CIREC monthly NEWS

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

Edited by Andrew Sparshott CIREC Limited
Telephone: +441202 959770 Email: support@cirec.net **Web:** www.cirec.net

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

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Key points from this issue:

Central European petrochemical markets

- The Orlen Group has set a target of allocating zl 36 billion (€6.786 billion) for investments in 2023 compared to zl 15.2 billion (€3.247 billion) undertaken in 2022
- Poland imported 120,138 tons of propylene in the first eleven months in 2022 against 220,795 tons in the same period in 2021
- Polish imports of polyethylene totalled 1.213 million tons in the first eleven months in 2022 against 1.286 million tons in the same period in 2021
- Synthetic rubber production at Oswiecim for Synthos dropped slightly in the first eleven months in 2022 to 243,900 tons from 252,200 tons in the same period in 2021
- MOL currently produces more propylene than it consumes and is currently building a new propylene plant with a capacity of 100,000 tpa to cover its polyol project

Regional methanol markets

- Imports of methanol into Poland totalled 879,215 tons in the first eleven months in 2022 against 643,337 tons in the same period in 2021
- Export deliveries of methanol from Poland to Southeast Europe are expected to see some new dynamics this year as Russian methanol sources are blocked, and Polish traders seek other source
- Russian methanol exports totalled 1.925 million tons in January to November 2022 against 1.700 million tons in the same period in 2021. Lower exports are expected in 2023 although the EU has extended its completion date of contract deliveries to 18 June from 8 January 2023
- In Azerbaijan SOCAR Methanol produced 489,500 tons of methanol in January-November 2022, 43.3% higher than the same period in 2021

Russian chemical production

- Synthetic rubber production in Russia totalled 1.404 million tons in the first eleven months in 2022 down from 1.548 million tons in the same period in 2021
- Russian propylene production dropped to 2.505 million tons in the first eleven months in 2022 against 2.764 million tons in the same period in 2021
- Russian normal butanol production rose from 112,300 tons in the first eleven months in 2022 to 137,300 tons in the same period in 2022

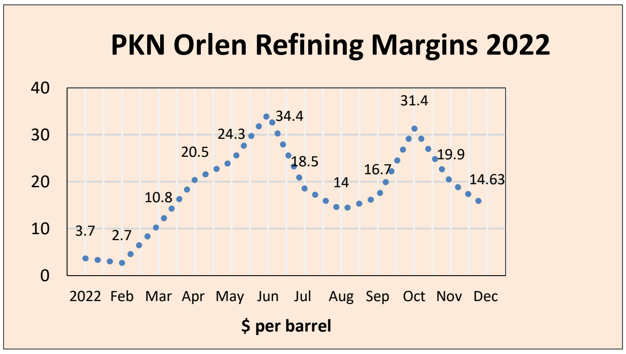
Russian chemical trade

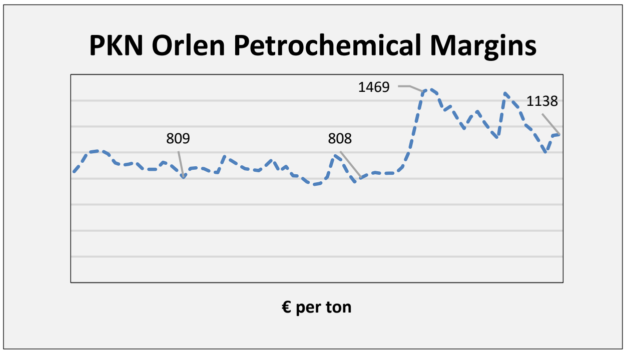
- SIBUR has stated that China has become the group's largest export destination and has already replaced much of its European trade
- For the chemical industry the reductions in imports and blocked access to Western markets is reported by some companies to be affecting availability of components and raw materials which are used by chemical producers

CENTRAL and SOUTH EAST EUROPE

PKN Orlen investment outline for 2023

The Orlen Group has set a target of allocating zl 36 billion (€6.786 billion) for investments in 2023 compared to zl 15.2 billion (€3.247 billion) in the whole of 2022. Higher investment capability and requirements have been facilitated from the acquisitions of Lotos and PGNiG made in 2023. More detail of Orlen's planned projects and strategy should be known sometime in the first quarter. The Orlen Group plans to present a programme to achieve synergies resulting from the acquisition of Lotos and PGNiG in the coming years. One of the main projects could also include the construction of a petrochemical complex at Gdansk in cooperation with the Saudi Aramco group. For now, however, the project is at the stage of talks between the partners. In January 2023 the EU approved the acquisition of some of the refinery assets sold by Lotos to Saudi Aramco and also MOL.





PKN Orlen-operational activity

Regarding operational activity the group faces a significant increase in costs in line with the rise in profits. Despite a fall in the refining margin in December to $14.6 per barrel from $19.9 in November and $31.4 in October the fourth quarter average margin of $22 is almost five times higher than in the same period in 2021. Petrochemical margins ended the year at €1138 per ton having peaked at €1469 earlier in 2022. Fourth quarter profits are expected to be positive, particularly as crude prices were lower than in the previous two quarters.

Polish petrochemical production Jan-Nov 2022

Ethylene production in Poland increased in the first eleven months to 426,300 tons from 307,500 tons in the same period in 2021, whilst propylene production rose from 307,800 tons to 384,900 tons. Butadiene production at Plock rose from 38,200 tons to 58,300 tons. In the plastics sector polyethylene production rose from 209,700 tons to 298,700 tons in January to November 2022 and polypropylene increased from 268,400 tons in the same period in 2021.

PKN Orlen Production (unit-kilo tons)		
Product	***Jan-Nov 22***	***Jan-Nov 21***
Ethylene	426.3	307.5
Propylene	384.9	307.8
Butadiene	58.3	38.2
Toluene	8.4	10.2
Phenol	40.4	41.8
Polyethylene	298.7	209.7
Polypropylene	295.1	268.4
PVC	254.0	202.5

Crude supplies to Central Europe

Lukoil looking to offload assets in Romania

Due to the difficulties of Russian companies operating refineries in Europe Lukoil is considering the sale of its assets in Romania, including the Petrotel refinery at Ploiesti, which is located around 60 km north of Bucharest. The Kazakh group KazMunayGaz, which operates Romania's largest refinery Petromidia, is among the prospective bidders for Lukoil's assets. A similar scenario applies to the Bourgas refinery in Bulgaria which is owned by Lukoil.

EU price cap on Russian crude & further restrictions

In December 2022, EU countries agreed to set a price cap on Russian oil at $60 per barrel. The price cap applies to seaborne crude oil, petroleum oils and oils obtained from bituminous minerals which originate in or are exported from Russia. The cap comes on top of the EU import ban on Russian seaborne crude oil and petroleum products, and the corresponding bans of other G7 partners.

The EU has prohibited EU vessels from transporting Russian crude oil (from 5 December 2022) and petroleum products (from 5 February 2023) to third countries. It has also prohibited the related provision of technical assistance, brokering services or financing or financial assistance. This ban doesn't apply if the crude oil or petroleum products are purchased at or below the oil price cap.

Slovnaft aims to cut the share of Russian oil in its processing activities in 2024 to about 60% from about 95% at present and use other blends to comply with sanctions on Russia. Slovnaft processes around 124,000 barrels per day and has been using Russian oil supplied by the Druzhba pipeline but is accelerating modifications to use other blends.

PKN Orlen to invest in terminal at Gdansk
PKN Orlen has outlined plans to invest zl 2 billion (€425 million) at Gdansk to construct a terminal for crude imports. Another zl 1.4 billion (€298 million) is targeted to the construction of a hydrocracking installation associated with the terminal. The commissioning of both investments is planned by mid-2025. The hydrocracking installation is aimed at improving the economics of crude oil processing, producing 400,000 tpa. The terminal will enable the handling of components and biocomponents (biodiesel and biogasoline), such as: FAME, i.e., bioesters fatty acid methyl esters, etc. Other products include xylenes produced at Gdansk used in petrochemical processes and low-sulphur marine fuels.

Polish crude supplies
PKN Orlen's contract with Rosneft for oil supplies to Płock is expiring in January 2023 and has not been renewed for around about 3 million tpa. A smaller contract with Tatneft, valid until 2024, will remain in force and can only be invalidated if sanctions are applied to pipeline supplies. Around 70% of Orlen's crude supplies were estimated to come from non-Russian sources in the fourth quarter, and this figure is expected to rise significantly in 2023.

Regarding the Lotos refinery already 100% of oil supplies are being delivered from non-Russian sources. The construction of a maritime transhipment terminal at the Gdansk will not only increase the capability to diversify imports of crude to the refinery but also help imports of non-Russian raw material to the Schwedt Refinery in eastern Germany.

Schwedt refinery east Germany
The Schwedt refinery in eastern Germany may have resolved the dependency problem on Russian oil after Poland committed to provide enough supply for the refinery to run at least at a capacity of 70% from January onwards. Both sides want to ensure Polish refineries in Gdansk and Plock as well as German refineries in Schwedt and Leuna are adequately supplied with crude oil. Germany in September took control of the Schwedt refinery, which was majority owned by Russia's Rosneft, as part of efforts to shore up the country's energy supply. Orlen is also ready to increase supplies from other directions primarily from Saudi Arabia.

MOL-JANAF pipeline
Croatian oil pipeline operator Janaf has signed an oil transport contract with MOL for the first quarter this year which will allow delivery of around half a million tons of crude oil through the Omisalj-Gola section of the Janaf pipeline system. It also includes an agreement to store almost 150,000 cubic metres of crude oil in Omisalj and Sisak during the same period. In the case of the Druzhba oil pipeline being shut down in the war in Ukraine, MOL will only have one Adriatic oil pipeline left to import crude and thus needs to ensure supplies.

Besides deliveries from the Baltic coast Kazakhstan's KazTransOil has been given permission from Russia to send 1.2 million tons of crude to Germany in 2023 using the Druzhba pipeline, including 300,000 tons in the first quarter. The Polish supply proposal assumes that two to three ships with 100,000 tons each a month of non-Russian oil would be unloading for Schwedt at Gdansk. That would amount to some 3.5 million tpa, and the rest could come via Rostock on the Baltic. Schwedt then could meet the needs of the Berlin region, supplying the nearly 600 German gas stations owned by PKN Orlen and provide some fuels for the western Poland region.

Orlen Unipetrol-TAL pipeline
Whilst the Litvinov refinery is still processing Russian oil, changes are expected in the near future. The Czech government has concluded an agreement to increase the capacity of the TAL oil pipeline, giving the Czech Republic a real opportunity to cut off Russian supplies in the next two years. The TAL oil pipeline is 753 km long and runs from the port of Trieste in Italy through the Alps to Austria and Germany. The Czech Republic is at the end of this route.

The aim of the TAL+ project is to increase the capacity of the TAL gas pipeline by the end of 2024 at the latest. Orlen Unipetrol is ready to undertake the necessary cooperation in the field of developing a solution allowing the Czech Republic to move away from purchases of Russian oil.

The pipeline capacity will be increased to 7-8 million tpa which would make the Czech Republic completely independent of supplies via the Druzhba by 2025. Of the 6.8 million tons of crude oil imported into the Czech Republic in 2022 more than half of all imports (exactly 51.2%) were delivered via the Ingolstadt-Kralupy-Litvinov (IKL), which is part of the Transalpine oil pipeline. This is mainly oil transported by tankers to the port of Trieste from Azerbaijan, Kazakhstan and the USA.

This pipeline supplies crude oil that does not come from Russia to the Orlen Group's Kralupy and Litvinov refineries in the Czech Republic. The Kralupy refinery processes only crude oil from outside Russia, while the Litvinov refinery currently uses some of the non-Russian crude oil for processing. The ban on importing Russian oil by sea to the EU came into force on 5 December. From 5 February 2023, a similar embargo will apply to petroleum products and fuels from Russia.

NIS-Business Plan 2023

In addition to Lukoil in Romania and Bulgaria, Gazprom Neft and the Serbia government both find itself in a difficult ownership position in Serbia through the refining group NIS. Serbia may eventually need to renationalise NIS in order to maintain relations with the EU and to ensure feedstock continuity. At present NIS is focused on the preparation of the third phase of modernisation of the Pancevo refinery which includes the reconstruction of the catalytic cracking plant (FCC) and the construction of a new ETBE plant.

Serbian Chemical Exports (unit-kilo tons)		
Product	***Jan-Oct 22***	***Jan-Oct 21***
Polyethylene	106.1	99.7
Polypropylene	15.0	22.6
Styrene Butadiene Rubber	15.2	16.3

In the petrochemical industry the priority remains on the further synergy with HIP Petrohemija, the implementation of projects to strengthen energy efficiency, as well as on further digitalization of the company at all levels.

Central European Olefin Production & Trade

Hungarian propylene exports Jan-Oct 2022

Exports of propylene from Hungary dropped in the first ten months from 86,387 tons in January to October 2022 to 66,148 tons in the same period last year. Exports to Slovakia from MOL to Slovnaft dropped from 77,628 tons to 57,947 tons which was due to lower production at Tiszaujvaros.

Hungarian Propylene Exports (unit-kilo tons)		
Country	***Jan-Oct 22***	***Jan-Oct 21***
Germany	4.283	4.748
Poland	3.918	1.015
Slovakia	57.947	77.628
Others	0.000	2.996
Total	66.148	86.387

MOL propylene expansion

Although MOL currently produces more propylene than it consumes it is currently building a new propylene plant with a capacity of 100,000 tpa. This is part of the programme to create sufficient propylene feedstock for the new polyol project at Tiszaujvaros. The propylene plant is being constructed by the engineering company Merkbau on an area of about three hectares at the site of MOL Petrochemicals at Tiszaújváros. The new plant will fit into the existing production infrastructure, providing raw materials for the polyol plant, thus expanding the company's chemical production capacity.

Polish Imports of Propylene (unit-kilo tons)		
Country	***Jan-Nov 22***	***Jan-Nov 21***
Lithuania	0.000	6.415
Bulgaria	7.011	0.000
Croatia	7.792	0.000
Germany	56.275	98.135
Russia	21.625	46.680
Ukraine	17.018	67.828
Hungary	3.918	0.000
Others	6.498	1.737
Total	120.138	220.795

Polish propylene & butadiene imports, Jan-Nov 22

Poland imported 120,138 tons of propylene in the first eleven months in 2022 against 220,795 tons in the same period in 2021. Imports fell last year due mainly to higher production at Plock. At the same time the market sources of imports changed significantly in 2022 due to effects of the Russian attacks on Ukraine.

Karpatneftekhim at Kalush in western Ukraine suspended petrochemical production on 25 February following the Russian invasion. Thus, propylene imports from Ukraine dropped from 67,828 tons in the first eleven months in 2021 to 17,018 tons in 2022, which were delivered in January and February. Russia also reduced shipments to Poland in 2022 to 21,625 tons with no volumes sent after June. This compared against 46,680 tons in January to November 2021. Due to availability imports from Germany fell to 56,275 tons in the first eleven months in 2022 versus 98,135 tons in the same period in 2021. Supplies from Bulgaria, Croatia and Hungary all were present in 2022.

