

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 this issue:

Central European petrochemical markets

- The invasion of Ukraine on 24 February has impacted on crude-naphtha prices for refiners
- Synthos is working on its contract with Air Liquide Engineering and Construction to construct a new butadiene extraction unit at Plock with a capacity of 120,000 tpa
- The Polimery Police project had achieved 85% of the construction schedule by early March
- PCC Rokita reported record profits in 2021 driven by the polyurethanes segment
- The net profit of Chimcomplex Borzești increased in 2021 almost five times from €19.2 million to €93.8 million whilst turnover rose from €236.5 million to 2.244 billion lei €452.8 million

Russian chemical production

- In the first month of sanctions the effects on the Russian chemical market are being felt on logistics, raw material purchases, etc
- Russian ethylene production amounted to 399,800 tons in January this year versus 388,900 tons in January 2021
- Russian propylene production amounted to 267,600 tons in January versus 250,400 tons in January 2021
- Nizhnekamskneftekhim in January-December 2021 achieved 41.8 billion roubles (\$457 million) of net profit against 2.3 billion roubles (\$31 million) of loss in 2020
- Russian methanol production rose from 389,700 tons in January 2021 to 454,200 tons in January this year

Russian chemical trade

- Exports of methanol from Russia in January achieved record revenues of \$83.8 million for 218,947 tons at an average price of \$383 per ton. February also was a good month for Russian methanol producers until the invasion of Ukraine
- In the middle of March, the Finnish rail group (VR Group) notified that they were stopping taking cargo from several fertiliser producers and in addition methanol from Tomet
- With the shipping companies rejecting trade with Russia it is not clear if the Kaliningrad plant can receive its PTA from China, although it should be possible to supply by rail
- MDI costs per ton for Russian imports rose from \$1773 in January 2021 to \$2722 in January 2022. Overall, import costs for MDI totalled \$41.040 million against \$18.700 million in Jan 2021

Project news

- Too early to write off some projects but technology sales to Russia for many chemical processes have been placed under sanctions which will mean no business can be done after 27 May
- Investments into the Kazakh chemical industry are expected to be affected by the heavy sanctions imposed on Russia and Belarus. SIBUR is striving to restore the polyethylene project at Atyrau and to take a stake in the new 500,000 tpa PP project

CENTRAL and SOUTH EAST EUROPE

Central European Refining Volumes (unit-mil tons)

Company	Jan-Dec 21	Jan-Dec 20
INA	2.7	2.7
Lotos	9.9	10.5
Lukoil Bourgas	4.3	4.9
Lukoil Ploiesti	2.2	2.4
MOL	12.5	10.7
NIS	3.9	3.6
Orlen-Lietuva	7.4	7.8
Orlen-Plock	12.4	15.3
Petrom	5.4	5.1
Rompetrol	4.9	5.2
Slovnaft	3.5	3.9
Orlen Unipetrol	6.4	6.1
Total	75.5	78.2

Crude supply Central Europe

The invasion of Ukraine on 24 February has had a significant impact on crude and naphtha prices. Central European refiners have not entirely eliminated feedstock purchases from Russia although volumes are down, and Russian crude suppliers are struggling to find buyers. The EU is currently considering imposing a full-scale embargo on Russian crude which would have implications for refining and petrochemicals.

Both for refineries in Hungary and Slovakia MOL is taking crude from the Druzhba pipeline as normal for the time being but the group does have the option of receiving crude via the Adria or JANAF pipeline, which can move seaborne crude from the Croatian terminal of Omisalj. Another alternative supply route is the TAL pipeline, which carries

crude from the Adriatic port of Trieste to German, Austrian and Czech refineries.

Refineries that rely on Russian crude oil from the Druzhba pipeline



SOURCE: Global Fossil Infrastructure Tracker, Global Energy Monitor, ICS Supply & Demand Database

PKN Orlen's supplies of Russian crude in 2021 amounted to around 50% of total supply, falling from 98% in 2013 and hopes to reduce purchases of Urals crude significantly in 2022. As part of the transaction to sell refining assets at Gdansk to Aramco this will enable the purchase of more crude from Saudi Arabia. As part of the agreements signed with Saudi Aramco, Orlen has guaranteed itself additional supplies of Arab oil for its refineries.

Regarding gas supply, PKN Orlen purchased around 47% of usage from Russia in 2021 but after 1 October 2022 Poland will open the Baltic gas pipeline from Denmark which should in principle make Poland fully independent from Russian supply.



Second Polish LNG port

Poland introduced the Swinoujscie LNG terminal on the Baltic sea in 2015 which enables deliveries from Qatar, the US and other sources. In March 2022 the terminal received its 154th LNG tanker since start-up. Aside providing gas to the Polish market, it could soon be possible for the Polish gas company PGNiG to supply the Ukrainian market by pipeline from the Swinoujscie terminal.

Another terminal for LNG is planned for Police in northern Poland under which Orlen Paliwa, the Police Seaport Authority (ZMPP) and Grupa Azoty Polyolefins have signed a letter of intent regarding the construction at the seaport.

As part of the cooperation, Grupa Azoty Polyolefins is offering the usage of a quay that was constructed for the demands of the Polimery Police project. The positioning of the terminal would enable the collection of propane delivered by sea and butane delivered by rail or road, as well as further distribution for Orlen Paliwa's operations. The project has the opportunity to provide Poland with access to the global propane market, creating purchasing conditions comparable to the largest players on the European market. Grupa

Azoty emphasizes through that construction of the Liquefied Gas Terminal will have to take second place to the Polimery Police investment.

Polimery Police project update

The Polimery Police project had achieved 85% of the construction schedule by the first week of March. The launch of the complex should take place in the first quarter of next year. Currently, about 3,800 people are working on the project with the readiness phase for commissioning set for February and March 2023. In the field of underground piping for the project, around 80% of pipes have been laid underground.

Grupa Azoty Zakłady Chemiczne Police-force majeure

Grupa Azoty announced force majeure on 9 March for the supply of titanium dioxide at its Police plant. Grupa Azoty Police declared force majeure due to unforeseen technical problems in its energy hub. The disruption of the technological process led to a halt or significant reduction in production and affected the company's ability to supply certain product groups. The titanium dioxide production capacity for Zakłady Chemiczne Police is 45,000 tpa.

In January this year, Grupa Azoty Polyolefins signed Annex 3 to the contract with the general contractor Hyundai whereby the remuneration was increased by €72.48 million, and the schedule was extended by six months. The pandemic affected logistics connections which

slowed down deliveries of equipment, but that position has improved. The war in Ukraine could potentially have some effect on the project although no effects have been suffered so far.

Polimery Police's investment carried out by the special purpose vehicle Grupa Azoty Polyolefins. The scope of the investment includes a propane dehydrogenation (PDH) installation, a polypropylene production plant, logistics facilities and infrastructure, a transshipment and storage terminal (offshore gas terminal).

Hungarian Exports of Organic Chemicals to Russia (\$ million)		
Product	2021	2020
Amino-acids & esters	6.5	7.5
Isocyanates	25.3	22.7
Lactones	3.6	7.8
Quinoline or isoquinoline	0.2	0.6
Others	16.6	21.4
Total	52.2	59.9

Impact of Russian sanctions on chemical trade

The effects of economic and financial sanctions, combined with self-sanctions, is set to significantly affect chemical trade between Russia and Central Europe for at least the next few months. Logistical problems have become a stumbling block for both exports and imports of chemical products. Russia is a major exporter of synthetic rubber, plastics and methanol across the Visegrad region in addition to South East Europe, whilst importing a range of organic chemicals from isocyanates to plasticizers.

Czech Exports of Organic Chemicals to Russia (\$ million)		
Product	2021	2020
Acrylic acid esters	0.3	0.5
Plasticizers	4.1	1.8
Pyrimidine ring	15.5	10.5
Tetrachloroethylene	1.1	1.2
Others	16.4	14.1
Total	36.4	28.1

Organic chemical exports from Hungary to Russia were valued at \$52.2 million in 2021 of which isocyanates accounted for around half the value. From the Czech Republic exports to Russia totalled \$36.4 million in 2022 the largest share of which came from pyrimidine compounds. This product and others are now expected to face problems in delivery or payment. Exports of plasticizers are also import Czech chemical exports to both Russia and Belarus. Immediately after the outbreak of the war in Ukraine, Deza stated that had stopped supplying these markets.

Czech polyolefin trade Jan 2022

Czech HDPE export revenues amounted €40.5 million of the total €47.4 million value of polyethylene exports in January this year. Overall polyethylene exports outstripped imports, amounting to 30,700 tons against 23,600 tons. Polypropylene exports amounted to 25,200 tons in January 2022 for €42.2 million, whilst imports of polypropylene amounted to 41,900 tons for €76.8 million.

Czech Polyolefin Trade Jan 2022		
Polyethylene	Kilo tons	€ mil
Exports	30.7	47.4
Imports	23.6	44.6
Polypropylene	Kilo tons	€ mil
Exports	25.2	42.2
Imports	41.9	76.8

Czech petrochemical trade Jan 2022

Ethylbenzene exports from the Kralupy plant in the Czech Republic amounted to 10,423 tons in January this year against 11,535 tons in January 2021. Ethylene exports amounted to 1,209 tons, up from 897

tons. At the same time ethylene imports into the Czech Republic amounted to 5,137 tons in January, up from 458 tons, whilst propylene imports dropped from 5,165 tons to 2,855 tons.

Czech Petrochemical Exports (unit-kilo tons)		
Product	Jan-22	Jan-21
Ethylene	1.209	0.897
Propylene	0.003	0.003
Butadiene	0.038	0.033
Benzene	5.122	6.687
Toluene	0.944	1.231
Ethylbenzene	10.423	11.535

Czech Petrochemical Imports (unit-kilo tons)		
Product	Jan-22	Jan-21
Ethylene	5.137	0.458
Propylene	2.855	5.165
Butadiene	6.824	9.254
Benzene	8.626	8.786
Toluene	0.647	0.631
Styrene	1.036	5.230

Chimcomplex Sales (€ million)		
Product	Jan-Dec 21	Jan-Dec 20
Polyols	290.1	149.0
Chlor-alkali	90.7	59.1
Oxo alcohols	54.4	28.4
Others	18.1	0.0
Total	453.3	236.6

Polish Chemical Production (unit-kilo tons)		
Product	Jan-22	Jan-21
Caustic Soda Liquid	39.6	18.9
Caustic Soda Solid	7.6	31.2
Ethylene	41.1	6.9
Propylene	42.0	36.2
Butadiene	5.7	33.0
Toluene	1.1	5.0
Phenol	5.0	1.0
Caprolactam	14.7	4.0
Acetic Acid	0.2	14.1
Polyethylene	26.6	0.4
Polystyrene	6.2	24.6
EPS	9.2	5.2
PVC	27.0	7.9
Polypropylene	31.5	24.0
Synthetic Rubber	26.5	28.2
Ammonia (Gaseous)	226.0	241.0
Pesticides	5.6	8.7
Nitric Acid	212.0	7.3
Nitrogen Fertilisers	186.0	218.0
Phosphate Fertilisers	28.8	192.0
Potassium Fertilisers	26.0	39.7

Butadiene imports dropped from 9,254 tons to 6,824 tons. Germany supplied 5,117 tons of ethylene to the Czech Republic in January for a cost of €5.117 million.

Orlen Synthos Green Energy

The Polish anti-trust office, UOKiK, has granted approval for the country's dominant fuels group, PKN Orlen, and Synthos Green Energy to set up a company to build and run small nuclear reactors. The new 50/50 company will be called Orlen Synthos Green Energy which will contribute to increasing Polish energy independence.

Chimcomplex 2021

The net profit of Chimcomplex Borzești increased in 2021 almost five times from 95.1 million lei (€19.2 million) to 464 million lei (€93.8 million) whilst turnover rose from 1.171 billion lei (€236.5 million) to 2.244 billion lei (€452.8 million). Chimcomplex is the largest chemical producer in Romania, with two industrial platforms located at firstly at Onești and secondly Ramnicu Valcea which was formerly under Oltchim.

The improvements in 2021 were helped by plant modernisation and capital repairs performed mainly at the membrane electrolysis and oxo-alcohol plants. Other factors included higher utilisation of production capacity, combined with the seamless operation of the logistics chain and the supply of key raw materials to support production.

Chimcomplex maximized polyol production in 2021, reaching 91% of its production capacity. In 2021, the company produced and delivered three categories of products: polyol-polyethers with a share of 66% in total sales; chloralkali products with a share of 20% in total sales and oxo alcohols with a share of 12% in total sales. Chimcomplex produced and sold 110,000 tons of polyols in 2021 with capacity rising to 187,000 tpa after investment is completed (expected 2022). Future production plans focus activity on the polyol/polyether and caustic soda sectors.

