

# 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**

**Issue No: 382, 23 September 2022**

## **Key points from this issue:**

### **Central European petrochemical markets**

- Polish imports of polyethylene totalled 799,415 tons in the first seven months in 2022 against 779,126 tons in the same period in 2021
- PKN Orlen is undertaking assessment for the construction of a new LDPE plant at Plock
- The Polimery Police project in northern Poland had achieved 96% of its construction schedule by the end of August. Start-up is scheduled for the first quarter in 2023
- Synthos announced in mid-September that due to high energy costs it was reducing its emulsion styrene-butadiene rubber (ESBR) production by around 30%
- Methanol imports into Hungary dropped from 64,373 tons in the first half of 2021 to 39,169 tons in the same period this year, with shipments from Russia greatly reduced

### **Russian chemical production**

- Further sanctions combined with mobilisation will add more pressure to the chemical industry
- Russian ethylene production rose from 2.260 million tons in the period January to July 2021 to 2.574 million tons in the same period in 2022
- Russian propylene rose from 1.544 million tons to 1.666 million tons in the first seven months
- Russian styrene production fell from 446,400 tons to 421,100 tons in January to July 2022
- Russian benzene production amounted to 771,600 tons in the first seven months in 2022 against 755,600 tons in the same period in 2021
- Overall, for the first seven months Russian synthetic rubber production fell from 999,000 tons to 902,000 tons. Production has fallen due to less exports being shipped to Europe

### **Russian chemical trade**

- Propylene exports from Russia amounted to 83,200 tons in the first seven months in 2022 against 85,700 tons in the same period 2021
- Export volumes for Russian methanol in the first seven months increased to 1.219 million tons versus 1.121 million tons in the same period in 2021
- Russian polyethylene trade with China, in both export and import activity, has increased this year helping to replace some trade with Europe

### **Project news**

- SIBUR has moved its completion date for the Amur Gas Chemical Complex near Svobodny in the Russian Far East from Q2 2024 to sometime in 2026. The complex is intended to constitute the largest polymer plant in the world, although completion looks provisional at this stage
- Novatek has suspended consideration of the project of the Ob Gas Chemical complex (Ob GCC) due to technology sanctions and does not expect to decide on the investment by 2023

## CENTRAL and SOUTH EAST EUROPE

**PKN Orlen Production (unit-kilo tons)**

Product	Jan-Jul 22	Jan-Jul 21
Ethylene	279.2	127.8
Propylene	266.0	143.0
Butadiene	37.1	16.2
Toluene	5.2	7.3
Phenol	25.3	29.1
Polyethylene	190.2	85.5
Polypropylene	207.2	145.0

### PKN Orlen production Jan-Jul 2022 and margins

PKN Orlen increased ethylene production from 127,800 tons in the first seven months in 2021 to 279,200 tons in the same period this year whilst propylene production rose from 143,000 tons to 266,000 tons. Due to higher operational activity this year butadiene production at Plock increased from 18,200 tons to 37,100 tons the first seven months whilst polyethylene production rose from 85,500 tons to 190,200 tons.

Average petrochemical margins for PKN Orlen amounted to €1212 per ton in July, down from €1343 per ton in June. In

August petrochemical margins dropped further to €1169 per ton, meaning that the average for 2022 was €1259.63 versus €1278.5 in the same period last year. Refining margins for PKN Orlen dropped to \$18.5 per barrel in July against €34.4 in June and then dropped to \$14.0 in August.

### Refining and crude supply in Central Europe

Up to seven tankers of Saudi crude were scheduled for delivery to the Butinge terminal in Lithuania in September. Although the Mazeikiiai refinery was built more than 40 years ago and designed for the refining of Russian oil, since April 2022 the refinery has processed only raw materials extracted in the North Sea, Saudi Arabia or the USA.

The Szazhalombatta refinery in Hungary completed a large maintenance shutdown in mid-September, with its main challenge over the next few years to adapt the processing technology to use more non-Russian crude.

On 16 September Germany took control of the Schwedt refinery which is owned by Rosneft. The refinery is very important for Berlin's fuel supply and the aim is eliminate the dependency on Russian crude. According to media reports PKN Orlen could be interested in taking over a controlling stake in the Schwedt refinery. This could represent a key part of the agreement on the supply of crude oil to Germany via the Polish oil terminal from Naftoport at Gdansk.

Serbia from 1 November will not be able to buy Russian oil due to EU sanctions, so it will try to replace it with oil from other sources either from Iraq or Azerbaijan.

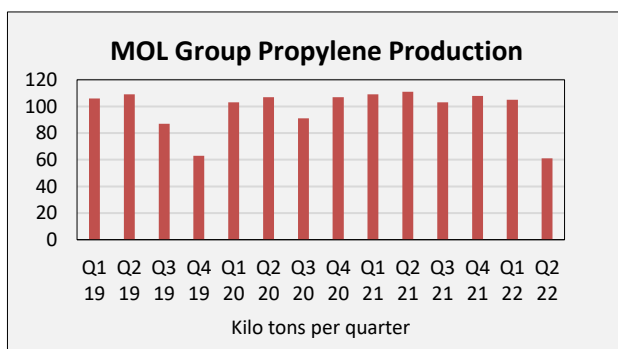
### Central European propylene market 2022

The rise in propylene production at Plock this year has helped reduce the demand for imports. Whilst PKN Orlen's propylene production has rebounded this year MOL in Hungary reduced production in the first half of 2022 due to extended maintenance.

Regarding investments MOL is constructing a new propylene plant in Hungary where most of the production may be channelled into the polyol project at Tiszaujvaros, Polimery Police which is constructing its PDH plant, and PKN Orlen which is planning large-scale investments at Plock.

Although reducing propylene production in the first half of 2022 to 166,000 tons from 220,000 tons in the corresponding period in 2021, MOL still was able to export 40,674 tons in the first six months which measures against 47,171 tons of propylene in the same period last year. Slovnaft in Slovakia was the main recipient of MOL's exports from Tiszaujvaros, taking 34,574 tons in the first six months in 2021 versus 42,398 tons in January to June 2021. Slovnaft needs to purchase propylene from MOL to support polypropylene production.

Imports of propylene into Poland dropped in the first six months to 81,703 tons against 121,246 tons in the same period last year, which was due mostly to the higher production undertaken at Plock in 2022. The increase in production enabled Poland to export 23,534 tons in the first half in 2022 where Germany was the largest



destination followed by the Czech Republic and Slovakia.

Overall, the Czech Republic remains a net importer of propylene, taking 24,006 tons in the first half of 2022. Germany has been the leading supplier of propylene to the Czech market in the first half, supplying 12,089 tons in the first six months for €17.478 million. Other suppliers to the Czech Republic included Romania which shipped 5,251 tons from the Petromidia refinery for €7.528 million, followed by Poland shipping 3,925 tons for €5.452 million.

Polish Polyethylene Trade		
Exports	Jan-Jul 22	Jan-Jul 21
Vol (kilo tons)	209.033	136.650
Value (€ million)	354.872	183.650
Imports	Jan-Jul 22	Jan-Jul 21
Vol (kilo tons)	799.415	779.126
Value (€ million)	1492.0	1174.0

#### Polish polyethylene trade Jan-July 2022

Polish imports of polyethylene totalled 799,415 tons in the first seven months in 2022 against 779,126 tons in the same period in 2021. Average prices for polyethylene imports into Poland rose to €1866.1 per ton in the first seven months in 2022 against €1507.4 in the same period in 2021.

Costs of polyethylene imports amounted to €1.492 billion in January to July 2022 against €1.174 billion. HDPE is the largest category of imported polyethylene into Poland, amounting to 272,406 tons in the

first seven months this year versus 267,380 tons in January to July 2021.

Polish exports amounted to 209,033 tons in the first seven months in 2022 versus 135,653 tons in the same period in 2021; the rise due to higher production. Average prices for polyethylene exports into

Polish PE Exports (unit-kilo tons)		
Country	Jan-Jul 22	Jan-Jul 21
LDPE	12.285	10.325
LLDPE	36.460	37.324
HDPE	142.165	74.175
EVA	2.131	1.181
EAC	13.154	10.684
Other	2.837	3.061
Total	209.032	136.750

Poland rose to €1697.7 per ton in the first seven months in 2022 against €1341.0 in the same period in 2021. Revenues from exports increased from €128.153 million in January to July 2021 to €354.872 million in 2022, through an increase in both prices and volumes. Effectively Poland is importing significantly more polyethylene as it exports, justifying interest in investment.

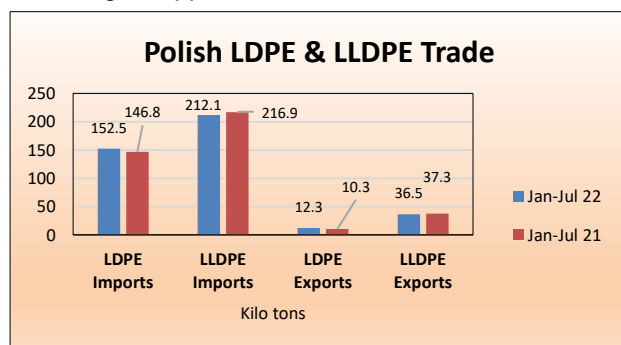
#### Orlen-LDPE project assessment

PKN Orlen is undertaking assessment for the construction of a new LDPE plant at Plock. Thus far, it has signed a license and base project agreement with LyondellBasell. Lupotech T technology provided by LyondellBasell accounts for more than 14 million tpa of LDPE/EVA polymer globally based on more than 70 production lines.

Polish PE Imports (unit-kilo tons)		
Country	Jan-Jul 22	Jan-Jul 21
LDPE	152.483	146.754
LLDPE	212.058	216.897
HDPE	272.406	267.380
EVA	10.454	12.414
EAC	116.755	107.815
Other	35.589	27.866
Total	799.744	779.126

LDPE market share for Orlen was increased this year through the acquisition of the assets from Basell Orlen Polyolefins (BOP). In July 2022, PKN Orlen acquired assets from BOP, including LDPE polyethylene production capacity of 100,000 tpa, as well as its sales and customer service on the Polish market. The company plans to finalise the transaction by the end of this year,

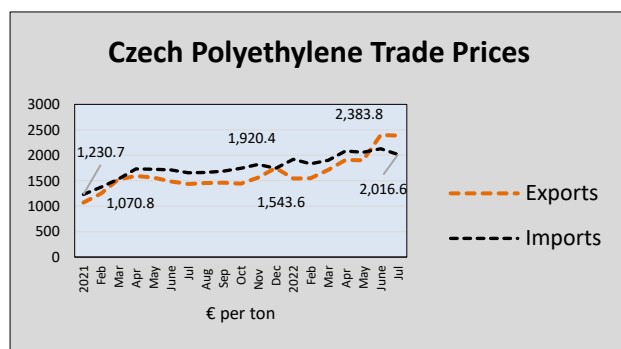
obtaining all approvals from antitrust authorities in Poland and the Netherlands.



PKN Orlen will thus become the sole producer of LDPE in Poland, covering about a third of the domestic demand. Overall, the market is dominated by imports which amounted to 152,483 tons in the first seven months in 2022 against 146,754 tons in the same period in 2021.

Poland is also the largest consumer of LDPE polyethylene in Central Europe. According to forecasts, in 2025 the LDPE market in Central

Europe will grow to approximately 890,000 tons, including around 312,000 tons for Poland against around 300,000 tpa at present.



### Czech polyethylene trade Jan-July 2022

Polyethylene prices in Europe have risen sharply since the start of 2021 to the second quarter in 2022. However, the combination of lower crude prices and lower demand indicate that polymer prices could stabilise and even decline somewhat.

In July export prices from the Czech Republic dropped slightly from June numbers of €2399 per ton to €2384 per ton whilst import prices dropped from €2128 per ton to €2017 per ton.

Comparatively Czech export prices have risen from €1544 per in January this year whilst import prices were €1920 per ton at the same time reflecting how export-import prices have changed.

Orlen Unipetrol Polyolefin Exports		
HDPE	Jan-Jul 22	Jan-Jul 21
Vol (ktons)	210.981	180.150
Value (€ mil)	347.524	246.656
PP	Jan-Jul 22	Jan-Jul 21
Vol (ktons)	148.688	163.579
Value (€ mil)	261.741	218.633

Czech HDPE exports increased in the first seven months to 210.981 tons against 180,150 tons in the same period in 2021, with revenues amounting to €347.524 million against €246.656 million. Although polypropylene exports dropped by volume from 163,579 tons to 148,688 tons, values rose from €218.633 million in January to July 2021 to €261.741 million this year.