Average prices for propylene imports into Poland rose from €892 per ton in January to November 2021 to €1265 in the same period in 2022. Prices started falling in the latter part of the third quarter and into the fourth quarter following feedstock trends.

Polish Butadiene Imports (unit-kilo tons)		
Country	***Jan-Nov 22***	***Jan-Nov 21***
Austria	28.941	38.807
Czech Republic	0.952	5.076
France	3.439	0.000
Germany	19.963	33.305
Hungary	32.298	42.075
Others	0.095	0.000
Total	85.687	119.264

Butadiene imports into Poland totalled 85,687 tons in the first eleven months in 2022 against 119,264 tons in the same period in 2021. The three largest suppliers comprised Hungary, Germany and Austria. The lower volumes last year were due mainly to increased production at Plock, rising to 58,300 tons from 38,200 tons in January to November 2021. Butadiene import prices averaged €1199 in the first eleven months in 2022 against €925 per ton in the same period in 2021. The market picture came under pressure in the fourth quarter due to a mixture of weak demand and lower crude prices.

Central European Styrene Trade Prices (€ per ton)		
Country	***Jan-Nov 22***	***Jan-Nov 21***
Czech Republic	1661	1120
Hungary	1695	1295
Poland	1556	1108

Polish Styrene Imports (unit-kilo tons)		
Country	***Jan-Nov 22***	***Jan-Nov 21***
Belgium	8.334	8.138
Czech Republic	8.870	1.442
Finland	0.693	1.052
Netherlands	53.389	77.576
Germany	18.817	7.673
Others	2.115	1.854
Total	92.218	97.736

Hungary supplied 32,398 tons in the first eleven months to Poland versus 42,075 tons in the same period in 2021. Hungary also supplied Germany and the Czech Republic with butadiene monomer from its plant at Tiszaujvaros.

Central European styrene trade Jan-Nov 2022

Prices for styrene imports into Central Europe for imports rose significantly in 2022, increasing by 48% for the Czech Republic in the first eleven months, followed by Poland with a 40% rise and Hungary 30%. Although prices started to soften towards the end of 2022 the higher costs have been hard to push through to finished products.

Poland imported 92,218 tons of styrene in January to November 2022 versus 97,736 tons in 2021. The Netherlands is the largest supplier of styrene to the Polish market, having shipped 53,389 tons in the first eleven months in 2022 versus 77,576 tons in the same period in 2021. Germany increased supplies to Poland from 7,673 tons in January to November 2021 to 18,817 tons in 2022.

Due to increased production at Kralupy this year imports of styrene from the Czech Republic into Poland increased from 1,442 tons to 8,870 tons. Increased production meant that Czech imports dropped from 57,679 tons in January to November 2021 to 13,848 tons.

Hungarian styrene imports (unit-kilo tons)		
Country	***Jan-Oct 22***	***Jan-Oct 21***
Germany	4.014	1.258
Italy	71.672	80.775
Netherlands	2.062	2.847
Others	0.000	0.070
Total	77.748	84.950

Italy is the dominant source of styrene imports into Hungary, supplied by Versalis to its polystyrene plant at Szazhalombatta. Imports of styrene into Hungary totalled 77,748 tons in January to November 2022, down from 84,950 tons in 2021, with supplies from Italy declining from 95% to 92%.

Czech petrochemical trade, Jan-Nov 2022

Ethylene exports from the Czech Republic dropped from 21,342 tons in the first eleven months in 2021 to 12,114 tons in the same period in 2022. This included deliveries of 2,236 tons of ethylene sent to India, 3,827 tons to Germany and 3,266 tons to Slovakia.

Czech imports of ethylene rose from 3,193 tons in the first eleven months last year against 16,037 tons in January to November 2022. Germany supplied 15,902 tons to the Czech Republic this year for €18.784 million, averaging €1.181 per ton.

Czech Petrochemical Exports (unit-kilo tons)		
Product	***Jan-Nov 22***	***Jan-Nov 21***
Ethylene	12.114	21.342
Propylene	0.035	4.019
Butadiene	1.100	2.453
Benzene	30.256	44.460
Toluene	5.203	7.807
Ethylbenzene	102.915	118.700

Czech Petrochemical Imports (unit-kilo tons)		
Product	***Jan-Nov 22***	***Jan-Nov 21***
Ethylene	16.037	3.216
Propylene	32.846	41.280
Butadiene	59.611	69.949
Benzene	65.706	73.630
Toluene	6.367	6.648
Styrene	13.848	57.679

Propylene imports into the Czech Republic dropped from 41,280 tons in the first eleven months in 2021 to 32,846 tons in the same period in 2022, with main suppliers including Germany, Romania and Poland. Czech imports of butadiene dropped from 69,949 tons in January-November 2021 to 59,611 tons in the same period in 2022. Germany was the largest supplier, shipping 50,001 tons in January to November.

Czech exports of ethylbenzene amounted to 102,915 tons in the first eleven months against 118,700 tons in the same period in 2021. All the ethylbenzene was shipped from Kralupy to Oswiecim, all within the structures of the Synthos Group. Benzene exports from the Czech Republic rose in the first eleven months this year to 30,256 tons against 44,460 tons in the same period in 2021. Germany was the primary market for Czech benzene exports, accounting for 30,536 tons for €34.488 million.

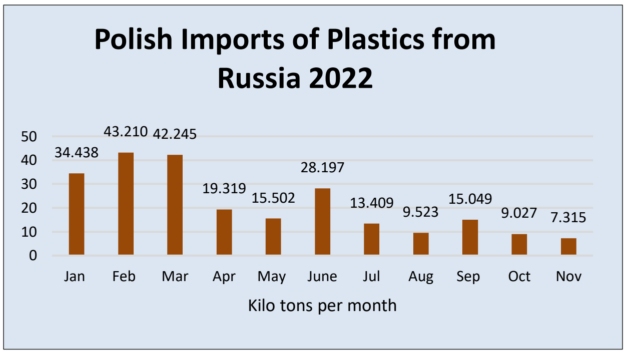
Imports of benzene into the Czech Republic dropped from 73,630 tons in 2021 to 65,706 tons in January to November 2022. Benzene imports were sourced in the first eleven months this year from Poland (46,247 tons for €49.100 million), Serbia (10,475 tons for €10.657 million) and Hungary (7,960 tons for €8.124 million).

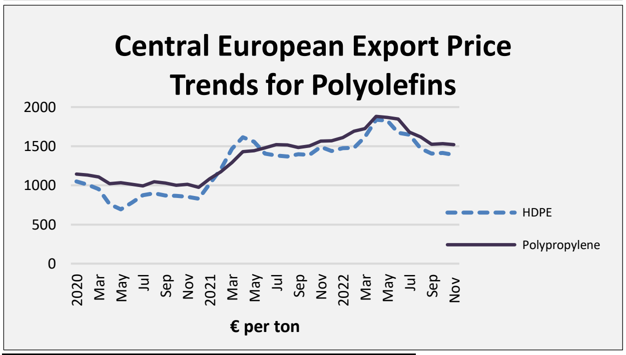
Polish Polyethylene Trade		
Exports	***Jan-Nov 22***	***Jan-Nov 21***
Vol (kilo tons)	320.382	327.9121
Value (€ million)	529.542	396.351
Imports	***Jan-Nov 22***	***Jan-Nov 21***
Vol (kilo tons)	1212.920	1285.845
Value (€ million)	2178.034	1955.814

Central European Polyolefin Production & Trade

Polish polyethylene trade Jan-Nov 2022

Polish imports of polyethylene totalled 1.213 million tons in the first eleven months in 2022 against 1.286 million tons in the same period in 2021. Average prices for polyethylene imports into Poland rose to €1986.8 per ton in 2022 against €1492.1 in 2021. Imports of polyolefins and all types of plastics from Russia into Poland saw a progressive decline in 2022, dropping from 34,438 tons in January to 7,315 tons in November.





Total costs of polyethylene imports into Poland amounted to €2.178 billion in January to November 2022 against €1.956 billion. HDPE is the largest category of imported polyethylene into Poland, amounting to 423,059 tons in the first eleven months this year versus 443,9732 tons in January to November 2021.

Polish polyethylene exports amounted to 320,382 tons in the first eleven months in 2022 versus 327,912 tons in the same period in 2021. Average prices for polyethylene exports from Poland rose to €1643.3 per ton in the first eleven months in 2022 against €1030.7 in the same period in 2021. Revenues from exports increased from to €526.505 million in 2022.

Price trends for polyethylene and plastics started to see declines in the fourth quarter in line with lower feedstock costs.

Although crude numbers are not expected to return to mid-2022 peaks this year, demand and recessionary factors are slowing down volume purchases.

Polish PE Exports (unit-kilo tons)		
Category	***Jan-Nov 22***	***Jan-Nov 21***
LDPE	56.976	72.792
LLDPE	20.360	15.523
HDPE	214.748	216.753
EVA	2.132	2.455
EAC	21.706	18.017
Other	4.459	2.371
Total	320.382	327.912
€ per ton	***1643.368***	***1030.733***
Polish PE Imports (unit-kilo tons)		
Category	***Jan-Nov 22***	***Jan-Nov 21***
LDPE	322.770	353.329
LLDPE	220.145	234.102
HDPE	423.059	443.973
EVA	16.769	20.535
EAC	178.551	194.761
Other	51.433	50.557
Total	1212.726	1297.257
€ per ton	***1921.649***	***1515.758***

Completion of PKN Orlen's stake in LDPE from BOP

Following approval by the competition authorities in Poland and the Netherlands, PKN Orlen completed the acquisition of LyondellBasell's jv stake in the LDPE activities of Basell Orlen Polyolefins (BOP, Plock). The plant at Plock is to be expanded under license from LyondellBasell. The project expansion is based on forecasts that demand in the country as well as in Central Europe will grow significantly in the coming years.

PKN Orlen is currently undertaking assessment for the construction of a new LDPE plant at Plock. 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.

The capacity of the new unit is expected to be 250,000 tpa against the existing unit of 100,000 tpa. Orlen's LDPE market share increased this year through the acquisition of the assets from Basell Orlen Polyolefins (BOP).

Poland is the largest consumer of this product in Central Europe. Currently, the domestic demand for this product is about 300,000 tpa, while for Central Europe it is nearly 800,000 tpa in total. Regional production capacity of 520,000 tpa indicates the deficit for LDPE and scope for expansion for PKN Orlen if it proceeds with its project for another 250,000 tpa. 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.

After the conclusion of the BOP purchase PKN Orlen will 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 nine months in 2022 against 146,754 tons in the same period in 2021.

Polish PP Exports (unit-kilo tons)		
Category	***Jan-Nov 22***	***Jan-Nov 21***
PP homo	177.420	183.656
Polyisobutylene	0.267	0.502
Propylene copolymers	85.373	71.481
Other	4.722	3.097
Total	267.781	258.737
Av €/ton	1747.530	1010.340
Polish PP Imports (unit-kilo tons)		
Category	***Jan-Nov 22***	***Jan-Nov 21***
PP homo	558.473	668.655
Polyisobutylene	3.205	4.182
Propylene copolymers	273.961	301.811
Other	18.998	22.593
Total	854.637	997.241
Av €/ton	1815.672	1563.780

Polish polpropylene trade Jan-Nov 2022

Polish polypropylene imports, including homo grade and copolymers, fell in the first eleven months in 2022 to a total of 997,241 tons versus 854,637 tons in the same period in 2021. Average prices per ton increased from €1563.8 per ton to €1815.7 per ton, although the gap between the upper and lower range narrowed in the fourth quarter. Homo grade polypropylene imports dropped from 668,655 tons in January to 2021 to 558,473 tons in the same period in 2022 whilst copolymer imports dropped from 301,811 tons to 273,961 tons. Regarding export activity, shipments increased to 267,781 tons for against 258,737 tons in January to November 2021.

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. Last year the position has changed due to the economic impact resulting from Russia's invasion of Ukraine.

Czech polyethylene exports (unit-kilo tons)		
Product	***Jan-Nov 22***	***Jan-Nov 21***
LDPE	28.582	32.968
LLDPE	3.662	5.133
HDPE	332.258	302.246
EVA	3.177	5.481
Other	12.367	9.857
Total	380.046	355.686
Av price €	1656.19	1438.34
Czech polyethylene imports (unit-kilo tons)		
Product	***Jan-Nov 22***	***Jan-Nov 21***
LDPE	113.557	117.773
LLDPE	20.295	22.258
HDPE	101.260	130.329
EVA	8.270	7.366
Other	35.074	41.969
Total	267.406	319.696
Av price €	1979.89	1631.31
Czech polypropylene exports (unit-kilo tons)		
Product	***Jan-Nov 22***	***Jan-Nov 21***
PP	213.617	254.297
Propylene Copolymers	43.554	47.207
Other	2.332	1.769
Total	259.503	303.273
Av price €	1758.35	1465.8
Czech polypropylene imports (unit-kilo tons)		
Product	***Jan-Nov 22***	***Jan-Nov 21***
PP	248.270	299.380
Propylene Copolymers	206.553	270.751
Other	14.713	15.815
Total	469.536	585.946
Av price €	1736.77	1370.76

Czech polyethylene trade Jan-Nov 2022

Czech HDPE exports increased in the first eleven months to 332,258 tons against 302,246 tons in the same period in 2021, with revenues amounting to €519.439 million up from €418.946 million. Although polypropylene exports dropped by volume from 303,273 tons to 259,503 tons, values rose from €444.537 million in January to November 2021 to €459.298 million last year.

For imports of all forms of polyethylene, Czech inward shipments dropped from 319,696 tons in the period January to November 2021 to 267,406 tons in 2022.

Over the first eleven months last year Slovak exports of polyethylene to the Czech Republic totalled 23,951 tons against 29,926 tons in the same period in 2021.

Exports of polyethylene totalled 380,046 tons in the first eleven months up from 355,686 tons. Germany was the largest destination in the period January to November 2022 with shipments of 152,492 tons.

For imports of all forms of polypropylene, Czech inward shipments dropped from 585,946 tons in the period January to November 2021 to 469,536 tons in 2022.

Orlen Unipetrol recycling acquistion & strategy

Orlen Unipetrol has taken over the Italian-Czech recycling company Remaq which it has integrated it into its group with aims to expand its recycling activities. Unipetrol's planned development of recycling activities includes recovering and processing waste plastic and biowaste in order to produce new petrochemicals and biofuels. One of the gradual goals is the development of recycling activities so that in 2030 up to 20% of Unipetrol's petrochemical production will be generated through the recycling of plastic and organic waste. The Italian-Czech company Remaq operates four re-granulation lines with a total capacity of 2400 tons per month.

Prices for polypropylene imports amounted to €1736.8 per ton in 2022 against €1370.8 in 2021. Exports of polypropylene totalled 259,503 tons in the first eleven months against 303,273 tons. Prices for polypropylene exports amounted to €1758.4 per ton in 2022 against €1465.8 in 2021.