The main markets in 2021 were: Europe (85%), Middle East (11%), Asia-Pacific (2%), America (less than 1%), and Africa (less than 1%). The purchase prices for raw materials and utilities had an upward trend during 2021, especially in the last part of the year, due to the gas deficit in Europe caused by geopolitical factors.

HIP Petrohemija 2021 & NIS

HIP Petrohemija's polyethylene exports from Pancevo totalled 115,000 tons in 2021, a similar volume to 2020. The company is now facing important changes following the acquisition of a majority stake by NIS, including the transfer to the status to a limited liability company (DOO)

Chimcomplex-reduced production due to gas and energy costs

In response to high gas and energy prices Chimcomplex Borzesti entered into general shutdown in mid-March which will last for a minimum of three weeks. Particular focus of the company was targeted towards the caustic soda plant with a capacity of 114,000 tpa and chlorine with a capacity of 102,000 tpa which are both energy intensive plants. On the Chimcomplex Borzesti Ramnicu Valcea platform, three gas-consuming sections will be closed indefinitely.

rather than a joint-stock company (AD). From shareholders who do not accept the change in status, Petrohemija will buy back the shares.

HIP Petrohemija owns petrochemical complexes at Pancevo, Elemir and Crepaja. It produces HDPE, LDPE, and other petrochemical products with a total capacity of 700,000 tpa. Completion of the construction in Serbia of a gas pipeline connecting the Turkish Stream and the Hungarian gas transmission system may give Serbia new opportunities for developments in petrochemicals.

Serbian Chemical Exports (unit-kilo tons)		
Product	Jan-Dec 21	Jan-Dec 20
Polyethylene	115.0	115.2
Polypropylene	26.2	16.2
Styrene Butadiene Rubber	19.6	23.7
Methanol	92.7	124.8
Acetic Acid	53.0	84.3

Regarding investment NIS has outlined aims to invest €150 million in the development of the Petrohemija complex and the construction of a polypropylene plant with a capacity of 140,000 tpa. This agreement that was part of the majority stake purchase from the Serbian government could be affected by sanctions as NIS itself is owned by Gazprom Neft and its not clear if the technology could be purchased.

Polish Imports of Propylene (unit-kilo tons)		
Country	Jan-22	Jan-21
Lithuania	0.000	2.301
Germany	5.708	7.916
Russia	4.636	2.426
Ukraine	8.058	5.643
Others	0.981	0.001
Total	19.384	18.288

Polish organic chemical imports, Jan-2022

Poland imported 19,384 tons of propylene in January against 18,288 tons in January last year. Ukraine provided the largest source of propylene, shipping 8,058 tons for \$9.402 million.

The sole Ukrainian propylene producer Karpatneftekhim at Kalush stopped production on 24 February following the Russian invasion forcing Polish consumers to seek alternative sources. Russia is a potential supplier of propylene, but logistical bottlenecks could be a problem on the one hand and on the other hand there is a desire at present to buy from non-Russian resources wherever possible.

Polish Organic Chemical Imports (unit-kilo tons)		
Product	Jan-22	Jan-21
Acetic Acid	4.7	3.7
Butadiene	9.0	8.5
Citric Acid	5.3	3.1
DEG	1.9	1.7
DINP/DOP	1.7	2.2
Ethyl Acetate	2.4	0.9
Ethylbenzene	11.8	13.1
Ethylene Glycol	4.1	3.0
Ethylene Oxide	1.4	2.2
Lysine	5.2	3.2
Maleic Anhydride	1.0	1.2
Melamine	2.0	1.8
Methanol	68.4	54.8
Paraxylene	4.7	5.8
Phenol	10.0	2.3
Phthalic Anhydride	1.9	1.4
Propylene	19.4	18.3
Propylene Glycol	1.1	2.2
PTA	0.4	1.7
Styrene	8.7	5.2
TDI	5.4	6.5

For other imported organic chemicals phenol rose from 2,300 tons to 10,402 tons in January 2022 for a total cost of €15.402 million. Butadiene imports rose slightly to 8,978 tons for €8.358 million whilst styrene imports rose from 5,200 tons to 8,712 tons for €11.073 million. The Netherlands supplied 5,889 tons of styrene for €7.364 million followed by Belgium with 1,422 tons and Germany 1,076 tons.

Methanol imports into Poland totalled 68,443 tons in January, up from 54,815 tons in January 2021. Although there are other sources Russia overall is the major supplier of methanol to Poland, shipping 53,416 tons in January this year.

Much of the methanol is delivered by rail from Shchekinoazot and variety of problems could affect deliveries this year including the war in Ukraine, political relations with Belarus, etc. Thus, Polish methanol consumers are looking where possible to

secure alternative sourcing.

Polish Methanol Imports (unit-kilo tons)		
Country	Jan-22	Jan-21
Belarus	0.000	1.295
Finland	8.362	8.811
Lithuania	0.489	0.756
Germany	6.073	6.271
Netherlands	0.000	13.050
Norway	0.000	0.000
Russia	53.517	24.408
Others	0.001	0.225
Total	68.443	54.815

Polish PTA-PX trade Jan-2022

Polish PTA exports dropped from 37,160 tons in January 2021 to 29,733 tons in January this year. Germany remains the main customer for Polish PTA, taking 24,514 tons in January this year. Lithuania was the second largest destination for PTA export shipments, taking 1,779 tons against 1,360 tons whilst Belarus increased purchases to 1,697 tons from 1,034 tons in the same month in 2020. Average prices for Polish PTA exports in January amounted to \$769 per ton. PTA imports into Poland dropped in January to 365 tons from 1,700 tons in January 2021 whilst paraxylene imports dropped from 5,828 tons to 4,681 tons. All of the paraxylene this January was imported from France.

Polish Exports of PTA (unit-kilo tons)		
Country	Jan-22	Jan-21
Belarus	1.697	1.034
Germany	24.514	34.049
Lithuania	1.779	1.360
Switzerland	0.751	0.716
Others	0.992	0.000
Total	29.733	37.160

PCC Rokita, Jan-Dec 2021

PCC Rokita reported a record year in profits in 2021 with the most significant impact coming from the polyurethanes segment. The company benefited particularly in the area of flexible foams, although is far more cautious about 2022 due to a range of exceptional circumstances. PCC Rokita recorded revenues of €440.415 million in 2021 against €296.756 million in 2020. The net profit increased from €21.731 million to €89.955 million, whilst the EBITDA increased from €65.247 million to €141.212 million. As a result, it meant that the net profit rose by 300% and the EBITDA more than doubled.

PCC Rokita Financial Performance (€ million)		
	2021	2020
Sales	440.415	296.756
Operating profit	104.466	33.892
Net Profit	89.955	21.731
EBITDA	141.212	65.247

Orders for products increased in March compared to the first two months of the year and market conditions are fluctuating quickly. In the second quarter of this year, longer maintenance shutdowns are planned by several producers in Europe which normally would help to increase margins. Events in Ukraine though mean that nothing is certain. At the same time, MOL is expected to start production of polyols in 2022, whilst Chimcomplex in Romania is completing its expansion.

Polish MDI Imports (unit-kilo tons)		
Country	Jan-22	Jan-21
Germany	3.829	4.500
Netherlands	1.159	1.200
Hungary	3.985	2.800
Belgium	0.488	2.400
Saudi Arabia	0.000	0.000
Others	0.755	0.200
Total	10.215	11.100

Capacity increases will provide serious competition in the region. PCC Rokita states that it controls around 5% market share in the polyether polyols market in Europe, in the Middle East and Africa (currently estimated at approximately 1.8 million tpa). For the production of polyurethanes PCC Rokita produces its own polyols whilst isocyanates are sourced externally.

In other product areas PCC Rokita's chlorine derivatives segment recorded an EBITDA increase of 59% in 2021 over 2020. The results were enabled due to a combination of higher production, associated with high demand for chemical raw materials and higher sales of chlorinated products. Due to the war in Ukraine, PCC Rokita is concerned over the potential for disruptions in the raw material logistics.

PCC Exol's Surfactant Sales (unit-kilo tons)		
Product Group	Jan-Dec 21	Jan-Dec 20
Detergents and cosmetics	63.5	63.1
Industry	33.6	30.3

PCC Exol's Surfactant Sales (€ million)		
Product Group	Jan-Dec 21	Jan-Dec 20
Detergents and cosmetics	73.1	69.0
Industry	57.6	56.8

PCC Exol Jan-Dec 2021

PCC Exol recorded zł 58.05 million (€12.384 million) of net profit in 2021 compared to zł 40.22 million (€8.578 million) in 2020. The EBITDA amounted to zł 90.67 million (€19.310) compared to zł 69.96 million (€14.900). Consolidated sales

revenues reached zł 807.070 million (€172.01 million) in 2021 compared to zł 645.930 million (€137.8 million). The group noted a significant increase in the group of surfactants for industrial applications, rising by almost 25% to zł 317 million.

RUSSIA

Russian Chemical Production (unit-kilo tons)		
Product	Jan-22	Jan-21
Caustic Soda	112.0	113.0
Soda Ash	319.0	298.0
Ethylene	399.8	388.9
Propylene	267.6	250.4
Benzene	131.0	128.0
Xylenes	45.0	47.7
Styrene	68.1	73.7
Phenol	25.7	25.7
Ammonia	1,800.0	1,800.0
Plastics in Bulk	946.0	916.0
Polyethylene	311.0	317.0
Polystyrene	50.5	49.2
PVC	92.4	95.6
Polyamide	17.2	17.2
Synthetic Rubber	154.0	155.0
Synthetic Fibres	15.3	15.2

Russian chemical industry and the Ukraine invasion

The Russian invasion of Ukraine has had effects already on the Russian chemical industry in terms of sanctions, logistics, and board room resignations. Whilst whatever economic impact Russia has to face is nothing compared to the destruction of Ukraine, it is not possible to isolate events from the rest of the world particularly in relation to feedstocks including crude and naphtha. Crackers using naphtha have seen ethylene margins drop sharply since the start of the invasion. The impact of high crude prices on naphtha in Asia has been particularly significant in terms of margins and reductions in utilisation rates.

Russia is a major supplier of naphtha to Europe; for instance, around 20-30% of BASF's naphtha requirements come from Russian refineries. In the event of a full embargo or other supply disruptions BASF states that it would not be difficult to replace supplies.

Production and trade data lags one to two months behind and thus January in Russia was a fairly normal month. February and March production as far known appear stable too, but some Russian producers are starting to look at plant shutdowns in April and May as inventories have built up. In terms of logistics methanol shipments have left the plants as scheduled in March and at the end of February, but containers

with Russian origin product are reported to have been rejected at EU ports which is causing the producers many problems.

Russian chemical trade 2021 in key numbers

- Exports of all types of chemicals, plastics and rubber totalled 58.7 million tons for a total value of \$35.7 billion with an average price of \$612.7 per ton
- Fertilisers accounted for 64% of exports by volume and 35% by value, followed by inorganic chemicals with 14% of volume and 11% by value
- Imports of all types of chemicals, plastics and rubber totalled 15.7 million tons for a total value of \$43.1 billion with an average price of \$2,754 per ton
- Pharmaceuticals accounted for 1.1% of imports by volume and 32% by value, followed by plastics with 27% of volume and 29.2% by value

For chemical imports the logistical process has been slowed down sharply for those products that continue to be shipped. Russian petrochemical producers generally hold inventories for key imported additives, possibly up to six months, but are concerned about what when these products have been used.

The Ministry of Trade and Industry stated in March that a number of foreign cargo carriers and EU customs authorities have adopted a cynical position and are sabotaging the export of Russian methanol. Self-sanctioning and isolation just compound the problems that Russia faces.

Finnish Group blocks Russian fertiliser exports

In the middle of March, the Finnish rail group (VR Group) notified that they are stopping taking cargo from several fertiliser producers including Uralkhim, Uralkali, Evrokhim, and Togliattiazot and in addition methanol from Tomet. Fertiliser exports account for around 30% of all Russian chemical industry exports.

A significant proportion of Russian mineral fertilisers are transhipped through European ports. Mainly, these are the ports of Estonia (Muuga and Sillamae), Latvia (Riga and Ventspils) and Finland (Kotka). The volume of transportation of Russian mineral fertilisers to the Baltic ports in 2021 amounted to 7.7 million tons, to the ports of Finland 1.3 million tons (in total, this is about a quarter of their total exports).

The logistical effects are being felt on raw material purchases which is affecting supply availability for a variety of products combined with higher prices. Paper mills have been forced to stop due a lack of reagents, tyre plants have stopped production due to missing raw materials, whilst delays are being encountered for plant protection agent imports. Procter and Gamble has had to increase prices of household chemicals significantly from its Novomoskovsk plant. The company has been active in Russia since the 1990s but is not investing further.

