from larger players and weaker margins.

Czech exports of ethylbenzene rose in the first five months to 48,700 tons from 29,424 tons in the same period in 2020. All the ethylbenzene was shipped from Kralupy to Oswiecim in Poland, all within the structures of the Synthos Group. Imports of benzene into the Czech Republic amounted to 20,783 tons in the first three months of which around 90% came from Poland. Thus, benzene is imported mostly from Kedzierzyn-Kozle and shipped to Kralupy for ethylbenzene production.

Benzene exports from Poland rose from 8,441 tons to 19,800 tons in the first five months this year. Most of the benzene was shipped to Germany. Ethylene exports increased from 6,015 tons to 13,200 tons in January to May this year of which 5,764 tons went to Germany via the Litvinov-Bohlen pipeline.

Czech Petrochemical Exports (unit-kilo tons)		
Product	***Jan-May 21***	***Jan-May 20***
Ethylene	13.2	6.015
Propylene	0.0	5.126
Benzene	19.8	8.441
Toluene	3.9	2.318
Ethylbenzene	48.7	29.424

Czech Petrochemical Imports (unit-kilo tons)		
Product	***Jan-May 21***	***Jan-May 20***
Ethylene	1.696	2.161
Propylene	22.761	17.904
Butadiene	33.780	20.521
Benzene	38.020	33.229
Toluene	3.037	2.092
Styrene	20.896	13.288

Imports of ethylene into the Czech Republic dropped from 2,161 tons in the first five months in 2020 to 1,696 tons in the same period this year. Propylene rose from 17,904 tons to 22,761 tons of which 4,698 tons was supplied by Germany and 3,098 tons by Poland.

Other propylene import sources included Romania with 2,064 tons and Ukraine 3,388 tons. Czech imports of butadiene rose from 20,521 tons in the first five months last year to 33,780 tons of which Germany supplied a total of 19,160 tons and Hungary 3,102 tons.

Central European methanol trade Jan-May 2021

Czech imports of methanol amounted to 39,700 tons in the first five months this year against 36,600 tons in the January to May 2021. Russia accounted for 22,800 tons in the first five months, according to Czech statistics, although these volumes are nor reported in Russian customs statistics. It is possible that these volumes are included in the numbers for Finland and Poland.

Czech Methanol Imports (unit-kilo tons)		
Country	***Jan-May 21***	***Jan-May 20***
Germany	6.7	5.8
Russia	22.8	14.1
Poland	9.7	15.6
Others	0.5	1.1
Total	39.7	36.6

Prices per ton for methanol exports into the Czech Republic increased this year from €239 to €350. Imports of methanol into Poland totalled 281,100 tons in the first five months against 274,100 tons in the same period last year. Exports of methanol from Poland dropped to 67,200 tons in January to May 2021 against 86,700 tons last year.

Polish Methanol Imports (unit-kilo tons)		
Country	***Jan-May 21***	***Jan-May 20***
Belarus	1.3	3.9
Finland	33.7	0.0
Lithuania	3.8	4.6
Germany	32.5	3.6
Netherlands	25.7	0.0
Norway	4.3	17.1
Russia	179.0	211.2
Others	0.9	33.7
Total	281.1	274.1

Import prices of methanol averaged €285 per ton and export prices averaged €347 per ton. Polish consumption of methanol is diverse including buyers such as PKN Orlen and Grupa Azoty, in addition to large traders which distribute methanol throughout Central Europe.

Central European isocyanates Jan-May 2021

Polish TDI imports amounted to 33,327 tons in the first five months this year against 30,300 tons in the corresponding 2020, but the significant rise in pricing meant that costs rose from €31.9 million to a total of €88.118 million.

Polish TDI Imports (ktons)		
Country	***Jan-May 21***	***Jan-May 20***
Germany	10.6	11.1
Netherlands	2.8	4.3
Hungary	15.6	12.4
Belgium	0.6	0.1
Saudi Arabia	1.1	2.3
Others	2.6	0.6
Total	33.3	30.8

MDI imports into Poland in the first five months totalled 34,723 tons of which Germany supplied 12,894 tons and Hungary 11,869 tons.

Czech MDI imports increased in the first five months to 19,200 tons against 10,900 tons in the same period last year, with costs rising from €15.3 million to €41.5 million or in average prices rising from €1404 per ton to €2157. Germany increased shipments to the Czech Republic from 4,500 tons in the first five months last year to 7,600 tons in January to May 2021, whilst Belgium increased from 3,000 tons to 5,600 tons and Hungary increased from 800 tons to 3,000 tons. TDI imports into the Czech Republic have been in decline in the past few years, although this year increased to 3,207 tons for €10.434 million against 2,329 tons in January to May 2020 for €6.810 million.

Czech MDI Imports (unit-kilo tons)		
Country	***Jan-May 21***	***Jan-May 20***
China	1.1	1.0
Belgium	5.6	3.0
Germany	7.6	4.5
Hungary	3.0	0.8
Netherlands	0.8	1.0
Others	1.2	0.6
Total	19.2	10.9

BorsodChem-new hydrogen unit for aniline project

BorsodChem aims to produce more concentrated nitric acid at its Berente site for s part of the raw material base for polyurethane production.

BorsodChem is also preparing to build a complex hydrogen and carbon monoxide production plant in which a maximum of 48,000 cubic metres of hydrogen and 12,000 cubic metres per hour of carbon dioxide could be produced. Although the company already has three plants with similar functions, additional hydrogen produced from natural gas will be needed for the planned start-up of aniline production. The new plant is being designed to produce 200,000 tpa of aniline with start-up aimed for the second half of 2021.

Polish Chemical Production (unit-kilo tons)		
Product	***Jan-May 21***	***Jan-May 20***
Caustic Soda Liquid	136.4	159.1
Caustic Soda Solid	36.5	31.0
Caprolactam	68.0	67.5
Acetic Acid	2.7	2.1
Ammonia (Gaseous)	1149.0	954.2
Ammonia (Liquid)	45.1	44.5
Pesticides	33.2	34.2
Nitric Acid	1042.0	1035.0
Nitrogen Fertilisers	908.0	928.0
Phosphate Fertilisers	195.8	181.8
Potassium Fertilisers	159.1	159.1

Grupa Azoty product news

Grupa Azoty Puławy and the Canadian company Mkango Resources signed a lease agreement for the plot on which the Rare Earth Refining Plant will be built at Puławy.

Grupa Azoty ZAK has completed a nitric acid project at Kedzierzyn which was carried out in cooperation with the Institute of New Chemical Synthesis. Poland produced 1,042,000 tons of nitric acid in the first five months in 2021 against 1,035,000 tons in the same period in 2020.

Celanese Corporation has acquired Azoty's technology relating to the production of polyacetal (POM) products after its decision to discontinue its POM manufacturing. Celanese will take over all existing Tarnoform® contracts in order to serve Azoty's customers.

RUSSIA

Russian Chemical Production (unit-kilo tons)		
Product	***Jan-May 21***	***Jan-May 20***
Caustic Soda	551.4	552.0
Soda Ash	1,436.0	1,472.0
Ethylene	1,879.5	1,801.6
Propylene	1,299.2	1,298.9
Benzene	574.2	608.0
Xylenes	249.8	219.3
Styrene	327.2	300.2
Phenol	108.3	108.2
Ammonia	8,500.0	8,500.0
Nitrogen Fertilisers	4,904.0	4,824.0
Phosphate Fertilisers	1,808.0	1,847.0
Potash Fertilisers	4,502.0	4,054.0
Plastics in Bulk	4,508.0	4,115.0
Polyethylene	1,447.0	1,418.0
Polystyrene	248.8	234.1
PVC	464.7	458.6
Polypropylene	851.7	851.7
Polyamide	83.8	70.9
Synthetic Rubber	725.0	615.0
Synthetic Fibres	85.9	62.0

Russian chemical production, Jan-May 2021

Russian chemical production rose 6.4% in the first five months in 2021 over the same period in 2020, with the largest rise seen in the output of mineral fertilisers. Ethylene production increased from 1.802 million tons in the first five months last year to 1.880 million tons this year whilst propylene was unchanged at rose from 1.299 million tons.

The production of polymers increased to 4.508 million tons from 4.115 million tons in January to May 2020, including a rise in polyethylene production from 1.418 million tons to 1.447 million tons. More than half of the olefin and polyolefin production in in Russia is undertaken by plants belonging to the SIBUR and TAIF groups which are now undertaking a large-scale merger.

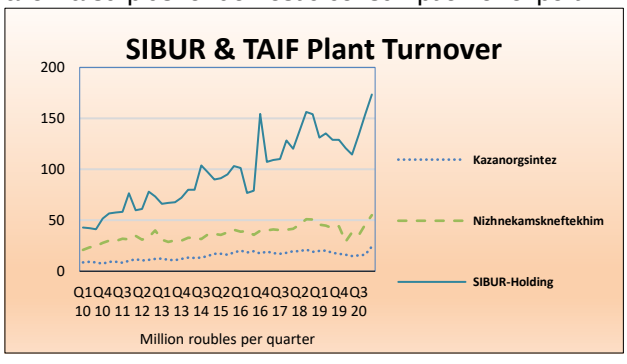
Russian plants produced 725,000 tons of synthetic rubber in the first five months, which is 10.2% more than in the same period in 2020. Rubber markets have improved in the first half of 2021 in terms of volume demand although margins remain tight.

In the base chemical sector Russian ammonia production stabilised at 8.5 million tons in the first five months in 2021. Caustic soda production amounted to 551,400 tons against 552,000 tons in 2020 whilst soda ash dropped from 1472,000 tons to 1436,000 tons. The main soda ash plants in Russia include Sterlitamak and Berezniki.

SIBUR-TAIF merger

The Federal Antitrust Service (FAS) of Russia has granted SIBUR's request to acquire 100% of TAIF voting shares. At the same time, SIBUR was issued an order to fulfill a number of mandatory conditions. After the completion of all investment projects that are currently under implementation, the combined company will enter the top five global leaders in the production of polyolefins and rubbers.

The FAS has stated that SIBUR will be able to process liquefied petroleum gas (LPG)only partially and thus allow a surplus for domestic consumption or export. The FAS may ask SIBUR to offload certain assets in order to prevent a 100% monopoly situation arising but this yet to be clarified.