HIP-Petrohemija-PE exports and feedstocks

HIP Petrohemija exported 106,100 tons of polyethylene in the first ten months in 2022 against 99,700 tons last year, whilst sales revenues rose from increased from \$160.2 million to \$171.2 million. Average prices per ton rose from \$1608 to \$1729 in 2022. Petrohemija's main concern at present is feedstock stability due to the Russian ownership of its holding company NIS.

Hungarian polypropylene Imports (unit-kilo tons)		
Product	***Jan-Oct 22***	***Jan-Oct 21***
PP homo	107.018	98.824
Propylene copolymers	49.669	59.095
Others	26.881	21.640
Total	183.568	179.559

Hungarian polymer trade Jan-Oct 2022

Polypropylene imports into Hungary totalled 183,588 tons in the first ten months in 2022 against 179,559 tons in the same period in 2021. This included 107,018 tons of homo grade polypropylene in January to October 2022 and 49,669 tons of copolymers. Import costs for polypropylene shipments into Hungary increased from €283.316 million in the first ten months in 2021 to €332.750 million in the same period in 2022. For propylene copolymers in Hungary Austria, Germany and the Netherlands were the largest sources of imports.

Hungarian Polypropylene Exports (unit-kilo tons)		
Product	***Jan-Oct 22***	***Jan-Oct 21***
PP homo	105.149	94.105
Propylene copolymers	82.075	99.667
Others	15.099	7.760
Total	202.323	201.531

Regarding exports MOL shipped 105,149 tons of homo grade polypropylene in the period January to October 2022 from 94,105 tons in the same period in 2021, whilst copolymer exports dropped from 99,667 tons to 82,075 tons. Export revenues increased from €321.704 million to €340.326 million. Copolymer exports are distributed mostly to European destinations, of which the largest include Italy, Germany and Romania.

Hungarian Polyethylene Imports (unit-kilo tons)		
Product	***Jan-Oct 22***	***Jan-Oct 21***
LLDPE	19.501	16.296
LDPE	47.504	48.130
HDPE	86.289	85.918
EAO	9.522	11.818
EVA	5.061	4.390
Other	19.183	17.197
Total	187.060	183.749

Polyethylene imports into Hungary amounted to 187,060 tons in the first ten months in 2022 against 183,749 tons in the same period in 2021. HDPE imports rose from 85,918 tons to 86,289 tons in January to October 2022, whilst LLDPE imports increased from 16,296 tons to 19,501 tons.

Hungarian Polyethylene Exports (unit-kilo tons)		
Product	***Jan-Oct 22***	***Jan-Oct 21***
LLDPE	4.331	4.538
LDPE	73.891	91.612
HDPE	194.100	244.294
EAO	0.316	0.083
EVA	0.100	0.271
Other	18.145	8.871
Total	290.883	349.669

Regarding export activity due to lower production by MOL at Tiszaujvaros, HDPE shipments from Hungary dropped from 244,294 tons in January to October 2021 to 194,100 tons in 2022 whilst exports of LDPE dropped from 91,612 tons to 73,891 tons. Despite the fall in export volumes revenues from polyethylene shipments rose from €282.657 million to €351.487 million. From HDPE exports, shipments to Italy totalled 49,752 tons in January to October 2022 for revenues of €78.768 million followed by Germany where exports totalled 32,832 tons for €56.515 million.

Czech PVC Exports		
	Jan-Nov 22	*Jan-Nov 21*
Vol ktons	103.271	109.370
Value € mil	175.924	132.936

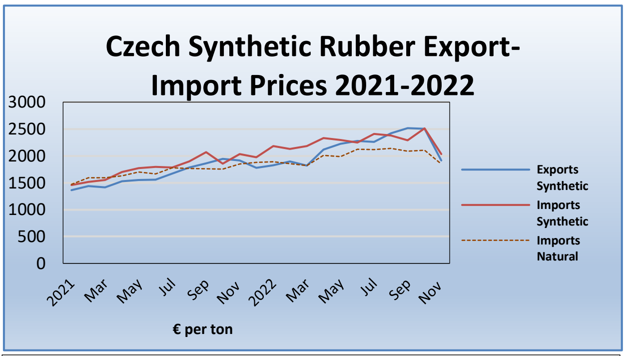
Central European PVC trade Jan-Nov 2022
Spolana exported 78,823 tons of PVC in the first eleven months this year against 95,310 tons in the same period in 2021. Revenues from PVC exports increased from €107.401 million to €156.638 million, after average prices rose from €1329 per ton to €1717 per ton.

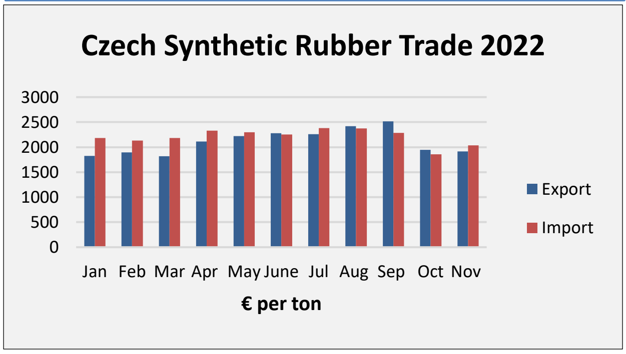
Italy was the largest destination for Spolana's exports this year, after shipments to Poland reduced from 23,132 tons in January to November 2021 to 31,347 tons. In order to support PVC production at Neratovice the Czech Republic imported 59,900 tons of ethylene dichloride from Germany in the first eleven months in 2022 versus 38,209 tons in the same period in 2021.

Polish PVC Production & Trade Balance (unit-kilo tons)		
	Jan-Nov 22	Jan-Nov 21
Production	254.000	202.500
Exports	114.297	135.467
Imports	257.974	367.311
Market Balance	397.677	434.344

Despite an increase in production at Wloclawek, PVC consumption declined in Poland in 2022 with imports dropping from 367,311 tons in the first eleven months against 257,974 tons in the same period in 2021.

Central European Rubber Markets





Synthetic rubber prices Jan-Nov 2022
Rubber prices in Europe started dipping in October-November last year and the outlook for at least the first half of 2023 is fairly depressed. European markets for synthetic rubber were in retreat amid weakness in demand as 2022 drew to a close.

December showed declines in pricing across all key synthetic rubber products. Styrene butadiene rubber and fluoroelastomers registered decreases of more than 3% compared to November.

Traditionally, demand drops towards the end of the year; however, given the upheaval in the global economy this year, the demand-drop was more prominent. This has resulted in a sharp dip in feedstock demand, including butadiene, as well as butadiene-based synthetic rubbers such as SBR, PBR and NBR.

Czech Exports of Butadiene Rubber 2022			
	Q1 22	*Q2 22*	*Q3 22*
Volume (Ktons)	28.309	28.588	26.583
Value (€ million)	51.849	63.919	64.739
Av € per ton	1.832	2.236	2.435

Central European synthetic rubber export and import prices had previously shown strong rises over the course of the first nine months. Export prices for Czech shipments increased from €1824 per ton in January to €2516 per ton in September whilst import prices rose more modestly from €2182 to €2288.

Czech Rubber Trade (unit-kilo tons)		
	Jan-Nov 22	*Jan-Nov 21*
Exports synthetic rubber	178.756	158.589
Imports synthetic rubber	147.398	149.763
Imports natural rubber	81.523	88.500

Czech exports of synthetic rubber amounted to 178,756 tons in the first eleven months in 2022 versus 158.589 tons in the same period in 2021.

Imports declined slightly from 149,763 tons to 147,398 tons in January-November 2022. Natural rubber imports dropped from 88,500 tons in the first eleven months in 2021 to 81,523 tons.

Synthos Production in Poland (unit-kilo tons)		
Product	***Jan-Nov 22***	***Jan-Nov 21***
Polystyrene	64.7	65.2
EPS	94.3	99.6
Synthetic Rubber	243.9	252.2

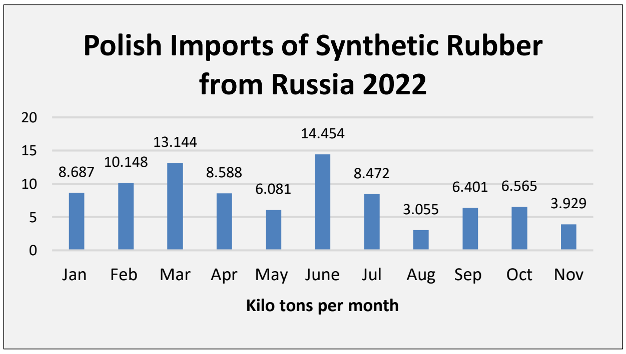
Synthos-production Jan-Nov 2022
Synthetic rubber production at Oswiecim for Synthos dropped slightly in the first eleven months in 2022 to 243,900 tons from 252,200 tons in the same period in 2021.

Polish Synthetic Rubber Imports (unit-kilo tons)		
Product	***Jan-Nov 22***	***Jan-Nov 21***
ESBR	12.618	20.218
Block SBR	38.268	57.788
S-SBR	13.570	14.604
Butadiene Rubber	54.907	41.172
Butyl Rubber	3.375	3.004
HBR	12.984	15.684
NBR	12.325	14.428
Isoprene Rubber	29.061	35.648
EPDM	42.401	35.648
Others	52.771	95.005
Total	272.280	333.200

Synthos reduced production of general polystyrene at Oswiecim in the first eleven months last year to 64,700 tons from 65,200 tons in 2021, whilst expandible polystyrene fell from 99,600 to 94,300 tons.

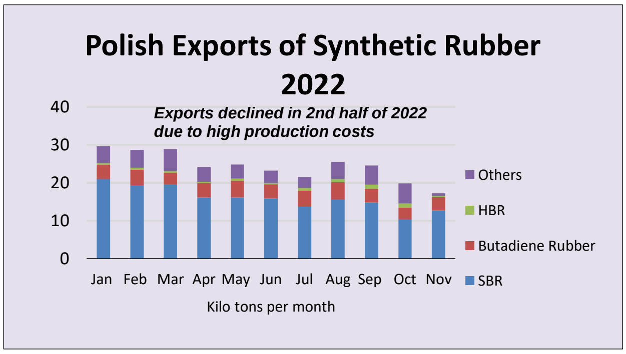
Achieving profit targets for Synthos from production last year became highly challenging particularly in the second and third quarters. Due to higher costs for energy and raw materials Synthos was forced to reduce ESBR production at its three sites at Oswiecim, Kralupy nad Vltavou, and Schkopau.

Polish rubber trade Jan-Nov 2022
In the first eleven months in 2022 Poland exported a total of 272,280 tons of synthetic rubber for a total cost of €662.430 million. This measured against 333,200 tons in the same period in 2021 for €686.709 million. The largest category of synthetic rubber included the group of styrene-butadiene-styrene block co-polymers which amounted to 179,243 tons in January to November 2022.



Due to EU sanctions imports of synthetic rubber from Russia into Poland slowed sharply in the second half of 2022. Isoprene rubber has thus far been excluded from sanctions and this now comprises the main share of rubber export shipments from Russia to Poland. Products such as butadiene rubber and halogenated butyl rubber have seen imports dropped to very small amounts after sanctions took effect from July.

Synthetic rubber exports from Poland also witnessed a steady decline in the second half of 2022 due mainly to lower production at Oswiecim. Export volumes are expected to revive again in 2023 depending on demand.



Butadiene rubber trade Jan-Nov 2022
Exports of butadiene rubber from Poland amounted to 41,885 tons in the first eleven months in 2022 for €82.078 million against 31,899 tons in the same period in 2022 for €48.506 million.

Poland imported a total of 54,907 tons of butadiene rubber in the first eleven months in 2022, which was up from 41,172 tons in the same period in 2021.

Imports from Russia increased in the first eleven months from 16,926 tons in January to November 2021 to 20,465 tons, most of which was supplied in the first half of 2022. As a sanctioned product butadiene rubber imports from Russia saw a sharp fall in the third and fourth quarters.

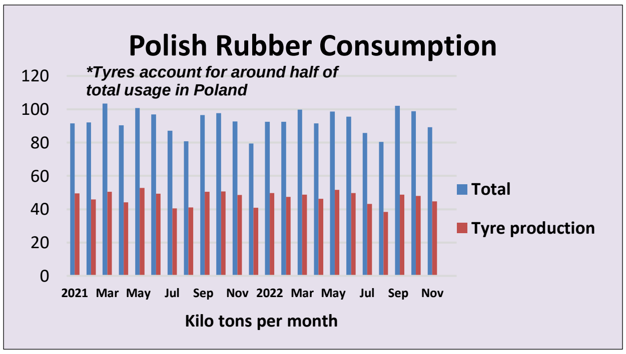
Czech imports of butadiene rubber dropped to 27,530 tons in the first eleven months of 2022 from 31,442 tons in 2021, with Russia supplying 10,568 tons in 2022 down from 11,912 tons. Costs for butadiene imports into the Czech Republic amounted to €68.913 million against €51.948 million.

Hungarian Imports of Synthetic Rubber (Ktons)		
	Jan-Oct 22	*Jan-Oct 21*
Total	106.842	118.749
From Russia	28.223	41.284
Hungarian Imports of Synthetic Rubber (€ million)		
	Jan-Oct 22	*Jan-Oct 21*
Total	257.792	217.526
From Russia	63.879	67.686

Czech exports of butadiene rubber increased from 95,633 tons in the first eleven months in 2021 to 96,913 tons in the same period in 2022. Revenues from butadiene exports increased from €150.000 million to €214.113 million.

The largest customer for Czech butadiene rubber is India which took 20,244 tons in the first eleven months in 2022 for €41.715 million. The largest European consumer was Poland taking 13,580 tons for €28.643 million followed by Slovakia with 8,693 tons for €17.956 million.

Hungarian imports of butadiene rubber increased in the first ten months in 2022 to 36,975 tons against 32,379 tons of which Russia increased supplies in 2022 to 13,102 tons to 12,229 tons. Imports of halogenated butyl rubber have been most affected by EU sanctions, dropping from Russia to 9,479 tons in the first eleven months in 2022 from 14,638 tons in the same period in 2021. Belgium was the second largest supplier of halogenated butyl rubber from ExxonMobil, and volumes are expected to increase from this source over the next few months.



Polish domestic rubber market

Rubber applications in Poland cover the automotive industry, construction (with particular emphasis on gaskets for joinery), agriculture, pharmacy and household appliances. Synthos is the sole Polish synthetic rubber producer, supplying a range of raw materials to the domestic market including styrene-butadiene rubber, nitrile and butadiene rubber, as well as concentrated butadiene-styrene latexes, etc.

Polish Rubber Trade (unit-kilo tons)		
	Jan-Nov 22	*Jan-Nov 21*
Exports synthetic rubber	267.639	310.448
Imports synthetic rubber	272.280	333.200
Imports natural rubber	129.779	116.898

Rubber supplies are provided by imports through either synthetic or natural. The largest sector for rubber consumption in Poland is associated with the production of tyres, accounting for around of half of total Polish demand.