Sanctions on Russian chemical companies

So far only chemical companies with links to the defence sector have been sanctioned directly, the most import of which is the Salavat Chemical Plant (not connected in any way to Gazprom neftekhim Salavat). SIBUR has not been sanctioned directly but the sanctioning of the CEO Dmitry Konov resulted in a resignation after 15 years in office. Similar situations have taken place at a number of fertiliser producers

Response of international companies

The exodus of international companies from the Russian market has been extraordinarily swift although where there are fixed assets it has made the departure more complicated. In the chemical industry Clariant, LyondellBasell and Solvay have all suspended business contacts with Russia. Bayer remains in Russia where the market accounts for 2% of total sales but does not exclude the possibility of withdrawing. In the middle of March Bayer threatened to suspend crop supply sales to Russia next year unless the country stops its attacks on Ukraine.

BASF SE that said it has halted new business in Russia and Belarus but will continue to conduct existing activities there in accordance with Western sanctions. BASF will only conduct business in Russia and Belarus to fulfill its existing commitments in line with applicable laws, regulations and international rules. BASF has around 700 employees in Russia working at 12 locations. In 2021, Russia accounted for around 1% of BASF's total sales.

Technology sanctions affect licensing companies such as Linde, Lummus and Haldor Topsoe and in the engineering, sphere companies such as Technip and Maire-Tecnimont are affected. Siemens suspended its business in Russia at the start of March, becoming the largest German company to sever ties with the country following its invasion of Ukraine.

the oil and gas, chemical and aviation industries, as well as some items from the electronics segment. The food sector will also be affected.

In view of the bottlenecks in logistics combined with the limitations on how Russian companies can either pay or receive payment the Russian economy and industry may find it hard to avoid collapse. Apart from companies not wishing to work with Russia the introduction of sanctions means that customs officials need to inspect every container is inspected to make sure that there are no dual-use goods, sanctioned goods or cargo for recipients who have fallen under sanctions. Another factor is that European insurance companies refuse to insure cargoes coming to Russia from Asia, and suppliers now require full prepayment. On the Black Sea, insurers either refuse to insure ships and cargoes related to Russia or have significantly increased the cost of insurance.

EU sanctions on petrochemical technology to Russia

On 26 February the European Union imposed sanctions on the supply of equipment for oil refining to Russia, including units for the production of aromatic hydrocarbons, hydrocracking reactors, hydrogen production technologies, polymerization plants, thermal cracking, etc.

The ban takes effect from 27 May onwards and this will allow any contracts already in process, started before 26 February, either to be completed or changed. After that though the EU wants to block all technology sales designed to improve and modernise Russian refineries. Equipment for oil refining, which is now included in the list of prohibited for supply, is valued at €1.3 billion on average over the past three years, including €1.34 billion in 2021. The largest supplier countries in 2021 were Germany (€670 million and Italy (€118 million).

Technology sales for many chemical processes have been placed under sanctions which will mean no new business can be done after 27 May. Apart from official sanctions and self-sanctions of Western companies

including CEO's at Phosagro, Uralkhim and Evrokhim. The reason given for sanctioning Dmitry Konov as the CEO of SIBUR is that he works in sectors of the economy that provide substantial income to the government of the Russian Federation, which is responsible for the annexation of Crimea and the destruction of Ukraine. In retrospect Konov was considered fortunate to escape sanctions after Crimea in 2014. If SIBUR is considered to be contributing financially towards Putin's war machine, then it could mean the whole chemical industry is under question.

Logistical problems facing Russian trade

In the first half of March cargo worth hundreds of millions of euros was accordingly stuck for both export and import. The list of the largest logistics companies that refuse to accept goods in Russia and deliver shipments includes shipping companies Maersk, Hapag-Lloyd, Ocean Network Express, Yang Ming, etc. From 50 to 70% of the total volume of exports from Russia has been suspended, until there is an opportunity to transport it.

More than 50% of imports are also idle due to the refusal of a number of key container lines from booking ships in the direction of Russian ports. The biggest difficulties arise in the delivery of goods for

Russian petrochemical projects

Sanctions on petrochemical technology sales

wishing to withdraw from the Russian market, construction of projects also faces the challenge of higher foreign worker costs after the sharp devaluation of the rouble.

Amur Gas Chemical Complex	
Month	Project progress
October 2021	23.0%
November	26.5%
December	30.0%
January 2022	32.8%

No Russian petrochemical projects have been cancelled to date as investors try to keep plans intact, but some face bigger challenges than others. The Irkutsk Polymer Plant for 650,000 tpa of polyethylene is around 50% complete and construction is continuing as normal. SIBUR is reported to have purchased most of the equipment for the 2.7 million tpa Amur Gas Chemical Complex at Svobodny but not all has been delivered. Receiving equipment by river transport when the water

navigation season opens in May could become complicated. The Amur Gas Chemical Complex needs to be connected to the Power of Siberia gas pipeline for gas to supply hot water for technological, heating and other needs.

For the Baltic Gas Chemical Complex at Ust Luga whilst the engineering and project construction is being undertaken by Chinese companies the technology is European which complicates the construction of the petrochemical complex. The German withdrawal from Nord Stream 2 means that gas will not be available under current conditions. It was assumed that 45 billion cubic metres of ethane-containing gas would come from the fields of West Siberia to the gas distribution hub at Ust-Luga. At the same time, 20 billion metres of gas were to go to Nord Stream 2, which was frozen by Germany following Russia's invasion of Ukraine. In addition, sanctions have been imposed on the company-operator of the Nord Stream 2 AG gas pipeline which is now facing bankruptcy.

Contracts for technological equipment for gas processing were placed with Linde which is now subject to sanctions and is one of the few companies in the world which owns the technology of large-scale gas liquefaction. Linde has suggested it will fulfill any existing Russian contracts although this could lead to major repercussions elsewhere.

Not only is gas processing and petrochemical production planned for Ust Luga, but blue hydrogen is also part of the project based on gas of the Nadym-Pur-Taz region in Yamal. Lummus has been commissioned to supply a total of fourteen furnaces, but this contract looks difficult now. Construction work began only on the ethylene plant at Ust Luga on 17 November 2021, where concrete was established on the base of the first of 14 pyrolysis furnaces. Builders poured the first concrete, almost 400 cubic metres, into the base of the gas chemical complex at Ust-Luga. The problem could come from keeping the foreign workers from China and Turkey satisfied in the context of a dramatic fall in the value of the rouble.

Russian petrochemical producer performance

SIBUR's operating results Jan-Dec 2021

SIBUR Holding achieved a net profit of 243.5 billion roubles in 2021 against 37.1 billion roubles in 2020. The increase in profit at SIBUR was driven by the rise in revenues (from 428.7 billion roubles to 731.0 billion roubles), although revenues was offset by a 24.2% rise in operating costs. Higher revenues in the olefins and polyolefins segment last year were attributable to both higher prices and sales volumes of polyethylene and polypropylene from ZapSibNeftekhim.

SIBUR-Kstovo 2021

SIBUR-Kstovo produced record levels of petrochemicals in 2021, including 89,400 tons of benzene, 377,000 tons of ethylene and 180,300 tons of propylene. The rise in output in 2021 was helped by less maintenance downtime combined with a number of digital and development projects.

SIBUR-Kstovo Production (unit-kilo tons)		
Product	Jan-Dec 21	Jan-Dec 20
Ethylene	377.0	387.2
Propylene	180.3	170.2
Benzene	89.4	74.9

All ethylene produced by SIBUR-Kstovo is supplied through product pipelines to the related plants RusVinyl at Kstovo and SIBUR-Neftekhim at Dzerzhinsk for processing into PVC, ethylene oxide and ethylene glycols. Part of the propylene is supplied to SIBUR-Neftekhim as a raw material for the production of acrylic acid and esters. In addition,

propylene is supplied to other chemical plants for the production of polypropylene, propylene oxide, isopropyl and butyl alcohols.

Nizhnekamskneftekhim Production (unit-kilo tons)		
Product	Jan-Dec 21	Jan-Dec 20
Ethylene	608.7	619.1
Propylene	304.6	297.8
Benzene	288.6	264.6
Polypropylene	165.1	164.8
Styrene	310.3	291.4

Nizhnekamskneftekhim 2021

Nizhnekamskneftekhim produced 2.7 million tons of marketable products in 2021, rising 10.6% over 2020. Record figures were achieved in the production of SKD-N rubber, benzene, styrene, polystyrene and ABS plastics.

Nizhnekamskneftekhim in January-December 2021 achieved 41.8 billion roubles (\$457 million) of net profit against 2.3 billion roubles (\$31 million) of loss in 2020. The company's revenue increased by 1.8 times to 254.8 billion roubles (\$2.473 billion), whilst costs rose by 1.7 times to 129.8 billion roubles (\$1.766 billion). Profit before tax amounted to 42.6 billion roubles (\$579 million) against a loss of 3.2 billion (\$44 million) for the same period in 2020. The volume of long-term loans increased by 23.1% to 126.6 billion roubles, short-term loans by 10.9 times, to 2.1 billion roubles.

Nizhnekamskneftekhim and sanctions

The financial situation for Nizhnekamskneftekhim has become very complicated since the introduction of sanctions on Russia. The credit burden of the company due to exchange rate fluctuations increased to 96 billion roubles (€840 million) which may become much harder to service as a foreign currency.

Moreover, in terms of sales the EU accounts for 19% of the company's revenue and thus any ban on sales to that region could be costly. Already the company is facing difficulties in selling to Western markets and will be very challenging to reorient sales to other markets in the short to medium term.

Although in theory the devalued currency should make exports more profitable this is offset by the debt servicing which may have to be managed through Eurobonds. The main risk of a euro loan is for the purchase and installation of equipment. New projects may be stopped, but it is hoped that the new environment will not affect already launched projects and projects in a high degree of readiness.

Nizhnekamskneftekhim increased revenues from sales of synthetic rubbers in 2021 by 1.5 times up to 89.8 billion roubles, and plastics by 1.8 times to 90.6 billion roubles. Nizhnekamskneftekhim produced 704,000 tons of synthetic rubber in 2021 and 772,000 tons of plastics. Overall, the company increased production by 13% compared 2020 which was due to the growth of polyethylene production and the revival of rubber production. Ethylene production at Nizhnekamsk amounted to 608,700 tons in 2021 against 619,100 tons in 2020. The main strategic project of Nizhnekamskneftekhim is the new olefin complex EP-600 which had achieved 34% of the schedule by the end of January 2022.

Kazanorgsintez 2021

Kazanorgsintez in January-December 2021 increased its net profit by 2.9 times compared to 2020 up to 24.9 billion roubles (\$271 million). The company's revenue increased by 1.6 times to 106.4 billion roubles (\$1.041 billion), whilst costs rose by 32.8% to 45.6 billion roubles (\$620 million), and the profit before tax increased three times to 25 billion roubles (\$340 million). Ethylene production at Kazan declined from 581,100 tons to 574,800 tons in 2021. Kazanorgsintez in 2021 increased production by 0.6%. The production of polycarbonates was increased by 16%, to 95,000 tons. Export sales accounted for 16.9% of the company's annual revenue in 2021.

Kazanorgsintez Production (unit-kilo tons)		
Product	Jan-Dec 21	Jan-Dec 20
Ethylene	574.8	581
Propylene	47.5	53.5
Acetone	41.9	48.8
Phenol	70.9	73.7
Polycarbonate	95.0	78
HDPE	289.9	383.8

Gazprom neftekhim Salavat Production (unit-kilo tons)		
Product	Jan-Dec 21	Jan-Dec 20
Ethylene	317.3	376.4
Propylene	126.6	139.0
Styrene	180.0	245.5
Benzene	188.4	199.6
Normal butanol	54.2	65.4
Isobutanol	32.5	37.1

Gazprom neftekhim Salavat, Jan-Dec 2021

Gazprom neftekhim Salavat reduced production of ethylene and propylene in 2021, affecting both benzene and styrene. Production has been affected by extended downtime last year. The management of Gazprom neftekhim Salavat was transferred at the start of 2021 to a Gazprom subsidiary Rusgazvydobuvannya RGD Refining Salavat.

Russian petrochemical markets

Russian Ethylene Production (unit-kilo tons)		
Producer	Jan-22	Jan-21
Angarsk Polymer Plant	20.5	20.6
Kazanorgsintez	58.7	49.5
Stavrolen	28.3	30.3
Nizhnekamskneftekhim	54.6	55.4
Novokuibyshevsk Petrochemical	4.5	5.0
Gazprom n Salavat	31.8	32.8
SIBUR-Kstovo	33.9	33.3
SIBUR-Khimprom	5.3	4.5
Tomskneftekhim	24.5	25.8
Ufaorgsintez	11.0	9.6
ZapSibNeftekhim	126.7	122.1
Total	399.8	388.9

55,400 tons. Production at Nizhnekamsk has been stable for most of the past decade.