For imports of all forms of polyethylene, Czech inward shipments dropped from 201,175 tons in the period January to July 2021 for costs of €316.125 million to 190,510 tons in 2022 for costs of

€378.476 million. Imports in 2022 can be broken down into 86,047 tons of LDPE and 72,614 tons of HDPE.

Hungarian Polymer Exports				
	Jan-Jun 22	Jan-Jun 22	Jan-Jun 21	Jan-Jun 21
Product	Ktons	€ million	Ktons	€ million
LDPE	45.218	78.419	54.789	82.269
HDPE	113.293	189.787	143.461	198.064
Polypropylene	123.332	219.843	125.276	190.801
Polystyrene	85.564	170.670	87.252	142.983
PVC	139.587	239.641	152.105	172.004

### Hungarian polymer exports Jan-Jun 2022

Hungarian exports of polyolefins, polystyrene and PVC all increased in value in the first half of 2022, although overall volumes have been lower due to lower production at Tiszaújváros. LDPE export prices from Hungary rose in the first half this year to €1734 per ton on average from €1502 in January to June 2021. HDPE prices rose from €1380 per ton to €1675 per ton, with

volumes dropping from 143,461 tons to 113,290 tons. Polyolefin production at Tiszaújváros was lower in the first half of 2022 due to maintenance, which thus impacted on volumes. MOL exports most of its HDPE production whilst LDPE is sold more on the domestic market.

Further maintenance on MOL's petrochemical facilities took place in August, thus affecting olefin and polyolefin production in the third quarter. Slovnaft in Slovakia has also undertaken shutdowns in recent months which have limited production this year. Slovnaft produced 267,000 tons of polypropylene in 2021 against 264,000 tons in 2020, whilst LDPE production rose from 190,000 tons to 195,000 tons. Polyolefin production increased in 2021 due to higher demand resulting from COVID.

Czech Petrochemical Exports (unit-kilo tons)		
Product	Jan-Jul 22	Jan-Jul 21
Ethylene	8.566	16.439
Propylene	0.034	3.020
Butadiene	1.100	1.342
Benzene	29.186	24.771
Toluene	4.835	5.341
Ethylbenzene	55.986	71.413

Around 90% of polymer sales are sent by Slovnaft for export, mainly to Central European countries. Over the first seven months this year Slovak exports of polyethylene to the Czech Republic totalled 14,810 tons against 19,076 tons in the same period in 2021.

### Czech petrochemical trade, Jan-Jul 2022

Ethylene exports from the Czech Republic dropped from 16,439 tons in the first seven months in 2021 to 6,566 tons in the same period this year. This included deliveries



of 1,186 tons of ethylene sent to India, 2,200 tons to Germany and 1,884 tons to Slovakia. Czech imports of ethylene rose from 3,134 tons in the first seven months last year against 15,025 tons in the same period this year. Partly due to the hydrocracking incident at Litvinov on 20 July, Czech imports of ethylene increased over that month. Germany supplied 3,288 tons of ethylene to the Czech Republic in July for a total cost of €4.408 million.

Propylene imports dropped from 25,536 tons in the first seven months in 2021 to 24,774 tons in the same period in 2022, with main suppliers including Germany, Romania and Poland. Czech imports of butadiene dropped from 45,340 tons in January-July 2021 to 43,972 tons in the same period in 2022. Czech exports of ethylbenzene amounted to 55,986 tons in the first seven months against 71,413 tons in the same period in 2021. All the ethylbenzene was shipped from Kralupy to Oswiecim, all within the structures of the Synthos Group.

<b>Czech Petrochemical Imports (unit-kilo tons)</b>		
<b>Product</b>	<b>Jan-Jul 22</b>	<b>Jan-Jul 21</b>
Ethylene	15.025	3.134
Propylene	24.774	25.536
Butadiene	43.972	45.340
Benzene	49.624	50.208
Toluene	4.373	4.185
Styrene	12.320	41.641

for €7.335 million).

Benzene exports from the Czech Republic rose in the first seven months this year to 29,186 tons against 24,771 tons in the same period in 2021. Germany was the primary market for Czech benzene exports, accounting for 21,279 tons for €21.388 million. Imports of benzene dropped slightly from 50,028 tons to 49,025 tons. Czech benzene imports were sourced in the first five months this year from Poland (21,742 tons for €24.940 million), Serbia (6,355 tons for €6.298 million) and Hungary (6,959 tons

<b>Czech PVC Exports</b>		
	<b>Jan-Jul 22</b>	<b>Jan-Jul 21</b>
Vol ktons	78.8	82.8
Value € mil	133.5	91.6

#### **Czech PVC exports Jan-Jul 2022**

Spolana exported 78,823 tons of PVC in the first seven months this year against 81,827 tons in the same period in 2021. Revenues from PVC exports increased from €91.583 million to €133.452 million, after average prices rose from €1114 per ton to €1700 per ton. Italy was the largest destination for Spolana's exports this year, after shipments to Poland reduced from 19,399 tons in January

to July 2021 to 16,489 tons. In order to support PVC production at Neratovice the Czech Republic imported 51,469 tons of ethylene dichloride from Germany in the first seven months in 2022 versus 29,142 tons in the same period in 2021.

<b>Polish Imports of Propylene (unit-kilo tons)</b>		
<b>Country</b>	<b>Jan-Jul 22</b>	<b>Jan-Jul 21</b>
Lithuania	0.000	6.415
Bulgaria	3.983	0.000
Croatia	1.958	0.000
Germany	38.307	64.375
Russia	23.132	29.398
Ukraine	19.020	41.097
Hungary	3.918	0.000
Others	4.421	0.012
Total	94.739	141.297

#### **Polish propylene & butadiene imports, Jan-Jul 22**

Poland imported 94,739 tons of propylene in the first seven months against 141,297 tons in the same period in 2021. Imports have fallen this year due partly to higher production at Plock. Average prices for propylene imports into Poland rose from €819 per ton in January to July 2021 to €1419 in the same period in 2022.

<b>Polish Butadiene Imports (unit-kilo tons)</b>		
<b>Country</b>	<b>Jan-Jul 22</b>	<b>Jan-Jul 21</b>
Austria	23.146	22.564
Czech Republic	1.746	3.390
Germany	1.959	0.000
Hungary	14.726	20.454
Others	0.005	0.701
Total	60.246	75.838

Germany supplied 38,307 tons of propylene to Poland in the first seven months against 64,375 tons in 2021 whilst imports from Ukraine dropped from 41,097 tons to 19,020 tons. Russia reduced shipments to 23,132 tons from 29,398 tons. Volumes from Russia have been gradually falling as the year goes by. Imports of propylene into Poland included 3,983 tons from Bulgaria and 1,958 tons from Croatia.

Butadiene imports into Poland totalled 60,246 tons in the first seven months in 2022 against 75,838 tons in the same period in 2021. The three largest suppliers comprised Hungary, Germany and Austria. Styrene imports fell from 64,907 tons to 63,379

tons. The Netherlands is the largest supplier of styrene to the Polish market, most of which is purchased by Synthos.

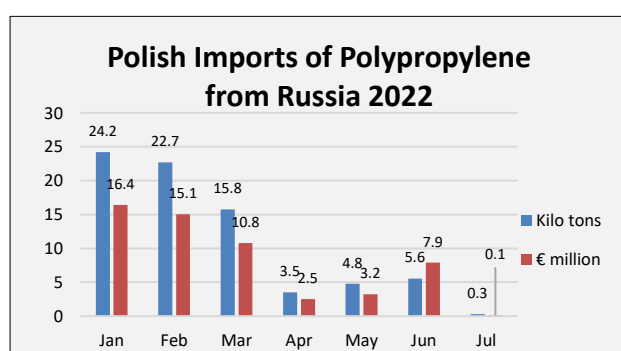
### Polimery Police achieves more than 90% of construction schedule by end-August

The Polimery Police project in northern Poland had achieved 96% of its construction schedule by the end of August. Production is forecast to start in 2023 based on capacities of 429,000 tpa of propylene and 437,000 tpa of polypropylene. At current progress rates, the aim is to start production in the first quarter

Polimery Police-Project Progress	
Month	% Progress
Jan 22	83%
Apr 22	90%
Aug 22	97%

next year. The scope of the project also includes a gas port, a transshipment and storage terminal, providing the possibility of obtaining the raw materials necessary for the production by sea.

Other parts of the project include the cryogenic separation system necessary to separate hydrogen from the post-reaction mixture in the PDH (propane dehydrogenation) process. The separated hydrogen will be subject to further purification and will be used for the internal needs of the PDH process. It will also be sent to Grupa Azoty Zakłady Chemiczne Police.



A significant part of the volume of the production under Grupa Azoty Polyolefins will be directed to domestic customers. This investment will enable the diversification of Grupa Azoty's business activities and strengthen the competitive position of Polish on the European market of plastics producers.

In addition to the dependency on propylene monomer imports, Poland has in recent years been increasing its imports of polypropylene and propylene copolymers. Imports of polypropylene

from Russia were one of the main sources in 2021, amounting to 155,805 tons from a total of 727,232 tons. In value terms this amounted to €198.656 million from a total value of €1100.731 million. This year the position has changed due to the economic impact resulting from Russia's invasion of Ukraine and imports of polypropylene from Russia into Poland have fallen in recent months to less than 200 tons in July.

### Polish Exports of ESRB Jan-Jun 2022

Country	Ktons	€ million
Brazil	6.274	11.682
China	1.666	2.391
Czech Republic	1.397	2.754
Finland	1.931	3.484
France	1.699	3.304
Spain	4.074	8.140
Hong Kong	1.573	2.364
India	21.288	38.134
Japan	1.096	1.761
Germany	2.922	5.583
South Africa	5.340	10.916
Romania	1.008	1.896
Serbia	1.215	2.426
Thailand	1.694	2.452
Turkey	3.782	7.394
Hungary	2.446	4.744
Italy	1.706	3.514
Others	8.556	16.074
Total	69.667	129.011

The construction of the Polimery Police complex is being undertaken by Hyundai Engineering Company, which started in January 2020, with total project costs estimated in the range of \$1.8 billion.

### Synthos-reduced production EBSR rubber

Synthos announced in mid-September that it was reducing its emulsion styrene-butadiene rubber (ESBR) production within the group by around 30%. Synthos stated that it could no longer operate its ESBR production at full capacity due to unsustainable and unpredictable utility costs. The costs have increased due to the current developments in connection with the supply of natural gas from Russia to Europe.

Synthos has stated that it aims to reduce ESBR production until further notice, while production of solution-SBR and butadiene rubber will continue as planned. Synthos manufactures ESBR at all three of its production sites in Oswiecim, Kralupy nad Vltavou, and Schkopau. If the reduction in ESBR production is

extended over a 12-month period at its three sites, it could equate to around a loss of 100,000 tpa.

Czech Exports of ESBR Jan-Jun 2022		
Country	Ktons	€ million
Austria	1.727	3.430
Belgium	1.431	2.790
Brazil	5.487	10.045
Spain	1.318	2.593
Finland	1.096	2.242
France	1.669	3.201
India	2.469	4.343
Italy	1.436	2.769
South Korea	7.198	12.930
Poland	3.747	7.350
Slovakia	1.114	1.976
Turkey	1.471	2.938
Others	10.445	21.224
Total	40.609	77.831

In the first half of 2022 Synthos exported 69,667 tons of ESBR from Oswiecim for a total value of €129.011 million and from Kralupy 40,609 tons for a total value of €77.831 million

Synthetic rubber production at Oswiecim rose in the first seven months rose from 160,000 tons to 163,800 tons. Synthos reduced production of general polystyrene at Oswiecim in the first seven months this year from 42,500 tons to 40,300 tons in 2022, whilst expandible polystyrene increased from 58,100 to 58,400 tons.

In the first seven months in 2022 Synthos exported a total of 180,671 tons of synthetic rubber for a total cost of €350.918 million against 195,146 tons in the same period for €279.223 million. The largest category of synthetic rubber included the group of styrene-butadiene-styrene block co-polymers which amounted to 121,476 tons in January to July 2022. From the Kralupy plant in the Czech Republic Synthos exported 119,400

Synthos Production (unit-kilo tons)		
Product	Jan-Jul 22	Jan-Jul 21
Polystyrene	40.3	42.5
EPS	58.4	58.1
Synthetic Rubber	163.8	160.0

tons of synthetic rubber in the first seven months for €245.471 million versus 119,374 tons in the same period in 2021 for €179.177 million.