Tyre production in Poland amounted to 516,600 tons in the first eleven months in 2022 against 523,400 tons in the same period in 2021.

Polish Tyre Production (unit-kilo tons)		
	Jan-Nov 22	*Jan-Nov 21*
Car Tyres	275.7	279.7
Bus & truck Tyres	202.7	201.1
Tractor tyres	9.9	13.4
Others	28.3	29.2
Total	516.6	523.4

Besides tyres there are a wide range of rubber products including hoses, valves, etc manufactured in the Polish market which includes more than 900 companies of varying sizes. The rubber industry does not only not use mainstream rubbers but utilises a much wider range of raw materials including liquid silicone rubbers (LSR) or thermoplastic elastomers (TPE).

Some of the main consumers include Stomil which specializes in the production of hydraulic hoses, industrial hoses and other rubber articles, tyre manufacturer Debica and Sanok Rubber Company. is a European leader in the production of rubber, rubber-metal products and combinations of rubber with other materials.

Central European aromatics and derivatives

Polish Exports of Benzene (unit-kilo tons)		
Country	***Jan-Nov 22***	***Jan-Nov 21***
Czech Republic	48.932	62.642
Germany	96.232	58.340
Others	9,844	5.136
Total	155.008	126.118

Polish benzene exports Jan-Nov 2022

Polish exports of benzene totalled 155,008 tons in the first eleven months in 2022 versus 126,118 tons in the same period in 2021. Revenues from export shipments in 2022 amounted to €162.970 million.

Whilst exports to the Czech Republic fell from 62,642 tons in January to November 2021 to 48,932 tons, there was a sharp rise in volumes to Germany rising from 58,340 tons to 96,232 tons. Exports of benzene to the Czech Republic are sent mostly to Kralupy for conversion into ethylbenzene which is then exported back to Poland.

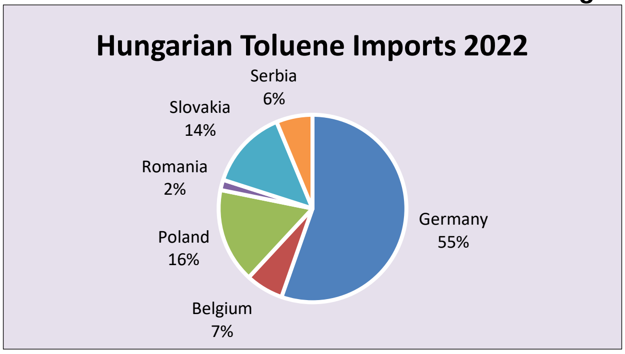
Polish Imports of Toluene (unit-kilo tons)		
Country	***Jan-Nov 22***	***Jan-Nov 21***
Czech Republic	1.747	2.538
Slovakia	10.226	11.043
Germany	6.301	3.466
Others	3.110	4.291
Total	21.383	21.337

Polish Exports of Toluene (unit-kilo tons)		
Country	***Jan-Nov 22***	***Jan-Nov 21***
Hungary	5.908	7.313
Germany	2.565	2.344
Others	0.252	0.164
Total	8.725	9.822

Polish toluene trade Jan-Nov 2022

Poland is a net importer of toluene, with Slovakia providing the largest share of deliveries which amounted to 10,226 tons in the first eleven months in 2022 from total imports of 21,383 tons. Poland exported 8,725 tons of toluene in the first eleven months in 2022 against 9,822 tons in 2021. Germany was a destination for some shipments, but the main market was Hungary where toluene is bought largely for the production of TDI.

Hungarian toluene imports Jan-Oct 2022



Hungary imported a total of 27,968 tons of toluene in the first ten months in 2022 for a total value of €29.887 million. Imports dropped last year against the preceding 2021 when volumes amounted to 32,930 tons for €20.342 million. Prices increased from €618 per ton in 2021 to €1079 per ton in 2022.

Export sources last year were led by Germany accounting for 55% of inward shipments, followed by a number of regional suppliers including Poland, Slovakia and Serbia.

Polish Aromatic Imports (unit-kilo tons)		
Product	***Jan-Nov 22***	***Jan-Nov 21***
Adipic Acid	10.840	9.585
Benzene	0.142	1.736
Ethylbenzene	89.117	124.797
Paraxylene	34.150	87.561
Phenol	95.198	38.389
Phthalic Anhydride	29.045	33.212
PTA	1.864	64.978
Styrene	92.211	97.785
TDI	68.962	74.944
Toluene	21.461	21.337

Polish phenol imports Jan-Nov 2022

Phenol imports into Poland amounted to 95,198 tons in January to November 2022 against 38,389 tons in 2021. Consumption in 2021 was lower than normal due to extended downtime at some of Azoty's installations.

Russia had been one of the main suppliers of phenol to Poland in the first half of 2022 although volumes in May started to show signs of softening even before EU sanctions were introduced. In the first nine months phenol imports into Poland from Russia totalled 14,133 tons for a total value of €20.616 million which measured against 9,746 tons for the whole of 2021 for €10.732 million.

Regarding other imported aromatics into Poland most products recorded declines in 2022 including ethylbenzene, paraxylene, phthalic anhydride, TDI and PTA. Declines were recorded for a variety of factors including higher domestic production, feedstock costs and demand.

Spolana Caprolactam Exports (unit-kilo tons)		
Country	***Jan-Nov 22***	***Jan-Nov 21***
Belgium	5.708	5.030
Germany	7.775	13.585
Italy	14.135	14.854
Slovenia	3.464	3.322
Switzerland	2.465	1.812
Others	0.304	2.380
Total	33.852	34.769

Spolana caprolactam exports Jan-Nov 2022
Spolana exported 33,852 tons of caprolactam from the Czech Republic in the first eleven months last year against 34,769 tons in the same period in 2021.

Revenues from caprolactam exports increased from €70.497 million to €87.372 million, after average prices rose from €2028 per ton to €2581 per ton. Italy was the largest destination for Spolana's exports in 2022, taking 14,135 tons against 14,854 tons in January to November 2021.

Polish PTA Exports (unit-kilo tons)		
Country	***Jan-Nov 22***	***Jan-Nov 21***
Belarus	4.463	10.240
Belgium	13.867	0.00
Germany	300.841	322.488
Lithuania	35.309	24.276
Switzerland	6.749	3.797
Turkey	5.984	0.000
Others	9.380	2.984
Total	376.593	363.785

Polish PTA exports Jan-Nov 2022
PKN Orlen has scheduled a maintenance shutdown at the PTA plant at Wloclawek from 23 March to 15 April and is currently creating enough inventory to cover this outage.

PTA exports from Poland amounted to 376,593 tons in the first eleven months in 2022 against 363,785 tons in the same period in 2021. Average prices for Polish PTA exports in the first eleven months amounted to €995 per ton.

Germany remained the main customer for Polish PTA, taking 300,841 tons in January to November 2022 against 322,488 tons in the same period in 2021. Lithuania was the second largest destination for PTA export shipments, taking 35,309 tons versus 24,276 tons in January to November 2021.

Central European isocyanates

Czech MDI imports (unit-kilo tons)		
Country	***Jan-Nov 22***	***Jan-Nov 21***
China	2.968	2.519
Belgium	11.196	11.136
Germany	7.336	13.797
Hungary	7.884	6.738
Netherlands	3.442	2.546
Others	1.230	2.212
Total	34.056	38.949

Central European isocyanates, Jan-Nov 2022
MDI imports into the Czech Republic totalled 34,056 tons in the first eleven months in 2022 against 38,949 tons in the same period in 2021. Total costs for MDI imports into the Czech Republic dropped from €91.987 million in January to November 2021 to €92.839 million in the same period in 2022, with average prices rising from €2.375 per ton to €2.752. TDI imports into the Czech Republic amounted to 6,920 tons in the first eleven months last year versus 6,561 tons in 2021, with costs rising from €20.952 million to €25.902 million.

Polish MDI Imports (unit-kilo tons)		
Country	***Jan-Nov 22***	***Jan-Nov 21***
Germany	88.025	100.624
Netherlands	61.082	47.050
Hungary	91.092	96.907
Belgium	72.456	59.088
Saudi Arabia	6.865	8.633
Others	36.963	29.756
Total	356.482	342.058
Ktons delivered	136.082	157.567
Av Price Per Ton	2.620	2.171

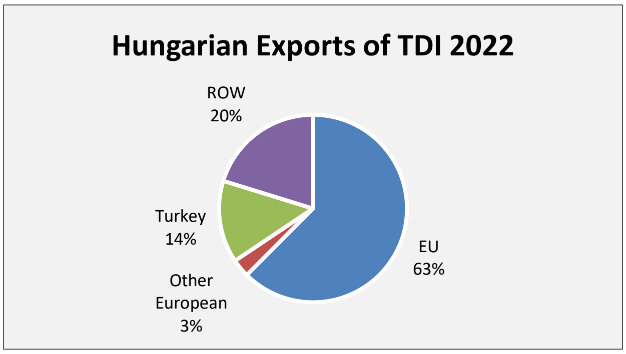
MDI imports into Poland totalled 136,082 tons in the first eleven months in 2022 against 157,567 tons in the same period in 2021. Overall costs rose from €342.058 million to €356.482 million, with average prices rising from €2171 per ton to €2620 in January to November 2022. Germany remains the largest supplier to the Polish market followed by Hungary. Although MDI imports into Poland fell in the first eleven months so did exports from Poland, dropping from 24,591 tons to 14,708 tons.

TDI imports into Poland amounted to 68,459 tons in the first eleven months in 2022 against 74,944 tons in the same period in 2021. Values in January to November 2022 amounted to €201.681 million, equating to €2946 per ton, against €189.068 million in the first eleven months in 2021 when prices averaged €2523 per ton.

Polish TDI Imports (€ million)		
Country	***Jan-Nov 22***	***Jan-Nov 21***
Belgium	4.514	2.653
Germany	49.158	50.085
Hungary	101.066	86.821
Netherlands	15.524	23.722
Saudi Arabia	7.887	8.097
South Korea	13.150	0.000
Others	10.381	17.690
Total	201.681	189.068
Ktons delivered	**68.459**	**74.944**
Av Price Per Ton	***2.946***	***2.523***

Hungarian TDI exports amounted to 198,755 tons in the first ten months in 2022 against 228,008 tons in the same period in 2021, whilst revenues from TDI shipments rose slightly from €546.746 million to €551.532 million. Average prices per ton rose to €2775 from €2398 in the first ten months in 2021. Price rises were driven largely by feedstock costs.

Exports of TDI from Hungary are delivered to throughout Europe, with the largest destinations in East Europe led by Poland and Romania. In West Europe Italy and Belgium are major markets whilst in Asia minor Turkey is a major recipient.



Central European organic chemical trade

Hungarian maleic anhydride exports Jan-Oct 2022

Hungary exported a total of 17,123 tons in the first ten months in 2022 for €36.932 million, equating to 2.156 per ton. Exports are distributed regionally with Poland taking the largest share in 2022 of 4,348 tons. Austria accounted for 3,594 tons of exports from MOL's plant at Szazhalombatta and Italy took 2,556 tons. MOL's maleic anhydride plant possesses a capacity of 22,000 tpa; due to the technical complications of transporting liquid maleic over large distances product sales are mostly limited to destinations no more than two days from the plant.

Hungarian imports of acrylonitrile (unit-kilo tons)		
Country	***Jan-Oct 22***	***Jan-Oct 21***
Belarus	0.000	**2.724**
Germany	4.055	**0.000**
France	6.017	**5.167**
Netherlands	21.685	**19.025**
Russia	1.985	**1.170**
Others	0.754	**0.000**
Total	34.497	28.086

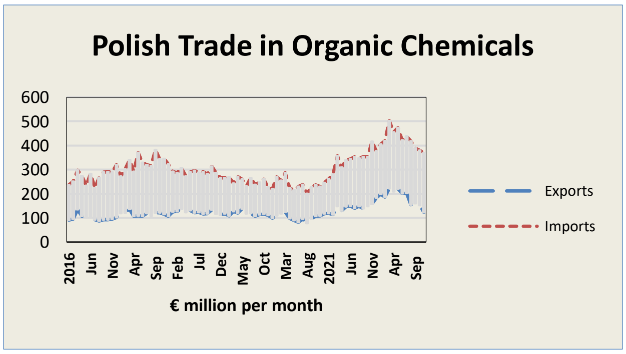
Hungarian acrylonitrile imports Jan-Oct 2022

Hungary imported 34,497 tons of acrylonitrile in the first ten months in 2022 against 28,086 tons in 2021. The Netherlands was the main source of imports in both years, shipping 21,685 tons in January to October 2022. Acrylonitrile prices increased from €1555 per ton in 2021 to €2195 per ton in 2022.

Polish Organic Chemical Trade		
Exports	***Jan-Nov 22***	***Jan-Nov 21***
Vol (kilo tons)	1536.0	1316.3
Value (€ million)	2057.0	1538.7
Imports	***Jan-Nov 22***	***Jan-Nov 21***
Vol (kilo tons)	2827.3	2874.0
Value (€ million)	4680.5	3717.3

Polish organic chemical trade Jan-Nov 2022

Imports of organic chemicals into Poland amounted to €4.681 billion in value in the first eleven months in 2022 for 2.827 million tons of products. Export values rose to €2057 million in January to November for 1.536 million tons. As import volumes far outstrip exports the deficit in organic chemical trade widens as prices rise.



High energy prices played a key role in driving up values last year across Europe although crude and gas prices have fallen in the past couple of months.

Regarding traditional trading partners imports of propylene and phenol from Russia have been sanctioned out of the Polish market and are not expected to restart in 2023 and for the foreseeable future.

Polish Organic Chemical Imports (unit-kilo tons)		
Product	***Jan-Nov 22***	***Jan-Nov 21***
Acetic Acid	41.656	40.791
Acetone	6.442	9.697
DEG	27.949	25.794
DINP/DOP	19.839	21.157
Ethyl Acetate	13.109	20.520
Ethylene Glycol	52.315	48.409
Ethylene Oxide	11.504	25.189
Isopropanol	10.164	10.668
Lysine	51.331	49.873
Maleic Anhydride	11.719	14.120
Melamine	27.188	22.592
Methanol	888.008	645.897
Propylene	120.138	220.449
Propylene Glycol	18.688	23.881
Propylene Oxide	2.058	4.191
Toluene	21.461	21.337
VAM	16.052	18.246

Methanol imports totalled 879,215 tons in the first eleven months in 2022 against 643,337 tons in the same period in 2021. Russia increased supplies to Poland from 434,113 tons in January to November 2021 to 692,759 tons in the same period in 2022. Already in December Poland had started to reduce shipments from Russia ahead of EU sanctions on Russian methanol which took effect from 8 January 2023. As a result, no volumes are expected to be traded between Russia and Poland this year.

Ethylene oxide imports into Poland totalled 11,504 tons in January to November 2022 down from 25,189 tons in the same period in 2021. Poland stopped importing ethylene oxide from Russia in May last year.