Russian Propylene Production (unit-kilo tons)		
Producer	Jan-22	Jan-21
Angarsk Polymer Plant	11.7	11.1
Kazanorgsintez	5.1	4.2
Lukoil-NNOS	27.2	14.5
Stavrolen	11.0	12.0
Nizhnekamskneftekhim	28.8	28.2
Novokuibyshevsk	3.5	3.7
Omsk Kaucuk	5.0	1.4
Polyom	16.9	16.7
Gazprom n Salavat	14.2	14.5
SIBUR Kstovo	16.0	15.1
SIBUR-Khimprom	6.9	3.9
Tomskneftekhim	14.1	13.8
Ufaorgsintez	14.2	16.8
ZapSibNeftekhim	93.1	94.5
Total	267.6	250.4

Russian Propylene Exports (unit-kilo tons)		
Producer	Jan-22	Jan-21
Lukoil-NNOS	11.8	1.6
SIBUR-Kstovo	6.4	0.0
Angarsk Polymer Plant	0.0	3.2
Stavrolen	0.0	0.0
Total	18.2	4.8

Russian Propylene Domestic Sales (unit-kilo tons)		
Company	Jan-22	Jan-21
Angarsk Polymer Plant	0.0	3.9
SIBUR-Kstovo	14.4	13.7
Lukoil-NNOS	15.4	12.9
Others	8.9	1.6
Total	38.7	32.1

Russian ethylene production, Jan-2022

Ethylene pricing in Russia is yet to respond to the devaluation of the rouble, but changes are expected in the second quarter. Russian ethylene supplies delivered by pipeline and connecting the plants in Bashkortostan and Tatarstan increased in price by 11% in February over January up to 102,000-110,200 roubles per ton (\$980-1060 per ton). In addition to the lower rouble the price of ethylene was driven by an increase in the cost of raw materials for pyrolysis.

Russian ethylene production amounted to 399,800 tons in January this year versus 388,900 tons in January 2021. ZapSibNeftekhim produced 126,700 tons versus 122,100 tons from January last year whilst Nizhnekamskneftekhim produced 54,600 tons versus

Other important ethylene producers included SIBUR-Kstovo which produced 33,900 tons versus 33,300 tons. In Bashkortostan Gazprom neftekhim Salavat produced 31,800 tons against 32,800 tons, whilst Ufaorgsintez increased production from 9,600 tons to 11,000 tons.

Stavrolen at Budyennovsk reduced ethylene production in the first month in 2022 to 28,300 tons against 30,300 tons in January 2021. Lukoil has begun supplying electricity to the Stavrolen petrochemical plant at Budyennovsk from its own solar power plant (SPP), located on the territory of the Volgograd refinery.

Russian propylene production, sales and exports, Jan-2022

Domestic Russian propylene prices are following similar upward pressure as ethylene, whilst exports are complicated by logistical issues. Russian propylene production amounted to 267,600 tons in January versus 250,400 tons in January 2021. ZapSibNeftekhim at Tobolsk produced 93,100 tons versus 94,500 tons, whilst Nizhnekamskneftekhim raised volumes from 28,200 tons to 28,800 tons.

In Bashkortostan Gazprom neftekhim Salavat produced 14,200 tons of propylene in January this year versus 14,500 tons whilst Ufaorgsintez reduced production from 16,800 tons to 14,200 tons. In the Nizhny Novgorod region SIBUR-Kstovo increased production of propylene from 15,100 tons to 16,000 tons in January 2021. Lukoil-NNOS at Kstovo increased production from 14,500 tons to 27,200 tons.

Propylene exports from Russia amounted to 18,800 tons in January against 4,200 tons in January last year. Lukoil-NNOS shipped 11,800

tons in January whilst SIBUR-Kstovo shipped 6,400 tons. Last year propylene exports were led by Finland (60,500 tons), Poland (53,800 tons) and China (38,100 tons). Overall propylene exports rose from 54,900 tons in 2020 to 169,200 tons in 2021. Due to the increase in volumes and prices revenues from Russian propylene exports rose from \$32.7 million in 2020 to \$147.7 million in 2021.

Russian Propylene Exports by Destination (unit-kilo tons)		
Country	2021	2020
Belarus	0.0	8.1
China	38.1	1.9
Finland	60.5	8.6
France	6.5	0.0
Germany	2.2	0.0
Kazakhstan	0.0	0.0
Latvia	0.0	4.5
Netherlands	5.3	3.0
Poland	53.8	28.0
Romania	2.9	1.0
Total	169.2	54.9

Russian sales of propylene on the domestic merchant market amounted to 32,100 tons in January 2022 against 38,700 tons in January 2021. The largest propylene supplier to the domestic market was Lukoil-NNOS, shipping 15,400 tons against 12,900 followed by SIBUR-Kstovo which fell from 15,700 tons to 14,400 tons.

ZapSibNeftekhim increased merchant propylene purchases from 4,400 tons in January 2021 to 14,900 tons in January 2022. Saratovorgsintez reduced purchases of merchant propylene from 16,100 tons to 16,000 tons whilst SIBUR-Khimprom reduced purchases from 5,800 tons to 2,000 tons.

Propylene supply in March exceeded demand, partly due to a planned shutdown at Saratovorgsintez and reduced purchases by other consumers. This was combined with export shipments being suppressed by a lack of containers.

Russian Propylene Domestic Purchases (unit-kilo tons)		
Consumer	Jan-22	Jan-21
Saratovorgsintez	16.0	16.1
Volzhskiy Orgsintez	0.9	1.2
Akrilat	0.5	0.0
SIBUR-Khimprom	2.0	5.8
Omsk-Kaucuk	1.8	0.3
Tomskneftekhim	0.5	0.0
SIBUR Tobolsk	14.9	4.8
Moscow Refinery	0.3	1.2
Ufaorgsintez	9.1	9.1
Khimprom Kemerovo	0.5	0.1
Plant of Synthetic Alcohol	0.0	2.6
Others	13	7.7
Total	38.7	32.1

Russian styrene production, sales and exports, Jan-2022

Russian styrene production fell from 73,700 tons in January last year against 68,100 tons in January 2022. Nizhnekamskneftekhim decreased production from 27,900 tons to 27,800 tons where most of the styrene is used internally for polystyrene and synthetic rubber output.

Gazprom neftekhim Salavat increased styrene production from 18,300 tons in January 2021 to 18,700 tons in January this year. SIBUR-Khimprom also increased production from 12,000 tons to 13,100 tons.

Russian styrene exports amounted to 11,500 tons in January 2022 against 10,600 tons in January last year. Gazprom neftekhim Salavat exported 5,100 tons in January and SIBUR-Khimprom 2,600 tons.

Russian Styrene Exports by Destination (unit-kilo tons)		
Country	2021	2020
Belarus	2.6	2.7
Finland	74.2	88.7
Netherlands	0.0	3.8
Norway	0.0	4.0
Poland	0.9	1.5
Romania	0.0	0.1
Serbia	0.6	0.8
Switzerland	1.2	0.0
Tunisia	0.7	2.3
Turkey	8.7	0.0
Uzbekistan	1.7	2.2
Others	0.3	1.5
Total	90.9	107.9

Regarding the domestic market spot prices rose sharply in March in the Volga Federal District due to higher European prices and the sharp devaluation of the rouble. SIBUR-Khimprom increased the cost of the monomer to 147,000-151,500 roubles per ton. Gazprom Neftekhim Salavat did not plan to supply the product to the spot at the beginning of the month. Rosneft has announced the second tender for the sale of styrene in the domestic and foreign markets.

Styrene exports may now run into logistical problems that are affecting global markets but Russian cargoes in particular. The largest destination for Russian styrene exports is Finland which took 74,200 tons in 2021 from the total of 90,900 tons. Revenues from styrene exports from Russia rose from \$87.3 million in 2020 to \$115.3 million in 2021.

Bulk Polymers

Russian Polymer Exports				
	2021		2020	
Product	Kilo tons	\$ million	Kilo tons	\$ million
LDPE	291.8	400.8	355.3	285.4
HDPE	857.6	936.4	681.8	516.9
Ethylene-VAM copolymers	1.8	5.4	2.0	3.4
Ethylene-AO-copolymers	175.4	213.8	14.6	13.2
Other PE	4.9	7.3	2.7	3.8
Polypropylene	776.8	1049.3	700.2	616.2
Polyisobutylene	5.0	15.8	3.4	11.7
Propylene copolymers	37.4	70.8	28.6	30.2
Other PP	1.8	4.0	0.5	1.0
Polystyrene, Expansible	44.2	83.3	47.1	47.7
Polystyrene, Other	55.5	96.8	79.6	71.5
ABS copolymers	6.8	19.1	2.9	5.2
PVC	197.2	269.1	199.4	151.6
Epoxy resins	2.6	17.5	2.4	9.6
Polycarbonates	29.6	93.4	19.9	31.3
Alkyd resins	3.5	4.3	5.1	4.6
PET high than 78 ml g	32.4	39.2	32.4	25.8
PET less than 78 ml g	1.3	1.9	2.2	1.9

Russian polymer trade & effects from the war

The impact of the sanctions and business decoupling from the Russian market, the length of which can only be determined by political factors, is expected to be far-reaching on polymer trade patterns. The devaluation of the rouble against international currencies theoretically helps exports of polymers and hinders exports, but the situation regarding logistics and business relationships tend to complicate forecasts. Demand for polymers in the domestic market is expected by producers to almost certainly to fall this year. A number of car plants have already suspended production and many other application areas expected to encounter problems which will force lower consumption of polyethylene, polypropylene, etc.

Russian polyolefin producers depend on export activity to a large extent to ensure full production capacity so ensuring reliable logistics will be a key factor. China is a major market for Russian HDPE and LDPE exports, most of which are delivered by rail and at this stage not expected to encounter difficulties. Other important markets include Kazakhstan, Belarus and Turkey, where logistics should not be a problem but it is unclear whether Central European consumers will continue to purchase Russian HDPE. From the last two years HDPE exports from Russia to the EU have not been significant so producers should be able of coping with any loss of sales in this region.

In the period 2018-2021 Russian polyethylene production and export activity rose significantly due to the establishment of production facilities at ZapSibNeftekhim. Overall production of polyethylene more than doubled in those four years and the availability of supply helping to develop domestic consumption.

HDPE production in Russia is more reliant on export activity than LLDPE and LDPE. Although not affected directly by sanctions, logistics could restrict outflows and inflows of polyethylene.

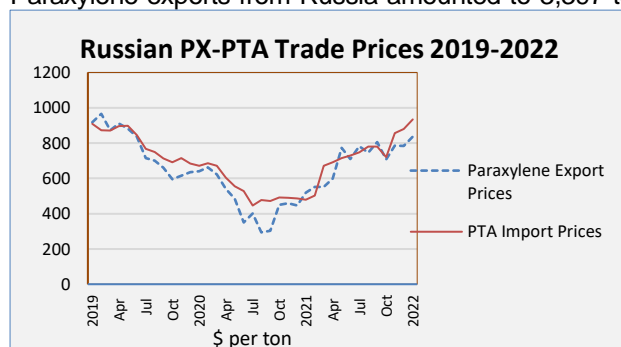
HDPE consumption dipped slightly in 2021 over 2020 but the general trend has been upwards. LLDPE consumption in the domestic market has seen the most significant rise, increasing from 250,400 tons in 2018 to 544,800 tons in 2021. LDPE has seen modest incremental rises from year to year.

Russian Polyethylene Market (unit-kilo tons)				
HDPE	2018	2019	2020	2021
Production	961.8	864.0	1826.7	2004.0
Exports	146.9	159.6	681.8	857.6
Imports	251.1	402.0	259.0	232.0
s/d balance	1065.9	1106.4	1403.9	1378.4
LDPE	2018	2019	2020	2021
Production	517.2	479.3	574.6	671.7
Exports	172.2	176.8	198.4	205.1
Imports	94.4	119.5	122.0	126.4
s/d balance	439.3	422.0	498.2	593.0
LLDPE	2018	2019	2020	2021
Production	176.2	221.7	545.5	555.5
Exports	7.9	7.9	156.9	86.7
Imports	82.1	78.4	67.2	75.9
s/d balance	250.4	292.2	455.8	544.8
PE Aggregates	2018	2019	2020	2021
Production	1655.2	1565.0	2946.8	3231.2
Exports	327.1	344.3	1037.1	1149.4
Imports	427.5	599.9	448.2	434.4
s/d balance	1755.6	1820.6	2357.9	2516.2

Paraxylene-PTA-PET

Russian paraxylene exports & PTA imports Jan-2022

Paraxylene exports from Russia amounted to 3,397 tons in January this year for \$837 per ton measured against 6,000 tons in January 2021 at a price of \$524 per ton. Paraxylene export prices and PTA import prices have both returned to levels seen prior to the outbreak of COVID and correlate closely with the much higher levels of crude prices.



PTA imports came solely from China in January amounting to 23,054 tons against 21,917 tons in January 2021. Costs rose from \$10.5 million to \$21.5 million with average prices rising from \$478.3 per ton to \$934.2 per ton.