### Synthos-gas supply

In order to strengthen gas supply Synthos has concluded a contract with Gaz-System has concluded a contract for the construction of the Oświęcim-Tworzeń gas pipeline. Due to this investment, Synthos will be possible to receive the transmission of natural gas to steam and gas units at Oswiecim. The Oswiecim-Tworzeń gas pipeline will be connected to the North-South Gas Corridor in Sławków, and in Oswiecim to the existing transmission network.

Czech Imports of Butadiene Rubber (unit-kilo tons)		
Country	Jan-Jun 22	Jan-Jun 21
Germany	3.027	2.501
Malaysia	1.189	2.216
Poland	1.669	3.689
Russia	6.419	6.558
Others	2.456	2.463
Total	14.760	17.427

Hungarian Imports of Butadiene Rubber (unit-kilo tons)		
Country	Jan-Jun 22	Jan-Jun 21
Czech Republic	3.166	2.176
Germany	1.506	2.173
France	0.535	1.777
Poland	0.314	0.058
Russia	9.226	7.863
South Korea	3.623	2.596
UK	2.383	1.046
Others	1.945	1.677
Total	22.697	19.367

Polish Imports of Butadiene Rubber (unit-kilo tons)		
Country	Jan-Jun 22	Jan-Jun 21
Czech Republic	2.999	3.461
Germany	2.268	1.241
Japan	1.209	1.785
South Korea	1.121	0.176
Russia	13.826	9.214
US	3.222	1.802
Others	4.342	4.473
Total	28.988	22.151

### Central European rubber trade 2022

Butadiene imports into Central Europe from Russia showed no signs of sanctions impact in the first half of the year although the sanctions did not take effect until 10 July. The introduction of sanctions on butadiene rubber is creating a gap in the market and has encouraged Synthos to revive production at the idled plant at Schkopau which it acquired under the Trinseo acquisition.

Poland imported a total of 28,988 tons of butadiene rubber in the first half of 2022, which was up from 22,151 tons in the same period in 2021 of which Russia supplied 13,826 tons. Hungarian imports of butadiene rubber increased in the first half this year to 22,697 tons against 19,367 tons of which Russia supplied 9,226 tons. Czech imports of butadiene rubber dropped to 14,780 tons in the first half of 2022 from 17,427 ton in 2021,

with Russia supplying 6,419 tons.

The fall of imports into the Czech Republic corresponds with rise in exports of butadiene rubber from 53,877 tons in the first six months in 2021 to 56,897 tons in the same period this year. Revenues from butadiene exports increased from €74.731 million to €115.769 million. The largest customer for Czech butadiene is India which took 11,419 tons in the first half of 2022 for €21.644 million. The largest European consumer was Poland taking 7,734 tons for €14.780 million followed by Slovakia with 5,210 tons for €10.241 million.

<b>Chimcomplex Sales (€ million)</b>		
<b>Product</b>	<b>Jan-Jun 22</b>	<b>Jan-Jun 21</b>
Polyols	123.0	167.5
Chlor-alkali	94.7	40.4
Oxo alcohols	9.7	21.9
Others	25.0	6.2
Total	252.5	235.9

#### **Chimcomplex investments 2022**

Chimcomplex is planning several investment projects aimed at the "green" transformation of the company. The total investment budget of the company for the entire year 2022 is 590.6 million lei. The main projects in progress being replacement of membranes for some electrolyzers

<b>Chimcomplex Expenditures (€ million)</b>		
<b>Product</b>	<b>Jan-Jun 22</b>	<b>Jan-Jun 21</b>
Raw materials and consumables	110.4	85.0
Other material charges	0.9	0.8
Energy and water costs	85.4	33.0
Cost of goods sold	7.4	2.9
Total	204.1	121.7

in the chlorine section, and completion of the cogeneration plant on the industrial platform at Ramnicu Valcea for the production of electricity, steam and hot water. Other projects include the modernisation and increase of the capacities of the propylene oxide plant and the increase in storage capacity of storage for the main raw materials in addition to increasing the degree of safety in operation.

Costs for Chimcomplex rose sharply in the first half of 2022, amounting to €204.1 million against €121.7 million in the same period in 2021. Propylene is one of the main raw materials where prices rose from €846 per ton in the first half of 2021 to €1274 in 2022, whilst gas rose from €18 per Mwh to €104 and electricity from €57 to €169.

Polyol revenues for Chimcomplex amounted to €123.0 million in the first six months against €167.5 million in 2021. The expansion of polyol capacity this year to 187,000 tpa is expected to increase exports particularly with some growth expected in domestic demand. Special bio polyols will also be produced including 100% vegetable polyols, made of castor oil, or fireproof polyols, which will be used in the construction of rigid foams, for example, to renovate hospital wards.

<b>Polish Organic Chemical Trade</b>	
<b>Exports</b>	<b>Jan-Jul 22</b>
Vol (kilo tons)	1030.2
Value (€ million)	1430.7
<b>Imports</b>	<b>Jan-Jul 22</b>
Vol (kilo tons)	1808.4
Value (€ million)	3126.7

#### **Polish organic chemical trade Jan-Jul 2022**

Imports of organic chemicals into Poland amounted to €3.127 billion in value in the first seven months in 2022 for 1.808 million tons of products. Export values rose to €1430.7 million in January to July for 1.030 million tons.

High energy prices have played a key role in driving up values this year. Imports of propylene and phenol from Russia have shown signs of decline since May, whilst methanol exports remain high in

Poland's new role as a regional conduit to other parts of Central Europe. Methanol imports totalled 565,213 tons in the first seven months in 2022 against 400,164 tons in the same period in 2021.

Phenol imports into Poland have risen sharply this year, amounting to 68,152 tons in the first seven months in 2022 versus 23,137 tons last year. Russia was one of the main suppliers of phenol this year in the first half of this year although volumes in May started to show signs of softening. This was in preparation for the EU sanctions on phenol which took effect from 10 July. In the first seven months phenol imports into Poland from Russia totalled 14,466 tons for a total value of €21.093 million which measured against 9,746 tons for the whole of 2021 for €10.732 million. Russia previously shipped ethylene oxide to the Polish market, but deliveries have stopped since May.



Polish Organic Chemical Imports (unit-kilo tons)		
Product	Jan-Jul 22	Jan-Jul 21
Acetic Acid	26.466	26.951
Acetone	4.619	2.764
Adipic Acid	6.928	4.768
Butadiene	68.254	75.838
DEG	15.869	17.075
DINP/DOP	13.721	11.978
Ethyl Acetate	9.147	7.605
Ethylbenzene	61.773	77.302
Ethylene Glycol	31.535	28.774
Ethylene Oxide	7.787	17.846
Isopropanol	6.014	5.427
Maleic Anhydride	8.255	9.692
Melamine	12.259	14.877
Methanol	565.213	400.164
Paraxylene	34.150	48.784
Phenol	68.152	23.137
Phthalic Anhydride	20.303	23.158
Propylene	94.720	141.268
Propylene Glycol	12.218	14.321
Propylene Oxide	1.379	2.993
PTA	1.179	32.108
Styrene	63.379	64.907
TDI	44.143	44.515
Toluene	13.873	12.583
VAM	11.213	10.332

Ethylene oxide imports into Poland totalled 7,787 tons in January to July 2022 down from 17,846 tons in the same period in 2021.

For other organic chemical imports Poland took 26,466 tons of acetic acid in the first seven months in 2022 against 26,951 tons in the same period in 2021. The UK was the leading supplier, shipping 9,347 tons for €11.158 million.

Ethyl acetate imports rose from 7,605 tons in the first seven months last year to 9,147 tons this year, with Belgium providing the largest volume of 1,769 tons. The second largest supplier was Ukraine, providing 1,453 tons although most of the product was shipped in the first quarter.

Isopropanol imports rose from 5,427 tons in January-July 2021 to 6,014 tons this year, with Germany providing the largest volume of 2,387 tons. Russia supplied over 700 tons in the first four months, but similarly to some other products trading has been phased out.

Paraxylene imports into Poland totalled 34,150 tons this year, down from 48,754 tons in January to July 2021. Russia's last shipment of paraxylene to Poland took place in April, amounting to 3,251 tons and taking the total for the year to 6,905 tons. Imports from Russia appear to have been replaced by inward shipments from Turkey, which amounted to 7,552 tons

for the first seven months this year. Overall, for the period January to July 2022 imports of paraxylene from France into Poland totalled 16,584 tons.

Polish PTA Exports (unit-kilo tons)		
Country	Jan-Jul 22	Jan-Jul 21
Belarus	5.762	10.854
Germany	212.872	241.483
Lithuania	27.322	20.544
Switzerland	5.652	3.111
Turkey	5.060	0.000
Others	14.492	5.312
Total	271.160	281.303

#### Polish PTA trade Jan-Jul 2022

PTA exports from Poland amounted to 271,160 tons in the first seven months in 2022 against 281,303 tons in the same period in 2021. Average prices for Polish PTA exports in the first seven months amounted to €958 per ton. PKN Orlen reduced PTA production in May due to some technical issues which followed on from April where the company delivered up to 75% of the minimum contract volumes. Germany remained the main customer for Polish PTA, taking 212,872 tons in January to July 2022 against 281,303 tons in the same period in 2021. Lithuania was the second largest destination for PTA export shipments, taking 27,322 tons.

Czech MDI imports (unit-kilo tons)		
Country	Jan-Jul 22	Jan-Jul 21
China	1.963	1.836
Belgium	7.406	7.643
Germany	5.567	10.173
Hungary	3.738	5.148
Netherlands	1.868	1.345
Others	0.784	1.282
Total	21.328	27.427

Due to higher production at Wloclawek Poland reduced imports of PTA in the first seven months to 1,179 tons against 32,108 tons in January to July 2021.

#### Central European isocyanates, Jan-Jul 2022

MDI imports into the Czech Republic totalled 21,327 tons in the first seven months in 2022 against 27,427 tons in the same period in 2021. Total costs for MDI imports into the Czech Republic dropped from €62.469 million in January to July 2021 to €56.635 million in the same period in 2022, with average prices

rising from €2.277 per ton to €2.655. TDI imports into the Czech Republic amounted to 4,759 tons in the first seven months this year for a total cost of €16.446 million.

<b>Polish MDI Imports (unit-kilo tons)</b>		
<b>Country</b>	<b>Jan-Jul 22</b>	<b>Jan-Jul 21</b>
Germany	66.641	75.609
Netherlands	33.847	27.056
Hungary	62.045	72.015
Belgium	47.578	37.769
Saudi Arabia	2.549	2.601
Others	17.295	13.706
<b>Total</b>	<b>229.955</b>	<b>228.756</b>
<b>Ktons delivered</b>	<b>86.512</b>	<b>100.778</b>
<b>Av Price Per Ton</b>	<b>2.658</b>	<b>2.270</b>

<b>Polish TDI Imports (€ million)</b>		
<b>Country</b>	<b>Jan-Jul 22</b>	<b>Jan-Jul 21</b>
Belgium	2.514	1.869
Germany	36.474	35.995
Hungary	60.533	57.482
Netherlands	9.234	11.060
Saudi Arabia	3.930	4.259
Others	11.944	8.994
<b>Total</b>	<b>124.628</b>	<b>119.659</b>
<b>Ktons delivered</b>	<b>44.143</b>	<b>44.515</b>
<b>Av Price Per Ton</b>	<b>2.823</b>	<b>2.688</b>

<b>Czech Methanol Imports (unit-kilo tons)</b>		
<b>Country</b>	<b>Jan-Jul 22</b>	<b>Jan-Jul 21</b>
Germany	3.646	7.621
Norway	0.525	0.000
Russia	19.303	33.478
Poland	20.694	12.773
Others	0.740	0.885
<b>Total</b>	<b>44.908</b>	<b>54.757</b>

Imports of methanol into Poland totalled 564,204 tons in the first seven months in 2022 against 406,218 tons in the same period in 2021. Russia increased exports from 268,318 tons to 432,165 tons whilst Finland shipped 42,007 tons against 42,024 tons in January to July 2021. Germany increased exports to Poland in the first seven months to 70,648 tons from 45,299 tons in the previous year. Import prices averaged €375 per ton in the first seven months.

<b>Polish Methanol Imports (unit-kilo tons)</b>		
<b>Country</b>	<b>Jan-Jul 22</b>	<b>Jan-Jul 21</b>
Azerbaijan	1.138	0.000
Belarus	0.044	2.620
Finland	42.007	42.024
Lithuania	0.610	6.166
Germany	70.648	45.299
Netherlands	0.650	25.692
Norway	16.787	6.299
Russia	432.165	268.318
Others	0.155	9.801
<b>Total</b>	<b>564.204</b>	<b>406.218</b>

Exports of methanol from Poland amounted to 249,613 tons in the first seven months against 111,838 tons in January to July 2021. Revenues from Polish exports of methanol rose from €26.7 million in January to May 2021 to €108.8 million in the same period in 2022, with export prices averaging €437 per ton against €347 per ton last year.