For other organic chemical imports Poland took 41,656 tons of acetic acid in the first eleven months in 2022 against 40,791 tons in the same period in 2021. The UK was the leading supplier, shipping 14,042 tons followed by the US with 11,030 tons.

Polish Imports of Acetic Acid (unit-kilo tons)		
Country	***Jan-Nov 22***	***Jan-Nov 21***
Austria	1.284	1.362
China	6.279	2.202
Germany	6.603	2.355
Norway	0.753	0.770
Serbia	0.000	12.552
UK	14.042	7.615
US	11.130	11.854
Others	1.203	2.002
Total	41.294	40.712

Ethyl acetate imports dropped from 20,520 tons in the first eleven months last year to 13,109 tons this year, with Belgium providing the largest share of imports. The second largest supplier was Ukraine, providing 1,453 tons although most of the product was shipped in the first quarter.

Central European methanol markets

Central European methanol trade Jan-Nov 2022

Czech imports of methanol amounted to 72,895 tons in the first eleven months against 84,886 tons in the same period in 2021. Russia accounted for 26,137 tons in the first eleven months down from 47,306 tons in 2021.

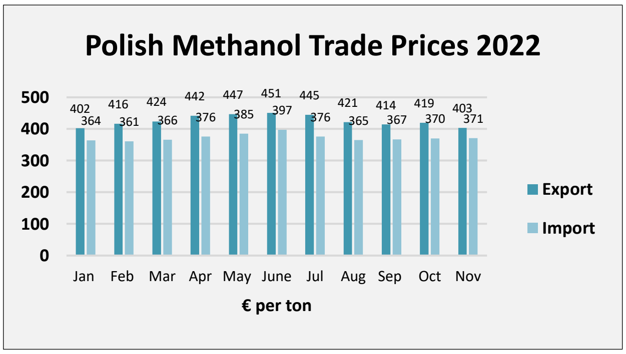
Czech Methanol Imports (unit-kilo tons)		
Country	***Jan-Nov 22***	***Jan-Nov 21***
Germany	6.636	10.615
Norway	0.788	0.024
Russia	26.137	47.306
Poland	37.837	24.979
Others	1.497	1.962
Total	72.895	84.886

Prices per ton for methanol imports into the Czech Republic increased from €364 in the first eleven months in 2021 to €428 in the same period in 2022.

Imports of methanol into Poland totalled 879,215 tons in the first eleven months in 2022 against 643,337 tons in the same period in 2021. Russia increased exports from 434,113 tons to 692,759 tons whilst Finland shipped 50,816 tons against 58,013 tons in January to November 2021. Germany increased exports to Poland in the first eleven months to 93,565 tons from 77,668 tons in the previous year. Import prices averaged €375 per ton in the first eleven months.

Exports of methanol from Poland amounted to 425,483 in the first eleven months against 171,989 tons in January to November 2021. Revenues from Polish exports of methanol rose from €47.5 million in January to September 2021 to €141.0 million in the same period in 2022, with export prices averaging €429 per ton against €347 per ton in 2021.

Polish Methanol Imports (unit-kilo tons)		
Country	***Jan-Nov 22***	***Jan-Nov 21***
Azerbaijan	1.138	0.000
Belarus	0.044	2.620
Finland	50.816	58.013
Lithuania	0.856	7.514
Germany	93.565	77.668
Netherlands	0.650	25.739
Norway	30.160	26.006
Russia	692.759	434.113
Others	9.227	11.663
Total	879.215	643.337
Av price €/ton	371.300	343.000



The extension of EU sanctions on Russian methanol contracts until 18 June this year may help Polish consumers and traders to seek out other sources. In addition to Romania and Slovakia, Polish exports to Ukraine started to increase in the third and fourth quarters last year and amounted to 18,484 tons in the first eleven months in 2022.

Poland Methanol Exports to Central Europe		
Country	***Jan-Nov 22***	***Jan-Nov 21***
Austria	69.587	27.116
Czech	72.584	59.766
Germany	107.709	80.165
Romania	45.384	0.000
Slovakia	49.389	3.641
Ukraine	18.484	0.429
Hungary	48.343	0.308
Others	14.004	0.564
Total	425.483	171.989

Methanol imports into Hungary dropped from 97,508 tons in the first ten months in 2021 to 61,706 tons in the same period in 2022. Imports from Russia dropped from 39,195 tons to 10,763 tons and from Slovakia from 32,817 tons to 12,657 tons.

Despite the regional interdependence on imported methanol previous project assessments have shown that it would be difficult to operate a profitable methanol project in Central Europe.

Hungarian Methanol Imports (unit-kilo tons)		
Country	***Jan-Oct 22***	***Jan-Oct 21***
Austria	1.381	2.968
Germany	9.194	1.686
Netherlands	7.274	1.876
Poland	15.940	0.309
Russia	10.763	39.195
Slovenia	3.044	0.504
Slovakia	12.657	32.817
Others	1.453	18.152
Total	61.706	97.508

The only project concept which seemed to make progress included the Larkwater Group which was assessing the construction options for a 1.650 million tpa plant at Paldiski in Estonia on the Baltic coast. This project was based on taking cheap gas from Russia which is an unavailable option at present. Although Paldiski is being developed into an LNG hub, connecting Finland and Estonia, there are no signs at this stage that the project is being revisited.

Polish fertiliser production

High gas prices affected the production of fertilisers throughout Europe in 2022 forcing companies such as Grupa Azoty and Anwil in Poland to reduce operating rates. Ammonia production in Poland dropped from 2.77 million tons in January to November 2021 to 1.914 million tons in the same period in 2022, whilst the production of nitrogen fertilisers dropped from 1.922 million tons to 1.614 million tons.

Polish Chemical Production (unit-kilo tons)		
Product	***Jan-Nov 22***	***Jan-Nov 211***
Caustic Soda Liquid	373.3	331.1
Caustic Soda Solid	54.1	75.7
Caprolactam	123.2	147.7
Acetic Acid	2.2	4.2
Ammonia (Gaseous)	1914.0	2377.0
Pesticides	59.8	56.7
Nitric Acid	1824.8	2254.0
Nitrogen Fertilisers	1615.0	1922.0
Phosphate Fertilisers	308.2	452.3
Potassium Fertilisers	297.1	325.7

In order to prepare for future gas price hikes Grupa Azoty has launched a new fertiliser storage facility in Tarnow which can hold up to 6,650 tons. The new fertiliser storage warehouse in Tarnow is a response to the growing expectations of customers in the area of fertiliser availability.

RUSSIA

Russian foreign trade and supply chain challenges

SIBUR has stated that China has become the group's largest export destination and has already replaced much of its European trade. At the same time SIBUR acknowledges that exports to Europe are more profitable in terms of both product pricing and logistical costs.

Imports overall into Russia have fallen by around 20% since the invasion last year. For the chemical industry the reductions in imports and blocked access to Western markets is reported by some companies to be affecting availability of high value components and raw materials which are used by chemical producers. Some catalysts can be replaced by domestic sources, such as the catalyst plants at Ishimbay in Bashkortostan and Novosibirsk but evidently there may be supply problems for certain product sectors. Where supplies have been thus far replaced from regions such as Asia, Russian companies have found themselves paying higher prices than previously paid from Europe. In addition, longer distances mean higher logistical costs and extended delivery times. The outlook for profit margins from export activity are becoming tighter.

Russian petrochemical production Jan-Nov 2022

Russian ethylene production dropped slightly from 3.995 million tons in the period January to November 2021 to 3.984 million tons in the same period in 2022. Propylene production dropped from 2.764 million tons to 2.510 million tons and benzene fell from 1.169 million tons to 1.088 million tons. Some Russian chemical producers have reported good results for 2022 despite the challenges presented by sanctions and economic hurdles.

Market dynamics for most mainstream petrochemicals are generally stagnant, with no increases in demand expected. Benzene prices on the domestic market range from 8,000-10,000 roubles per ton (€107-€133). Regarding exports of intermediates shipments of caprolactam for export decreased by 66% to 7,500 tons in November versus October whilst phenol exports also feel slightly. Styrene exports previously were shipped to Europe, but EU sanctions were applied last year. Gazprom neftekhim Salavat is the main exporter of styrene from Russia, shipping now to countries such as India and the UAE. The Salavat division of Gazprom did report a significant rise in net profits for 2022 despite the challenges presented from sanction and difficult economic conditions.

Butanols was one of the few product areas which saw growth in 2022. Demand for benzene and its derivatives such as phenol, caprolactam, and phthalic anhydride all came under pricing pressure last year. Methanol producers had performed relatively well for the first three quarters, but the fourth quarter saw some declines in export activity following the announcement of sanctions which were to take effect from 8 January 2023.

Russian Petrochemical Production (unit-kilo tons)		
Product	***Jan-Nov 22***	***Jan-Nov 21***
Ethylene	3,983.9	3,994.6
Propylene	2,510.2	2,764.0
Benzene	1,088.0	1,168.9
Styrene	649.0	657.7
Phenol	209.6	241.6

For the domestic market supply exceeds demand in many product areas thus putting pressure on prices. For phthalic anhydride for example prices had been stabilising in the third quarter whilst the largest producer Kamteks-Khimprom had been idle but after the restart of the plant in October increased availability helped drive prices downwards.

Russian Polymer Production (unit-kilo tons)		
Product	***Jan-Nov 22***	***Jan-Nov 21***
Plastics in Bulk	9,378.0	9,969.0
Polyethylene	3,174.0	3,075.5
Polystyrene	531.7	508.9
PVC	888.0	930.8
Polyamide	151.6	180.7
Synthetic Rubber	1,404.0	1,548.0
Synthetic Fibres	171.2	184.7

Russian polymer production Jan-Nov 2022

In the first eleven months in 2022 Russian polymer production declined by 3.2% over the same period in 2021, dropping to 7.760 million tons. Whilst the decline has thus far been only marginal, it provides a shift in trend over the past decade when aggregate numbers increased year on year.

Polyethylene production totalled 2.579 million tons in the first nine months in 2022 versus 2.606 million tons in 2021. Russian polypropylene production totalled 1.457 million tons in the first three quarters in 2022 against 1.537 million tons. Whilst falls in polyolefins were recorded polystyrene production in Russia rose from 508,900 tons in the first eleven months last year to 531,700 tons in January to November 2022. The production of PVC fell to 888,000 tons from 930,800 tons.

Synthetic rubber production fell by around 10% in the first eleven months to 1.404 million tons in January to November 2022 from 1.548 million tons. Polyamide production dropped by 12.3% in the first eleven months, falling from 180,700 tons to 151,600 tons. The production of polyamide fell probably due to the reduction of demand from the automotive industry which has affected a number of polymers.

Russian ammonia production and UN grain agreements

Russian ammonia production has seen the largest fall in the past year dropping from 18.3 million tons in the first eleven months in 2021 to 15.5 million tons in 2022. This was due to mainly the lack of shipments through the Togliatti-Odesa pipeline. Ukraine has stated that the pipeline will not be re-opened until all Ukrainian soldiers have been released.

Russian Chemical Production (unit-kilo tons)		
Product	***Jan-Nov 22***	***Jan-Nov 21***
Caustic Soda	1,154.1	1,178.1
Soda Ash	3,208.0	3,106.0
Ammonia	15,500.0	18,300.0
Nitrogen Fertilisers	10,738.0	10,359.0
Phosphate Fertilisers	3,877.0	3,891.0
Potash Fertilisers	6,651.0	9,787.0

The ammonia pipeline Togliatti-Odessa was built in the late 1970s for the transportation of Russian ammonia for export. The capacity for ammonia transportation is 2.52 million tons per annum, of which 2.12 million tons is accounted for by Russian companies, and the remaining 400,000 tons was originally for Stirol at Gorlovka which has since suspended production activity. The total length of the ammonia is 2,420 kilometres, including 1,020 kilometres inside Ukraine which appears undamaged from the consequences of the war.

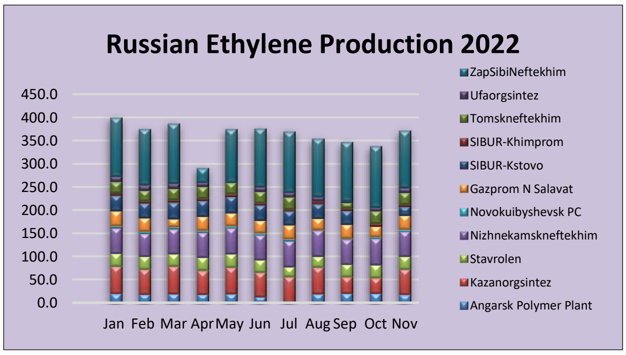
Russian petrochemical markets

Russian ethylene production, Jan-Nov 2022

Russian ethylene production totalled 3.984 million tons in the first eleven months in 2022 against 3.995 million tons in the same period in 2021. After increases in production in the first quarter in 2022, output volumes tended to stabilise for the rest of the year.

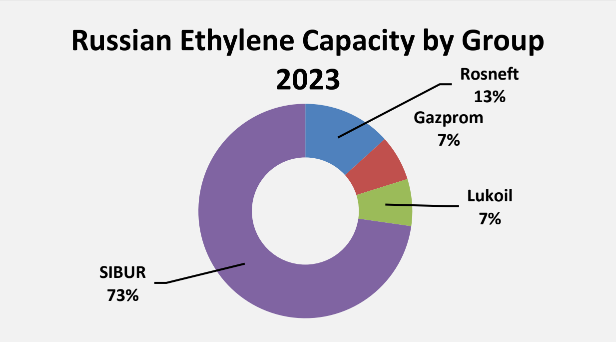
Russian Ethylene Production (unit-kilo tons)		
Producer	***Jan-Nov 22***	***Jan-Nov 21***
Angarsk Polymer Plant	191.0	189.1
Kazanorgsintez	568.5	517.0
Stavrolen	295.8	284.4
Nizhnekamskneftekhim	600.5	554.3
Novokuibyshevsk Petrochemical	37.9	43.2
Gazprom n Salavat	304.2	285.0
SIBUR-Kstovo	320.4	341.7
SIBUR-Khimprom	51.0	49.6
Tomskneftekhim	242.8	270.5
Ufaorgsintez	86.7	85.3
ZapSibNeftekhim	1285.0	1374.4
Total	3983.8	3994.6

Regarding individual producers ZapSibNeftekhim at Tobolsk produced 1.285 million tons in January to November 2022, down from 1.374 million tons from January to November 2021. Nizhnekamskneftekhim produced 600,500 tons of ethylene in the first eleven months in 2022 against 554,300 tons in 2021, whilst Kazanorgsintez increased from 517,000 tons to 568,500 tons.



Other important ethylene producers included SIBUR-Kstovo in the Nizhniy Novgorod region which produced 320,400 tons versus 299,600 tons. SIBUR-Kstovo does not consume ethylene internally but sells to RusVinyl for PVC production and SIBUR-Neftekhim for PVC production.

In Bashkortostan Gazprom neftekhim Salavat produced 304,200 against 285,000 tons, whilst Ufaorgsintez increased production from 85,300 tons to 86,700 tons. Stavrolen at Budyennovsk increased ethylene production in the first eleven months to 295,800 tons against 284,400 tons in 2021.