Russian PTA Imports from China		
Country	Jan-22	Jan-21
Ktons	23.1	21.9
\$ million	21.5	10.5
Total	21.5	10.5

Ekopet at Kaliningrad accounted 14,100 tons of PTA imports from China against 17,200 tons in January last year. The Senezh plant near Moscow increased from 4,700 tons to 9,000 tons in January 2021.

Russian PTA Imports by region (unit-kilo tons)		
Region	Jan-22	Jan-21
Kaliningrad	14.1	17.2
Moscow	9.0	4.7
Total	23.7	21.9

In view of major shipping companies blocking business with Russia, it is not clear if the Kaliningrad plant can receive its PTA from China by sea, although it should be possible to supply by rail. Only a few days before the Russian invasion of Ukraine shipping line Maersk had introduced its new service AE66 which linked Korea, Japan and China to the Kaliningrad Region. The new Sea-Rail-Sea service was intended to run west-bound fortnightly departing from the seaport of Vostochny in Russia Far East (at the Pacific to Kaliningrad on the Baltic sea). Maersk has now withdrawn completely from the Russian

market, so this service is effectively not available.

Should the geopolitical position change the advantages of the AE66 service is that it can transport goods in less than 20 days from Busan to Kaliningrad compared to an average of 55-60 days via the Suez Canal. Ekopet was ready to use this service for the import of PTA.,

Polief Domestic Raw Material Purchases (unit-kilo tons)		
Product	Jan-22	Jan-21
MEG		
Nizhnekamskneftekhim	6.0	2.4
SIBUR-Kstovo	0.0	4.8
Acetic Acid		
Azot Nevinnomyssk	0.5	1.5

Aromatics and paraxylene project for Taneko at Nizhnekamsk-possible delays

Tatneft has stated since the Russian invasion and subsequent sanctions that despite sanctions it is continuing to construct its aromatics complex at the Taneko refinery at Nizhnekamsk. However, Tatneft acknowledges that there

may be problems in securing catalysts and other components. On 26 February 2022, the EU imposed sanctions on the export of dual-use products, equipment and technologies for refineries to the Russian Federation so this could affect equipment imports for this project. The aromatics complex is currently scheduled for completion at the end of 2022. Other projects such as PTA planned for Nizhnekamsk are likely to be shelved possibly until sanctions are removed which could be some time.

Titan-Polymer BOPET construction progress

The Titan-Polymer plant had assembled almost 80% of the equipment as of January 2022, for the BOPET film plant under construction. Titan-Polymer expects to launch of the first line of the BOPET film at its Pskov site in 2022. The capacity of the BOPET plant will be 35,000 tpa after the first line and after the launch of the second line will rise to 72,000 tpa. It looks as if this project may be completed without being affected by sanctions.

Aromatics

Russian Benzene Production (unit-kilo tons)		
Producer	Jan-22	Jan-21
Angarsk Polymer Plant	8.2	8.6
Gazprom Neft	9.7	9.0
LUKoil-Neftekhim	7.1	0.0
LUKoil-Permnefteorgsintez`	4.5	4.7
Magnitogorsk MK	0.0	4.0
Nizhnekamskneftekhim	25.6	26.5
Novolipetsk MK	0.5	0.7
Gazprom n Salavat	18.5	18.6
Severstal	3.2	3.0
SIBUR-Holding	7.8	7.4
Slavneft-Yaroslavlorgsintez	5.9	6.6
Surgutneftegaz	0.6	5.5
Ryazan RN Holding	2.7	2.8
Ufaneftekhim	8.5	8.2
Ural Steel	0.0	0.9
Uralorgsintez	7.4	8.4
Zapsib	5.5	7.0
Novokuibyshevsk Petrochemical	2.3	1.3
Total	118.0	123.4

military action.

The largest supplier of benzene to Russia last year was Ukraine but production has now been stopped at most of the plants. This may potentially cause supply problems for the Russian market, but signs are that demand for benzene has already dropped in line with the economic sanctions. Regarding exports of benzene Lukoil planned to ship about 5,000 tons of benzene to European countries. In the first ten days of March, 2,400 tons were exported from the Stavrolen plant.

Kuibyshevazot-Production (unit-kilo tons)		
Product	Jan-Dec 21	Jan-Dec 20
Polyamide-6	175.2	142.0
High Tenacity Tech Yarns	7.0	0.0
Tyre Cord Fabric	19.7	4.4
Caprolactam	203.2	189.7
Ammonia	1101.0	1048.0
Urea	353.0	329.9
Ammonium Nitrate	602.0	721.0
Ammonium Sulphate	508.4	465.6

Russian Caprolactam Production (unit-kilo tons)		
Producer	Jan-22	Jan-21
Kuibyshevazot	18.3	18.5
Shchekinoazot	5.3	5.2
SDS Azot	10.2	11.3
Total	33.8	35.0

period in 2021. Kuibyshevazot reduced production from 18,500 tons to 18,300 tons whilst SDS Azot at Kemerovo reduced production to 10,200 from 11,300 tons. Caprolactam exports from Russia are directed

Russian benzene production Jan-2022

Russian benzene prices in March increased in line with higher European numbers and the devaluation of the rouble. This led to an increase in the cost of batches of the product sold on the domestic market under formula contracts by 2500-3500 roubles. Benzene prices in the Siberian Federal District rose to 87,600–88,100 roubles per ton whilst In the Volga Federal District, benzene rose in price by about 1,000 roubles, to 90,000-91,000 roubles per ton.

In March, demand for benzene on the Russian market was moderate demand with some logistical challenges such as an insufficient number of tanks and an increase in the delivery time of products by Russian Railways. Similar problems are noted in the tank container market, which may cause a decrease in the capacity utilisation of processing industries.

Russian consumers purchased 72,300 tons of benzene on the merchant market in January against 61,300 tons in January last year. From Ukraine Karpatneftekhim supplied 3,600 tons in January and was supplying in February until the plant was forced to stop after Russian

Russian benzene production amounted to 118,000 tons in January against 123,400 tons in the same month in 2021. Nizhnekamskneftekhim reduced benzene production slightly from 26,600 tons to 25,600 tons, whilst Gazprom neftekhim Salavat reduced production to 18,500 tons from 18,600 tons.

Kuibyshevazot 2021

Kuibyshevazot achieved an increase in revenues by 42.8% in 2021 over 2020 to 82 billion roubles. The net profit amounted to 21.7 billion roubles. In total, 7.4 billion roubles were allocated for production development in 2021, 2.1 billion roubles for the repair and updating of equipment. Kuibyshevazot does have projects ongoing with Linde but it is not clear at this stage if sanctions will prevent completion.

Russian caprolactam production, Jan-2022

Russian caprolactam production amounted to 33,800 tons in January 2022 against 35,000 tons in the same

mostly to Asia of which China is the leading consumer accounting for around 40% of trade. The devaluation of the rouble should make more exports more profitable. However, Taiwan is the next largest consumer of Russian caprolactam, and it is not clear if sanctions may affect shipments.

Russian Orthoxylene-PA Purchases (unit-kilo tons)		
Consumer	Jan-22	Jan-21
Kamteks-Khimprom	8.3	6.2
Gazprom neftekhim Salavat	1.5	1.3
Roshalsky Plasticizer Plant	0.5	0.0
Total	10.3	7.5

Russian orthoxylene market, Jan-2022

Orthoxylene domestic sales in Russia amounted to 14,000 tons in January against 14,100 tons in the same period in 2021. Gazprom Neft increased domestic shipments from 8,200 tons to 8,600 tons whilst Ufaneftkhim reduced shipments from 600 tons to 4,500 tons.

Kirishinefteorgsintez increased domestic shipments of orthoxylene from 16,000 tons to 25,000 tons. Sales of orthoxylene for the production of phthalic anhydride totalled 10,300 tons in January 2021 against 7,500 tons in January last year. Kamteks-Khimprom increased purchases from 6,200 tons to 8,300 tons. Russian toluene sales on the domestic market dropped from 13,500 tons in January last year to 10,200 tons. TAIF-NK is the largest consumer of merchant toluene in the Russian market.

Russian toluene prices March 2022

Rises in toluene prices in March has made it uneconomic to use as a solvent in the production of paints and varnishes and as a high-octane additive for motor gasolines. Toluene prices at the Omsk Refinery in the Siberian Federal District rose in price by 3,000 roubles in March to 74,000 roubles per ton. The cost of toluene supplied by Slavneft-Yaroslavnefteorgsintez in the Central Federal District increased by 2,000 roubles to 79,000 roubles per ton although Lukoil-Permnefteorgsintez continued to sell toluene at the February price level of 79,000 roubles per ton.

Despite the rapid depreciation of the rouble against the dollar and unclear export prospects due to sanctions being imposed, not all suppliers have raised orthoxylene prices in March. The cost of products of Kirishinefteorgsintez remained in March at the previous levels and in the North-western Federal District of Russia is 97,200 roubles per ton, whilst in the Central Federal District traders continued to sell orthoxylene at the previous price of 105,000-106,000 roubles per ton. At the same time, in the Siberian Federal District orthoxylene went up by 4,000 roubles in March, to 87,000 roubles per ton. In the Volga Federal District prices were being quoted at 98,000-98,500 roubles per ton.

Russian Phenol Production (unit-kilo tons)		
Producer	Jan-22	Jan-21
Ufaorgsintez	5.2	5.7
Kazanorgsintez	7.2	6.6
Novokuibyshevsk Petrochemical	5.8	6.7
Omsk Kaucuk, Omsk	7.5	3.6
Total	25.7	22.5

Russian phenol market, Jan-2022

Russian phenol production amounted to 25,700 tons in January against 22,500 tons in January 2021. Novokuibyshevsk Petrochemical reduced production from 6,700 tons to 5,800 tons whilst Ufaorgsintez increased production from 6,600 tons to 7,200 tons. Kazanorgsintez increased slightly from 6,600 tons to 7,200 tons. Omsk Kaucuk increased production from 3,600 tons in the first month in 2021 to 7,500 tons in 2022.

Russian Domestic Market Phenol Sales by Supplier (unit-kilo tons)		
Producer	Jan-22	Jan-21
Omsk Kaucuk	1.7	2.1
Novokuibyshevsk Petrochemical	4.7	5.2
Kazanorgsintez	0.0	0.0
Ufaorgsintez	4.3	5.4
Total	10.7	12.7

Sales of phenol on the domestic market totalled 10,700 tons in January 2022 against 12,700 tons in January last year. Omsk Kaucuk increased phenol shipments from 2,100 tons to 1,700 tons, whilst Novokuibyshevsk Petrochemical reduced sales from 5,200 tons to 4,700 tons, corresponding with the fall in production.

The demand for phenol in the Russian market saw a fall in February as some phenol-formaldehyde resin producers were forced to reduce production as it was impossible to send deliveries to Ukraine. In addition, some resin consumers have reduced purchases due to repairs or the presence of large stocks of unsold products in warehouses. In March, the price of phenol rose on the Russian market following the increase in the contract price of benzene in Europe combined with the depreciation of the rouble. Product batches sold by Rosneft and Titan under formula contracts rose in price to 119,300-125,500 roubles per ton.

Synthetic rubber

Russian rubber production and consumption Jan-2022

Synthetic rubber and tyre exports from Russia have thus far escaped direct sanctions following the Russian invasion of Ukraine, but Russian tyre production has already been reduced by Western companies. There is also the prospect that European buyers of rubber and tyres may opt not to buy from Russia where alternative supplies are available or unless Russian sellers are prepared to offer discount prices.

Russian Synthetic and Natural Rubber Market (unit-kilo tons)		
	Jan-22	Jan-21
Production	154.0	155.0
Exports	80.6	83.1
Imports	27.1	13.6
Supply/Demand Balance	100.5	85.5

Russian natural rubber imports

Natural rubber import prices averaged \$2170 per ton in January against \$2160 in December. The big difference came in volume rising from 9,123 tons in December against 20,360 tons in January. The leading suppliers of natural rubber to the Russian market include Indonesia which supplied 11,752 tons in the first month in 2022 followed by Malaysia and Thailand. As from late February natural rubber imports became more complicated due to Western logistical companies refusing to deal with Russian cargo.

The Association of Natural Rubber Producing Countries reported that the global outlook for the natural rubber market should stay positive this year. World production is expected to grow by 1.9%, or 14.107 million tons, while the world consumption is expected to grow moderately at 1.2%, or 4.232 million tons this year.

Several foreign car plants have stopped production whether it be on moral grounds or due to a lack of components which need to be imported. The Toyota Motor plant at St. Petersburg stopped production completely in March due to problems in production chains and export channels, whilst producers such as Renault and Hyundai have paused operations indefinitely. Lada was forced to halt production at its Togliatti plant due to its heavy dependence on imported components which have been blocked temporarily.

The first month of 2022 proved relatively successful for Russia's rubber market with net consumption amounting to 100,500 tons against 85,500 tons in January 2021. Although export volumes of synthetic rubber dropped from 83,100 in January 2021 tons to 80,600 tons revenues rose from \$123.4 million to \$153.0 million. Export prices of Russian synthetic rubber averaged \$1879 per ton in January 2022 versus \$1485 per ton in the same month last year.