Regarding turnover, SIBUR has expanded on a much greater scale than TAIF's plants Kazanorgsintez and Nizhnekamskneftekhim over the past decade. Although TAIF plants have reported gradually higher turnover numbers it has not been able to keep pace with SIBUR's investment of around $20 billion in the past fifteen years. One of the key factors justifying the TAIF position involves the introduction of a reverse excise tax for new petrochemical projects using ethane and LPGs which makes it very difficult for naphtha-based producers such as Nizhnekamskneftekhim to compete. Moreover, Kazanorgsintez depends on some raw materials from SIBUR accounting for 22% in the first five months. One of the significant advantages of SIBUR's announced takeover of TAIF is for more efficient distribution of raw materials. Overall SIBUR may appear the winner in this transaction, but TAIF has also secured economic survival for its plants.

Russian petrochemical projects

Amur Gas Chemical Complex-progress

The progress of the Amur Gas Chemical Complex (a jv between SIBUR and Sinopec) had achieved 19.5% of the project schedule by the start of July. This included mobilisation of 155 units of equipment at the construction site and establishing almost 1,096 personnel. The construction of the steam cracker involves the preparation of the foundations of pyrolysis furnaces, filled with a total of 2.047 million metres of concrete.

The first column for the installation of pyrolysis weighing more than 1500 tons was sent from the Russian port of De Kastri to the Amur region and reached the river Zeya on 21 June. The delivery arrived on 8 July at the temporary berth on the river Zeya and unloaded.

Construction of a workshop for the manufacture of reinforced concrete piles has begun. Other works are being ensured to supply voltage from the PS-220 to the steam cracker site. For the polymer plants the assembly of silos intended for storing the finished products has begun. A total of 24 silos is being constructed for polyolefin storage.

The readiness of the access road-1 South with a total length of about 1km is 96.4%. The road connects the regional highway with the Amur GHC site. 19% of the waterways have been installed in the construction of water supply facilities, the total length of which will be 7 km. The raw material for the Amur Gas Chemical Complex will be ethane and LPGs sourced from the Amur Gas Processing Plant. The capacity of gas chemical complex includes 2.3 million tpa of polyethylene and 400,000 tpa of polypropylene.

Nizhnekamksneftekhim-ethylene project

The cargo ship Oksky-56 delivered the compressor plant in July for the EP-600 complex under construction at Nizhnekamskneftekhim. The deoxing air compressor plant arrived at the industrial port of TransKama which is 15 km from Nizhnekamsk. The supercharged device was manufactured in South Korea and sent to Russia by sea across the Indian Ocean on a special barge. The installation includes two compressors. The equipment will be installed in the water preparation shop No.7209 EP-600. The compressor plant will be the last batch of equipment delivered by water transport.

Construction and installation work on the new olefin complex at Nizhnekamskneftekhim had achieved 20% of the product schedule by the end of June. The EP-600 plant is scheduled to be completed in July 2023.

Lummus Technology is acting as the main license supplier for Nizhnekamskneftekhim and recently concluded new contracts to supply new technologies for ethylbenzene, styrene, ethylene dimerization, and olefins conversion units. These plants are to be built as part of an expansion of an olefins production facility at Nizhnekamsk. The units are planned to produce 250,000 tpa of ethylbenzene, 250,000 tpa of styrene via the Classic SM process, and 150,000 tpa of polymer-grade propylene via olefins metathesis chemistry.

Nizhnekamskneftekhim pyrolysis unit main characteristics	
Licensor	Linde
Contract management	Gemont
Capacity	Ethylene 600 ktpa including six furnaces
Capacity	Propylene 272.8 ktpa
Naphtha Processing	1.798,500 million tpa
Equipment deliveries 2020	264 units

The furnaces for the olefin complex at Nizhnekamsk consist of two radiant sections and one common conversion part. Five of the high-performance furnaces will be operational with one kept in reserve. The five furnaces will process up to a total of 226 tons of naphtha per hour. The installation of pyrolysis furnaces at Nizhnekamsk is expected to take several months. In addition to the 600,000 tpa of ethylene the new cracker will be able to produce 272,800 tpa of propylene.

Nizhnekamskneftekhim-polypropylene expansion

TAIF plans to increase the capacity of polypropylene production at Nizhnekamskneftekhim by building another plant of 400,000 tpa to add to the existing 180,000 tpa plant. By 2020, the range of polypropylene produced by TAIF had already 51 products, including special and with improved performance characteristics, and the share of the Russian market occupied by Nizhnekamskneftekhim specifically for polypropylene was 13% (the second largest result among domestic producers). The Polypropylene-400 project is part of the TAIF Group's large-scale Development Strategy as a whole. The programme is designed for the period up to 2030 and is estimated at more than $20 billion.

Lukoil-polypropylene project construction at Kstovo

Lukoil began construction of a polypropylene production complex on the basis of the refinery Lukoil-Nizhgorodnefteorgsynthesis (Lukoil-NNOS) at Kstovo on 22 July 2021. The complex will utilise propylene from two modernized catalytic cracking units which possess of total capacity of 4 million tpa. After commissioning of the complex, the enterprise will be able to produce 500,000 tpa of products of modern polypropylene grades for processors. The volume of investments in the project is estimated at 61 billion roubles. Commissioning is scheduled for 2025.

Lukoil has selected Lummus Technology's Novolen polypropylene production technology for the Kstovo for a polypropylene plant. Lukoil is building a polypropylene plant at its Bourgas refinery in Bulgaria. The plant's capacity will be 280,000 tpa of polypropylene. Lukoil signed a contract with Lummus Technology's Novolen division in 2020 to provide licensed technology for a new polypropylene plant at the Bourgas site. The stated capacity is 280,000 tpa of propylene polymer. with a capacity of 500,000 tpa. The project also includes basic design, personnel training, and the supply of catalysts.

Russian petrochemical markets

Russian ethylene production, Jan-May 2021

Russian ethylene production totalled 1.880 million tons in the first five months in 2021 against 1.802 million tons in the same period in 2020. SIBUR's group production increased from 774,100 tons to 912,400 tons.

Russian Ethylene Production (unit-kilo tons)		
Producer	***Jan-May 21***	***Jan-May 20***
Angarsk Polymer Plant	98.2	99.0
Kazanorgsintez	247.6	269.6
Stavrolen	145.0	146.5
Nizhnekamskneftekhim	270.2	274.4
Novokuibyshevsk Petrochemical	23.3	20.2
Gazprom N Salavat	151.4	161.8
SIBUR-Kstovo	167.5	179.4
SIBUR-Khimprom	24.8	23.9
Tomskneftekhim	120.5	118.6
Ufaorgsintez	31.4	56.1
ZapSibNeftekhim	599.6	452.2
Total	1879.5	1801.7

ZapSibNeftekhim produced 599,600 tons in January to May up from 452,200 tons from January to May 2020. In the first five months in 2021 Nizhnekamskneftekhim produced 270,200 tons of ethylene against 164,100 tons in the first five months in 2020 whilst Kazanorgsintez dropped from 167,000 tons to 146,500 tons.

Other important ethylene producers in the first quarter included SIBUR-Kstovo which produced 167,500 tons versus 179,400 tons and Gazprom neftekhim Salavat which produced 151,400 tons against 161,800 tons. In terms of feedstocks, ZapSibNeftekhim relies on LPGs delivered from the gas processing plants in West Siberia, whilst Kazanorgsintez relies heavily on ethane feedstock supplies from the Orenburg and Minnibayevo gas plants but also needs to purchase other hydrocarbons.

Russian Propylene Production (unit-kilo tons)		
Producer	***Jan-May 21***	***Jan-May 20***
Angarsk Polymer Plant	54.8	54.6
Kazanorgsintez	21.0	21.3
Lukoil-NNOS	84.1	94.6
Stavrolen	57.9	56.1
Nizhnekamskneftekhim	134.5	131.6
Novokuibyshevsk	15.5	16.6
Omsk Kaucuk	8.4	19.7
Polyom	81.3	75.4
Gazprom n Salavat	53.9	69.9
SIBUR Kstovo	75.0	77.9
SIBUR-Khimprom	24.5	25.1
Tomskneftekhim	65.9	66.8
SIBUR Tobolsk	3.0	143.8
Ufaorgsintez	72.6	79.1
ZapSibNeftekhim	546.6	175.2
Total	1298.9	1107.7

Propane supplies are purchased by Kazanorgsintez mostly from Uralorgsintez and SIBUR-Novatek at Tobolsk, usually in volumes of 8-10,000 tons per month. Other sources include Novokuibyshevsk Petrochemical Company and Tatneft. Kazanorgsintez' s main costs in the first quarter increased by only 14% to 14.7 billion rubles, while prices for raw materials such as ethylene, ethane, propane butane and benzene increased in the first quarter of 2021 compared to January-March 2020.

From 11 September to 1 October 2021, Nizhnekamskneftekhim's ethylene plant will undergo a maintenance shutdown. The production of ethylene, propylene, benzene and some derivatives at Nizhnekamskneftekhim will be reduced, if not stopped, during the repair period. Ethylene from Nizhnekamsk is shipped via the Volga-Urals pipeline to other consumers and producers, particularly Kazanorgsintez where

ethylene production is lower than for polyethylene. As ethylene is expected to remain tight in the third quarter Kazanorgsintez will need to seek other supplies where available. Ufaorgsintez issued a tender in July for 7,193 tons of ethylene to be delivered by pipeline before the end of 2021 with the possibility of shipping the carry-overs in January 2022 in the seller's option.

Russian propylene production, sales and exports, Jan-May 2021

Russian propylene production amounted to 1.299 million tons in the first five months in 2021 against 1.108 tons in the same period in 2020. The increase was due largely to the cumulative effect of the start-up of the plant at ZapSibNeftekhim at Tobolsk. The combined ZapSibNeftekhim and SIBUR Tobolsk plants increased production from 319,000 tons in the first five months in 2020 to 549,900 tons in the same period in 2021. Overall, the SIBUR Group production of propylene rose from 488,800 tons to 714,900 tons.