Russian olefin capacity

Russian ethylene capacity currently amounts to 4.77 million tpa, with the next completed expansion expected to take place at Nizhnekamsk. SIBUR controls 73% of capacity, having increased assets in the second half of 2021 through the acquisition of Kazanorgsintez and Nizhnekamskneftekhim from the TAIF Group. Tatarstan group TAIF sold these plants to SIBUR due mainly to feedstock issues and the assessment that it was unable to compete with SIBUR in the long-term.

Since the acquisition and merger SIBUR has been engaged in the full-scale integration of Nizhnekamskneftekhim and Kazanorgsintez, ranging from sales and marketing through to maintenance aimed at reducing the chances of accidents. In the context of sanctions, the acquisitions have been beneficial both to SIBUR and the Tatarstan plants in terms of coordination of sales and logistics in China rather than operating as separate and competing entities.

Russian ethylene projects under construction

Company	*Location*	*Capacity*
Amur Gas Chemical Complex	Svobodny, Amur Oblast	2.3 million tpa
RusKhimAlliance	Ust Luga, Leningrad Oblast	3.1 million tpa
Nizhnekamskneftekhim	Tatarstan	600,000 tpa
Irkutsk Polymer Plant	Irkutsk Oblast	650,000 tpa

Russian ethylene projects

Prior to the outbreak of Russia's conflict in Ukraine, ethylene capacity was expected to see some huge expansions by around 2025-2026 transforming the country into a major petrochemical producer whilst reducing the dependency on oil and gas exports. Four projects in particular had been started which a totalled 6.650 million tpa in capacity, thus more than doubling the current capacities. All of these four projects have been delayed to some extent by the withdrawal of Western and Japanese companies and the introduction of sanctions. The Ust Luga project on the Baltic coast is probably at the earliest stage of its schedule and thus faces the largest challenges. Work is continuing on the site foundation including the installation of power facilities and delivery of equipment from domestic sources but is lacking international participation. The Amur Gas Chemical Complex was originally aimed for start-up in 2024-2025 but this has been already revised to a provisional 2026.

Nizhnekamskneftekhim's EP-600 complex was originally scheduled supposed to start in 2023 but this has been delayed to 2024, with a similar scenario for the Irkutsk Polymer Plant. Those two projects appear to have received the necessary equipment from international suppliers and thus are better placed for completion.

The RusKhimAlliance project at Ust Luga, involving ethylene capacity of 3.1 million tpa, is a jv between Gazprom and RusGazDobycha whilst the Amur Gas Chemical Complex project is a joint venture between SIBUR and Sinopec with a capacity of 2.3 million tpa. This latter project is more than half-finished but SIBUR is missing

RusKhimalliance-Linde

A Russian court has ordered $488 million of assets belonging to Linde to be frozen at the request of a Russian joint venture building a gas complex at the Baltic Sea port of Ust-Luga. RusKhimAlliance, the jv which is 50% owned by Gazprom, asked the Court of Arbitration of St Petersburg and the Leningrad Region to freeze Linde assets worth 35 billion roubles ($488 million) as a preventative measure.

The legal dispute at least means delays in the construction schedule for the Ust Luga gas processing and gas-chemical complex. In 2021, Linde and Renaissance Heavy Industries signed an engineering, procurement and construction (EPC) contract with Gazprom and its partners for the Ust-Luga gas complex. Linde notified the customer in May and June 2022 that it had suspended work under the contract due to EU sanctions imposed after Russia's invasion of Ukraine.

RusKhimAlliance alleges that EU sanctions ban supplying equipment for the liquefied natural gas (LNG) plant but do not cover equipment required for the other part of the Ust-Luga gas processing plant. RusKhimAlliance intends to apply to the Hong Kong International Arbitration Centre to recover advance payment and losses worth around €972 million and 7.6 billion roubles.

some vital components plus the difficult subject of intellectual property which complicates the completion process.

Nizhnekamskneftekhim EP-600 project

The EP-600 cracker project at Nizhnekamskneftekhim possesses a reasonable prospect of completion in 2024, mainly because most of the equipment and technology had been supplied prior to the introduction of sanctions. The biggest delay to the project, which was originally designed to start in 2023, emanated from the change in general contractor Gemont last year.

Nizhnekamskneftekhim EP-600 Project Capacities	
Product	***Capacity ktpa***
Ethylene	600
Propylene	270
Benzene	248
Butadiene	89
Hexene	50
Ethylbenzene	350
Styrene	400
Naphtha processing	1800

Besides the initial complex including ethylene, propylene, butadiene and benzene, other projects affiliated with the EP-600 complex include styrene-EB and hexene which are all based on Russian technology. The capacity for the production of ethylbenzene and styrene 400,000 tpa is under design to produce 350,000 tpa. SIBUR has also 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 Tomsk will be used for hexene which is required for HDPE and LDPE production.

Russian ethylene market

Regarding all of the projects mentioned above, the closure of Western markets and restrictions elsewhere calls into question the need for additional volumes of ethylene. The Ust Luga project was originally conceived in order to supply the European markets with added value gas and petrochemicals in place of natural gas. Only Nizhnekamskneftekhim is linked by pipeline to other ethylene consuming plants in Russia and thus ethylene can be used internally or sold companies such as Kazanorgsintez for polyethylene production and Bashkir Soda for PVC production.

Volga ethylene pipeline-total length 780 km

The capacity of the Tatar-Bashkir ethylene pipeline at maximum can transport up to 250,000 tpa. This is the most important ethylene pipeline in Russia.

The southern branch of the pipeline system provides ethylene supply from Nizhnekamskneftekhim to Ufaorgsintez, Bashkir Soda Company, and Gazprom neftekhim Salavat.

The northern branch supplies Kazanorgsintez where its own ethylene production is lower than required. Kazanorgsintez uses ethane technology for the production of ethylene, receiving ethane through a pipeline system from the Orenburg region.

Other shorter pipelines are located in the Irkutsk and Nizhniy Novgorod regions. The Siberian ethylene pipeline Angarsk-Sayansk allows to pump around 130,000 tpa from the Angarsk Polymer Plant to Sayanskkhimplast for the production of PVC. Although a new ethylene-polyethylene project is being constructed at Ust Kut in the north of the Irkutsk Oblast the distances to Angarsk and Sayansk are too far away to consider a pipeline construction.

In the Nizhniy Novgorod region SIBUR supplies ethylene from its petrochemical complex at Kstovo to Dzerzhinsk for the production of ethylene oxide and glycols. Generally, the weak development of the ethylene transportation network in comparison with the EU countries limits the ethylene market in Russia and thus restricts competition and floating pricing.

Russian Propylene Production (unit-kilo tons)		
Producer	***Jan-Nov 22***	***Jan-Nov 21***
Angarsk Polymer Plant	103.7	104.3
Kazanorgsintez	45.9	42.8
Lukoil-NNOS	251.9	237.1
Stavrolen	135.6	113.5
Nizhnekamskneftekhim	295.0	276.7
Novokuibyshevsk	27.6	56.3
Omsk Kaucuk	48.0	31.3
Polyom	167.9	175.5
Gazprom n Salavat	133.1	112.2
SIBUR Kstovo	139.0	164.0
SIBUR-Khimprom	74.2	59.7
Tomskneftekhim	126.0	145.5
SIBUR Tobolsk	0.0	3.0
Ufaorgsintez	137.2	152.8
ZapSibNeftekhim	819.8	1089.1
Total	2504.9	2764.0

Russian propylene production, sales and exports, Jan-Nov 2022

Russian propylene production amounted to 2.505 million tons in the first eleven months in 2022 against 2.764 million tons in the same period in 2021.

The ZapSibNeftekhim and SIBUR Tobolsk plants reduced production from 1.089 million tons in the first eleven months in 2021 to 819,800 tons. In Tatarstan Nizhnekamskneftekhim produced 276,700 tons of propylene in the first eleven months in 2022 against 295,000 tons in 2021 whilst Kazanorgsintez increased production 42,800 tons to 45,900 tons.

In Bashkortostan Gazprom neftekhim Salavat produced 133,100 tons of propylene in the first eleven months in 2022 versus 112,200 tons, whilst Ufaorgsintez reduced production from 152,800 tons to 137,200 tons. In the Nizhny Novgorod region SIBUR-Kstovo reduced production of propylene from 164,000 tons to 139,000 tons. Lukoil-NNOS at Kstovo increased production from 237,100 tons to 251,900 tons.

Russian Propylene Exports (unit-kilo tons)		
Producer	***Jan-Nov 22***	***Jan-Nov 21***
Lukoil-NNOS	63.3	85.8
SIBUR-Kstovo	10.6	15.4
Angarsk Polymer Plant	13.8	4.2
Stavrolen	21.7	35.2
Total	109.3	140.5

Russian propylene exports & sales Jan-Nov 2022

Propylene exports from Russia amounted to 109,300 tons in the first eleven months in 2022 against 140,500 tons in the same period 2021.

Lukoil-NNOS reduced export shipments from 85,800 tons to 63,300 tons whilst SIBUR-Kstovo reduced shipments from 15,400 tons to 10,600 tons. European markets have been gradually closed for Russian exporters.

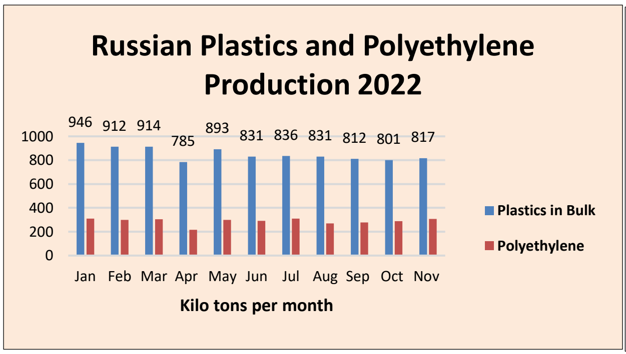
Russian Propylene Domestic Sales (unit-kilo tons)		
Producer	***Jan-Nov 22***	***Jan-Nov 21***
Angarsk Polymer Plant	25.0	35.3
SIBUR-Kstovo	110.9	123.9
Akrilat	13.2	4.2
LUKoil-NNOS	162.9	148.7
Stavrolen	25.7	3.7
Others	8.1	4.2
Total	355.0	320.5

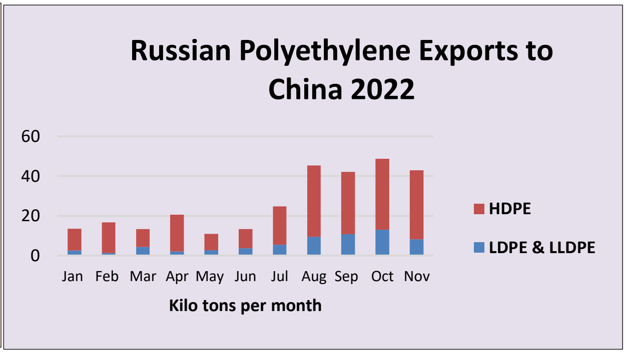
Russian sales of propylene on the domestic merchant market amounted to 355,000 tons in the first eleven months in 2022 against 320,500 tons in the same period last year. The largest propylene supplier to the domestic market was Lukoil-NNOS, shipping 162,900 tons against 148,700 tons in January to November 2021 followed by SIBUR-Kstovo which reduced from 123,900 tons to 110,900 tons.

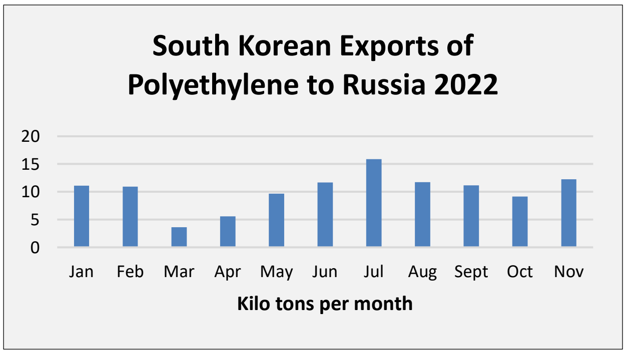
Russian Propylene Domestic Purchases (unit-kilo tons)		
Consumer	***Jan-Nov 22***	***Jan-Nov 21***
Saratovorgsintez	153.9	134.4
Volzhskiy Orgsintez	10.5	10.7
Akrilat	20.4	11.7
SIBUR-Khimprom	35.9	47.8
Omsk-Kaucuk	7.3	15.7
ZapSibNeftekhim	91.4	60.9
Moscow Refinery	3.2	8.8
Ufaorgsintez	10.7	9.1
Khimprom Kemerovo	6.6	6.3
Plant of Synthetic Alcohol	5.2	8.2
Others	7.8	16.4
Total	352.8	329.9

Due to lower production ZapSibNeftekhim increased merchant propylene purchases, mostly from other SIBUR plants. Purchases increased from 60,900 tons in January to November 2021 to 91,400 tons in the same period in 2022. Saratovorgsintez increased purchases of merchant propylene for acrylonitrile production from 99,500 tons to 123,800 tons in January to November 2022, mostly supplied by Lukoil from its Kstovo refinery. SIBUR-Khimprom at Perm reduced purchases from 47,800 tons to 35,900 tons.

Russian bulk polymers







Russian polyethylene production and trade Jan-Nov 2022

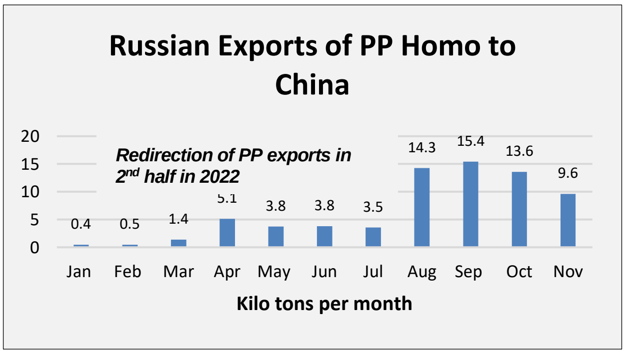
Russian polyethylene production amounted to 3.174 million tons in the first eleven months in 2022 against 3.075 million tons in the same period in 2021. Production of polyethylene was slightly lower in the first half of 2022 but recovered in the second half. Domestic demand for polyethylene has been helped by the consumption in the pipe sector both for gas and water.

Whilst exports to Europe were strong in the first half of 2022, applied sanctions helped reduce shipments in the third quarter. At the same time Russian exports to China increased, particularly HDPE where shipments totalled 86,200 tons in the third quarter against 75,900 tons for the first half of 2022. The redirection of exports to China has not replaced European volumes completely but sales do allow Russian plants to continue operating at high utilisation rates. The main feature of Russian companies trading with China is the need to discount prices more than with European clients.

Regarding copolymer imports Russia sharply reduced inward shipments from Europe in 2022 as sanctions took effect. South Korea is another source of imports of copolymers. Imports of higher grades of HDPE from South Korea dropped in the third quarter after rising in the first half of 2022.