Foreign tyre producers in Russia suspending or reducing production

Company	Location
Nokian Tyres	Vsevolozhsk
Pirelli	Voronezh
Bridgestone	Ulyanovsk
Continental	Kaluga
Michelin	Moscow
Yokohama	Lipetsk

Foreign tyre producers have been reviewing their positions in the Russian market, although are reluctant to exit the market completely in order to protect their assets if possible. Russian production of passenger tyres in 2021 over 2020 increased by 30% but the prospects for 2022 have been severely damaged by the economic repercussions arising from international sanctions and response.

Of the manufacturers in Russia Pirelli is still operating at Kirov and Voronezh plants mainly out of fear that the assets will be taken by the Russian government, but the intention is to gradually reduce production. Nokian Tyres announced plans to suspend the production of a separate category of products in Russia and the company has also begun exporting tyres from Russia to warehouses closer to customers, although it is not yet possible to say whether the move will be temporary or permanent. Nokian Tyres produces tyres in the high (A) and medium (B) tyre segments. According to the company's estimates, in these segments it occupies 32.6% of the tyre market in Russia.

Russian Synthetic Rubber Exports (unit-kilo tons)		
Product	Jan-22	Jan-21
E-SBR	4.2	3.7
Block	5.0	5.3
SSBR	0.4	0.1
SBR	4.5	7.3
Polybutadiene	21.6	22.2
Butyl rubber	6.9	7.7
Halogenated butyl	11.0	11.3
NBR	1.2	2.7
Isoprene	25.6	22.0
Others	0.2	1.0
Total	80.6	83.3

Bridgestone stopped production at its tyre plant at Ulyanovsk from 18 March whilst export of products to Russia was stopped from 14 March. The company's share of the Russian market in the total revenue of the group is less than 2%. Continental took the decision to suspend production and operations at its Kaluga plant which produces tyres and spare parts for the Contitech division. The

Michelin tyre plant in the Moscow region suspended work from 14 March which was due to the temporary difficulties in procurement of raw materials and semi-finished products. The Michelin plant in Russia was opened in 2004 and includes a production capacity of 1.5-2 million tyres per annum.

Russian Synthetic Rubber Exports by Destination (unit-kilo tons)		
Country	Jan-22	Jan-21
Belarus	2.4	2.1
Brazil	2.8	3.1
China	10.1	8.4
Czech	2.6	2.7
Germany	2.5	2.8
Hungary	5.7	5.0
India	3.2	11.8
Mexico	3.3	3.2
Poland	10.7	8.3
Romania	3.2	1.9
Serbia	0.5	1.2
Slovakia	3.1	3.0
Turkey	9.0	8.7
Ukraine	1.1	1.3
US	5.1	2.6
Others	15.4	16.9
Total	80.6	83.1

Russian synthetic rubber exports Jan-2022

Russian exports of synthetic rubber totalled 80.600 tons in January this year against 83,300 tons in January 2021, with revenues rising from \$123.4 million to \$153.0 million. Average prices per ton rose from \$1485 in January last year to \$1879. Polybutadiene exports declined slightly from 22,200 tons in January 2021 to 21,600 tons but revenues from those shipments increased from \$29.2 million to \$38.4 million. Isoprene exports rose from 22,000 tons to 25,600 tons with revenues rising from \$33.6 million to \$44.3 million.

Exports of halogenated butyl rubber from Russia increased in revenues from \$22.1 million to \$27.4 million, despite a slight fall in volumes from 11,300 tons to 11,000 tons.

Regarding export destinations for Russian synthetic rubber China bought 10,100 tons in January 2022 against 8,400 tons in January last year whilst Poland increased shipments from 8,300 tons to 10,700 tons.

Nizhnekamskneftekhim Rubber Exports (unit-kilo tons)		
Product	Jan-22	Jan-21
Isoprene Rubber	20.6	19.6
Butyl Rubber	6.1	6.2
HBR	11.0	11.3
Polybutadiene	15.8	21.7
Others	0.2	1.4
Total	53.7	60.2

Nizhnekamskneftekhim rubber exports Jan-2022

Nizhnekamskneftekhim exported 53,700 tons of synthetic rubber in the first month in 2022 down from 60,200 tons in 2021. Revenues from synthetic rubber exports rose from \$78.7 million to \$101.5 million. isoprene rubber and polybutadiene exports rose from \$29.9 million to \$34.3 million and from \$16.4 million to \$28.9 million

respectively.

Voronezhskintezkaucuk Exports (unit-kilo tons)		
Product	Jan-Dec 21	Jan-Dec 20
Polybutadiene	75.2	62.2
SBR	103.4	75.8
Others	0.7	0.6
Total	179.3	138.5

Voronezhskintezkaucuk Jan-Dec 2021

Voronezhskintezkaucuk produced 346,000 tons of synthetic rubber in 2021, including 125,000 tons of thermoplastic elastomers and 225,000 tons of synthetic rubber. In 2020, the company completed a project to expand the production of thermoplastic elastomers to 135,000 tpa and in 2021, a project to expand SKD-ND rubbers to 50,000 tpa has approached the final stage.

Krasnoyarsk Synthetic Rubber Plant NBR Production & Sales (unit-kilo tons)		
	Jan-Dec 21	Jan-Dec 20
Production	38.3	34.7
Exports	37.6	34.8

Krasnoyarsk Synthetic Rubber Plant 2021

As the sole Russian producer of NBR the Krasnoyarsk synthetic rubber plant in 2019-2021 invested more than 600 million roubles in the modernisation of production and projects to reduce the impact on the environment. However, problems from rubber production continue to affect the local area and the company is now facing fines for harmful emissions and shortages of safety equipment. Further investment targets as part of the SIBUR Group, which include improving usage of butadiene, may now be subject to sanctions. Export revenues from NBR sales in 2021 increased to \$84.6 million up sharply from \$45.6 million in 2020. China is the largest consumer of Russian NBR, followed by Poland and the US.

Methanol

Russian Methanol Production (unit-kilo tons)		
Producer	Jan-22	Jan-21
Shchekinoazot	134.5	84.2
Gazprom Methanol	81.5	87.3
Metafrax Chemicals	113.0	110.1
Akron	9.3	8.3
Azot Novomoskovsk	20.2	25.9
Angarsk Petrochemical	3.1	5.4
Azot Nevinnomyssk	12.4	12.2
Tomet	69.9	43.0
Ammoni	10.3	13.3
Totals	454.2	389.7

Russian methanol production Jan-2022

Russian methanol production rose from 389,700 tons in January 2021 to 454,200 tons in January this year. Production was boosted by the increase by Shchekinoazot from 84,200 tons in January last year to 134,500 tons whilst Tomet increased from 43,000 tons to 69,900 tons. Regarding other producers Metafrax Chemicals at Gubakha produced 113,000 tons of methanol in the first month of the year versus 110,100 tons in January 2021.

Azot at Novomoskovsk decreased production from 25,900 tons to 20,200 whilst Azot at Nevinnomyssk increased from 12,200 tons to 12,400 tons. By contrast to Azot at Novomoskovsk which sells all of its methanol in the merchant domestic and export markets, Azot at Nevinnomyssk consumes most of its methanol in the production of acetic acid and derivatives. Azot at Nevinnomyssk started a

planned shutdown lasting from 21 March to 16 April. Ammoni in Tatarstan reduced methanol production from 13,300 tons in January 2021 to 10,300 tons in January 2022.

Russian methanol exports post invasion

In the middle of March, the Finnish rail group (VR Group) notified that they were stopping taking cargo from several fertiliser producers including Uralkhim, Uralkali, Evrokhim, and Togliattiazot and in addition methanol from Tomet. The situation on methanol exports from Russia has become very difficult, with consumers and ports in Europe refusing to take shipments. The first three weeks of February saw normal trade until the invasion took place, after which all has changed.

Due to delivery issues the Ministry of Industry and Trade of the Russian Federation recommended to Metafrax Chemicals to suspend the shipment of pentaerythritol and urotropin for export to the EU countries. Whilst some methanol shipments to Central Europe did get through to end-users and traders but further ahead there are many uncertainties which could threaten exports from Russian plants and production.

Major Russian Methanol Producers % of Exports in Production		
Producer	2021	2020
Azot Novomoskovsk	35.0	35.2
Metafrax Chemicals	33.1	30.3
Gazprom Methanol	48.1	55.9
Tomet	36.6	41.9
Shchekinoazot	70.0	73.2

The most export oriented of the Russian methanol producers is Shchekinoazot which shipped abroad 70% of production last year. Shchekinoazot is currently arranging maintenance shutdowns for all of its facilities including its three methanol plants of which probably at least two will undertake outages in April and May. The company is holding to some hope that the political environment may have seen some improvement by then.

Russian Methanol Exports to 17 March 2022 (unit-kilo tons)		
Country	Shipped to	March target
Belarus	8.38	39
Kazakhstan	2.07	2.9
Latvia	0.32	1.1
Lithuania	3.33	9.1
Netherlands	11.26	32.6
Poland	21.0	46.8
Turkey	3.23	3.5
Finland	58.89	115.8
Total	108.735	251.2

Russian methanol sales in March

In the first seventeen days of March Russian producers shipped 108,735 tons of methanol to export markets and 72,080 tons to the domestic market. The export shipments overall are slightly lower than expected by the middle of March whilst it is hard to know exactly how much actually arrived at the end-user. Most of the shipments are destined for the EU where there has been large-scale rejection of Russian origin methanol.

To some extent Russian producers in March have been to compensate for the impact of export trade by shipping more product than planned. For April and beyond the outlook is unclear. If producers are unable to export normal volumes the domestic market will be faced by a surplus which will ultimately result in reduced utilisation. On the other hand, the depreciation of the rouble may lead to a significant increase in the value of formula contracts in April. The Ministry of Trade and

Industry is seeking ways in how to fix domestic prices for chemical raw materials including urea, methanol and melamine for Russian producers of wood-based panels.

Russian Methanol Export Destinations (unit-kilo tons)		
Country	Jan-22	Jan-21
Belarus	10.3	13.0
Finland	62.2	115.8
Kazakhstan	4.2	1.5
Latvia	1.6	2.9
Lithuania	12.5	10.8
Netherlands	14.6	0.0
Poland	42.2	30.2
Romania	19.6	4.8
Slovakia	34.9	14.7
Turkey	0.0	2.8
UK	8.4	0.0
Ukraine	7.9	5.2
Others	0.5	0.0
Total	219.0	202.0

Logistics support for exporters is also important and the expansion of container transportation through the involvement of alternative logistics operators is being considered. This is problematic through as many foreign companies are keeping their distance from business with Russia.

Russian methanol exports Jan-22

Regarding January, exports of methanol from Russia achieved record revenues of \$83.8 million for 218,947 tons at an average price of \$383 per ton. February also was a good month for Russian methanol producers until the invasion of Ukraine started on 24 February. Methanol deliveries to Ukraine stopped on 23 February the day before the Russian invasion of Ukraine. The Ukrainian Military decided to destroy the railway border crossings with

Belarus and the Russian Federation in order to impede the advance of the troops of the attacking country. Ukrainian companies had placed orders at the start of the month for 7,700 tons of methanol from Russia but only 3,970 tons was delivered up to 23 February and there is no idea when deliveries might restart.

Russian exports of methanol reported by producers amounted to 214,900 tons in January versus January 2021. Tomet exported 32,000 tons of methanol against 14,300 tons whilst Metafrax Chemicals reduced exports from 46,800 tons to 38,300 tons. Gazprom Methanol (Sibmetakhim) reduced exports from 45,200 tons in January 2021 to 37,600 tons, with the reduction similarly to Metafrax down to increased domestic market activity.

Russian Methanol Exports by Producer (unit-kilo tons)		
Producer	Jan-22	Jan-21
Azot Nevinnomyssk	0.0	0.7
Azot Novomoskovsk	5.5	9.3
Akron	1.6	0.6
Metafrax Chemicals	38.3	46.8
Gazprom Methanol	37.6	45.2
Tomet	32.0	14.3
Shchekinoazot	100.0	62.4
Ammoni	0.0	0.0
Total	214.9	179.3

The largest Russian exporter in January was Shchekinoazot shipping 100,000 tons versus 62,400 tons in January 2021. Lyshchitsy in the Brest region acts as the main export junction for exports to Belarus from Shchekinoazot, whilst for the Polish market the border crossing Bruzgi is used. For the

Romanian market Shchekinoazot exports methanol via Vadul-Siret in southern Ukraine and to Slovakia through Chop which is located on the western Ukrainian border town. Chop is being used as an exit town for Ukrainian refugees and is now unable to receive deliveries from Russia.