Russian Propylene Domestic Sales (unit-kilo tons)		
Company	***Jan-May 21***	***Jan-May 20***
Angarsk Polymer Plant	19.3	29.1
SIBUR-Kstovo	58.1	55.5
Lukoil-NNOS	61.8	73.7
Others	6.5	1.4
Total	145.7	159.8

Main Russian Propylene Domestic Purchases (unit-kilo tons)		
Consumer	***Jan-May 21***	***Jan-May 20***
Saratovorgsintez	64.2	56.9
Volzhskiy Orgsintez	4.5	4.0
Akrilat	0.0	0.4
SIBUR-Khimprom	19.7	19.6
Omsk-Kaucuk	3.8	10.2
Tomskneftekhim	2.7	2.1
SIBUR Tobolsk	26.8	46.8
Moscow Refinery	5.7	4.0
Novokuibyshevsk Petrochemical	3.0	1.2
Khimprom Kemerovo	2.5	1.1
Plant of Synthetic Alcohol	5.7	7.6
Ufaorgsintez	7.1	3.5
Angarsk Polymer	0.0	2.0
Total	145.7	159.8

In Tatarstan Nizhnekamskneftekhim produced 131,600 tons of propylene in the first five months against 134,500 tons last year whilst Kazanorgsintez reduced production from 21,300 tons to 21,000 tons.

In Bashkortostan Gazprom neftekhim Salavat produced 53,900 tons of propylene against 69,900 tons whilst Ufaorgsintez reduced production from 79,100 tons to 72,600 tons. In the Nizhny Novgorod region SIBUR-Kstovo reduced production of propylene from 79,100 tons to 72,600 tons in January to May 2021, whilst due to maintenance Lukoil-NNOS reduced production from 94,600 tons to 84,100 tons.

Russian sales of propylene on the domestic merchant market amounted to 145,700 tons in the first five months in 2021 against 159,800 tons in the same period last year. Production at ZapSibNeftekhim was consumed internally in the production of polypropylene. The largest propylene supplier to the domestic market in the first five months was Lukoil-NNOS, shipping 61,800 tons against 73,700 in January to May 2020 tons followed by SIBUR-Kstovo which increased from 56,900 tons to 64,200 tons.

Russian Propylene Exports (unit-kilo tons)		
Producer	***Jan-May 21***	***Jan-May 20***
Lukoil-NNOS	33.8	16.5
SIBUR-Kstovo	8.8	3.4
Angarsk Polymer Plant	14.2	0.0
Stavrolen	0.0	0.7
Total	56.8	20.5

SIBUR-Tobolsk reduced merchant propylene purchases from 48,800 tons in January to May 2020 to 28,800 tons in the same period this year. Saratovorgsintez increased purchases of merchant propylene from 56,900 tons to 64,200 tons but diversified its supply sourcing due to lower availability from Lukoil-NNOS. Regarding other consumers, the Plant of Synthetic Alcohol at Orsk supplements propylene purchases for the production of isopropyl alcohol through the purchase of propane-propylene fractions.

Russian Styrene Production (unit-kilo tons)		
Producer	***Jan-May 21***	***Jan-May 20***
Nizhnekamskneftekhim	128.5	126.8
Angarsk Polymer Plant	19.1	17.2
SIBUR-Khimprom	60.8	60.9
Gazprom n Salavat	88.2	74.5
Plastik, Uzlovaya	30.6	21.8
Total	327.2	301.2

Propylene exports from Russia amounted to 56,800 tons in the first five months against 20,500 tons in the first five months in 2020. Lukoil-NNOS increased export shipments from 16,500 tons to 33,800 tons whilst the

Angarsk Polymer Plant shipped 14,200 tons against no activity in the same period last year. Revenues from propylene exports jumped from $9.3 million in the first five months to $18.3 million in January to May 2021.

Russian Styrene Exports (unit-kilo tons)		
Producer	***Jan-May 21***	***Jan-May 20***
Angarsk Polymer Plant	1.8	2.2
Plastik Uzlovaya	0.0	0.0
Gazprom neftekhim Salavat	43.6	30.2
Nizhnekamskneftekhim	1.0	0.4
SIBUR-Khimprom	0.4	5.0
Total	46.8	37.8

Russian styrene production, sales and exports, Jan-May 2021

Russian styrene production increased from 301,200 tons in the first five months in 2020 against 327,200 tons in January to May 2021. Russian styrene exports amounted to 46,800 tons in 2021 against 37,800 tons in the same five-month period in 2020. Gazprom neftekhim Salavat increased exports from 30,200 tons to 43,600 tons whilst SIBUR-Khimprom reduced export shipments from 5,000 tons to 400 tons.

Russian Styrene Domestic Sales (unit-kilo tons)		
Producer	***Jan-May 21***	***Jan-May 20***
Angarsk Polymer Plant	12.2	9.1
Plastik	0.2	0.8
Gazprom n Salavat	28.0	22.9
SIBUR-Khimprom	19.3	10.9
Nizhnekamskneftekhim	1.0	0.0
Total	60.6	43.8

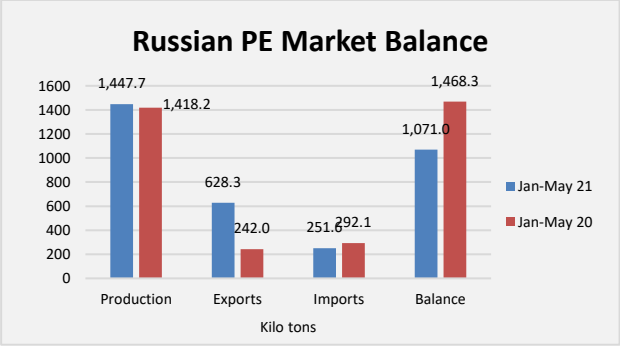
Domestic merchant sales of styrene rose from 43,800 tons in the first five months in 2020 to 60,600 tons in the same period in 2021. Increases were noted in merchant sales for Angarsk Polymer Plant, Gazprom neftekhim Salavat and SIBUR-Khimprom. In the second half of June, there were no offers of styrene on the domestic merchant market reflecting the market shortage. The Angarsk Polymer Plant did not announce a tender for the sale of the monomer due to a shutdown for scheduled repairs in the first half of June. SIBUR-Khimprom and Gazprom neftekhim Salavat also did not have free volumes of monomer although both producers to ship the contracted volumes of the product. The shortage of styrene on the Russian market is expected to widen due to the shutdown of Gazprom neftekhim Salavat for scheduled repairs which started in the second half of July lasting until 20 August. SIBUR-Khimprom is soon to start a scheduled shutdown compounding the shortages of available product on the market.

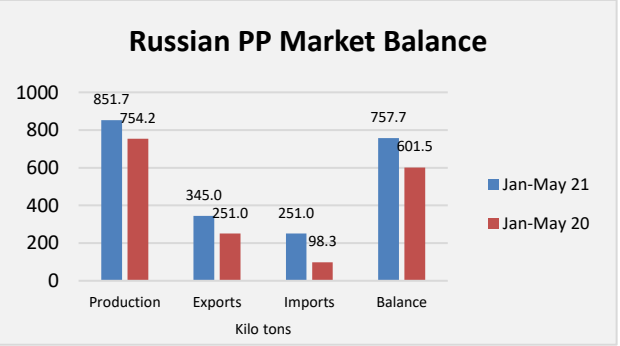
Bulk Polymers

Russian polyethylene production and trade, Jan-May 2021

Russian HDPE production totalled 831,000 tons in the first five months in 2021, 7% more than in 2020 at 761,100 tons. ZapSibNeftehim increased HDPE production 31% in the first five months to 473,000 tons, whilst Kazanorgsintez reduced production by 23% to 174,900 tons. Stavrolen reduced production by 1% to 134,300 tons whilst Gazprom neftekhim Salavat dropped by 8% to 49,900 tons. HDPE exports from Russia totalled 393,581 tons in the first five months in 2021 for $366.477 million compared to 135,386 tons in the first five months in 2020 for $105.724 million.

Russian HDPE Production (unit-kilo tons)		
Producer	***Jan-May 21***	***Jan-May 20***
Kazanorgsintez	174.9	233.0
Stavrolen	134.0	132.0
Gazprom neftekhim Salavat	49.2	54.0
ZapSibNeftekhim	472.9	342.1
Total	831.0	761.1





Polyethylene production of all grades totalled 1.448 million tons in the first five months, against 1.418 million tons in the same period in 2021. Exports of polyethylene increased sharply from 242,000 tons in the period January to May 2020 to 628,300 tons this year whilst imports dropped from 292,100 tons to 251,563 tons. Trade data combined with production shows that the supply/demand balance for polyethylene dropped significantly in the first five months, but this is mostly due to the huge increase in production in 2020 and the time lag for these volumes to be shipped for export.

Russian polypropylene production, Jan-May 2021

Production of polypropylene in Russia increased by 13% in the first five months and amounted to 851,700 tons against 754,200 tons a year earlier. Exports of polypropylene increased from 251,000 tons in January to May 2020 to 345,000 tons in the same period this year whilst imports increased from 98,300 tons to 251,000 tons. Taking trade data into account the market for polypropylene increased in the first five months from 601,500 tons to 757,700 tons.

Russian Polypropylene Production (unit-kilo tons)		
Producer	***Jan-May 21***	***Jan-May 20***
Ufaorgsintez	53.8	53.5
Stavrolen	52.1	52.1
Neftekhimya	62.9	62.6
Nizhnekamskneftekhim	92.1	92.1
Polyom	86.8	78.9
Tomskneftekhim	64.7	64.4
SIBUR-Tobolsk	0.0	168.2
ZapSibNeftekhim	439.3	182.4
Total	851.7	754.2

ZapSibNeftekhim, together with the merged SIBUR-Tobolsk plant, produced a total of 439,300 tons in the first five months which was 27% up on the same period in 2020. SIBUR is launching the Vivilen product solutions brand with the involvement of recycled materials in the production technology scheme. The production of polypropylene and polyethylene has already been launched at the partners' facilities, and it is planned to expand the product line with other products such as PET and other products.