Export deliveries from Poland to Southeast Europe are expected to continue for the rest of this year, or as long as the Russian occupation of Ukraine prevents the railways from restarting.

MDI imports into Poland totalled 86,512 tons in the first seven months in 2022 against 100,778 tons in the same period in 2021. Costs rose from €228.756 million to €229.955 million, with average prices rising from €2270 per ton to €2658 in January to July 2022. Germany was the largest supplier to the Polish market followed by Hungary. Although MDI imports into Poland fell in the first seven months so did exports from Poland, dropping from 24,591 tons to 14,708 tons. Hungary exported 116,750 tons of MDI in the first half of 2022 against 115,341 tons January to June 2021, with average prices rising from €2207 per ton to €2598 per ton this year.

TDI imports into Poland amounted to 44,143 tons in the first seven months in 2022 against 44,515 tons in the same period in 2021. Values in January to July 2022 amounted to €124.628 million, equating to €2823 per ton, against €119.659 million in the first seven months in 2022 when prices averaged €2688 per ton. Hungarian TDI exports amounted to 148,344 tons in the first half of 2022 against 150,689 tons in the same period in 2021, whilst revenues from TDI shipments from €368.270 million to €402.652 million. Average prices per ton rose to €2714 from €2443 in the first half of 2021.

#### **Central European methanol trade Jan-Jul 22**

Czech imports of methanol amounted to 44,908 tons in the first seven months against 39,417 tons in the same period in 2021. Russia accounted for 19,303 tons in the first seven months down from 33,478 tons last year, according to Czech statistics.

Costs of methanol imports into the Czech Republic rose from €19.218 million in January to July 2021 to €20.558 million in 2022. Prices per ton for methanol imports into the Czech Republic increased from €351 in the first seven months in 2021 to €457 in the same period in 2022.

<b>Hungarian Methanol Imports (unit-kilo tons)</b>		
<b>Country</b>	<b>Jan-Jun 22</b>	<b>Jan-Jun 21</b>
Austria	1.071	0.000
Germany	6.996	0.000
Netherlands	5.196	0.000
Poland	5.579	0.309
Russia	10.763	28.080
Serbia	0.000	9.431
Slovakia	8.399	22.033
Others	1.166	4.520
<b>Total</b>	<b>39.169</b>	<b>64.373</b>

Methanol imports into Hungary dropped from 64,373 tons in the first half of 2021 to 39,169 tons in the same period this year. Imports from Russia dropped from 28,080 tons to 10,763 tons and from Slovakia from 22,033 tons to 8,399 tons. Last year Serbia provided 9,431 tons from the Kikinda plant in the first six months, but the plant has hardly operated this year and thus Hungary has imported from other sources including the Netherlands, Germany and Poland.

#### **Ciech Jan-Jun 2022**

The Ciech Group increased its EBITDA in the first half of 2022 by 5% to zł 431 million whilst net profits rose by 14% to zł 148 million. Geographical diversification of sales, improving efficiency of production processes, effective cost control and a safe liquidity position are the principles that Ciech tries to apply to limit the effects of rising raw material prices and inflationary pressure. The company forecasts the EBITDA for 2022 to amount to zł 740–zł 780 million.

<b>Ciech Product Revenues (€ million)</b>		
<b>Product Group</b>	<b>Jan-Jun 22</b>	<b>Jan-Jun 21</b>
Soda Segment	417.7	255.8
Agro	82.1	65.6
Foams Segment	42.8	47.4
Silicates	49.3	25.3
Packaging Segment	10.1	7.7
Other operations	17.1	22.7
<b>TOTAL</b>	<b>590.2</b>	<b>403.8</b>

Consolidated revenues of the Ciech Group in the first half of 2022 rose by 46% to zł 2,479 million, which means an increase by 46% and proves the impact of rapidly growing raw material prices on the valuation of the Group's products.

Revenues from the sale of sodium carbonate and sodium bicarbonate increased in the first half of the year by 68% and 38% respectively. In the foams business, after the record-breaking 2021, the first half of the year brought a stabilisation of financial results, including due to the base effect and the downturn in the furniture industry. The revenues of Ciech Pianki amounted to zł 180 million in the first half of this year (compared to zł 199 million in January to June 2021), and an EBITDA of zł 27 million, compared to zł 36 million a year earlier.

<b>Polish Chemical Production (unit-kilo tons)</b>		
<b>Product</b>	<b>Jan-Jul 22</b>	<b>Jan-Jul 21</b>
Caustic Soda Liquid	245.7	191.3
Caustic Soda Solid	39.0	50.7
Caprolactam	95.0	93.8
Acetic Acid	1.4	3.4
Ammonia (Gaseous)	1448.0	1531.0
Ammonia (Liquid)	63.6	61.5
Pesticides	43.6	42.6
Nitric Acid	1360.0	1421.0
Nitrogen Fertilisers	1157.0	1218.0
Phosphate Fertilisers	200.2	292.6
Potassium Fertilisers	187.9	202.3

Effectively the downturn in revenues in the foams business was linked to a deterioration in the automotive sector, which directly determines demand for flexible polyurethane foams. Moreover, the uncertainty caused by the war in Ukraine, resulted in retail customers delaying their purchase decisions. In connection with the continuing unstable situation on the raw materials market, the soda business is expected to gradually move away

from annual contracting towards flexible pricing formulae.

<b>Grupa Azoty EBITDA Margins (%)</b>		
<b>Product Group</b>	<b>Jan-Jun 22</b>	<b>Jan-Jun 21</b>
Agro	18.7	11.0
Plastics	9.7	5.8
Chemicals	21.6	10.4
Energy	30.4	35.1
Other	69.1	50.0
<b>Total</b>	<b>19.5</b>	<b>11.7</b>

#### **Grupa Azoty, Jan-Jun 2022**

In spite of high gas and electricity prices Grupa Azoty multiplied its profits in the first half of 2022. Sales revenues rose around two-fold to zł 13.237 billion (€2.776 billion) whilst the net profit rose over times to zł 1.682 billion (€353 million), and the operating profit rose six-fold to zł 2.214 billion (€464 million). The EBITDA margin amounted to 19.5% in the first half of 2022.

In Azoty's plastics division the prices of benzene and phenol, increased by 18% and 24% respectively, while the prices of polyamide produced in the group increased. The sales volume of polyamide was slightly lower due to weakening demand in the automotive industry, which was caused by difficulties in accessing semiconductors and other components, not rebuilt after the COVID-19 pandemic. Strong, stable demand remained in the packaging sector.

## RUSSIA

Russian Chemical Production (unit-kilo tons)		
Product	Jan-Jul 22	Jan-Jul 21
Caustic Soda	747.0	752.1
Soda Ash	2,082.0	1,947.0
Ethylene	2,573.9	2,260.2
Propylene	1,666.4	1,803.3
Benzene	771.6	755.6
Styrene	421.1	446.4
Phenol	144.0	148.1
Ammonia	10,100.0	11,700.0
Nitrogen Fertilisers	6,884.0	6,631.0
Phosphate Fertilisers	2,498.0	2,458.0
Potash Fertilisers	4,649.0	6,289.0
Plastics in Bulk	6,117.0	6,371.0
Polyethylene	2,031.0	2,048.0
Polystyrene	337.9	321.1
PVC	604.5	622.8
Polyamide	106.4	115.6
Synthetic Rubber	902.0	999.0
Synthetic Fibres	111.3	118.7

### Russian chemical production Jan-Jul 2022

Russia's inability to accept defeat in Ukraine raises the possibility of further EU and US sanctions on parts of chemical industry. Thus far the fundamental shift in market trade dynamics both Russian exports and imports of polyethylene into and from China have risen in recent months, largely replacing European volumes. Chemical products previously not sold by Russia to China such as methanol are starting to increase as difficulties in trading with European customers intensify. Russian polymer and chemical producers are attempting to develop market share in China and other Asian markets, even if logistics are more challenging than for European markets.

Russian producers are placed in a vulnerable position where they may have to sell with a discount to incentivise foreign consumers who may face secondary sanctions. Moreover, companies have found that they can physically establish logistics to new markets, but the costs involved make exports themselves unprofitable. Problems are compounded by the strength of the rouble, even if it is artificially controlled, which makes it unprofitable to buy raw materials for roubles and sell finished products abroad for dollars. The damage done to Russian industry by Putin's actions extend deep and wide.

### Russian petrochemical production Jan-Jul 2022

In view of sanctions and increasing economic and political isolation and mounting challenges facing Russian companies from logistics to key components, it is strange to observe that Russian chemical production still appears to be performing relatively well. This is spite of the tightening sanctions and other economic effects from the war in Ukraine.

#### New logistical routes & challenges for Russian chemical trade

Russia's foreign trade has undergone significant reshaping this year with trade involving Germany and the US falling and to countries such as Turkey and India rising. China was expected to increase trade with Russia, but actually declined in the first half of 2022 due to a number of factors.

Some of the new logistics networks introduced include the recalibration of the Vostochny port in the Russian Far East to allow large volumes of methanol to be exported from Tomsk in Siberia. Another new project includes a shuttle between Kazan and Vladivostok, entitled FESCO Kazan Shuttle. This will allow deliveries from Russia to China to arrive in around 21 days, which is quicker than previous rail options. Overland transport routes have become much more important for Russian exporters and importers as major sea-shipping companies such as Maersk have withdrawn completely from the Russian market. Another illustration of these new routes includes the first Xinjiang-Kaliningrad train which left China on 1 August with its first large shipment of PTA for the Ekopet plant.

The introduction of mobilisation is likely to add to the pressure on the industry and wider economy. Ethylene production rose from 2.260 million tons in the period January to July 2021 to 2.574 million tons in the same period in 2022, whilst propylene dropped from 1.803 million tons to 1.666 million tons and benzene increased from 755,600 tons to 771,600 tons.

In the first seven months in 2022 polymer production declined by 3.2% over the same period in 2021 to 6.117 million tons. Polyethylene production totalled 2.031 million tons in the first seven months in 2022 versus 2.048 million tons in 2021. Polystyrene production rose from 321,100

tons to 337,900 tons. For the first seven months in 2021, the production of PVC decreased by 3.3% to 604,500 tons. Overall, for the first seven months Russian synthetic rubber production fell from 999,000 tons to 902,000 tons. Ammonia production has seen the largest fall this year dropping from 11.7 million tons in the first seven months last year to 10.1 million tons this year. This was due to the lack of shipments through the Togliatti-Odesa pipeline. The UN has been trying to rearrange the restart of the 2,400 km pipeline in order to help fertiliser production.



## Russian petrochemical project update

**Completion date for Amur Gas Chemical Complex moved to 2026**

SIBUR has moved its completion date for the Amur Gas Chemical Complex near Svobodny in the Russian Far East from Q2 2024 to sometime in 2026. It is difficult to verify this forecast as SIBUR's shareholders are linked to the Kremlin and tries to provide public statements that suggest all is well. However, there are no-SIBUR sources that suggest replacing Linde and Maire Tecnimont from the Amur project may be beyond SIBUR. Since the introduction of sanctions this year departure of Linde from the construction of the Amur Gas Chemical Complex the project has slowed down in view of some large technical challenges. Equipment deliveries by river have been slower also, with the first batch this delayed from May to August. The first vessel started its river journey from the port of De-Kastri on 5 August, weighing 2,370 tons and originating from China.

**Nizhnekamskneftekhim-EP 600 project**

SIBUR is undertaking its plans for the construction of the Ethylene-600 olefin complex in Nizhnekamsk despite the need to rebalance the company's investment portfolio. The company is rebalancing its investment portfolio based on available raw materials due to the inaccessibility of some foreign technologies. In effect it means that Nizhnekamskneftekhim's original plan for the EP-600 has had to be adapted to the new realities.

Construction of the EP-600 cracker at Nizhnekamskneftekhim has been delayed due to the search for a new contractor. The general contract with the Turkish company Gemont was terminated and it will take considerable time to clarify the picture and rebuild all contractual relations. The collaboration with Linde AG has been suspended as officially Linde withdrew from the Russian market at the end of June. All the imported equipment required for the project is reported by Nizhnekamskneftekhim to have already been delivered but completing the project has become more challenging and costly over the past few months.

SIBUR has already decided to build a hexene production unit with a capacity of 50,000 tpa at Nizhnekamskneftekhim. The capacity of the plant will be 50,000 tpa with production set to start by 2025. SIBUR's own technology developed at Tomsik will be used for hexene which is required for HDPE and LDPE production.