Russian Methanol Domestic Sales (unit-kilo tons)		
Producer	Jan-22	Jan-21
Azot Nevinnomyssk	2.3	3.0
Azot Novomoskovsk	12.2	18.7
Metafrax Chemicals	32.8	45.0
Gazprom Methanol	35.3	48.8
Tomet	39.6	31.8
Shchekinoazot	21.1	18.9
Ammoni (Mendelevsk)	4.5	9.9
Total	147.7	175.9

Russian methanol domestic sales, Jan-2022

If export activity is to be curtailed can domestic consumers compensate for this loss of business. The simple answer is no, but at the same time some producers are more dependent on exports than others. Merchant sales from Russian methanol producers on the Russian domestic market amounted to 147,700 tons in January 2022 (more

than a third of production) against 175,900 tons in the same period in 2021 which was around 45%. This latter figure is at the higher end of merchant purchases.

Metafrax Chemicals Methanol Balance		
	Jan-22	Jan-21
Production	113.0	110.1
Exports	38.3	46.8
Domestic sales	32.8	45.0
Captive/Inventory	41.9	18.3

Metafrax Chemicals for example consumes methanol in the production of formaldehyde and other derivatives in addition to selling merchant methanol on the domestic market. Having started a new formaldehyde plant last year Metafrax Chemicals has increased its domestic consumption which means that it could run at around 70% of capacity without export shipments. Metafrax Chemicals reduced shipments to the domestic market from 45,000 tons in January 2021 to 32,800 tons this January.

Tomet's sales from the Togliatti plant still increased from 31,800 tons to 39,600 tons whilst Gazprom Methanol reduced domestic shipments of methanol from 48,800 tons to 35,300 tons. Shchekinoazot increased domestic sales from 18,900 tons to 21,100 tons.

Russian Methanol Domestic Purchases by Consumer (unit-kilo tons)		
Consumer	Jan-22	Jan-21
Nizhnekamskneftekhim	32.5	40.4
Togliattikavuk	6.4	18.9
Uralorgsintez	2.0	6.7
SIBUR-Khimprom	0.2	1.3
SIBUR Tobolsk	3.2	3.2
Omsk Kavuk	9.2	8.9
Novokuibyshevsk NPZ	2.7	1.5
Uralkhimplast	2.0	2.2
Slavneft-Yanos	1.1	1.6
Metadynea	8.1	10.6
Kronospan	7.9	14.1
Gazprom	27.3	18.2
Khimsintez	4.8	0.4
Volzhsky Orgsintez	3.6	0.6
Togliattiazot	10.8	11.2
Others	25.8	39.8
Total	147.7	139.7

Regarding consumers, Nizhnekamskneftekhim reduced purchases of merchant methanol from 40,400 tons in January 2021 to 32,500 tons whilst Togliattikavuk reduced methanol purchases from 18,900 tons to 6,400, due mainly to lower MTBE production. Gazprom increased purchases of methanol for gas hydrates in Siberia from 18,200 tons in January last year to 27,300 tons.

Russian resin market Jan 2022

Russian production of urea resins dropped 12% in January from December to 101,200 tons. One of the reasons included reduced resin purchases by wood processing plants due to significant unsold stocks of wood-based panels in warehouses.

Overall for 2021 the production of urea-formaldehyde resins in Russia increased by 18% over 2020 to a total of 1.47 million tons. The increase in production was in response to higher demand in the wood-based panels segment.

The largest contribution to the increase in Russian production of urea-formaldehyde resins was made by the plants belonging to Metadynea and Kronospan. At the Metadynea plants at Gubakha and Orekhovo-Zuyevo, total production of urea-formaldehyde resins increased by 73,000 tons in 2021 over 2020 to 414,000 tons. Russian producers of formalin, urea-formaldehyde concentrate, and synthetic resins increased methanol consumption in 2021 by 107,100 tons compared to 2020 to a total of 987,100 tons. Domestic consumption of methanol at producing plants increased over the past year by 62,600 tons to 567,100 tons.

Russian Exports of Melamine 2021		
Country	Qty (unit-kilo tons)	Value (\$ mil)
Austria	0.1	0.2
Belarus	0.4	0.6
China	34.2	51.7
Germany	2.2	4.3
Netherlands	0.4	1.6
Qatar	0.2	0.3
Others	0.0	0.1
Total	37.6	58.8

At Kronospan, the production of binders increased to 287,000 tons, whilst the Srednevolzhskaya Chemical Company in 2021 reduced the production of resins by 59% to 5,100 tons, which was due to insufficient supply of urea-formaldehyde concentrate produced by Togliattiazot.

Metafrax-license contract for second melamine plant

It is unclear if the contract between Metafrax Chemicals and Casale signed a contract for the construction of a second melamine plant at Gubakha will be allowed to proceed. The project which was the second melamine unit and intended to be fully integrated with the ammonia-urea-melamine

complex represents a key investment in the Metafrax Group's strategy. Securing technology for the project may become complicated as Casale is located in Switzerland which has followed most of the EU sanctions.

Russian Imports of Melamine 2021		
Country	Qty (unit-kilo tons)	Value (\$ mil)
Austria	2.1	2.5
Belarus	27.7	43.8
Finland	0.7	1.0
Germany	0.5	0.8
India	1.0	0.4
Italy	0.7	1.5
Poland	0.3	0.3
Turkey	0.7	1.0
Netherlands	0.2	0.2
Others	1.1	1.9
Total	34.8	53.3

Moreover, it is not clear whether Metafrax Chemicals will be in any position to finance more investment. The capacity of the second melamine unit comprises 40,000 tpa with commissioning date (set before the invasion) scheduled for the second half of 2025. The AKM complex at Gubakha, which is close to completion, includes plants for the production of ammonia (307,900 tpa), urea (575,800 tpa) and melamine (41,300 tpa).

Tomet short stoppage and improvements

At the end of January Tomet was instructed the suspend production for 30 days until the start of March due to industrial safety violations. This decision was later reviewed after an appeal and the shutdown period was reduced to 15 days which allowed the production of methanol to resume on 14 February. Since then,

Tomet has been named by the Finnish transport group VR as one of the companies banned from using its rail services. Tomet sends all of its methanol exports to the Netherlands, after transportation from the Finnish ports and the announcement from the Finnish railways creates problems for the company.

Domestic sales accounted for around 56% of Tomet's methanol sales in 2021 against 48% in 2020. If the company was unable to export probably one line would shut. Since being declared bankrupt in March 2021 Tomet's appointed management team has undertaken a number of projects. On the first methanol unit, the air-cooling apparatus has been replaced, which made it possible to stabilize the operation of the synthesis gas compressor circuit. On the second unit, the catalyst of the reforming furnace was replaced, which also had a positive impact on the long-term stability of its operation. Currently, a weighing complex for cars is being built, which will allow the company to expand the geography of product supplies for domestic consumers located within a radius of 300 km from the plant. The degree of readiness of the facility is 90%, and this may help the company to continue to produce this year.

Russian Exports of Urea 2021		
Country	Qty (unit-kilo tons)	Value (\$ mil)
Belarus	132.8	59.9
Brazil	1383.8	521.1
Canada	241.3	99.7
Côte d'Ivoire	119.5	40.7
Ecuador	145.0	61.2
Estonia	513.6	151.0
Finland	855.6	310.3
Honduras	149.4	50.4
India	238.1	67.7
Israel	149.0	69.1
Mexico	444.5	159.7
Morocco	108.4	26.4
Peru	174.6	57.0
Switzerland	551.1	187.8
United States	492.8	192.8
Others	9.3	2.6
Total	6,957.3	2,480.7

A contractor was selected by Tomet's bankruptcy manager to develop project documentation for an increase in production of the second methanol unit to 1600 tons per day. A contract was intended to be concluded in the near future but may now be placed on hold. Other plans being implemented by Tomet's bankruptcy manager include the construction of a warehouse of goods and materials. This would be the first such warehouse for Tomet which will ensure the safety of expensive goods and materials.

Togliattiazot-losses from war in Ukraine

On 24 February TOAZ announced the shutdown of three units, and the transfer of four units to the reduced load mode. The company also stopped deliveries through the ammonia pipeline. The production capacity of the enterprise is more than 3 million tpa of ammonia and 960,000 tpa of urea.

Togliattiazot (TOAZ) may lose more than 30 billion roubles a year due to the war in Ukraine. The company produced a record 3.04 million tons of ammonia in 2020, of which two-thirds were exported mostly through the ammonia

pipeline "Togliatti-Gorlovka-Odessa", the end point of which is the Odessa Port Plant. In monetary terms, 68% of the company's products were transported through the ammonia pipeline, which is 36 billion roubles by the end of 2020 and another 28% by rail. Similarly to Tomet, Togliattiazot has been blocked by Finnish railways.

Organic chemicals

Russian N-Butanol Production (unit-kilo tons)		
Producer	Jan-22	Jan-21
Angarsk Petrochemical company	3.4	3.0
Azot Nevinnomyssk	1.5	1.8
Gazprom neftekhim Salavat	4.5	6.5
SIBUR-Khimprom, Perm	1.8	2.5
Total	11.2	13.8
Russian Isobutanol Production (unit-kilo tons)		
Producer	Jan-22	Jan-21
Angarsk Petrochemical Company	2.2	2.2
Gazprom neftekhim Salavat	3.9	3.5
SIBUR-Khimprom, Perm	2.5	1.5
Total	8.6	7.3

Russian Butanol Domestic Sales (unit-kilo tons)		
Producer	Jan-22	Jan-20
Gazprom n Salavat	0.4	0.5
SIBUR-Khimprom	1.8	1.9
Angarsk Petrochemical	3.3	2.7
Azot Nevinnomyssk	0.0	0.1
Totals	5.6	5.2

At the beginning of March prices on the Russian solvent market started to rise. There is no shortage of domestic ethyl acetate and butyl acetate, mainly as trading companies state that foreign buyers refuse to accept applications for the sale and supply of ethyl acetate.

According to traders, consumers are divided into three camps. Some seek to buy products for future use, others stop production or look for an alternative to imported material, others, using domestic raw materials, have taken a wait-and-see attitude, work as planned, without freezing working capital for the purchase of additional consignments of goods for replenishment of stocks. Despite the constraints on exporting ethyl acetate imports are also impeded to some extent and prices rose in March by 10-12%. According to traders, the supply of imported solvents will be sufficient until the end of March, but the situation will worsen in April if foreign suppliers do not unblock shipments to Russia. Volumes of domestic solvent in March were expected to be sufficient.

Russian Acetone Production (unit-kilo tons)		
Producer	Jan-22	Jan-21
Ufaorgsintez	3.6	4.2
Kazanorgsintez	4.6	4.7
Novokuibyshevsk Petrochemical	3.6	4.1
Omsk Kaucuk	4.5	1.9
Total	16.4	14.8

4,600 tons.

Acetone exports from Russia totalled 2,400 tons in January this year against 6,500 tons in January 2021.

Russian Acetone Exports (unit-kilo tons)		
Country	Jan-22	Jan-21
Belarus	0.7	1.1
Netherlands	1.5	2.6
Turkey	0.0	0.0
Lithuania	0.0	1.2
Latvia	0.0	1.5
Others	0.21	0.0
Total	2.4	6.5

Russian butanol production Jan-2022

Russian normal butanol production totalled 11,200 tons in January 2022, against 13,600 tons in the same month in 2021. Gazprom neftekhim Salavat was the largest Russian producer, producing 4,500 tons against 6,500 tons in January 2021.

Isobutanol production in Russia increased from 7,300 tons to 8,600 tons in January 2022. Gazprom neftekhim Salavat increased production from 3,500 tons to 3,900 tons, and SIBUR-Khimprom increased production from 1,500 tons to 2,500 tons.

Russian domestic butanol sales, Jan-22

Merchant butanol sales on the Russian domestic market amounted to 5,600 tons in January against 5,200 tons in the same month last year.

Russian acetone market Jan-2022

Russian acetone production in January 2022 amounted to 16,400 tons against 14,800 tons in January last year. Omsk Kaucuk produced 4,500 tons of acetone against 1,900 tons in the same month in 2021 whilst Kazanorgsintez reduced production from 4,700 tons to

Revenues from Russian acetone exports dropped from \$1.9 million to \$1.4 million with average prices rising from \$293 per ton to \$582 per ton. The largest market for Russian acetone exports was the Netherlands taking 1,500 tons against 2,600 tons in the same period in 2021. Belarus imported 700 tons of acetone from Russia in January 2022 versus 1,100 tons in January last year.

Russian acetic acid production and sales

Azot at Nevinnomyssk has arranged a shutdown of its acetic acid plant for planned maintenance from 29 March

to 17 April 2022. The capacity of the plant is 160,000 tpa at Nevinnomyssk where VAM, butyl acetate and methyl acetate are also produced. The shutdown was planned prior to the Russian invasion.