Polyom at Omsk increased polypropylene production by 1% to 86,800 tons whilst Nizhnekamskneftekhim remained unchanged 92,100 tons. Ufaorgsintez increased production from 53,500 tons to 53,800 tons. Stavrolen at Budyennovsk was unchanged at 52,100 tons whilst Tomskneftekhim increased from 64,400 tons to 64,700 tons and Neftekhimya increased from 62,600 tons to 62,900 tons.

Russian PVC Production (unit-kilo tons)		
Producer	***Jan-May 21***	***Jan-May 20***
Bashkir Soda	117.3	110.9
Kaustik	36.0	30.6
RusVinyl	145.4	149.1
Sayanskkhimplast	133.5	137.3
Total	432.1	432.1

Russian PVC production and trade, Jan-May 2021

The total production of PVC in Russia for the first five months amounted to 432,100 tons, some to the same level in 2020. RusVinyl produced 145,400 tons of PVC against 149,100 tons for the same period of 2020. Sayanskhimplast produced 133,500 tons of PVC against 137,300 tons a year earlier. Sayanskkhimplast started a shutdown at the PVC plant on 12 July, lasting for a period of around 10 days.

Bashkir Soda Company produced 117.300 tons of PVC in January-May this year, 2% more than in Jan-May 2020. Kaustik (Volgograd) produced 36,000 tons of PVC in January to May 2021 against 30,600 tons for the same period in 2020. PVC imports into Russia rose to 14,600 tons in the first five months in 2021 against 9,900 tons in the same period in 2020 whilst exports dropped from 98,800 tons to 88,800 tons.

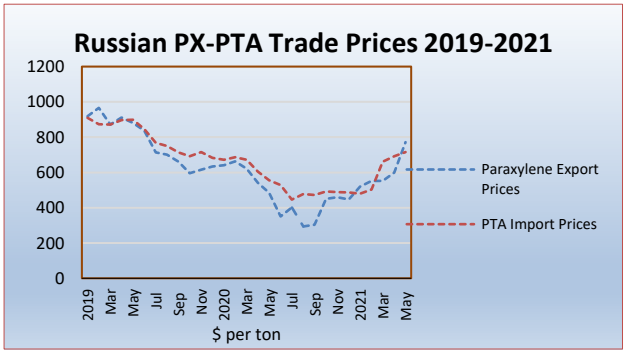
Russian Polycarbonate Imports Jan-May 2021		
Country	***Vol kilo tons***	***$ million***
South Korea	1.7	5.4
Germany	1.8	5.6
Belgium	0.8	2.0
Netherlands	1.1	3.5
Hungary	1.0	3.2
China	1.0	2.6
Others	1.5	2.5
Total	9.1	24.7

Russian polycarbonate imports, Jan-May 2021

Imports of polycarbonate into Russia amounted to 9,050 tons in the first five months in 2021, down from 15,182 tons in the same period in 2020. Import costs amounted to $24.7 million in the first five months versus $29.8 million last year. Aside shortages in the European market which restricted import availability the sole Russian producer Kazanorgsintez increased production this year helping to meet domestic demand. In the first quarter this year polycarbonate sale revenues rose by 11% over the same period in 2020 to 8.8 billion roubles.

Paraxylene-PTA-PET

Russian Paraxylene Exports (unit-kilo tons)		
Producer	***Jan-May 21***	***Jan-May 20***
Gazprom Neft	25.0	34.1
Kirishinefteorgsintez	14.7	13.4
Ufaneftekhim	0.0	4.6
Total	39.7	52.0



Russian paraxylene trade Jan-May 2021

Export shipments of Russian paraxylene totalled 39,700 tons in the first five months in 2021 against 52,000 same period in 2020. Exports declined this year due to increase in PTA production at Polief and increased paraxylene purchases made by SIBUR. However, traders believe that if the current volume of purchases by Polief is maintained, paraxylene exports from Russia in 2021 will be lower than in 2020.

Paraxylene exports to Finland from Russia dropped from 45,639 tons in the first five months last year for $25.059 million to 36,227 tons in the same period in 2021 for $20.037 million. Exports of paraxylene to Belarus amounted to 3,918 tons in January to May 2021 for $3.260 million up from 3,466 tons for $1.846 million.

Russian PTA imports, Jan-May 2021

PTA imports into Russia totalled 116,200 tons in the first five months in 2021 against 132,500 tons in the same period in 2020. China has been the sole source of PTA imports so far in 2021, increasing shipments from 112,600 tons in the first five months last year for $50 million to 116,200 tons for $73.5 million. Average prices for PTA imports into Russia amounted to $662.4 per ton in January to May 2020 against $698.1 per ton in the same period in 2020. Whereas prices declined in April and May 2020 the opposite trend took place in 2021 rising to $715 per ton in May this year. This corresponds with the rise in paraxylene prices.

Russian PTA Imports by Country (unit-kilo tons)		
Country	***Jan-May 21***	***Jan-May 20***
Belgium	0.0	8.0
China	116.2	112.6
South Korea	0.0	7.0
Others	0.0	4.9
Total	116.2	132.5

Ekopet at Kaliningrad accounted for 69.2% of Russian PTA imports over the first five months in 2021, paying $45.1 million in value against $47.1 million in the same period last year. Ekopet produced PET at close to full capacity of 220,000 tpa between March and May despite the problems encountered with the supply of raw materials in recent months. A new container system has been introduced this enabling shipment loads of up to 2,650 tons of PTA. In principle this route was claimed to be deliverable in shorter time than by sea which typically takes around 58 days. However, the rail system of deliveries has been held up by technical and bureaucratic procedures in China.

Tatneft announces PTA project

Tatneft has announced plans to build a PTA plant with a capacity of 600,000 tpa to provide raw materials to the Ekopet PET plant at Kaliningrad which it currently purchased. The aim is to satisfy the demand for PTA in addition to allowing some surplus for export. MEG production facilities are also under consideration. On 22 June Tatneft became the owner of 100% of the shares of Ekopet for a sum of 6.45 billion roubles.

Polief-solar power plant construction

SIBUR has started construction of a solar power plant at the Polief plant at Blagoveshchensk. The aim of the project is to increase the share of "green" electricity in the company's energy balance and reduce the carbon footprint from production. The solar power plant is intended to provide electricity for the production of "green" PET granules based on secondary raw materials. SIBUR aims to complete the construction of the solar power plant at the Polief site by January 2022, acting as SIBUR's first production site to generate green electricity. Compared against 2019 SIBUR plans to increase the volume of "green" electricity in the total energy balance of the company by up to 5 times more by 2025.

Aromatics

Russian Benzene Production (unit-kilo tons)		
Producer	***Jan-May 21***	***Jan-May 20***
Angarsk Polymer Plant	41.0	41.1
Gazprom Neft	44.8	58.2
LUKoil-Neftekhim	0.0	24.4
LUKoil-Permnefteorgsintez	20.7	24.7
Magnitogorsk MK	15.1	17.7
Nizhnekamskneftekhim	126.9	127.5
Novolipetsk MK	2.5	0.6
Gazprom n Salavat	88.6	93.6
Severstal	13.0	14.9
SIBUR-Holding	35.4	39.7
Slavneft-Yaroslavlorgsintez	28.7	27.2
Kirishinefteorgsintez	11.3	25.8
Ryazan RN Holding	11.6	13.2
Ufaneftekhim	40.3	39.9
Ural Steel	4.1	4.5
Uralorgsintez	36.8	32.5
Zapsib	30.0	25.9
Novokuibyshevsk Petrochemical	9.4	7.7
Total	560.4	619.2

Russian Benzene Sales (unit-kilo tons)		
Company	***Jan-May 21***	***Jan-May 20***
Angarsk Polymer Plant	24.0	23.69
SIBUR-Kstovo	33.5	39.26
Severstal	14.4	14.01
Uralorgsintez	34.6	32.45
Kirishinefteorgsintez	2.7	1.81
West Siberian MC	28.2	24.45
Ryazan NPZ	10.2	14.03
Slavneft-Yanos	28.5	27.27
Gazprom Neft (Omsk)	41.0	35.56
Gazprom n Salavat	16.9	19.37
Stavrolen	0.0	24.02
Nizhnekamskneftekhim	11.1	13.30
Ufaneftekhim	0.2	2.8
Karpatneftekhim	3.2	1.5
Atyrau	2.5	16.2
Belarus	13.4	2.0
Altay-Koks	13.4	1.96
Novolipetsk MK	0.7	0.0
Chelyabinsk MK	6.9	2.8
Altay-Koks	2.7	13.2
Koks	11.4	9.7
Magnitogorsk MK	15.6	18.9
Nizhny Tagil MK	4.0	7.7
Ural Steel	1.1	0.0
Total	306.7	343.9

Russian benzene production Jan-May 2021

Russian benzene production declined slightly in the first five months in 2021 to 560,400 tons from 619,200 tons in the same period in 2020. Nizhnekamskneftekhim reduced benzene production from 127,500 tons to 126,900 tons, whilst Gazprom neftekhim Salavat reduced production from 57,100 tons to 51,400 tons. Rosneft's benzene plants at Angarsk, Novokuibyshevsk, Ufa and Ryazan produced a combined total of 102,300 tons which was up slightly on last year, whilst Gazprom Neft at Omsk reduced benzene production from 93,600 tons to 88,600 tons.

Regarding domestic merchant sales, Russian producers and importers shipped 306,700 tons to Russian consumers in the first five months this year against 343,900 tons in the same period in 2020.

SIBUR-Kstovo reduced shipments to the merchant market from 39,260 tons in January to May 2020 to 33,500 tons in the same period in 2021, whilst Gazprom Neft at Omsk increased shipments slightly from 35,560 tons to 41,000 tons. Imports of benzene amounted to 19,100 tons in the first five months versus 19,700 tons in the same period in 2020.

Market supply for benzene tightened in June under pressure from plant outages. Severstal stopped production from 29 May to 11 June whilst the Angarsk Polymer Plant stopped the production of benzene and styrene on 18 June. In June benzene prices in the Volga Federal District fell to 106,000-107,000 roubles per ton whilst in the North-Western Federal District dropped sharply o 82,000-82,500 roubles per ton. In July the supply side persisted with shortages with Gazprom neftekhim Salavat not making any product available for the domestic market but offering 2,500 tons for export. In mid-July, repair work began at the Gazprom neftekhim Salavat pyrolysis unit which will last a month whilst Ufaneftekhim started maintenance on 19 July.