Although most of the equipment for the Amur Gas Chemical Complex is fully available, the speed of installation of the pyrolysis unit is moving slowly and reconfiguration is required for many aspects of the production facilities. There is still an element of doubt whether this project will be completed due to the exit of western partners. The construction was set up to be synchronized with the gradual reaching full capacity of Gazprom's Amur GPP, which will supply ethane and LPG. It is not clear if these delays are holding up completion of the Amur Gas Processing Plant as the chemical complex was originally a key part of the construction plan.

Progress in the installation of the pyrolysis unit for Amur Gas Chemical Complex had achieved 84% of the schedule by the start of May, and for polymer installations the estimated completion was 86%. As often in many petrochemical projects the last stages of construction and installation are the most complicated and time-consuming, and thus by SIBUR depicting 2026 as the new completion date indicates the scale of difficulties faced.

The Amur Gas Chemical Complex and the Amur Gas Processing Plant (GPP) are the two largest projects within the framework of a single gas chemical cluster for gas processing, being built near the city of Svobodny in the Amur Region. At the Amur Gas Processing Plant, the gas going through the Power of Siberia will be divided into fractions. After that, part of the fractions will be directly exported to China, and the other part will be processed at the Amur GPP.

**Linde exits Russian market**

From 30 June 2022, Linde officially withdrew from the Russian market. The company reflected in the report the impact of deconsolidation and impairment of assets in the amount of \$993 million for the second quarter. Overall Linde's business in Russia accounted for around 2-3% of total turnover, including 1% for industrial gases business accounted for about 1% of Linde's consolidated sales in Russia. Linde's engineering division has been heavily involved in the development of the Russian petrochemical industry in the past decade.

**Novatek suspends Ob Gas Chemical project**

Novatek has suspended consideration of the project of the Ob Gas Chemical Complex (Ob GCC) and does not expect to decide on the investment by 2023 due to technical issues. Thus far the project

has passed the stage of pre-FEED, but sanctions have complicated any further decisions. The Ob gas Chemical Plant is Novatek's project to produce 2.2 million tpa of ammonia and 130,000 tpa of hydrogen from natural gas. The launch of the first line of the plant was scheduled for 2026, the second line for 2027.

## Russian petrochemical markets

Russian Ethylene Production (unit-kilo tons)		
Producer	Jan-Jul 22	Jan-Jul 21
Angarsk Polymer Plant	111.8	112.0
Kazanorgsintez	388.2	352.6
Stavrolen	188.8	203.7
Nizhnekamskneftekhim	379.4	378.3
Novokuibyshevsk Petrochemical	27.9	31.2
Gazprom n Salavat	195.6	198.0
SIBUR-Kstovo	237.2	238.8
SIBUR-Khimprom	31.3	35.3
Tomskneftekhim	175.6	166.9
Ufaorgsintez	59.7	46.4
ZapSibNeftekhim	778.5	868.1
Total	2573.9	2631.3

59,700 tons. Stavrolen at Budyennovsk reduced ethylene production in the first seven months to 188,800 tons against 203,700 tons in 2021.

Russian Propylene Production (unit-kilo tons)		
Producer	Jan-Jul 22	Jan-Jul 21
Angarsk Polymer Plant	62.4	62.4
Kazanorgsintez	31.9	29.5
Lukoil-NNOS	186.4	132.3
Stavrolen	95.2	80.9
Nizhnekamskneftekhim	188.7	186.6
Novokuibyshevsk	15.7	42.7
Omsk Kaucuk	31.7	15.5
Polyom	113.0	114.5
Gazprom n Salavat	85.8	72.9
SIBUR Kstovo	104.5	103.3
SIBUR-Khimprom	46.1	37.8
Tomskneftekhim	91.4	89.5
SIBUR Tobolsk	0.0	3.0
Ufaorgsintez	98.7	101.4
ZapSibNeftekhim	509.5	731.0
Total	1661.1	1803.3

The Angarsk Polymer Plant is undertaking programmes aimed at reducing the absolute and specific consumption of energy resources, projects to replace purchased energy resources with energy resources of its own production. The production facilities of the enterprise include installations for the production of LDPE, ethylbenzene, styrene, polystyrene, and expandable polystyrene. The volume of processing of the enterprise is more than 730,000 tpa based on hydrocarbon gases, in addition to naphtha produced by the Angarsk Petrochemical Company.

## Russian propylene production, sales and exports, Jan-Jul 2022

Russian propylene production amounted to 1.661 million tons in the first seven months in 2022 against 1.803 million tons in the same period in 2021. The ZapSibNeftekhim and SIBUR Tobolsk plants reduced production from 734,000 tons in the first seven months in 2021 to 509,500 tons. In Tatarstan Nizhnekamskneftekhim produced 188,700 tons of propylene in the first seven months in 2022 against 186,600 tons in 2021 whilst Kazanorgsintez increased production 31,900 tons to 29,500 tons. In Bashkortostan Gazprom neftekhim Salavat produced 85,800 tons of propylene in the first seven months in 2022 versus 72,900 tons, whilst Ufaorgsintez reduced production from 101,400 tons to 98,700 tons.

## Russian ethylene production, Jan-Jul 2022

Russian ethylene production totalled 2.574 million tons in the first seven months in 2022 against 2.631 million tons in the same period in 2021. ZapSibNeftekhim at Tobolsk produced 778,500 tons in January to July 2022, down from 599,600 tons from January to July 2021. Nizhnekamskneftekhim produced 379,400 tons of ethylene in the first seven months in 2022 against 378,300 tons in 2021, whilst Kazanorgsintez increased from 247,600 tons to 279,300 tons.

Other important ethylene producers included SIBUR-Kstovo which produced 237,200 tons versus 238,800 tons. In Bashkortostan Gazprom neftekhim Salavat produced 195,600 against 198,000 tons, whilst Ufaorgsintez increased production from 46,400 tons to

Feedstock costs for Russian petrochemical producers have risen this year, both for naphtha and LPGs. SIBUR purchases around 1.3 million tpa of naphtha for Nizhnekamskneftekhim but has faced price issues with the regional refinery TAIF-NK.

Of the producers Nizhnekamskneftekhim, SIBUR-Kstovo and Angarsk Polymer Plant supply ethylene by pipeline to downstream consumers. Gazprom neftekhim Salavat can supply some free ethylene which all goes to Sterlitamak. The Bashkir Soda Company purchases around 130,000 tpa for the Sterlitamak plant. The Angarsk Polymer Plant can produce 200,000 tpa of ethylene, 100,000 tpa of propylene and 60,000 tpa of benzene. The main part of ethylene is supplied to Sayanskkhimplast for the production of PVC, and part is used by the plant for the production of low-density polyethylene, styrene and polystyrene.

The Angarsk Polymer Plant is undertaking programmes aimed at reducing the absolute and specific consumption of energy resources, projects to replace purchased energy resources with energy resources of its own production. The production facilities of the enterprise include installations for the production of LDPE, ethylbenzene, styrene, polystyrene, and expandable polystyrene. The volume of processing of the enterprise is more than 730,000 tpa based on hydrocarbon gases, in addition to naphtha produced by the Angarsk Petrochemical Company.

Russian Propylene Exports (unit-kilo tons)		
Producer	Jan-Jul 22	Jan-Jul 21
Lukoil-NNOS	53.4	49.8
SIBUR-Kstovo	10.6	14.0
Angarsk Polymer Plant	5.1	4.2
Stavrolen	14.2	17.7
Total	83.2	85.7

In the Nizhny Novgorod region SIBUR-Kstovo increased production of propylene from 103,300 tons to 104,500 tons. SIBUR-Kstovo sells most of its propylene on the domestic market in addition to exports. Lukoil-NNOS at Kstovo increased production from 132,300 tons to 186,500 tons.

#### Russian propylene exports & domestic sales Jan-Jul 22

Propylene exports from Russia amounted to 83,200 tons in the first seven months in 2022 against 85,700 tons in the same period 2021. Lukoil-NNOS increased export shipments from 49,800 tons to 53,400 tons whilst SIBUR-Kstovo increased shipments from 14,000 tons to 10,600 tons.

Russian sales of propylene on the domestic merchant market amounted to 247,300 tons in the first seven months in 2022 against 179,000 tons in the same period last year.

The largest propylene supplier to the domestic market was Lukoil-NNOS, shipping 105,400 tons against 77,400 tons in January to July 2021 followed by SIBUR-Kstovo which increased from 78,500 tons to 91,900 tons.

Russian Propylene Domestic Purchases (unit-kilo tons)		
Consumer	Jan-Jul 22	Jan-Jul 21
Saratovorgsintez	102.5	70.5
Volzhskiy Orgsintez	6.5	6.5
Akrilat	17.8	0.0
SIBUR-Khimprom	20.1	30.0
Omsk-Kaucuk	4.3	7.9
Tomskneftekhim	1.7	2.7
ZapSibNeftekhim	78.9	34.0
Moscow Refinery	1.3	6.5
Ufaorgsintez	1.6	2.7
Khimprom Kemerovo	4.2	3.4
Plant of Synthetic Alcohol	3.4	6.4

Russian Propylene Domestic Sales (unit-kilo tons)		
Producer	Jan-Jul 22	Jan-Jul 21
Angarsk Polymer Plant	16.1	21.9
SIBUR-Kstovo	91.9	78.5
Akrilat	13.2	0.2
LUKOil-NNOS	105.4	73.9
Stavrolen	17.2	2.9
Others	1.3	1.6
Total	247.3	179.0

ZapSibNeftekhim increased merchant propylene purchases from 34,000 tons in January to July 2021 to 78,900 tons in the same period this year. Saratovorgsintez increased purchases of merchant propylene from 70,500 tons to 102,500 tons. Regarding other consumers, SIBUR-Khimprom reduced purchases from 30,000 tons to 20,100 tons.

#### Russian styrene production, sales and exports, Jan-Jul 2022

Russian styrene production fell from 446,400 tons in the first seven months in 2021 to 421,100 tons in January to July 2022. Nizhnekamskneftekhim reduced production from 183,200 tons to 180,600 tons where most of the styrene is used internally for polystyrene and synthetic rubber output. Gazprom neftekhim Salavat reduced production from 115,200 tons to 110,000 tons.

Russian styrene exports amounted to 51,500 tons in the first seven months in 2022 against 59,000 tons in the same period in 2021. Gazprom neftekhim Salavat reduced exports from 55,100 tons to 41,000 tons in January to July 2022 whilst SIBUR-Khimprom increased export shipments from 600 tons to 6,800 tons.

Styrene exports from Russia are expected to decline in the second half of 2022, main due to the effect of sanctions Domestic merchant sales of styrene dropped slightly from 79,000 tons in the first seven months last year to 65,600 tons in 2022. Demand for styrene was

Russian Styrene Production (unit-kilo tons)		
Producer	Jan-Jul 22	Jan-Jul 21
Nizhnekamskneftekhim	180.6	183.2
Angarsk Polymer Plant	19.5	22.5
SIBUR-Khimprom	86.0	85.0
Gazprom n Salavat	110.0	115.2
Plastik, Uzlovaya	25.0	40.7
Total	421.1	446.6

Russian Styrene Exports (unit-kilo tons)		
Producer	Jan-Jul 22	Jan-Jul 21
Angarsk Polymer Plant	3.7	1.8
Plastik Uzlovaya	0.0	0.5
Gazprom neftekhim Salavat	41.0	55.1
Nizhnekamskneftekhim	0.0	1.0
SIBUR-Khimprom	6.8	0.6
Total	51.5	59.0

affected by lower synthetic rubber production, although polystyrene production has increased slightly.

## Paraxylene-PTA-PET

Russian Paraxylene Production (unit-kilo tons)		
Producer	Jan-Jul 22	Jan-Jul 21
Gazprom Neft	58.7	59.3
Kirishinefteorgsintez	31.7	42.0
Ufaneftekhim	62.9	64.5
Total	153.2	165.8

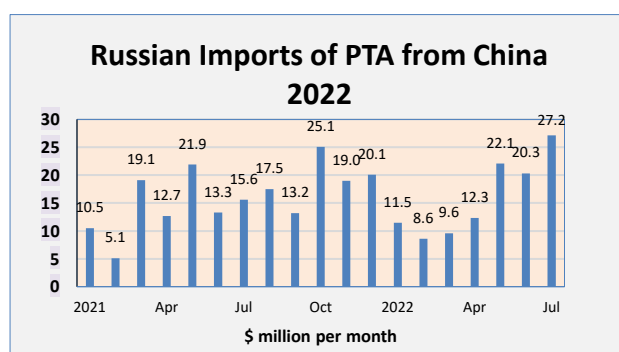
## Russian paraxylene production &amp; exports Jan-Jul 2022

Russian paraxylene production dropped from 165,800 tons in the first seven months in 2021 to 153,200 tons in the same period in 2022. Russian exports declined from 42,900 tons in the first five months in 2021 to 23,800 tons in the same period this year.