Azot Nevinnomyssk Acetic Acid Domestic Sales		
Consumer	Jan-22	Dec-21
Polief	0.5	2.7
Stavrolen	4.0	3.4
Dmitrievsky Chemical Plant	1.6	1.1
Sverdlov plant	0.9	0.9
Pigment	0.1	0.1
Nizhnekamskneftekhim	0.0	0.1
Others	0.8	0.7
Total	7.8	8.8

Acetic acid exports from Russia amounted to 1,200 tons in the first month in 2022 down from 2,100 tons in January 2021. Small volumes of acetic acid were imported from Uzbekistan in the first month this year. Normal butyl acetate exports from Russia dropped from 3,400 tons to 3,500 tons in 2021. Merchant sales of acetic acid amounted to 7,800 tons in January against 8,800 tons in December. Stavrolen is the largest consumer, purchasing 4,000 tons in January, with the other major consumers including Dmitrievsky Chemical Plant and Polief. Stavrolen also produces VAM, whilst for butyl acetate production is undertaken by

Dmitrievsky Chemical Plant and Ashchinsk.

Russian Plasticizer Imports (unit-kilo tons)	
Product	Jan-Dec 21
DOP	2.2
DOTP	14.1
DINP	39.3
Total	55.6

Russian plasticizer prices trade and prices

Demand for plasticizers in Russia was moderate in March but the volatility of the rouble is leading to a rise in prices. In addition, the cost of raw materials (phthalic anhydride and 2-ethylhexanol) has increased, which also affects the pricing of plasticizers.

SIBUR DOTP Exports (unit-kilo tons)	
Country	Jan-Dec 21
Belgium	3.1
Germany	1.3
Netherlands	4.4
Uzbekistan	2.2
Switzerland	1.1
France	1.5
Italy	0.9
Portugal	0.7
UK	0.8
US	0.6
Others	2.4
Total	19.1

Gazprom neftekhim Salavat raised the price of dioctyl phthalate (DOP) in March by 10,000 roubles to 188,000 roubles. SIBUR-Khimprom also increased prices of DOTP to 198,000-200,000 roubles. DINP produced by the Roshalsky plasticizer plant was available at 230,000-231,000 roubles per ton.

In 2021 Russia imported a total of 55,600 tons of plasticizers of which 39,300 tons comprised DINP. Major importers included BASF, Evonik and Exxon Mobil. Following the Russian invasion Deza from the Czech Republic has stated that it does not intend to sell more plasticizers after current contracts have been completed.

SIBUR exported 19,100 tons of DOTP in 2021 against 9,700 tons in 2020. Exports to the Netherlands amounted to 4,400 tons last year followed by Belgium with 3,100 tons. All of the DOTP was produced by SIBUR-Khimprom at Perm. As a general trend, exports have been falling as domestic consumers have taken

more product although SIBUR believes the market will be tougher this to attract new customers.

Russian Imports of DINP (unit-kilo tons)				
Supplier	Oct-21	Nov-21	Dec-21	Jan-Dec 21
BASF	0.6	0.2	0.3	4.8
Evonik	1.4	1.4	1.3	11.1
Exxon Mobil	0.6	0.6	0.5	5.6
Frescom	0.7	0.6	0.0	4.4
Deza	0.9	0.1	0.1	1.8
Chemnews	0.0	0.1	0.1	1.6
LG Vina Chemical	0.2	0.4	0.1	1.2
Others	0.8	0.3	0.0	9.3
Total	5.2	3.7	2.4	39.3

In the second half of February, plasticizer prices in the Russian market rose in accordance with higher feedstock costs. SIBUR-Khimprom increased the cost of DOTP to 187,000-188,000 roubles (6,000-7,000 roubles higher than at the beginning of the month). In March, plasticizer prices in the domestic market have continued to see pressure largely driven by the exchange rate.

Russian TDI-MDI Imports

Russian TDI Imports (unit-kilo tons)		
Country	Jan-22	Jan-21
Belgium	0.0	0.0
China	1.8	1.9
Germany	0.9	0.1
Hungary	1.6	1.0
Japan	0.0	0.0
Netherlands	0.1	0.31
Saudi Arabia	0.000	0.41
South Korea	0.6	0.8
Turkey	0.0	0.0
Others	0.0	1.2
Total	5.2	5.8

Russian TDI-MDI imports, Jan-2022

The significant fall in value of the rouble against other currencies is likely to affect imports of TDI and MDI where prices have been rising already in line with crude costs. Moreover, domestic demand for polyurethanes is being affected by economic problems faced by Russia, including the stoppage in production at many car plants.

January imports of TDI into Russia saw a slight decline from January 2021, dropping from 5,768 tons to 5,181 tons although higher than in December when volumes totalled 4,362 tons. Although volumes were lower this January than in January 2021 costs rose from \$14.600 million to \$14.744 million.

The main Russian regions for TDI purchased imports in January included Moscow and Tatarstan. Import shipments into Moscow increased from 1,798 tons in December to 2,262 tons in January.

China was the largest supplier of TDI to Russia in the first month in 2022 shipping 1,817 tons for \$5.150 million which compares against 1,913 tons in January 2021 for \$4.197 million. Other important suppliers

Russian Imports of TDI by Region (unit-kilo tons)		
Region	Jan-22	Dec-21
St Petersburg	0.077	0.082
Kaluga	0.038	0.038
Moscow	2.262	1.798
Moscow Oblast	0.606	0.277
Stavropol	0.336	0.143
Vladimir	0.345	0.171
Tatarstan	1.286	1.726
Others	0.230	0.125
Total	5.181	4.362

included Hungary which shipped 1,631 tons to Russia against 964 tons in January 2021 and Germany which increased shipments from 117 tons to 939 tons.

MDI imports into Russia amounted to 15,049 tons in the month in 2022 against 10,547 tons in January 2021. The Vladimir region accounted for the largest amount of MDI imports in January taking 34%, amounting to 5,533 tons for \$14.338 million. The Moscow region accounted for 2,868 tons of MDI imports in January for \$8.643 million.

Dow Izolan at Vladimir is one of the most important polyurethane system manufacturers in which Dow Chemical has a stake in a joint venture. Following Russia's military incursion into Ukraine Dow

Chemical stated that is not planning to start any new investment in Russia whilst on 24 March Dow Izolan at Vladimir was forced to reject rumours of planned reductions in output due to raw material bottlenecks.

Russian Imports of MDI (unit-kilo tons)		
Country	Jan-22	Jan-21
Belgium	1.7	1.1
China	3.6	0.6
Germany	3.4	1.4
Hungary	0.3	0.5
Japan	1.7	1.5
Netherlands	2.8	3.0
Portugal	0.6	0.0
Saudi Arabia	2.2	2.8
South Korea	0.4	0.1
Others	0.0	0.8
Total	15.0	10.5

Saudi Arabia shipped 2,234 tons of MDI to Russia in January 2022 against 2,810 tons in January 2021 whilst shipments from the Netherlands dropped from 3,045 tons to 2,762 tons.

Other MDI suppliers into Russia included China which increased shipments from 642 tons in January 2021 to 3,624 tons this year and Germany which increased shipments from 1,423 tons to 3,378 tons.

Russian isocyanate import costs Jan-Nov 2021

TDI costs for Russian importers averaged \$2857 per ton in January 2022 against \$2532 in January 2021. Import costs rose from \$14.6 million to \$14.8 million in the period January 2022.

MDI costs per ton for Russian imports rose from \$1773 in January 2021 to \$2722 in January 2022. Overall, import costs for MDI totalled \$41.040 million in January 2022 against \$18.700 million in the same month last year. Imports from China increased from \$1.777 million to \$10.809 million followed by imports from Germany rising from \$2.724 million to \$9.144 million.

Ukraine

Ukrainian chemical industry after Russian invasion

Ukraine is more of a chemical and polymer consumer than producer and many of its processing plants have come to almost a standstill following the Russian invasion and mass destruction. The sole petrochemical producer Karpatneftekhim announced the shutdown of production facilities on 24 February for the period of martial law in order to avoid possible negative consequences and given the fact that the complex is a critical infrastructure facility. The last benzene export shipment was made from Karpatneftekhim on 8-9 February, when a batch of benzene with a volume of 5,000 tons sent to Italy for purchase by Versalis. Karpatneftekhim is capable of producing about 250,000 tpa of ethylene, 100,000 tpa of polyethylene, 200,000 tpa of caustic soda, 180,000 tpa of chlorine and 300,000 tpa of PVC.

The Ukrainian government is doing its best to support any sort of production, but other matters take far more priority. Polymer imports are suspended due to the dangers in addition to connected products such as plasticizers, although there are inventories which could be used when some form of peace can be achieved.

Ukrainian Plasticizer Imports (unit-tons)		
Product/Company	Jan-22	Jan-21
DOP	76.0	295.0
Boryszew	76.0	272.0
DEZA	0.0	23.0
DOTP	90.0	100.0
Grupa Azoty	68.0	40.0
Boryszew	22.0	35.0
Others	0.0	25.0
DINP	480.0	589.0
BASF	46.0	116.0
DEZA	138.0	345.0
Exxon Mobil	98.0	128.0
KH Chemicals BV	95.0	0.0
Other	103.0	0.0

More than 200 companies have applied for assistance in evacuating to the west of Ukraine, some are already in the process of moving. Appeals come from representatives of the food, woodworking, textile, chemical industry, medicine and mechanical engineering. Polish plastics processor Plast-Box reported that their plant at Chernihiv north east of Kyiv had been badly damaged by a Russian attack. Plast-Box has stated that it intends to fully rebuild the plant when possible.

Sumykhimprom which is Ukraine's largest producer of complex fertilizers, declared force majeure in March for the supply of titanium dioxide (TiO₂). The production capacity is 75,000 tpa. Azot at Severodonetsk also stopped production of fertilisers in early March.

Ukrainian methanol market 2022

Methanol deliveries to Ukraine stopped on 23 February due to the Russian invasion and it is not clear when they could restart. Sometime between 23 and 24 February Ukrainian Railways Ukrzaliznytsia took the decision to destroy the railway border crossings with Belarus and the Russian Federation in order to impede the advance of the troops of the attacking countries. Consequently, KarpatSmol at Kalush was forced to stop the production of urea-formaldehyde on 24 February.

Ukrainian methanol imports from Russia (unit-kilo tons)			
Russian Producer	Border Crossing	Del by 23 Feb	Feb plan
Total		3.97	7.70
Metafrax Chemicals	Kagamlyk	0.98	1.80
Metafrax Chemicals	Kegichevka	0.13	0.30
Metafrax Chemicals	Kuryazh	0.07	0.10
Metafrax Chemicals	Seleshchina	0.39	0.70
Metafrax Chemicals	Sencha	0.39	0.40
Shchekinoazot	Kegichevka	0.26	0.30
Shchekinoazot	Osnova	0.46	0.90
Shchekinoazot	Rozhnyatov		1.30
Shchekinoazot	Seleshchina	0.71	0.70
Shchekinoazot	Sencha	0.20	0.30
Shchekinoazot	Suprunovka	0.39	0.90

From 1 February to 23 February a total of 3,970 tons of methanol were imported to Ukraine from Russia by rail. At the start of February orders had been arranged for 7,700 tons to be delivered from Russia to Ukraine.

The major consumers of methanol in Ukraine under normal conditions include Ukrtatnafta for use in fuels, Ukrgasvydobuvannya in gas supply and KarpatSmol in resin manufacture. For supplies of formalin, urea-formaldehyde concentrate and urea-formaldehyde resins, Ukraine imports from a number of countries including Poland, Belarus, Romania and Slovakia. These markets have ceased up since the invasion.

Central Asia

Kazakh petrochemical investments could be influenced by Russian sanctions

Investments into the Kazakh chemical industry could be affected by the heavy sanctions imposed on Russia and Belarus. Particularly the polyethylene project at Atyrau could be vulnerable to sanction-based delays whilst the 500,000 tpa polypropylene project is close to completion and may avoid a delay. The plant near Atyrau is expected to start in the first half of 2022 after progress had achieved 96% of the project schedule by the end of 2021.

Other polymer and chemical projects that are expected to be held back include the construction of a PET plant in the Atyrau region with a capacity of 430,000 tpa and a plant for the production of methanol in the West Kazakhstan region, with a capacity of 130,000 tpa.

Azerbaijan-chemical exports January 2022

In January 2022 methanol exports amounted to \$11.9 million (in January 2021, exports were not carried out), LDPE \$11.5 million (an increase of 66.6%), HDPE \$10.5 million (an increase of 3.6 times), and polypropylene \$10.3 million (an increase of 2%). Exports of polyethylene rose 38% to 175,300 tons.

SOCAR Polymer increased its output by 44% in 2021 compared to 2020, and in 2020 plans to grow by 15.5%. A total of 205,200 tons were produced at SOCAR Polymer's plants in 2021, which is 44% higher than in 2020. Production for 2021 is projected to rise to total 237,000 tons. The key consumers of SOCAR Polymer products last year were Russia, Turkey, Kazakhstan, Ukraine and China.

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