Kuibyshevazot reduced benzene purchases from 83,000 tons to 62,900 tons in the first five months whilst Azot at Kemerovo increased purchases to 45,700 tons from 64,100 tons. For the production of cumene Kazanorgsintez purchased a total of 31,300 tons of benzene in January to May 2021, versus 29,700 tons in the same period in 2020, whilst Omsk Kaucuk reduced purchases from 19,400 tons to 4,900 tons.

Phenol production at Ufaorgsintez has not been stopped during the shutdown of Ufaneftekhim meaning that benzene is being sourced from other Rosneft plants, while the utilisation of phenol production facilities at the Ufa plant may decrease. Elsewhere in the phenol sector Novokuybyshevsk Petrochemical Company resumed

phenol production after maintenance. Russian converters will continue to import benzene from Belarus and Ukraine, although the position in Belarus could become complicated by sanctions. Deliveries of benzene from Kazakhstan may be restricted for the rest of the year as the Atyrau refinery will operate in a fuel mode and will not be producing benzene or paraxylene.

Russian Caprolactam Production (unit-kilo tons)		
Producer	***Jan-May 21***	***Jan-May 20***
Kuibyshevazot	81.3	84.0
Shchekinoazot	23.7	24.7
SDS Azot	55.3	48.7
Total	160.3	157.5

Russian caprolactam production, Jan-May 2021

Russian caprolactam production amounted to 94,300 tons in January to May 2021 against 99,300 tons in the same period in 2020. Kuibyshevazot reduced production from 81,300 tons to 84,000 tons whilst SDS Azot at Kemerovo increased production to 55,300 tons from 48,700 tons.

Russian orthoxylene market, Jan-May 2021

Orthoxylene domestic sales in Russia amounted to 81,600 tons in the first five months in 2021 against 67,200 tons in the same period in 2020. Gazprom Neft increased domestic shipments from 35,100 tons to 45,300 tons whilst Ufaneftekhim reduced shipments from 29,800 tons to 20,200 tons. Kirishinefteorgsintez increased domestic shipments of orthoxylene from 2,300 tons to 16,100 tons.

Russian Orthoxylene Domestic Sales (unit-kilo tons)		
Producer	***Jan-May 21***	***Jan-May 20***
Gazprom Neft	45.3	35.1
Ufaneftekhim	20.2	29.8
Kirishinefteorgsintez	16.1	2.3
Total	81.6	67.2

The volume of shipments of orthoxylene from Russia abroad decreased in January-May by 2,400 tons compared to the same period of 2020, to 29,900 tons. Export shipments produced by the Kirishi refinery which is owned by Surgutneftegaz could not compensate for the reduction of supplies from Gazprom Neft, which reduced exports in favour of the domestic market, and Ufaneftekhim, which reduced capacity utilization due to the weakening of demand for gasoline, which led to a decrease in the volume of exports of the product.

Russian toluene production, Jan-May 2021

Russian toluene production totalled 115,500 tons in the first five months in 2021 against 102,900 tons in the same period in 2020. Toluene sales on the Russian domestic market amounted to 64,500 tons against 54,000 tons Jan-May 2020.

Russian Toluene Domestic Sales (unit-kilo tons)		
Producer	***Jan-May 21***	***Jan-May 20***
Slavneft-Yanos	6.6	9.8
Severstal	0.9	4.1
LUKoil-Perm	18.8	12.9
Gazprom Neft	24.3	17.0
Zapsib	2.6	4.3
Kinef, Kirishi	6.6	6.3
Gazprom Neftekhim Salavat	0.0	0.0
Others	4.6	0.4
Total	64.5	54.8

Russian phenol market, Jan-May 2021

Russian phenol production dropped from 110,500 tons in the first five months in 2020 to 108,200 tons in the same period in 2021. Novokuibyshevsk Petrochemical produced 30,900 tons of phenol against 32,500 tons whilst Ufaorgsintez increased production from 25,900 tons to 35,200 tons. Kazanorgsintez increased slightly from 33,800 tons to 35,200 tons. Omsk Kaucuk reduced production from 18,200 tons in the first five months in 2020 to 10,100 tons due to technical problems.

Russian Phenol Production (unit-kilo tons)		
Producer	***Jan-May 21***	***Jan-May 20***
Ufaorgsintez	32.0	25.9
Kazanorgsintez	35.2	33.8
Novokuibyshevsk Petrochemical	30.9	32.5
Omsk Kaucuk, Omsk	10.1	18.2
Total	108.2	110.5

Sales of phenol on the Russian domestic market amounted to 57,700 tons in the first five months in 2021, up from 52,600 tons. Omsk Kaucuk supplied 8,000 tons to the domestic market, Ufaorgsintez supplied 26,400 tons and Novokuibyshevsk Petrochemical 23,300 tons. Exports of phenol amounted to 10,500 tons in the first five months against 19,100 tons in January to May 2020. Omsk Kaucuk is currently in the process of restarting the full cumene chain after maintenance. The start-up of the new plant for isopropyl alcohol at Omsk has been more difficult than envisaged, particularly in regard to selling to new customers.

Synthetic rubber

Russian rubber production and consumption Jan-May 2021

Russian production of synthetic rubbers in May amounted to 129,600 tons which is 28.8% more than in May 2020 (but a decrease of 12.4% compared to April 2021). For the first five months production totalled 725,000 tons against 615,000 tons in the same period in 2020. Export prices of Russian synthetic rubber averaged $1586 per ton in the first five months versus $1357 per ton in the same period in 2020.

Russian Synthetic and Natural Rubber Market (unit-kilo tons)		
	Jan-May 21	***Jan-May 20***
Production	725.0	615.0
Exports	457.7	345.8
Imports	95.5	78.7
Supply/Demand Balance	362.8	347.9

The domestic market for tyre sales is gradually recovering from the sharp slowdown in 2020, but a full recovery to pre-pandemic sales is not expected by some manufacturers until 2022. Probably the greatest threat to the market comes from the prospect of an enforced lockdown on the domestic market which could happen in the winter months. For now, the tyre market is recovering and in the first five months of 2021, increasing by 35.3% more than in January-May 2020 to 26 million pieces.

Russian Synthetic Rubber Exports (unit-kilo tons)		
Product	***Jan-May 21***	***Jan-May 20***
E-SBR	19.7	14.8
Block	35.5	20.6
SSBR	4.5	2.5
SBR	54.2	42.8
Polybutadiene	108.0	85.6
Butyl rubber	54.4	48.1
Halogenated butyl	58.4	43.0
NBR	15.9	14.3
Isoprene	104.5	69.2
Others	2.6	4.2
Total	457.7	345.0

One of Russia's leading tyre manufacturers Tatneft intends to invest 16.4 billion roubles in the development of its tyre business in 2021, compared to 3.7 billion roubles in 2020. Tatneft aims to increase the manufacture of all-metal tyres by 1.2 million pieces per annum up to 2.8 million units. In addition, this year Tatneft plans to develop the production of large tyres in Nizhnekamsk. Production of passenger and light-duty tyres is planned to increase by 1.2 million tyres per annum (from 5.0 million to 6.2 million by 2021. These investments will lead to increased consumption of rubber, particularly from Tatneft's synthetic rubber plant at Togliattikaucuk.

Russian Synthetic Exports by Destination (unit-kilo tons)		
Country	***Jan-May 21***	***Jan-May 20***
Belarus	13.9	9.2
Brazil	11.0	5.4
China	63.7	77.6
Czech	14.1	8.9
Germany	14.6	10.9
Hungary	23.0	13.1
India	47.7	35.7
Mexico	17.2	8.6
Poland	51.6	34.4
Romania	13.7	10.4
Serbia	5.8	5.6
Slovakia	16.1	10.9
Turkey	42.1	21.7
Ukraine	11.5	5.5
US	20.2	14.5
Others	91.7	72.6
Total	457.7	345.0

Russian synthetic rubber exports Jan-May 2021

Russian exports of synthetic rubber totalled 457,700 tons in the first five months in 2021 against 345,000 tons in the same period in 2020. The increase in exports equates to the rise in production in 2021.

Polybutadiene and isoprene exports showed large increases in volume, rising from 85,600 tons to 108,000 tons and from 69,200 tons to 104,500 tons respectively. Exports of butyl rubber and halogenated rubber increased in the first five months, with butyl exports helped by increased production at Togliattikaucuk. Overall, synthetic rubber export prices increased in 2021 from $1459 per ton in January to $1959 per ton in May.

China bought 63,700 tons of synthetic rubber in January to May 2021 against 77,600 tons in 2020 whilst Poland imported 51,600 tons against 34,400 tons. India took 47,700 tons of synthetic rubber from Russia in the first five months this year, rising from 35,700 tons in 2020.

Nizhnekamskneftekhim Rubber Exports (unit-kilo tons)		
Product	***Jan-May 21***	***Jan-May 20***
Isoprene Rubber	82.0	55.6
Butyl Rubber	30.3	30.1
HBR	58.5	43.0
Polybutadiene	80.0	58.2
Others	4.3	4.0
Total	255.0	190.9

Nizhnekamskneftekhim rubber exports Jan-May 2021

Nizhnekamskneftekhim exported 255,000 tons of synthetic rubber in the first five months in 2021, up from 190,900 tons in the same period in 2020. Exports of halogenated rubber increased from 43,000 tons to 58,500 tons with revenues rising from $95.2 million tons to 121.1 million. Revenues from isoprene rubber and polybutadiene exports rose from $76.5 million to $126.0 million and $65.5 million to $97.1 million respectively.