Russian polypropylene exports to China

Russian exports of homo grade polypropylene to China increased last year as markets in Europe become harder to access, particularly after the fifth wave of sanctions which became effective from 10 July. At the same time imports of copolymers have become more difficult for Russian consumers. Imports from South Korea increased in the middle part of the year but then declined as South Korean sellers try to avoid secondary sanctions.



SIBUR's polymer sales to Europe drop in 2022

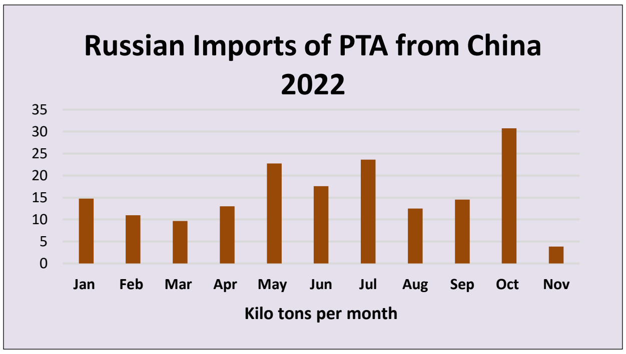
Due to sanctions the share of polyolefin deliveries to Europe dropped to 3-5% of SIBUR's revenues against 20% received in 2021. Regarding the internal market SIBUR believes it can achieve an additional 400,000 tons per annum through replacement of imported finished products. In SIBUR claims to have developed seven new polymer grades that yielded import substitution of about 40,000 tons of polyethylene and polypropylene. SIBUR has developed a new category of BOPP films, which circumvents a shortage of individual raw materials. Complex masterbatches will be supplied from China, Israel and possibly India replacing Western imports.

Paraxylene-PTA-PET

Taneko starts testing aromatics unit

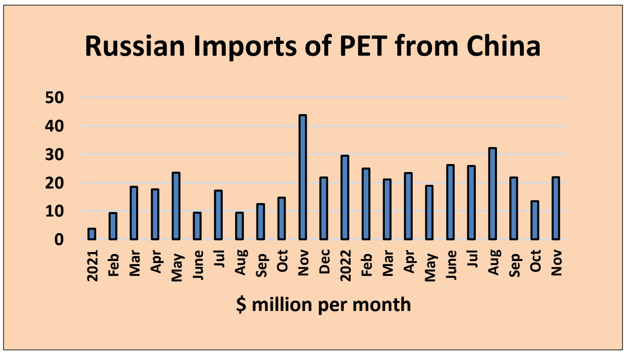
Tatneft's Taneko refinery at Nizhnekamsk launched its new aromatics unit at the end of 2022 after completion of the construction schedule. The aromatics unit includes capacities for 60,000 tpa of benzene and 150,000 tpa of paraxylene. The production of paraxylene will enable the production of PTA although this idea remains in the concept stage. The PTA plant is intended to supply the Ekopet plant for PET at Kaliningrad even if this plant is located around 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 eleven months in 2022 Russian imports of PTA from China totalled $175.281 million versus $149.2 million in the same period in 2021. Volumes were lower in 2022 due to the problems associated with transportation, particularly affecting deliveries in November. Essentially PTA deliveries to Kaliningrad were not affected by international sanctions, but MEG imports from Saudi Arabia were stopped and Ekopet has had to buy glycols from SIBUR-Neftekhim in Russia.



Russian PET market & imports

PET imports into Russia from China totalled $259 million in value in the first eleven months in 2022 against $179 million in the same period in 2021. China accounts for around 80% of imports into Russia. Although values increased the volumes were similar to 2021 but prices were higher in 2022.

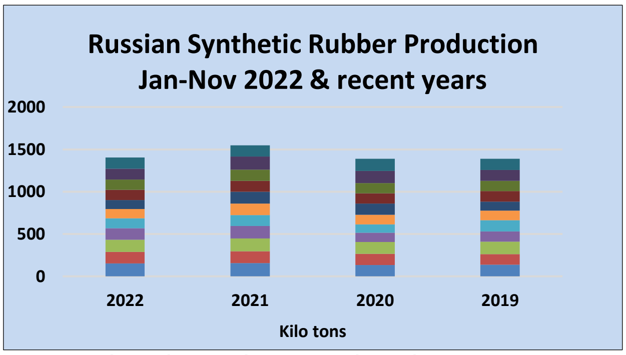
Russian PET Market (unit-kilo tons)		
	2021 Volume (unit-tons)	*Vs 2020*
Production	598,000	-2.4%
Consumption	776,000	+6%

The net deficit in 2021 was 178,000 tons which was 28% higher than in 2020. Russian PET production in Russia decreased by 2.4% over 2020 to a total of 598,000 tons in 2021, while consumption increased by 6% to 776,000 tons.

Imports of PET are necessary if growth is to be achieved in the Russian market. A number of new greenfield projects have been cancelled in recent years, which has meant that production has lagged behind consumption trends. The only tangible new investment involves the construction of a PET plant at Pskov by Titan-Polymer.

Already a new BOPET plant has been opened at Pskov thus adding to PET consumption in Russia and Titan-Polymer is now undertaking its own investment into PET to develop the full chain of production. For 2023 Polief is increasing its PET capacity by 34,000 tpa in 2023 through the use of FTR technology (flakes-to-resin) and this may offset some imports. The first PET production in Russia was launched at the SIBUR-PET site with a current capacity of 75,000 tpa. This was followed by Polief (210,000 tpa) and Ekopet (240,000 tpa) and Senezh (130,000 tpa). In 2022, Polief intends to increase its capacity by 34,000 tons.

Synthetic rubber



Russian synthetic rubber production Jan-Nov 2022

Synthetic rubber production in Russia totalled 1.404 million tons in the first eleven months in 2022 against 1.548 million tons in the same period in 2021. Production tended to stabilise in October and November after some declines in the third quarter.

Overall, for 2022 production is expected to total around the same level in the pandemic year 2020, although much lower than in 2021. Due to an accident and serious fire on 12 December Nizhnekamskneftekhim was forced to launch the production of isoprene rubber on the reserve line. Work is currently underway to dismantle the damaged structures and the timing of its restoration is being clarified. Nizhnekamskneftekhim is the most integrated of the synthetic rubber producers in Russia.

Russian sales and consumption of synthetic rubber

Largely due to sanctions the consumption of synthetic rubber in Russian tyre manufacturing dropped from 395,400 tons in January to November 2021 to 325,900 tons in the same period in 2022. Tyre manufacturing accounts for around half of Russia's internal consumption for rubber, either natural or synthetic. In the spring of 2022, the EU banned imports of tyres from Russia which had in 2021 accrued revenues of $628 million.

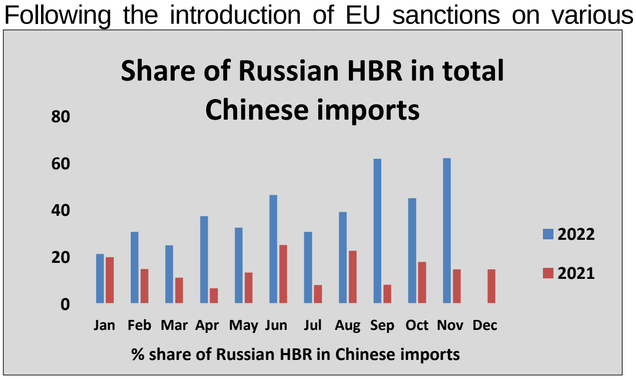
Russian Tyre Production (unit-kilo tons)

Product	***Jan-Nov***	***Jan-Nov 21***
Car Tyres	254.6	333.9
Lorry tyres	42.8	50.5
Agricultural tyres	28.6	10.9
Total	325.9	395.4

Not only were tyres sanctioned by the EU last year but also many raw materials which Russia imported. The impact of these sanctions is yet to be fully felt as the industry to some extent has been running on inventory which is rapidly disappearing. Around 200 different components are needed to produce one tyre and many of these are imported. Countries such as China and Turkey have helped Russia as they sell components at much higher prices than before. For other products Russia has made some progress in producing its own, but there are still important products where are there no available suppliers.

Russian synthetic rubber trade

Sanctions impacted significantly on exports of synthetic rubber particularly in the second half of the year. Following the introduction of EU sanctions on various synthetic rubber grades, from 10 July onwards, Russian exporters have tried to develop other markets. China has been a willing buyer of butadiene rubber and halogenated butyl rubber, to some extent replacing European buyers.



In the case of halogenated butyl rubber China increased purchases from Russia significantly in 2022, rising to 39% of monthly purchases for the first eleven months last year from 15% in 2021. In order to increase sales so quickly Nizhnekamskneftekhim was forced to offer noticeable price discounts.

Nizhnekamskneftekhim expansion of HBR capacity

Nizhnekamskneftekhim aims to complete the expansion of capacity for the production of halogenated butyl rubber (HBR) in 2023, rising from 150,000 tpa to 200,000 tpa. Only three companies produce HBR globally and thus Nizhnekamskneftekhim represents a key part of the international supply/demand balance.

The increase in the production of HBR involves the additional construction of six new units which have already passed the necessary examinations. HBRs are used as a sealing layer in the manufacture of tubeless automobile tyres. Due to this component, they become not only more environmentally friendly, but also economical, allowing to reduce fuel consumption. The initial capacity of HBR production at Nizhnekamskneftekhim was 40,000 tpa. In 2012, production increased to 100,000 tpa and then later increased to 150,000 tpa.

Nizhnekamskneftekhim Synthetic Rubber	
Product	***Capacity (ktpa)***
Chlorobutyl rubber	50
Bromobutyl rubber	150
Butadiene rubber	180
Isoprene rubber	330
HBR	200
Divinyl	60
TEPs	10

Nizhnekamskneftekhim Rubber Production 2021	
Product	***Share in global market***
Butyl rubber	15.4%
Isoprene rubber	41.6%
Butadiene rubber	5.8%

European Synthetic Rubber Capacities	
Product	***Capacity***
SIBUR & TAIF	1191
Arlanxeo	454
Versalis	443
Synthos	415
Trinseo	330
Global Synthetic Rubber Capacities	
Product	***Capacity***
Arlanxeo	1969
Sinopec	1895
PetroChina	1505
SIBUR & TAIF	1191

Nizhnekamskneftekhim's rubber caapcities
Nizhnekamskneftekhim had set a target of raising synthetic rubber capacity by 2025 of 1 million tpa, but due to external events such as the pandemic and now sanctions capacity remains around the current 800,000 tpa. Rubbers have traditionally provided 35-40% of all proceeds for Nizhnekamskneftekhim and 80% of the company's foreign exchange earnings.

Until Russia invaded Ukraine Nizhnekamskneftekhim sold nearly of its synthetic rubber exports in the European market, shared with other players. Since the second half of the company has been redirecting exports largely to China.

Isoprene rubber has not yet been affected by EU sanctions and thus exports to Europe still continue despite other difficulties such as transportation. Nizhnekamskneftekhim accounted for 41.6% of global isoprene rubber production in 2021, whilst accounting for 15.4% of butyl rubber in global terms and 5.8% of butadiene rubber. Together with the acquisition of Nizhnekamskneftekhim in 2021, SIBUR is the largest producer of synthetic rubber in Europe but is largely excluded from European markets.

Nizhnekamskneftekhim-rubber profitability
Even under normal conditions margins on synthetic rubber exports for Nizhnekamskneftekhim were relatively small. Factors such as raw material costs and natural rubber prices complicate margins. Before sanctions Nizhnekamskneftekhim sold rubber under long-term contracts to tyre manufacturers such as Goodyear, Michelin, Pirelli, Continental, Bridgestone, etc. Most of these contracts came with zero margins or at a loss in order to fulfil the terms of supply, even if sales themselves brought decent revenue. As a result, the total revenues for the company rose sharply even if total profitability only hovered around 10%. This explains why Kazanorgsintez, which does not produce synthetic rubber, has traditionally recorded higher profit margins.

Togliattikaucuk-tertiary dodecyl mercaptan
Togliattikaucuk is developing a component for synthetic rubber production which was previously imported. Tertiary dodecyl mercaptan is an integral part of the production of synthetic butadiene-alphamethylstyrene rubber (SBSC). Changes in supply chains due to sanctions required looking for an alternative within the country or creating them from scratch. In September 2022 Togliattikaucuk started the production of oxalic acid for the production of isoprene rubbers and is now scaling up production to industrial volumes.

SIBUR n-butyllithium
SIBUR's corporate research centre has completed the development of its own technology for the production of n-butyllithium, which is used as an initiator of polymerisation for the production of synthetic rubbers and SBS polymers. N-butyllithium was previously imported into Russia, mainly from European countries and the US; currently supplies are imported from China. SIBUR sees the potential for the supply of n-butyllithium to other segments such as the pharmacological industry.

Methanol

Russian Methanol Production (unit-kilo tons)		
Producer	***Jan-Nov 22***	***Jan-Nov 21***
Shchekinoazot	1387.8	916.3
Gazprom Methanol	646.3	763.2
Metafrax Chemicals	1075.0	1098.5
Akron	88.3	96.0
Azot Novomoskovsk	191.9	234.0
Angarsk Petrochemical	28.5	28.4
Azot Nevinnomyssk	104.9	118.2
Tomet	437.7	625.3
Ammoni	85.0	109.9
Totals	4045.7	3989.7

Russian methanol production Jan-Nov 2022

Russia produced 4.046 million tons of methanol in the first eleven months in 2022 against 3.990 million tons in the same period in 2021. For most of 2022 cumulative production numbers exceeded levels in 2021, which was partly due to the start-up of Shchekinoazot's third plant in September 2021. This meant that production was higher for the first three quarters in 2022 but then became closer with 2021 numbers in the fourth quarter. Prospects for production in 2023 look constrained even if the EU has extended sanctions for uncompleted contracts that were concluded before 7 October last year. This extends the date of completion from 8 January to 18 June, but does not allow new contracts to be arranged.

Shchekinoazot was the only major producer to record an increase in 2022, rising from 916,300 tons in January to November 2021 to 1.388 million tons. Metafrax reduced production from 1.099 million tons to 1.075 million tons, and Gazprom Methanol reduced production to 646,300 tons from 763,200 tons.

Tomet produced 437,700 tons of methanol in the first eleven months in 2022 against 625,300 tons in the same period in 2021. Production for Tomet was higher in the first half of the year due to both units operating for most of this period but declined sharply in the third quarter and fourth quarters.

The other producer In the Tula Oblast, Azot at Novomoskovsk, reduced production from 234,000 tons to 191,900 tons in the first eleven months last year. Elsewhere Ammoni in Tatarstan reduced methanol production from 109,900 tons in the first eleven months in 2021 to 85,000 tons in 2022.