## Taneko paraxylene project

At the end of 2021 Tatneft stated that it was aiming to finish construction of its new aromatics complex at its Taneko refinery at Nizhnekamsk by the end of 2022 but owing to the sanctions imposed after the invasion of Ukraine completion and start-up is now in question. Paraxylene represents the most important product in the aromatics complex, besides benzene and toluene, in view of the plans to produce PTA. Taneko has set further project investment plans for a doubling of paraxylene capacity to 1 million tpa by 2024, with the ultimate aim of constructing a PTA plant with a capacity of 600,000 tpa. The PTA plant is intended to supply the Ekopet plant for PET in Kaliningrad which is 2,200 km from Nizhnekamsk.

Tatneft first announced plans for the production of paraxylene in 2017 with a view to start production in 2019. The launch of production was scheduled for 2019 in order to supply to the company SafPet, which was trying to construct a PTA plant with a capacity of 210,000 tpa together with a PET plant of 250,000 tpa. The SafPet project had seen no progress for several years and was eventually replaced by Tatneft's project which was created after the acquisition of Ekopet in 2021.



## PTA deliveries from China to Kaliningrad

In the first seven months in 2022 Russian imports of PTA from China totalled \$112.3 million versus \$98.2 million in the same period in 2021.

At the start of August this year TransContainer launched its first train from China to Kaliningrad through the Dostyk-Alashankou border crossing. The new service is focused on the transportation of PTA for PET production at Kaliningrad. As part of the first shipment, TransContainer provided its

own equipment and organised the transportation of 96 twenty-foot containers from Korla through the territory of Kazakhstan, Russia, Belarus and Lithuania. The delivery time from the Dostyk-Alashankou border crossing to the destination in Kaliningrad is eight days.

Most of the PTA into Kaliningrad is sourced from China and has traditionally been supplied by the Danish company Maersk through the Suez Canal. The Xinjiang connection with other parts of China was completed this summer, the route allowing delivery of PTA to Kaliningrad (4,822 km) avoiding sea transport. The problem for Ekopet in Kaliningrad is that the transshipment has to go through Lithuania and relations regarding transport arrangements are a potential risk.

## Senezh increasing usage of secondary PET

The PET plant Senezh at Solnechnogorsk achieved a record daily capacity for the production of PET granulate in September due following the introduction of new technology of "flakes-in-granules" (FTR, flakes-to-resin). The use of FTR makes it possible to add up to 30% of secondary PET to primary raw materials to create food granulate, which is produced under the new brand CleverPET. Total capacity for processing polymer waste in Russia is currently estimated at 890,000 tpa most of which can be repurposed to recycle PET. At present there are 23 enterprises for PET recycling located inside Russia, with a total capacity of 233,000 tpa. The main obstacle to using this capacity is the lack of PET waste. Many regions in Russia are collecting PET bottle waste now to be sent for recycling but investments are required in the infrastructure and logistics of moving this waste to plants.



## Aromatics

Russian Benzene Production (unit-kilo tons)		
Producer	Jan-Jul 22	Jan-Jul 21
Angarsk Polymer Plant	39.6	45.9
Gazprom Neft	58.7	64.0
LUKoil-Neftekhim	47.4	0.0
LUKoil-Permnefteorgsintez	35.8	28.0
Magnitogorsk MK	22.3	19.5
Nizhnekamskneftekhim	180.0	178.0
Novolipetsk MK	6.5	3.8
Gazprom neftekhim Salavat	116.6	112.8
Severstal	19.9	18.0
SIBUR-Holding	53.2	51.4
Slavneft-Yaroslavlorgsintez	30.7	39.6
Surgutneftegaz	7.0	11.3
Ryazan RN Holding	16.4	18.8
Ufaneftekhim	40.7	55.4
Ural Steel	4.2	5.5
Uralorgsintez	47.4	52.1
Zapsib	33.6	40.3
Novokuibyshevsk Petrochemical	11.8	11.2
Total	771.6	755.6

Russian Benzene Consumers (unit-kilo tons)		
Consumer	Jan-Jul 22	Jan-Jul 21
Kuibyshevazot	106.9	85.7
Azot Kemerovo	56.6	79.9
Shchekinoazot	31.1	42.2
Kazanorgsintez	37.6	39.0
Omsk Kaucuk	50.0	15.8
Novokuibyshevsk PC	13.9	26.5
Zapsib	19.3	19.0
SIBUR-Khimprom	50.1	62.5
Ufaorgsintez	8.3	6.2
Uralorgsintez	29.3	29.8
Others	2.0	3.8
Export	29.4	26.8
Total	434.6	437.3

reduced shipments from 42,200 tons to 31,100 tons. In the phenol sector Kazanorgsintez reduced purchases from 39,000 tons to 37,600 tons whilst Omsk Kaucuk increased purchases from 15,800 tons to 50,000 tons. For styrene production SIBUR-Khimprom reduced purchases from 62,500 tons to 50,100 tons.

Russian Caprolactam Production (unit-kilo tons)		
Producer	Jan-Jul 22	Jan-Jul 21
Kuibyshevazot	110.2	111.9
Shchekinoazot	34.3	34.0
SDS Azot	59.4	77.5
Total	203.9	223.3

production from 111,900 tons to 110,200 tons whilst SDS Azot at Kemerovo reduced production slightly to 77,500 tons from 59,400 tons. Caprolactam exports from Russia amounted to 14,549 tons in July was largely due to purchases made by China and Taiwan.

## Russian benzene production Jan-Jul 2022

Russian benzene production amounted to 771,600 tons in the first seven months in 2022 against 755,600 tons in the same period in 2021. The main reason for the higher production this year was the resumption of the Stavrolen plant at Budyennovsk at the end of 2021, producing 47,400 tons in the first seven months versus zero activity last year. Nizhnekamskneftekhim increased benzene production slightly from 178,000 tons to 180,000 tons.

Extended shutdowns at the aromatics' complexes both at Kirishinefteorgsintez and Ufaneftekhim impacted on the domestic supply/demand balance in the first seven months in 2022. Neither of those plants sell much benzene on the merchant market, but these outages mean that product was redirected from other suppliers creating bottlenecks.

Benzene sales from domestic producers and importers on the Russian domestic market amounted to 434,600 tons in the first seven months against 437,300 tons the same period in 2021. Imports started to disappear from the market in March as Ukrainian producers stopped operating whilst Belarussian refineries were forced to reduce operating rates after sanctions from the EU.

Angarsk Polymer Plant reduced sales from 24,600 tons to 21,200 tons whilst SIBUR-Kstovo increased sales from 50,700 tons to 51,400 tons.

Amongst the consumers Kuibyshevazot increased benzene purchases from 85,700 tons to 106,900 tons. Other caprolactam producers included Azot at Kemerovo which reduced purchases from 79,900 tons to 56,600 tons and Shchekinoazot which

## Russian caprolactam production, Jan-Jul 2022

Russian caprolactam production amounted to 203,900 tons in January to July 2022 against 223,300 tons in the same period in 2021. Kuibyshevazot reduced

Russian Orthoxylene Domestic Sales (unit-kilo tons)		
Company	Jan-Jul 22	Jan-Jul 21
Gazprom Neft	39.5	67.9
Ufaneftekhim	16.8	24.7
Kinef, Kirishi	18.4	18.4
Total	74.6	111.1

Russian Toluene Domestic Sales (unit-kilo tons)		
Producer	Jan-Jul 22	Jan-Jun 21
Slavneft-Yanos	3.6	8.4
Severstal	1.7	1.3
LUKoil-Perm	16.7	24.3
Gazprom Neft	26.1	31.1
Zapsib	3.9	3.6
Kinef, Kirishi	3.7	6.7
Others	1.7	5.1
Total	57.3	80.4

only Gazprom neftekhim Salavat and the Roshalsky Plasticizer Plant as the main merchant buyers for orthoxylene.

Toluene sales dropped from 80,400 tons in the first seven months to 57,300 tons in the same period last year. Gazprom Neft reduced sales from 31,100 tons to 26,100 tons. The Kirishi refinery reduced toluene sales to 3,700 tons versus 6,700 tons whilst Lukoil at Perm reduced shipments from 24,300 tons to 16,700 tons. Gazprom Neft reduced sales on the domestic market from 31,100 tons to 26,100 tons.

Russian toluene production totalled 198,300 tons in the first seven months in 2022 against 159,800 tons in the same period in 2021. Gazprom Neft increased production from 39,700 tons to 44,800 tons whilst Ufaneftekhim increased production from 13,100 tons to 71,900 tons.

Russian Domestic Market Phenol Sales by Supplier (unit-kilo tons)		
Producer	Jan-Jul 22	Jan-Jul 21
Omsk Kaucuk	21.4	16.3
Novokuibyshevsk Petrochemical	21.5	27.8
Ufaorgsintez	25.8	36.1
Total	68.8	80.3

Russian Phenol Production (unit-kilo tons)		
Producer	Jan-Jul 22	Jan-Jul 21
Ufaorgsintez	33.8	38.5
Kazanorgsintez	47.5	47.0
Novokuibyshevsk Petrochemical	29.7	39.4
Omsk Kaucuk, Omsk	33.0	23.2
Total	144.0	148.1

Russian Phenol Exports by Supplier (unit-kilo tons)		
Producer	Jan-Jul 22	Jan-Jul 21
Omsk Kaucuk	13.2	3.6
Novokuibyshevsk Petrochemical	3.5	8.5
Ufaorgsintez	3.3	3.0
Total	20.0	15.0

increasing shipments from 3,600 tons to 13,200 tons. Phenol and acetone have both been placed under EU sanctions and exports to Turkey have subsequently increased in recent months.

### Russian orthoxylene market, Jan-Jul 2022

Orthoxylene domestic sales in Russia amounted to 74,600 tons in the first seven months in 2022 against 111,100 tons in the same period in 2021. Gazprom Neft reduced domestic shipments from 67,900 tons to 39,500 tons whilst Ufaneftekhim reduced shipments from 24,700 tons to 16,800 tons. Orthoxylene exports from Russia totalled 37,200 tons in 2021 against 10,400 tons in 2020. Last year Kirishinefteorgsintez was the main exporter, shipping 23,600 tons.

Gazprom Neft did not sell orthoxylene on the merchant market in July and August. It is now more profitable to use orthoxylene in motor gasoline production, due to a mechanism that provides compensation from the state to fuel producers. In July Kamteks-Khimprom did not produce phthalic anhydride and thus did not buy orthoxylene, leaving

### Russian phenol market, Jan-Jul 2022

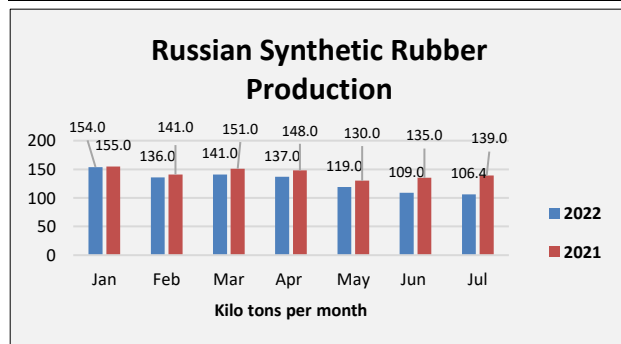
Russian phenol production amounted to 198,700 tons in the first seven months in 2022 against 159,100 tons in the same period in 2021. Novokuibyshevsk Petrochemical produced 29,700 tons of phenol against 39,400 tons whilst Ufaorgsintez reduced production from 38,500 tons to 33,800 tons. Kazanorgsintez produced 47,500 tons versus 47,000 tons whilst Omsk Kaucuk increased production from 23,200 tons in the first seven months in 2021 to 33,000 tons in 2022.