Nizhnekamskneftekhim's butyl rubber plant launched a new brand of BBC 246 bromobutyl rubber in March this year. Final plans for the number of products of this brand will be formed after production tests by the consumer. This new product follows the introduction of other new products including DSSK rubber with a capacity of 60,000 tpa and thermoelastoplasts (TEP) with a capacity of 10,000 tpa,

Togliattikaucuk Rubber Exports (unit-kilo tons)		
Product	***Jan-May 21***	***Jan-May 20***
Isoprene Rubber	8.7	1.4
Butyl Rubber	24.0	18.2
SBR	20.5	12.1
Others	2.3	0.2
Total	55.6	31.9

Togliattikaucuk-rubber exports, Jan-May 2021

Togliattikaucuk increased rubber exports from 31,900 tons in the first five months in 2020 to 55,600 tons in the same period this year. Butyl rubber exports rose from 18,200 tons to 24,000 tons and isoprene rubber exports rose from 1,400 tons to 8,700 tons. Revenues from export shipments increased from $45.5 million to $75.7 million.

Togliattikaucuk produced 208,000 tons of synthetic rubber in 2020 and expects to produce more in 2021. The company is one of the top 10 largest exporters and one of the largest taxpayers in the Samara region. Togliattikaucuk' s owner Tatneft has drawn up active investment plans for the plant in addition to forming joint ventures with MOL for bitumen binders at the Taneko refinery at Nizhnekamsk and with Kazakh investors for a tyre plant in Kazakhstan.

Methanol

Russian Methanol Production (unit-kilo tons)		
Producer	***Jan-May 21***	***Jan-May 20***
Shchekinoazot	415.5	400.8
Sibmetakhim	421.6	394.3
Metafrax	528.7	522.8
Akron	44.4	36.4
Azot Novomoskovsk	122.3	97.8
Angarsk Petrochemical	17.1	24.3
Azot Nevinnomyssk	50.2	49.3
Tomet	170.6	387.1
Ammoni	57.2	38.6
Totals	1827.4	1951.3

Russian methanol production Jan-May 2021

Russia produced 1.827 million tons of methanol in the first five months in 2021 against 1.951 million tons in same period in 2020. Metafrax at Gubakha produced 528,700 tons of methanol against 522,800 tons in January-May 2020 whilst Sibmetakhim (Gazprom Methanol) at Tomsk increased production from 394,300 tons to 421,600 tons.

Due mainly to the operation of only one-line at Togliatti, Tomet produced 170,600 tons of methanol in the first five months against 387,100 tons in the same period in 2020. Tomet remains under control of bankruptcy management as part of the legal proceedings involving creditors. Production should increase at the plant over the next few months as long as two lines of capacity are allowed to operate. Moreover, arrangements are being made to ship methanol by tanker from around September-October 2021 in addition to railway wagons.

Shchekinoazot achieved production volumes in the first five months of 415,500 tons against 400,800 tons in January to May 2020. Also, in the Tula Oblast Azot at Novomoskovsk increased production from 97,800 tons to 122,300 tons and undertook a maintenance shutdown in July. Ammoni in Tatarstan increased

methanol production from 38,200 tons in the first five months in 2020 to 57,200 tons for the same period in 2021. The increase was partly due to the introduction of new owners.

Russian Methanol Exports by Producer (unit-kilo tons)		
Producer	***Jan-May 21***	***Jan-May 20***
Azot Nevinnomyssk	3.6	0.0
Azot Novomoskovsk	44.1	23.4
Akron	4.3	4.5
Metafrax	189.7	192.7
Sibmetakhim	213.1	174.2
Tomet	52.3	123.1
Shchekinoazot	293.9	239.7
Ammoni	0.0	0.0
Total	801.0	757.6

Russian methanol exports, Jan-May 2021

Reported producer export shipments of Russian methanol amounted to 801,000 tons in the period January to May 2021 against 757,600 tons in the same period in 2020. The average ratio of exports as a share of production achieved 43% over the five-month period in 2020. Tomet reduced exports from 123,100 tons in the first five months in 2020 to 52,300 tons this period this year, whilst declines by other producers were much smaller.

The imbalance in the market created by the lower production at Tomet did not greatly affect export volumes. Metafrax reduced exports from 192,700 tons in the first five months in 2020 to 189,700 tons in the same period in 2020 whilst Sibmetakhim increased exports from 174,200 tons to 213,100 tons. The largest Russian exporter was Shchekinoazot shipping 293,900 tons versus 239,700 tons in January to May 2020.

Russian Methanol Export Destinations (unit-kilo tons)		
Country	***Jan-May 21***	***Jan-May 20***
Belarus	54.9	36.9
Finland	413.3	401.5
Kazakhstan	9.6	21.3
Latvia	6.7	4.7
Lithuania	30.8	26.9
Netherlands	37.0	72.6
Poland	134.4	158.1
Romania	28.6	26.7
Slovakia	105.3	57.3
Turkey	6.4	19.3
UK	0.0	28.5
Ukraine	27.1	14.3
Others	12.0	2.2
Total	867.3	882.9

From customs reported data, which differs from producer reported data, exports totalled 867,300 tons in the first five months against 882,900 tons in 2020. Exports to Finland totalled 413,300 tons in the first five months against 401,500 tons in the same period in 2020.

Poland reduced shipments from Russia to 134,400 tons in January to May 2021 against 158,100 tons in the same period in 2020, whilst Slovakia increased volumes from 57,300 tons to 105,300 tons. Romania increased imports from Russia from 26,700 tons to 28,600 tons in January to May 2021.

Russian methanol domestic sales, Jan-May 2021

Merchant sales of methanol on the Russian domestic market amounted to 676,500 tons in the first five months in 2021 against 576,600 tons in the same period in 2020. Despite mostly operating one line in the first five months Tomet's sales from the Togliatti plant still amounted to 118,100 tons against 171,400 tons last year. Sibmetakhim or Gazprom Methanol increased domestic shipments from 100,100 tons to 121,900 tons whilst Shchekinoazot increased domestic sales from 32,000 tons to 49,500 tons.

Russian Methanol Domestic Sales (unit-kilo tons)		
Producer	***Jan-May 21***	***Jan-May 20***
Azot Nevinnomyssk	8.9	7.5
Azot Novomoskovsk	77.6	54.4
Metafrax	170.3	126.7
Sibmetakhim	184.8	141.8
Tomet	118.1	171.4
Shchekinoazot	79.8	58.0
Ammoni (Mendeleevsk)	36.9	16.7
Total	676.5	576.6

Metafrax increased shipments to the domestic market from 126,700 tons to 170,300 tons. Metafrax supplied 31,900 tons to Nizhnekamskneftekhim to support higher isoprene production.

Nizhnekamskneftekhim increased purchases of merchant methanol from 76,200 tons in January to May 2020 to 127,600 tons in the same period in 2021. This rise was due to the increased production of formaldehyde and isoprene rubber at Nizhnekamsk.

Togliattikaucuk reduced methanol purchases from 61,100 tons in January to May 2020 to 51,200 tons due mainly to lower MTBE production. Gazprom increased purchases of methanol for gas hydrates in Siberia from 59,000 tons in the first five months in 2020 to 85,500 tons in 2021. In the area pf urea-formaldehyde resins Kronospan and Metadynea recorded higher production volumes in the first five months which led to

higher methanol purchases. Kronospan bought 53,400 tons in January to May 2021 against 31,400 tons last year and Metadynea increased purchases from 28,700 tons to 40,400 tons.

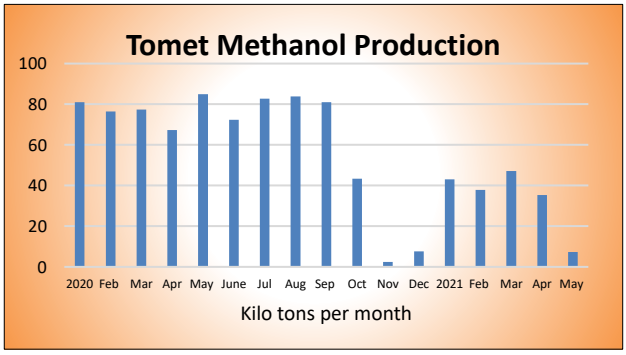
Russian Methanol Domestic Buyers (unit-kilo tons)		
Consumer	***Jan-May 21***	***Jan-May 20***
Nizhnekamskneftekhim	127.6	76.6
Togliattikaucuk	51.2	61.1
Uralorgsintez	21.1	23.7
SIBUR-Khimprom	12.5	7.4
SIBUR Tobolsk	12.8	15.5
Ektos-Volga	3.6	23.2
Omsk Kaucuk	36.7	32.2
Novokuibyshevsk NPZ	12.1	16.9
Uralkhimplast	8.8	8.4
Slavneft-Yanos	5.5	2.5
Metadynea	40.4	28.7
Kronospan	53.4	31.4
Gazprom	85.8	59.0
Khimsintez	7.7	4.0
Volzhsky Orgsintez	3.0	3.8
Others	194.4	183.2
Total	676.5	576.6

Tomet-current outlook

At some stage the assets owned under Tomet will require a new investor, but for the time being the methanol plants operate under the management appointed by the courts. Tomet was declared bankrupt on 3 March 2021 and placed under the control of the competitive manager Anatoly Selishchev on 9 March. The Eleventh Arbitration Court of Appeal on 7 June upheld the decision of the first two instances and confirmed the powers of the competitive administrator. The Supreme Court of Russia is now close to giving its verdict.

The Tomet case is inextricably linked to the Togliattiazot (ToAZ) case. The courts accuse the main owners of ToAZ which includes Vladimir and Sergey Makhlai and their Swiss partner Andrew Tsivi, of transferring the assets of ToAZ to Tomet for minimal or underestimated value. This included the transfer of the methanol units at ToAZ with a total capacity of 900,000 tpa.

At the same time, ToAZ covered all the costs associated with the maintenance and repair of Tomet's equipment, supplying it with raw materials and selling finished products, but the profit from all this went to the offshore company Triumph. Thus, the circumstances of the creation of Tomet are being investigated by the Investigative Committee of the Russian Federation.



The court ordered Tomet's owners (which have been prosecuted in their absence) to pay compensation to including 77 billion roubles directly to ToAZ and 10 billion roubles to Uralkhim, which is a minority shareholder of the company.

Taking into account Tomet's liabilities of 87 billion roubles, the restoration of Tomet's solvency is impossible, as the debt is nine times higher than its balance sheet. It is expected that at the end of the arbitration and valuation, Tomet's assets will be sold in open bidding, which will help to partially compensate the damage caused by the owners of Togliattiazot to the company and its non-controlling shareholders. This gives Tomet an opportunity to acquire a new Russian investor who will invest in the development of production, take care of industrial security and pay taxes in Russia.