Sales of phenol on the domestic market totalled 68,800 tons in the first seven months in 2022 versus 80,300 tons in the same period in 2021, with Ufaorgsintez reducing shipments from 36,100 tons to 25,800 tons. Omsk Kaucuk increased shipments from 16,300 tons to 21,400

tons after recovering from technical problems earlier in the year whilst Novokuibyshevsk Petrochemical reduced sales from 27,800 tons to 21,500 tons. Russian phenol exports directly from producers amounted to 20,000 tons in the first seven months this year against 15,000 tons in the same period in 2021, with Omsk Kaucuk

## Synthetic rubber

Russian Butadiene Production (unit-kilo tons)			
Producer	Q1 22	Q2 22	Jul-22
ZapSibNeftekhim	80.6	63.0	14.8
Nizhnekamskneftekhim	61.5	50.7	19.0
Togliattikaucuk	12.6	14.1	2.2
Sterlitamak Petrochemical Plant	8.7	6.9	1.3
Omsk Kaucuk	8.6	10.2	3.5
Total	172.0	144.9	40.6



### Russian rubber feedstocks Jan-Jul 2022

Butadiene production in Russia fell in July to 40,640 tons which is the lowest monthly volume in 2022. Butadiene production has fallen in line with lower rubber production. Synthetic rubber production in Russia totalled 902,000 tons in the first seven months in 2022 against

999,000 tons in the same period in 2021. Production is expected to remain under the monthly 2021 levels for the rest of 2022. As a result, Nizhnekamskneftekhim may be forced to reduce operating rates for some product lines. Butadiene rubber, butyl rubber and halogenated butyl rubber are all products affected directly by sanctions, whilst isoprene rubber has thus far been excluded. The main problem facing isoprene rubber exports from Nizhnekamskneftekhim is logistics and the shipment of deliveries to European customers.

Nizhnekamskneftekhim Forecast (billion roubles)		
	2022 estimate	2021
Revenues	248.5	256.1
EBITDA	37.3	51.2
Profit	24.8	41.8
Operating Profit	15%	20%
Profit Margin	10%	16%

### Nizhnekamskneftekhim Jan-Jun 2022

In the second quarter sales of synthetic rubber by Nizhnekamskneftekhim to Europe dropped by around three-fold. Q3 and Q4 may be better than Q2 because of the redirection of products to Asia and the alignment of delivery logistics.

Nizhnekamskneftekhim Exports of Halogenated Butyl Rubber (unit-kilo tons)		
Country	Jan-Jun 22	Jan-Jun 21
Czech Republic	3.092	4.594
Hungary	7.304	9.938
Poland	9.142	7.846

In the first half of 2022 exports of halogenated butyl rubber increased to Poland to 9,142 tons against 7,846 tons in the same period in 2021, whilst volumes dropped to Hungary and the Czech Republic. Second half year volumes are expected to fall significantly

due to sanctions. After taking over Nizhnekamskneftekhim SIBUR is of the impression that the European tyre industry will be hampered by the absence of Russian synthetic rubber, particularly halogenated butyl rubber. Nizhnekamskneftekhim's project to increase the production of halogenated butyl rubber (HBR) from 150,000 tpa to 200,000 tpa has received safety and technical approvals which would allow completion of the project by the end of 2022. In view of the sanctions placed on halogenated butyl rubber for sale into the EU, which took effect from 10 July, combined with the reorientation of specific industries towards supporting the defence sector this project may be delayed.

### Togliattikaucuk-replacing imported oxalic acid for isoprene rubber production

Togliattikaucuk has replaced imported oxalic acid with domestically produced acid for the production of isoprene rubbers. The need to create the company's own production was determined by the high probability of limiting foreign supplies of oxalic acid. The development of the technology was entrusted to the scientific and technical centre at Togliattikaucuk. The first crystals were obtained from sugar-containing raw materials. Further, the technology is planned to be scaled to industrial volumes. Most of the oxalic acid imported into Russia comes from China, and thus not particularly affected by sanctions

## Methanol

Russian Methanol Production (unit-kilo tons)		
Producer	Jan-Jul 22	Jan-Jul 21
Shchekinoazot	891.0	563.9
Gazprom Methanol	421.9	579.0
Metafrax Chemicals	641.3	738.2
Akron	55.9	61.9
Azot Novomoskovsk	130.9	147.0
Angarsk Petrochemical	20.5	17.2
Azot Nevinnomyssk	64.2	73.0
Tomet	362.8	311.6
Ammoni	57.3	72.6
Totals	2645.8	2564.3

## Russian methanol production Jan-Jul 2022

Russia produced 2.646 million tons of methanol in the first seven months in 2022 against 2.564 million tons in the same period in 2021. The rise in production is due almost exclusively to the increases at two producers Shchekinoazot and Tomet. For other plants, the picture is one of stability or declines. Metafrax reduced production from 738,200 tons to 641,300 tons, due to extended maintenance in mid-2022, and Gazprom Methanol reduced production from 579,000 tons to 421,900 tons where exports have dropped.

Tomet produced 362,800 tons of methanol in the first seven months in 2022 against 311,600 tons in the same period in 2021. Production was higher due to both units operating for most of the first seven months whilst in 2021 only one unit worked for most of this five-month period. As Tomet is now facing restrictions on export possibilities only line has operated since June.

Russian Methanol Balance (unit-kilo tons)		
	Jan-Jul 22	Jan-Jul 21
Production	2645.8	2563.8
Exports	1219.4	1121.5
Domestic	936.7	936.1
Market Balance	489.7	506.2

Shchekinoazot produced 631,900 tons in the first seven months in 2022 against 415,500 tons in January to July 2021, the increase due to the addition of new capacity. More than two thirds of production was sent for export by Shchekinoazot, but the increase in domestic market sales has affected other producers. Thus, some of the smaller producers have reduced utilisation rates this year. In the Tula Oblast Azot at Novomoskovsk reduced production from 147,000 tons to 130,900 tons. Ammoni in Tatarstan reduced methanol production from 72,600 tons in the first seven months in 2021 to 57,300 tons in 2022.

Russian Methanol Exports by Producer (unit-kilo tons)		
Producer	Jan-Jul 22	Jan-Jul 21
Azot Nevinnomyssk	1.0	4.4
Azot Novomoskovsk	43.5	52.8
Akron	4.9	5.5
Metafrax Chemicals	246.8	252.4
Gazprom Methanol	139.3	306.4
Tomet	119.9	102.4
Shchekinoazot	662.6	397.5
Ammoni	1.5	0.0
Total	1219.4	1121.4

662,600 tons. Due to increased production Tomet was able to increase export shipments to 119,900 tons against 102,400 tons in January to July last year. Despite the overall increase Tomet exported very small volumes in May, June and July.

## Russian methanol market overview Jan-Jul 2022

Export volumes for Russian methanol in the first seven months increased to 1.219 million tons versus 1.121 million tons in the same period in 2021. The main reason for the higher exports was due to the start-up of the third unit M-500 at Shchekinoazot in September 2021 where shipments rose from 397,500 tons to

Gazprom Methanol at Tomsk reduced export shipments from 306,400 tons in January to July 2021 to 139,300 tons after the Finnish route became difficult to use. However, shipments to China have started this year and are helping to replace exports for Gazprom Methanol. Volumes from Tomsk to Hamina-Kotka have been shipped intermittently over the summer months.

Russian methanol exports to Belarus increased to 137,800 tons in the first seven months against 72,800 tons last year. Exports to Kazakhstan in January-July 2022 rose to 22,600 tons from 13,700 tons whilst shipments to Poland rose from 176,400 tons to 253,400 tons. Poland has acted as the conduit for Russian shipments to South-East Europe. Romania has not been able to receive methanol from Russia since the end of February and thus imports fell in the first seven months to 26,500 tons from 43,100 tons. Slovakia is facing the same delivery issues reduced imports from 141,800 tons in January to 49,000 tons. Methanol exports to Finland declined from 559,900 tons in January to July 2021 to 437,400 tons this year. Russian producers are actively seeking new customers and alternative routes for shipments to replace lost business in northern Europe.



Summary of Russian Methanol Export Destinations (unit-kilo tons)		
Country	Jan-Jul 22	Jan-Jul 21
Belarus	137.8	72.8
Finland	437.4	559.9
Kazakhstan	22.6	13.7
Latvia	45.4	7.9
Lithuania	40.8	48.7
Netherlands	137.1	39.7
Poland	253.4	176.4
Romania	26.5	43.1
Slovakia	49.0	141.8
Turkey	55.7	6.4
UK	8.4	0.0
Ukraine	11.9	39.2
Others	9.9	3.0
Total	1235.7	1152.7

Whilst methanol exports to China have not previously been considered by Russian producers' volumes have started to be shipped from Tomsk through the Russian Far East port Vostochny. Producers expect a drop in demand for Russian methanol in Europe and over time want to reorient of exports to Turkey and the Asia-Pacific region. At present these goals are complicated by logistical problems.

The shortage of specialised port facilities in Russia for transshipment of methanol has been a concern for producers for some years, and the concerns have been heightened by the economic impact from war in Ukraine. In the first seven months exports to Turkey increased from 6,400 tons to 55,700 tons from 7,400 tons in the same period last year, but in the southern part of Russia there are limitations on transshipment capacities required in order to further increase exports. The

only ports available at present include Yugneftekhimtransit at Kavkaz and Kargokhim at the port of Temryuk. The total volumes of methanol transshipment at these terminals are insignificant and amount to about 100,000 tpa.

Several projects for the construction of relevant terminals have been announced, and there are also opportunities under consideration to reprofile oil products terminals for methanol transshipment. Lukoil has already started investing in the Vysotsk terminal on the Gulf of Finland for transshipment of methanol, intended to operate on the basis of the methanol plant which is under construction. After the completion of the second stage at the facility, it will be possible to tranship 1 million tpa of methanol.

Russian Methanol Domestic Sales (unit-kilo tons)		
Producer	Jan-Jul 22	Jan-Jul 21
Azot Nevinnomyssk	15.5	13.4
Azot Novomoskovsk	77.3	91.8
Metafrax Chemicals	216.8	246.6
Gazprom Methanol	218.7	245.6
Tomet	216.1	185.7
Shchekinoazot	160.1	111.3
Ammoni (Mendeleevsk)	31.0	41.6
Total	935.5	936.1

#### Russian methanol domestic sales, Jan-Jul 2022

Merchant sales of methanol on the Russian domestic market amounted to 935,500 tons in the first seven months against 976,100 tons in the same period in 2021. The slight rise in domestic consumption in the first quarter has started to roll back as demand for methanol derivatives slows down. Tomet supplied 216,500 tons in the first seven months against 185,600 tons in the same period last year, making it the third largest provider on the domestic merchant market. The largest consumer for Tomet is Togliattiazot where methanol is used for the production of urea-formaldehyde concentrate.



Gazprom Methanol reduced domestic shipments of methanol from 245,600 tons in the first seven months in 2021 to 218,700 tons in the same period in 2021. Shchekinoazot increased domestic sales from 111,300 tons to 160,100 tons. Metafrax Chemicals reduced merchant shipments to the domestic market from 246,600 tons in January to July 2021 to 216,800 tons in the first seven months this year.

Nizhnekamskneftekhim still remains the largest merchant consumer in the Russian domestic market, taking 175,200 tons in the first seven months against 176,000 tons in the same period in 2021, with Gazprom increasing purchases from 117,500 tons to 151,200 tons. Togliattiazot increased purchases of

methanol from 44,200 tons to 81,000 tons in the first seven months and Omsk Kaucuk increased from 51,700 tons to 66,100 tons.

Russian Methanol Buyers (unit-kilo tons)		
Consumer	Jan-Jul 22	Jan-Jul 21
Nizhnekamskneftekhim	175.2	176.0
Togliattikaucuk	34.4	72.4
Uralorgsintez	27.7	32.5
SIBUR-Khimprom	1.1	12.8
SIBUR Tobolsk	25.3	21.5
Omsk Kaucuk	66.1	51.7
Novokuibyshevsk NPZ	20.0	18.1
Uralkhimplast	11.3	13.9
Slavneft-Yanos	7.2	8.3
Metadynea	42.3	53.6
Kronospan	53.5	72.3
Gazprom	151.2	117.5
Khimsintez	24.8	17.2
Volzhsky Orgsintez	32.4	4.3
Togliattiazot	81.0	44.2
Others	182.1	219.8
Total	935.5	936.1

Formaldehyde production in Russia has slowed in recent months due to weak demand, thus reducing purchases of methanol. The production of urea-formaldehyde concentrate increased in the first seven months to 183,700 tons against 171,200 tons in the same period in 2021, but the production of urea-formaldehyde resins dropped from 634,800 tons to 511,800 tons and phenol-formaldehyde resins fell from 284,500 to 264,900 tons. Resin producers have been faced by higher costs which combined with lower demand impacted on profits in the first half of 2022.