Tomet Methanol Market Balance (unit-kilo tons)		
	Jan-May 21	***Jan-May 20***
Production	163.3	302.2
Domestic Sales	118.1	171.4
Exports	52.3	123.1
Total	-7.1	7.7

New methanol terminal for Shchekinoazot at Kotka

Fertilog Group and Shchekinoazot have commissioned a new terminal, Tanking Terminal Kotka (TTK), at the port of the Finnish port of Kotka for the second time in 2021. The first new terminal, opened in January 2021, is intended for the transfer of bulk urea, whilst the second TTC will be used for the overflow of methanol produced by Shchekinoazot. The investment is expected to will significantly improve the export capacity of the company. TTC has the facility to store 20,000 tons of methanol at a time, whilst providing a high rate of discharge of cargo from tanks and a high rate of loading of ships on two berths.

Tanking Terminal Kotka for Shchekinoazot's methanol distribution

New rail cars for Shchekinoazot's methanol logistics

The capacity of the new terminal is 600,000 tpa of methanol. Fertilog Group has been operating in Finland for more than ten years and during this time has transported more than 10 million tons of various cargoes to the port of Hamina Kotka. In 2021 Shchekinoazot plans to complete construction and commission new production of methanol with a capacity of 500,000 tpa.

In May Shchekinoazot and the wagon company OVK (TikhvinKhimMash) signed a contract in May for the supply of 132 new-generation tank cars for methanol transportation. The shipment of the entire batch is planned to be delivered by the end of the third quarter of this year.

Shchekinoazot M-500 launch 2021

Shchekinoazot announced in mid-July that it is preparing to launch its third methanol plant M-500 by the early part of the fourth quarter. Official commissioning is scheduled for autumn, and builders are currently in a hurry to finish all the work.

There are about three months from the middle of July until production of the first methanol. In addition to the online format, face-to-face operational meetings on all construction issues and other urgent tasks are held directly at the M-500 site. The new M-500 plant is using technology licensed by Haldor Topsoe differs from the existing two methanol plants in terms of power and compact appearance. Due to the technological solutions provided by the licensor, the plant is located in a relatively small area particularly compared to the M-450/A-135.

Environmental opposition to methanol projects

Opposition to methanol projects in Russia is challenging investors to consider all sides of plant construction in terms of location and impact on environment. Already this year the Ayano-May methanol project in northern part of the Khabarovsk Kray was cancelled after a referendum was granted and over 90% opposed its construction. Other projects where residents see no economic benefits from methanol plants, but only adding to environmental problems, include Taman, Nakhodka, and Arkhangelsk. The problem for investors in selling the project ideas to local people is partly due to a lack of trust which permeates deep into Russian society. Public hearings are taking place for major projects are taking place for the Taman and Nakhodka projects, but these tend to increase the opposition to projects rather than reduce it.

Ruskhim methanol project

Salavatneftehimproject and Ruskhim have signed a contract for the development of project documentation for the methanol project in the Nenets Autonomous Region, with a production capacity of 5,000 tons per day (1.8 million tpa). The target year for production is 2025.

Previously, Ruskhim signed a contract to purchase a license to use Air Liquide methanol technology and a contract to design the main technological equipment for he methanol plant. The Salavatneftehimproject Design Institute serves as the General Designer of the new vertically integrated gas-chemical complex of deep natural gas processing and methanol production. The key components of the complex include the construction of a methanol plant, methanol pipeline and the creation of export port infrastructure in the area of Indiga, with the possibility of access to the Northern Sea Route.

Ruskhim agreed in June to grant up to 25% of shareholding interests for the methanol project to the Russian Direct Investment Fund (RFPI). The plant for the production of methanol with a capacity of 1.8 million tpa is to be created on the basis of Korovinskoye and Kumzhinskoe fields (licenses from Pechora LNG) with a

total reserve of 195 billion cubic metres of gas. The total investment can amount to more than 200 billion roubles, and the launch is scheduled for 2026. In recent years, plans to build a non-freezing port in Indiga have been under consideration which is critical for the Ruskhim methanol project.

Organic chemical

Russian N-Butanol Production (unit-kilo tons)		
Producer	***Jan-May 21***	***Jan-May 20***
Angarsk Petrochemical company	14.2	7.5
Azot Nevinnomyssk	5.9	13.9
Gazprom neftekhim Salavat	27.2	25.0
SIBUR-Khimprom, Perm	10.4	10.6
Total	57.7	57.0
Russian Isobutanols Production (unit-kilo tons)		
Producer	***Jan-May 21***	***Jan-May 20***
Angarsk Petrochemical Company	7.4	7.6
Gazprom neftekhim Salavat	14.4	16.1
SIBUR-Khimprom, Perm	11.3	26.3
Total	33.1	50.0

Russian butanol production Jan-May 2021

Russian normal butanol production totalled 57,700 tons in January to May 2021, against 57,000 tons in the same period in 2020. Gazprom neftekhim Salavat was the largest Russian producer, increasing production to 27,200 tons against 25,000 tons in January to May 2020.

Isobutanol production in Russia dropped from 50,000 tons to 33,100 tons in the first five months in 2020 during which Gazprom neftekhim Salavat reduced production from 16,100 tons to 14,400 tons, and SIBUR-Khimprom reduced from 26,300 tons to 11,300 tons. Angarsk Petrochemical Company stopped the production of butanols on 26 June for planned maintenance which is scheduled to finish by the end of July.

Russian domestic butanol sales, Jan-May 2021

Russian Butanol Consumption (unit-kilo tons)		
Consumer	***Jan-May 21***	***Jan-May 20***
Akrilat	4.6	6.4
Dimitrievsky Chemical	9.5	9.0
Volzhskiy Orgsintez	4.1	3.8
Roshalsjy Plant of Plasticizers	1.3	0.9
Others	5.0	6.9
Total	24.5	26.9

Russian Butanol Domestic Sales (unit-kilo tons)		
Producer	***Jan-May 21***	***Jan-May 20***
Gazprom n Salavat	4.4	1.6
SIBUR-Khimprom	7.1	10.9
Angarsk Petrochemical	13.2	12.4
Azot Nevinnomyssk	0.3	0.7
Totals	25.1	25.6

Merchant butanol sales on the Russian domestic market dropped in the first five months to 25,100 tons from 26,900 tons in January to May 2020. Deliveries directly from Russian producers dropped to 20,000 tons in the first five months, with the remainder made up by traders. The largest supplier of butanols to the domestic merchant market in the first five months in 2020 came from Angarsk Petrochemical which shipped 13,200 tons against 12,400 tons in the same period in 2020. Most of the butanols produced at Angarsk are currently sold on the merchant market despite the geographical distances from the customers.

The largest butanol buyer on the domestic market in the first five months in 2021 was Dimitrievsky chemical which took 9,500 tons against 9,000 tons in January-May 2020 whilst Akrilat at Dzerzhinsk reduced purchases from 6,400 tons to 6,400 tons.

Russian Acetone Production (unit-kilo tons)		
Producer	***Jan-May 21***	***Jan-May 20***
Ufaorgsintez	20.0	16.3
Kazanorgsintez	22.4	21.4
Novokuibyshevsk Petrochemical	19.1	20.3
Omsk Kaucuk	6.3	10.3
Total	67.9	68.3

Russian acetone production and exports, Jan-May 2021

Russian acetone production in the first five months in 2021 amounted to 67,900 tons against 68,300 tons in the same period in 2020. Omsk Kaucuk produced 6,300 tons of acetone against 10,300 tons in the same period in 2020 whilst Kazanorgsintez increased production from 21,400 tons to 22,400 tons. Acetone exports from Russia totalled 25,200 tons in the first five months in 2021 against 26,360 tons in the same period in 2020.

Revenues from acetone exports rose from $9.8 million to $17.4 million after prices rose sharply this year. The domestic market is benefiting from upward pressure from European prices and all producers have increased values in the past few months. Supply on the domestic market is tighter this year due to increased captive consumption at Kazanorgsintez which has capacity for Bisphenol A production. Omsk Kaucuk is facing technical problems in production which is limiting availability for exports and domestic sales.

Russian TDI-MDI Imports

Russian TDI Imports (unit-kilo tons)		
Country	***Jan-May 21***	***Jan-May 20***
Belgium	0.2	0.1
China	8.6	1.2
Germany	1.0	4.6
Hungary	3.7	4.2
Japan	0.1	0.4
Netherlands	1.1	0.7
Saudi Arabia	1.0	2.7
South Korea	5.2	1.5
US	3.2	1.1
Others	0.1	0.3
Total	24.3	16.8

Russian TDI-MDI imports, Jan-May 2021

Russian TDI imports totalled to 24,300 tons in the first five months in 2021 against 16,831 tons in the first same period in 2020. Values of Russian TDI imports increased from a total of $34.839 million in January to May 2020 to $62.403 million in 2021. The main regions for Russian TDI imports included Moscow and Tatarstan.

China was the largest supplier of TDI to Russia in the first five months this year shipping 8,599 tons for $8.060 million which compares against 1,177 tons in January to May 2020.

South Korea was the second largest supplier of TDI to Russia in the first five months this year shipping 5,233 tons against 1,483 tons in January to May 2020. Other important suppliers included Hungary which shipped 3,693 tons to Russia against 4,200 tons in January to May 2020 and the US which exported 3,191 tons against 1,100 tons in the first five months in 2020. TDI supplies from Germany and Saudi Arabia both declined this year.

Russian Imports of MDI (unit-kilo tons)		
Country	***Jan-May 21***	***Jan-May 20***
Belgium	8.0	5.6
China	16.0	11.1
Germany	10.4	5.5
Hungary	1.6	1.4
Japan	0.8	0.5
Netherlands	14.0	8.3
Saudi Arabia	13.5	11.8
South Korea	0.6	0.3
Others	4.0	0.1
Total	68.9	44.5

MDI imports into Russia amounted to 68,902 tons in the first five months in 2021 against 44,262 tons in the same period last year, with costs rising from $65.888 million to $148.980 million. Saudi Arabia increased shipments in the first five months from 8,284 tons last year to 13,977 tons whilst shipments from the Netherlands rose from 11,782 tons to 13,594 tons in the same period this year.

Other MDI suppliers included China which increased shipments from 7,322 tons in January to May 2020 to 6,190 tons in the 2021 and Germany which increased from 5,505 tons to 10,353 tons. The most important region for Russian MDI imports was the Vladimir Oblast which accounted for purchases of 28,210 tons in the first five months this year for $53.020 million.

Russian isocyanate import costs Jan-May 2021

TDI costs for Russian importers averaged $2547 per ton in the first five months against $2283 in the same period in 2020. MDI costs per ton for Russian imports rose from $1369 in the first five months in 2020 to $2119 in the same period this year.

SIBUR-MDI technology research

SIBUR began R&D into MDI in 2019 and since then the SIBUR Research Centre has improved Soviet technology and produced laboratory batches of the product. The SIBUR team is reportedly on the verge of the most risky and costly stage of the project involving the creation of demonstration capacity. If the company manages to enlist the support of the state, SIBUR will be able to move to the development of technologies at demonstration facilities from 2022 to 2024 and the construction of an integrated isocyanate complex of MDI and TDI in 2024-2028. If the project is successful, Russia could produce up to 170,000 tpa of MDI.

Ukraine

Ukrainian polymer trade Jan-May 2021

In the first five months of the year, polypropylene imports into the Ukrainian market amounted to 49,800 tons, 4% more than in the same period in 2020 when the total amounted to 47,700 tons. Homopolymer imports into the Ukrainian market amounted to 36,400 tons in the first five months, less than the 37,000 tons in the same period in 2020. Block copolymer imports jumped from 4,100 tons to 5,300 tons and random copolymers rose from 5,800 tons to 6,600 tons.

In the first five months of the year, imports of polyethylene to the Ukrainian market reached 103,300 tons against 112,700 tons in January to May 2020. HDPE imports declined from 46,600 tons to 33,100 tons whilst LDPE imports were unchanged at 31,600 tons. LLDPE imports increased from 29,300 tons to 31,700 tons and EVA imports amounted to 6,900 tons against 5,400 tons a year earlier.

Ukrainian Polymer Imports (unit-kilo tons)		
Product	***Jan-May 21***	***Jan-May 20***
PVC	10.6	17.8
LDPE	31.6	31.6
LLDPE	31.7	29.8
HDPE	33.1	46.6
Ethylene Vinyl Acetate	6.9	5.0
PP	49.7	47.8

Imports of PVC to Ukraine decreased by 41% in the first five months of 2021, compared to the same period in 2020 and amounted to about 10,600 tons. Export sales of Ukrainian PVC did not increase despite record high prices in several regions of the world. In the first five months in 2021, 90,000 tons of PVC were shipped for export by Karpatneftekhim against 89,600 tons in the same period in 2020.

Karpatneftekhim-production and trade Jan-May 2021

Karpatneftekhim increased exports of propylene in the first five months in 2020 from 43,500 tons to 43,800 tons, whilst benzene exports rose from 11,600 tons to 41,500 tons. The largest share of propylene shipments was exported to Poland. Karpatneftekhim has encountered several stoppages this year due the high cost of raw materials combined with low prices for polyethylene.

Karpatneftekhim Petrochemical Exports (unit-kilo tons)		
Product	**Jan-May 21**	***Jan-May 20***
Propylene	43.8	43.5
Benzene	41.5	11.6

Karpatneftekhim Production (unit-kilo tons)					
Product	***Jan***	***Feb***	***Mar***	***Apr***	***May***
Benzene	9.3	8.8	9.2	7.1	5.1
Ethylene	21.0	19.0	17.3	20.6	16.4
Propylene	11.8	8.6	7.6	9.4	7.1

All of the benzene produced by Karpatneftekhim is exported. From 10 June 12 to June 5,600 tons of benzene were loaded onto the YM Mercury tanker in the Ukrainian port of Chornomorsk. According to ship brokers, the cargo will be delivered to the port of Tees (UK). The batch is likely to be shipped to Huntsman for the production of aniline. This is the second delivery on this route in 2021. Exports to Russia totalled 3,200 tons in the first five months against 1,500 tons in 2020.

Belarus

Belarussian Petrochemical Production (unit-kilo tons)		
Product	***Jan-May 21***	***Jan-May 20***
Ethylene	56.2	32.6
Propylene	36.1	20.5
Benzene	43.6	35.1
Caprolactam	31.0	27.4
OX	12.9	8.4
PX	20.1	23.7
Methanol	38.3	23.4

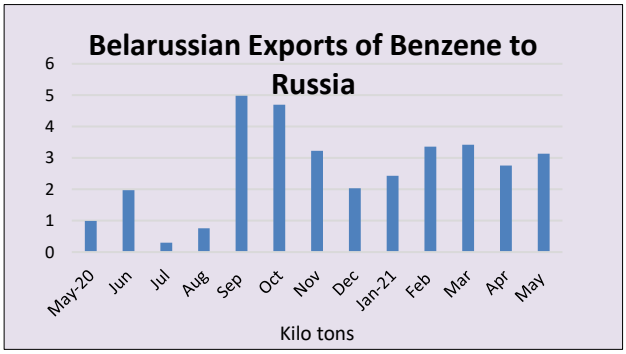
Belarussian chemical production, Jan-May 2021

Ethylene production in Belarus totalled 56,200 tons in the first five months in 2021 against 32,600 tons in the same period in 2020. Propylene production increased from 20,500 tons to 36,100 tons, whilst caprolactam production amounted to 31,000 tons against 27,400 tons.

Paraxylene production at the Naftan refinery decreased in the first five months in 2021 to 20,100 tons against 23,700 tons in the same period in 2020. Belneftekhim intends to sell about 8,500 tons of C4s with shipment from July to September 2021. Price and

delivery on FCA Novopolotsk terms. Delivery is possible in all directions, except for the ports of Lithuania and the territory of Iran.

Due to the complexities of US sanctions Transneft has not reserved any pipeline volumes for transporting oil to the Belarusian refinery Naftan in the third quarter from Rosneft and Surgutneftegaz for the third quarter of 2021. Transneft informed that it would still transport 2.36 million tons of crude from its suppliers, including Rosneft, Surgutneftegaz, Tatneft and Lukoil, to Belarus's second large refinery, Mozyr, which the US sanctions had not targeted. Unlike Naftan, which is a 100% Belarus co-owns the Mozyr refinery with Russia's Slavneft, a 50-50 joint venture between Rosneft and Gazprom Neft.



Rosneft and the other Russian energy companies' decision to comply with the US sanctions against Belarus was not particularly exceptional. Last March, for instance, Rosneft fully adhered to the US sanctions targeting Venezuela.

Moreover, while deprived of a significant buyer of their crude exports, Russian oil companies actually stand to benefit from the US sanctions on Naftan. They will enjoy less competition from Belarus in critical markets, including the European Union and Ukraine. These two destinations had accounted for almost all Belarusian petroleum product exports in the first four months of 2021.

Central Asia

Turkmengaz-polyvinyl acetate project

Turkmengaz has outlined plans to build a gas chemical plant at Dashoguz Velayat in the north of Turkmenistan for the production of polyvinyl acetate. The project is planned to be implemented on the basis of direct investments with the terms of production sharing. The main field of application of polyvinyl acetate is the production of polyvinyl acetate adhesive (PVA glue), water-emulsion and acrylic paints, as well as further processing into polyvinyl alcohol and polyvinyl acetal.

Kazakh Polyethylene Imports (unit-kilo tons)		
Polymer	***Jan-May 21***	***Jan-May 20***
HDPE	43.0	54.6
LDPE	8.5	8.5
LLDPE	5.9	5.9

Kazakh polyethylene imports Jan-May 2021

In the first five months in 2021, imports of polyethylene to Kazakhstan decreased by 20% versus 2020 and amounted to 57,500 tons. HDPE imports dropped 27% in the first five months to 42,000 tons whilst LDPE imports were unchanged at 8,500 tons and LLDPE amounted to 5,900 tons.

Kazakhstan-green hydrogen

The German investor and project developer SVEVIND Energy GmbH and the Kazakh Invest National Company have signed a memorandum of understanding to build mega-sized facilities for producing green hydrogen by utilizing wind and solar power in the Republic of Kazakhstan. SVEVIND plans to install wind and solar farms with a total capacity of 45 gigawatt (GW) in mainly steppe areas in west and central Kazakhstan. The green electricity will feed 30 GW of electrolyzers to produce about 3.0 million tpa of green hydrogen every year. The green hydrogen can either be exported directly to growing Eurasian markets or used locally to produce high-value green products, like ammonia, steel or aluminum.

Kazakh polypropylene project-commissioning scheduled for October 2021

Kazakhstan Petrochemical Industries (KPI) has exceeded 90% of the construction schedule for its long-planned polypropylene project at the National Industrial Petrochemical Technopark in the Atyrau region. While construction works on main processing plants and offsite installations, including metal structures, mechanical equipment, process pipelines, and tanks remains in progress, the laying of concrete foundations and installation of underground pipelines is now complete. The transportation infrastructure has also been completed including 11.6 km of railway and 4 km of roads.

Official commissioning is scheduled to start in October 2021 and start-up is to take place during the first-quarter 2022. Phase 1 of the Integrated Gas Chemical Complex comprises a propane dehydrogenation (PDH) unit to convert 629,000 tpa of propane from Tengiz oil field into propylene feedstock for the polypropylene (PP) plant. The polypropylene plant will use Lummus Novolen Technology GMBH process technology to produce 500,000 tpa for supply to domestic and export markets. A second phase planned for the Integrated Gas Chemical Complex at Atyrau has been delayed by various factors. However, this represents the largest part of the investment involving a gas separation plant that will supply ethane to a proposed 1.25 million tpa polyethylene plant.

The polypropylene unit is located 33 kilometres from Atyrau, and 8-9 kilometres north of the Karabatan railway station. The largest producer of liquefied gas in Kazakhstan, Tengizchevroil, will be the propane supplier to the plant. The Gas Chemical Complex at Atyrau has reportedly contracted the entire volume of polypropylene for shipments to China, Turkey and Europe.

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