Methanol consumption in Russia has grown in the gas industry where it is used mainly as a chemical reagent for drying gas in order to prevent the formation of hydrates. The annual consumption of methanol for the Chayanda field in south-west Yakutia, which supplies the Power of Siberia pipeline to China, is estimated at about 10,000 tpa at present and is rising due to development of the Chayanda deposits. In the warm season, river transportation is used to transport methanol to Yakutia, and the navigation season accounts for about two-thirds of the supply volume. During August, more than 1,500 tons of methanol were shipped to the Chayanda field. The transportation route starts from the site of the Tomsk plant of Gazprom Methanol.

Russian Formaldehyde Resin Production (unit-kilo tons)		
Category	Jan-Jul 22	Jan-Jul 21
Urea-formaldehyde concentrate	183.7	171.2
Urea-formaldehyde resins	511.8	634.8
Phenol-formaldehyde resins	264.9	289.5

### Organic chemicals

#### Russian butanol production Jan-Jul 2022

Russian normal butanol production rose from 76,300 tons in the first seven months in 2022 to 81,300 tons in 2022. Gazprom neftekhim Salavat was the largest Russian producer, increasing production to 36,400 tons against 30,600 tons in January to July 2021.

Russian N-Butanol Production (unit-kilo tons)		
Producer	Jan-Jul 22	Jan-Jul 21
Angarsk Petrochemical company	18.0	14.2
Azot Nevinnomyssk	9.3	7.3
Gazprom neftekhim Salavat	36.4	30.6
SIBUR-Khimprom, Perm	17.6	13.8
Total	81.3	76.3

Isobutanol production in Russia increased from 47,800 tons to 64,600 tons in January to July 2022 during which Gazprom neftekhim Salavat reduced production from 19,600 tons to 19,000 tons, and SIBUR-Khimprom increased production from 19,200 tons to 32,900 tons.

#### Russian paints market

Prior to the Russian invasion the share of foreign manufacturers in the Russian market is estimated at about 30-35% (including companies Tikkurila, AkzoNobel, Huntsman, Hempel, etc.). The leading foreign brand was Tikkurila (taking around 13% of the market). The largest participant in the Russian market is TEX, which is 100% owned by the Finnish Tikkurila. Since sanctions on Russia were introduced, domestic manufacturers have sought to fill gaps left by foreign manufacturers where possible. Companies that previously worked only on Finnish or Norwegian materials are switching to domestic suppliers. Some Russian producers have noted a large influx of buyers, and this is due not only to seasonal demand.

Producers have reduced the production of ethyl acetate and butyl acetate because these products have a shelf life (six months from the date of production), and also in order not to overpack the warehouse and not freeze assets. At the same time, the volumes of supply of acetate solvents, as well as raw materials for their production (butanols and acetic acid), are sufficient as there is practically no export. Thus, the domestic market is oversaturated with these products.

Ethyl acetate imports into Russia amounted to only 142 tons in July, supplied from China and Uzbekistan. Uzbek ethyl acetate is still imported by the Dmitrievsky Chemical Plant for use in mixed solvents of its own production. Overall, for the first seven months in 2022 imports of ethyl acetate dropped by almost 80% compared to the same period in 2021. The supply of the European product was reduced due to its rise in price against the backdrop of rising electricity tariffs and the complexity of logistics. Delivery times for materials from Asia-Pacific countries remain long, and there is still no systematic shipment from manufacturing plants.

Russian Plasticizer Trade 2022 (unit-kilo tons)			
Exports			
	Q1 22	Q2 22	July
DOTP	3.925	1.623	1.037
Imports			
	Q1 22	Q2 22	July
DOP	0	0.958	0.362
DOTP	1.975	2.408	0.129
DINP	5.365	6.856	1.496

#### Russian plasticizers market Jan-Jul 2022

Both Russian exports and imports of plasticizers have been lower this year which is attributable due to a range of issues including logistics, sanctions, etc. SIBUR has been reducing exports of DOTP from Perm due to increased sales on the domestic market and the replacement of imports. Regarding imported plasticizers logistical bottlenecks have held up deliveries across of the board of DOP, DOTP and DINP.

For the domestic market prices for plasticizers in Russia have fallen in recent months due weakening demand. Availability is tight also despite low demand which means that producers such as Gazprom neftekhim Salavat and Roshalsky Plasticizer Plant are both quoting higher numbers. The cost of dioctyl terephthalate (DOTP) varies in the range of 145,000-151,000 roubles. On the trading floor, SIBUR-Khimprom offers DOTP for 162,000 roubles.

For plasticizer raw materials, domestically produced 2-ethylhexanol (2-EH) fell in price in July to 202,000-210,000 roubles from 215,000-225,000 roubles in June. The main merchant suppliers of 2-EH are Angarsk Petrochemical and SIBUR-Khimprom. Despite lower domestic prices consumers of 2-EH have begun to buy imported product from China.

Russian Phthalic Anhydride Production (unit-kilo tons)		
Producer	Jan-Jul 22	Jan-Jul 21
Gazprom neftekhim Salavat	7.2	7.8
Kamteks-Khimprom	31.1	56.4
Roshalsky Plasticizer Plant	6.5	4.4
Total	44.8	64.1

For other plasticizer raw materials, the cost of phthalic anhydride increased at the beginning of the month due to the high cost of orthoxylene.

#### Kamteks-Khimprom stopped production of phthalic anhydride

In the first seven months in 2022 Russian production of phthalic anhydride dropped to 44,800 tons against 64,100 tons in the same period last year. Kamteks-Khimprom stopped production at the start of June and hopes to resume as soon as it is possible to restore the disrupted export supply chains. Up to 80% of products from Kamteks-Khimprom have traditionally been exported but the company has faced numerous problems regarding logistical, trade and production ties.

Russian Acetone Production (unit-kilo tons)		
Producer	Jan-Jul 22	Jan-Jul 21
Ufaorgsintez	21.5	27.9
Kazanorgsintez	31.5	31.9
Novokuibyshevsk Petrochemical	17.1	23.0
Omsk Kaucuk	19.3	12.9
Total	89.4	95.8

#### Russian acetone market Jan-Jul 2022

Russian acetone production dropped from 95,800 tons in the first seven months in 2021 to 89,400 tons in the same period in 2022. Omsk Kaucuk produced 19,300 tons of acetone in the first seven months this year against 12,900 tons whilst Kazanorgsintez produced 31,500 tons, 400 tons less than last year. Acetone has sanctioned by the EU, preventing Russian exports.

## Central Asia

**Kazakh polypropylene project completion**

The first phases of polypropylene production at Atyrau started in August which apart from helping to increase non-fossil fuel exports for Kazakhstan will help to solve the shortage of polymer for domestic companies. The licensor of the technology of the plant at Atyrau is Lummus Technology, with parts of

**Boost to Kazakh petrochemical exports**

For Kazakhstan, the start-up of the polypropylene plant at Atyrau represents is an opportunity to become a net exporter of petrochemical products. The capacity of the project is 500,000 tpa, the KPI product line provides for the production of polypropylene grades 1100N, 1102K, 1104K, 1104H, 1101SC and 1125MC. The plant operates on the territory of the integrated gas chemical complex of the FEZ National Industrial Petrochemical Technopark.

equipment supplied by companies such as Air Liquide, Siemens, Mitsubishi, etc. The construction and launch of the plant was postponed on numerous occasions and for various important reasons and as a result has taken close to fourteen years to complete.

According to Kazakhstan Petrochemical Industries (KPI), shipments of polypropylene to merchant consumers will begin in the fourth quarter of 2022. Sales of finished products are intended for domestic markets and export markets to Russia, China, Turkey, and possibly Europe depending on logistics.

**Should KPI work with SIBUR in view of potential secondary sanctions**

SIBUR Holding and Kazakhstan Petrochemical Industries (KPI) are preparing to create a JV for the polypropylene plant, with SIBUR's stake not expected to exceed 40%. The JV may be accompanied by another JV which includes the proposed 1.25 million tpa polyethylene project. Kazakhstan Petrochemical Industries is not concerned about SIBUR's involvement and any potential for sanctions based on the premise that the Kazakh side will retain a larger stake in this project. SIBUR will only enter the polypropylene project as one of the shareholders.

Despite SIBUR's experience and credentials, there is some internal KPI concern that the JV might incur secondary sanctions. The Kazakh fear is that the West may decide that this project is more Russian than Kazakhstan's, that Russia withdraws money through the Kazakh project. The Kazakh Ministry of Energy has stated that binding documentation provides for the withdrawal of SIBUR from the project in the event of a significant impact of sanctions.

The design capacity of the complex is 500,000 tpa, ultimately comprising a range of 65 types of polypropylenes. The first phase will produce approximately seven grades of polypropylene with a melt flow rate (MFR) of 3 to 35 g/10 min for injection moulding, raffia, and BOPP films and nonwovens. In 2023, the brand range for the production of polypropylene is planned to be widened to include the full range of products. There is already a small plant in Kazakhstan for polypropylene production at Pavlodar, but volumes are small and is of low quality.

**Domestic demand for polypropylene in Kazakhstan**

Domestic demand is estimated at around 50,000 tpa, thus production will be export oriented. Even though domestic consumption is relatively small, the availability of polypropylene will help many domestic processing industries which have until now have purchased polypropylene from Russian, Chinese or Uzbek producers.

The question of how much and at what price local producers will be able to buy polypropylene from Atyrau remains open. Hitherto, domestic manufacturers of polypropylene bags, soft containers, etc have purchased polypropylene from Russia and Turkmenistan, but supplies have become particularly less reliable from Russia in 2022 due to the situation in Ukraine.

**Azerbaijan methanol exports Jan-Jul 2022**

Non-oil exports from Azerbaijan in January-July 2022 amounted to \$1.7 billion, which is 24.2% more than in the same period of 2021. This included \$81.3 million for methanol, 3.5 times higher than in 2021, \$56.9 million for polypropylene (a decrease of 15%), and \$51.5 million for polyethylene.

growth in the next two or three years. It could depend on how far KPI is prepared to fix or grant preferential prices for domestic consumers.

According to the Kazakhstan Association of Packaging Manufacturers, there are currently fourteen small factories in the country for the production of big bags soft containers used to store and transport bulk and liquid cargo. Also, in existence there are manufacturers of disposable tableware made of polypropylene, food cups, etc. Whilst Kazakh consumption of polypropylene is currently low, the availability of domestic product could help to support rapid



**Navoiyazot-PVC project construction**

SOCAR is interested in participation of major projects in the chemical industry of Uzbekistan. Already agreement has been reached on SOCAR's participation in the project to organise the production of propylene from methanol in the Navoi region (the project cost is \$1.3 billion), and the second and third stages of creating a complex for the production of PVC and caustic soda. In addition, SOCAR plans to jointly produce acetic acid.

**Indorama-SOCAR investments**

Azerbaijan's Ministry of Economy, SOCAR and Indorama have signed a Memorandum of Understanding which envisages investigating the possibilities of establishing a plant for the production of ammonium nitrate, NPK (nitrogen-N, phosphorus-P and potassium-K), DAP (diammonium phosphate) and ammonium sulphate fertilisers at the Sumgait Chemical Industrial Park and conducting relevant exchange of information between the parties.

Navoiyazot is currently undertaking construction of the second stage of the plant for the production of PVC. The project is worth \$400 million will increase the production capacity of PVC to 220,000 tpa from 165,000 tpa. The general contractors of the project include the Turkish group Tatarstan Trade House and China National Chemical

Engineering No.7 Construction.

Navoiyazot-selected products	
Product	Capacity (unit-tpa)
Methanol	352,000
Ammonia aqueous	99,840
Nitric acid unconcentrated	480,000
Formalin	8,000
Unsaturated polyester resins	1,000
PVC	165,000
Caustic soda	75,000

Previously, around 80% of Navoiyazot's production focused on fertilisers and associated chemicals but in recent years the production of polymers and other chemicals such as methanol has risen. State holding Uzkiyosanoat aims to create a large integrated chemical and technological cluster based on Navoiyazot. In this cluster, a total of 23 projects have been identified which have estimated at a value of around \$3.4 billion. In the renewable energy sector Navoiyazot is currently installing a solar power plant with a capacity of 200 kW. This is intended to generate more than 296.4 thousand kWh of green electricity per annum which is a key plank of

Uzkiyosanoat's energy strategy and target for the chemical industry.

Other projects include the construction of plants for the production of hydrogen peroxide with a capacity of 10,000 tpa as well as bioprotein for livestock needs with a capacity of 9,500 tpa (which is planned to be opened by 2025), and aqueous ammonia with a capacity of 40,000 tpa to start by 2023. The largest project involves the construction of an ammonia-urea complex with an ammonia production capacity of 660,000 tpa, urea 577,500 tpa, weak nitric acid 395,000 tpa and ammonium nitrate at 500,000 tpa. The project is being undertaken in the 2022-2026 timeframe.

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