Russian Methanol Balance (unit-kilo tons)		
	Jan-Nov 22	***Jan-Nov 21***
Production	4045.7	3989.7
Exports	1922.9	1700.0
Domestic	1462.6	1513.3
Market Balance	660.1	776.4

Russian Methanol Exports by Producer (unit-kilo tons)		
Producer	***Jan-Nov 22***	***Jan-Nov 21***
Azot Nevinnomyssk	4.5	5.1
Azot Novomoskovsk	72.8	82.6
Akron	4.9	8.0
Metafrax Chemicals	427.6	365.9
Gazprom Methanol	277.3	372.4
Tomet	120.4	229.3
Shchekinoazot	1016.1	636.6
Ammoni	1.5	0.1
Total	1925.0	1699.9

Russian methanol market balance Jan-Nov 2022

Exports accounted for 47.9% of Russian methanol in November against 46.6% in October and 56.1% in September, thus indicating the significance of outward shipments in the sales mix. Exports increased in the first eleven months from 1.7 million tons to 1.923 million tons although domestic merchant sales dropped from 1.513 million tons to 1.463 million tons.

The main reason for the higher exports in 2022 was the additional capacity started by Shchekinoazot in September 2021. More than two thirds of production was sent for export by Shchekinoazot, whilst a relative increase in domestic merchant sales from Shchekino in the Tula Oblast added pressure to the domestic market.

Russian methanol exports & market overview Jan-Nov 2022

Russian methanol exports totalled 1.925 million tons in January to November 2022 against 1.700 million tons in the same period in 2021. Methanol exports from Russia amounted to 168,940 tons in November against 172,450 tons in October, whilst exports to the EU dropped from 62.4% to 52%. Shchekinoazot exported 1.016 million tons of methanol in the first eleven months in 2022 against 636,600 tons, whilst Metafrax Chemicals increased shipments from 365,900 tons in January to November 2021 to 427,600 tons in 2022. In the fourth quarter Metafrax Chemicals started to supply the Chinese market through the Nakhodka-Vostochny terminal although this only amounted to 12,580 tons in October and November.

Russian Methanol Exports by Destination (unit-kilo tons)		
Country	***Jan-Nov 22***	***Jan-Nov 21***
Belarus	217.8	113.5
China	132.6	0.0
Finland	672.4	709.2
Kazakhstan	35.3	20.0
Latvia	62.7	9.4
Lithuania	56.7	80.6
Netherlands	137.1	140.7
Poland	421.3	286.8
Romania	26.5	79.6
Slovakia	49.0	202.9
Turkey	104.6	6.4
UK	8.4	3.3
Ukraine	11.9	57.9
Others	11.2	17.9
Total	1939.1	1725.0

Tomet exported very small volumes since May and from the end of May has only operated one line. The restart of the second line was planned for mid-September but that was delayed and now unlikely to restart in 2023. Gazprom Methanol reduced exports from 372,400 tons in the first eleven months in 2021 to 277,300 tons in 2022 of which around 120,000 tons was shipped to China.

In addition to China deliveries to Turkey have increased in the past year as producers strive to reduce dependency on the European market. Despite the logistical constraints, Russian exports to Turkey increased from 6,400 tons in January to November 2021 to 104,600 tons in the same period in 2022.

EU Sanction reprieve for Russian uncompleted methanol export contracts from January until June

The European Commission has extended the sanction date on Russian methanol trade from 8 January until 18 June 2023. The reason is to allow customers in EU countries to have more time to conclude contracts. The ban on methanol imports from Russia was announced in October 2022 as part of the eighth package of economic sanctions. The extension of the deadline applies to the supply of methanol under contracts concluded before 7 October 2022. However, the extension does not apply to additional volumes or spot supplies so this does not keep the EU market open.

Russian methanol exports to Belarus increased to 217,828 tons in the first eleven months in 2022 against 113,487 tons in the same period in 2021. Potentially exports to Belarus have risen to provide transit to other markets, but Belarus has not published trade data since April 2021. Exports to Kazakhstan in January-November 2022 rose to 35,259 tons from 19,971 tons whilst shipments to Poland rose from 286,798 tons to 421,289 tons. After the Russian invasion 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 eleven months to 26,488 tons from 79,646 tons. Slovakia is facing the same delivery issues reduced imports from 202,910 tons in January to November 2021 to 49,035 tons. Despite the logistical difficulties and political fallout, Russian methanol exports to Finland declined only slightly from 709,167 tons in January to November 2021 to 672,388 tons in 2022.

Methanol exports decreased in December against November by around 25% and around half of the shipments were made to the EU countries. These exports were undertaken based on contracts that were agreed before the introduction of the eighth package of sanctions. An extension should allow some contracts to be completed.

Russian methanol domestic sales, Jan-Nov 2022

Merchant sales of methanol on the Russian domestic market amounted to 1.461 million tons in the first eleven months in 2022 against 1.515 million tons in the same period in 2021. Domestic consumption has shown signs of a slow decline in 2022 with monthly merchant sales volumes since the middle of the year dropping below comparative months in 2021.

Russian Methanol Domestic Sales (unit-kilo tons)		
Producer	***Jan-Nov 22***	***Jan-Nov 21***
Azot Nevinnomyssk	16.460	21.545
Azot Novomoskovsk	118.966	147.697
Metafrax Chemicals	388.607	404.097
Gazprom Methanol	324.980	352.366
Tomet	297.180	353.623
Shchekinoazot	268.982	172.880
Ammoni (Mendeleevsk)	45.892	63.064
Total	1461.066	1515.272

Tomet supplied 297,180 tons to the domestic merchant market in the first eleven months against 353,623 tons in the same period in 2021, 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. Togliattiazot increased consumption from 77,206 tons in January to November 2021 to 116,394 tons in the same period in 2022.

Russian Methanol Buyers (unit-kilo tons)		
Consumer	***Jan-Nov 22***	***Jan-Nov 21***
Nizhnekamskneftekhim	251.192	285.331
Togliattikaucuk	53.585	108.702
Uralorgsintez	58.925	54.693
SIBUR-Khimprom	1.724	21.262
SIBUR Tobolsk	42.295	41.079
Omsk Kaucuk	93.806	82.860
Novokuibyshevsk NPZ	27.621	34.848
Uralkhimplast	17.466	21.079
Slavneft-Yanos	12.125	14.582
Metadynea	63.280	88.817
Kronospan	85.264	107.487
Gazprom	218.252	184.221
Khimsintez	37.420	33.527
Volzhsky Orgsintez	50.840	17.662
Togliattiazot	116.394	77.206
Others	330.877	401.186
Total	1461.065	1574.542

Gazprom Methanol reduced domestic shipments of methanol from 352,366 tons in the first eleven months in 2021 to 324,980 tons in the same period in 2021. Previously formaldehyde was produced by Gazprom Methanol, but the assets were sold in 2021.

Other consumers which increased methanol consumption in 2022 included Volzhsky Orgsintez which increased purchases from 17,662 tons in January to November 2021 to 50,840 tons in 2022.

Shchekinoazot increased domestic sales from 172,880 tons to 268,982 tons in January to November 2022. The increase by Shchekinoazot in domestic sales affected other producers. In particular Metafrax Chemicals reduced merchant shipments to the domestic market from 404,097 tons in January to November 2021 to 388,607 tons.

Formaldehyde production in Russia has slowed in recent months due to weak demand, thus reducing purchases of methanol. Production amounted to 693,796 tons in the first eleven months in 2022 versus 866,461 tons in the same period in 2021. The slowdown in formaldehyde production helped reduce the amount of internal methanol processing at Metafrax Chemicals, Akron and Shchekinoazot.

Russian Formaldehyde Production (unit-kilo tons)		
Producer	***Jan-Nov 22***	***Jan-Nov 21***
Pigment	33.748	35.795
Shchekinoazot	28.375	30.705
Akron	124.190	155.325
Metafrax Chemicals	319.897	367.986
Sverdlov Plant	12.878	17.44
Khimsintez	36.298	46.941
Uralkhimplast	39.930	53.685
Nizhnekamskneftekhim	67.089	66.864
Gazprom Methanol	0.000	64.298
Metadynea	31.570	27.422
Total	693.976	866.461

Deliveries by rail to the domestic market in December dropped by around 8% over November. The cost of methanol on the domestic market ranged widely depending on the size of the buyer. In the Moscow region prices ranged from €208-301 per ton in December and in the Volga region €182-270 per ton.

Vysotsk methanol terminal

Lukoil-II has started purchasing equipment for the reconstruction and construction of new facilities at the port of Vysotsk (Leningrad region) for transhipment of acrylonitrile and methanol. In the autumn of 2022, the company announced several tenders with a total price of about 900 million roubles for the supply of 16 tanks for acrylonitrile, pumping equipment, and thermocatalytic afterburning units for acrylonitrile and methanol, a nitrogen station and other equipment. It appears it may be possible that the terminal for methanol will be constructed without the planned 1 million tpa methanol plant which would provide a logistics outlet for existing producers.

Organic chemicals

Russian N-Butanol Production (unit-kilo tons)		
Producer	***Jan-Nov 22***	***Jan-Nov 21***
Angarsk Petrochemical company	29.2	23.0
Azot Nevinnomyssk	16.4	13.6
Gazprom neftekhim Salavat	64.4	49.4
SIBUR-Khimprom, Perm	27.4	26.3
Total	137.3	112.3

Russian Isobutanol Production (unit-kilo tons)		
Producer	***Jan-Nov 22***	***Jan-Nov 21***
Angarsk Petrochemical Company	20.3	14.8
Gazprom neftekhim Salavat	31.6	28.0
SIBUR-Khimprom, Perm	51.9	34.9
Total	103.9	77.6

Russian butanol production Jan-Nov 2022

Russian normal butanol production rose from 112,300 tons in the first eleven months in 2022 to 137,300 tons in the same period in 2022. Gazprom neftekhim Salavat was the largest Russian producer, increasing production to 64,400 tons against 49,400 tons in January to November 2021.

Isobutanol production in Russia increased from 77,600 tons to 103,900 tons in January to November 2022 during which Gazprom neftekhim Salavat increased production from 31,600 tons to 28,000 tons, and SIBUR-Khimprom increased production from 34,900 tons to 51,900 tons.

Russian Acetone Production (unit-kilo tons)		
Producer	***Jan-Nov 22***	***Jan-Nov 21***
Ufaorgsintez	29.7	42.2
Kazanorgsintez	42.4	45.7
Novokuibyshevsk Petrochemical	28.0	37.8
Omsk Kaucuk	25.5	26.3
Total	125.5	151.9

Russian oxygenated solvents Jan-Nov 2022

Russian acetone production dropped from 151,900 tons in the first eleven months in 2021 to 125,500 tons in the same period in 2022. Omsk Kaucuk produced 25,500 tons of acetone in the first eleven months this year against 26,300 tons whilst Kazanorgsintez produced 42,400 tons, 3,300 tons less than last year. Acetone has sanctioned by the EU, preventing Russian exports. As a result, exports dropped from 63,600 tons in the first eleven months in 2021 to 22,800 tons in the same period in 2022. Exports to EU countries including the Netherlands and Latvia dropped sharply.

Russian Acetone Exports (unit-kilo tons)		
Producer	***Jan-Nov 22***	***Jan-Nov 21***
Belarus	1.1	10.4
Netherlands	12.8	29.2
Turkey	5.0	5.6
Lithuania	0.0	1.4
Latvia	2.0	8.9
Others	1.9	7.8
Total	22.8	63.6

Isopropanol production in Russia amounted to 38,875 tons in the first eleven months, which is 7.6% more than in the same period in 2021. The production of isopropanol in Russia is carried out by the Khimprom (12,000 tpa), Sintez-Acetone 2000 (up to 4,000 tpa), Impexneftekhim at Orsk (up to 21,000 tpa) and Omsk Kaucuk (up to 60,000 tpa). The export of isopropanol since the beginning of 2022 has grown by 32.7%, whilst imports have decreased by 49%. Current demand is fully covered by Russian production.

Russian Plasticizer Trade 2022 (unit-kilo tons)			
Exports			
	Q1 22	***Q2 22***	***Q3 22***
DOTP	3.925	1.623	3.545
Imports			
	Q1 22	***Q2 22***	***Q3 22***
DOP	0	0.958	0.763
DOTP	1.975	2.408	0.317
DINP	5.365	6.856	4.117

In other areas of solvent production Russian producers have reduced the production of ethyl acetate and butyl acetate because these products have a shelf life (nine months from the date of production), and also in order not to overpack the warehouse and not freeze assets.

As a result of surplus availability ethyl acetate imports dropped sharply last year. November saw a rise of 2.5 times over October to 107,610 tons due to the desire of traders to create sufficient volumes of stocks before the end of the year and into January. The main batches of imported ethyl acetate were supplied from China where prices are 10-15% lower than that of domestic counterparts. Overall, for the first eleven months imports of ethyl acetate dropped by 77% against 2021 to 1,490 tons.

Central Asia

Raw materials for polyolefin production in Kazakhstan
Kazakhstan's raw material base for petrochemical projects based at Atyrau comes from the Tengiz field which yields a high content of ethane (up to 14%), butane and propane. Tengizchevroil has previously liquefied and exported one part of the gas another part was pumped inside the oil reservoir to maintain the necessary pressure in the wells, and the remainder was simply flared as an unclaimed product. The tightening of international and national environmental legislation has raised the question of handling these products, including the development of petrochemicals.

KazMunaiGaz-Univation Technologies

KazMunayGaz and Univation Technologies signed a license agreement for a second polymerisation unit with a capacity of 625,000 tpa. The agreement between KMG and Univation will ensure the release of a package of design and technological documentation (PDP) for the installation for the production of polyethylene (PE) using Unipol PE Process technology and the provision of an appropriate license for the production of PE in the amount of 625,000 tpa.

Univation will also supply catalyst systems for the polymerisation of PE, including catalysts for the mass production of blow moulding grades from HDPE and LLDPE. Previously KazMunayGaz signed a license agreement for the first installation with a capacity of 625,000 tpa with Chevron Phillips Chemical. The project is being developed by Silleno, a joint venture of KazMunayGaz, Kazakhstan's Samruk-Kazyna National Welfare Fund and SIBUR.

KazMunaiGaz-Lummus butadiene
KazMunaiGaz and Lummus Technology are considering the project to build the butadiene production facility to add to the project of separation of butadiene for the production of synthetic rubber. Currently, work is underway to design the future plant. KazMunaiGas and Lummus worked together at the KPI Inc. polypropylene plant located near Atyrau.

In November KazMunaiGaz and Chevron Phillips Chemical signed a license and design agreements for the delayed polyethylene project in Kazakhstan, which is to be located near Atyrau. The contract involves the development of project documentation for the production of polyethylene using MarTECH® ADL technology and the provision of an appropriate license for the production of the first line of 625,000 tpa. Technology from Chevron Phillips Chemical will allow the Kazakh plant to produce a wide range of products, including premium HDPE.

SOCAR methanol exports Jan-Nov 2022

SOCAR Methanol produced 489,500 tons of methanol in January-November 2022, 43.3% higher than the same period in 2021. The company held 45,500 tons of stock at the start of November. Exports totalled 448,300 tons of methanol worth $120.726 million.

Azerbaijan Methanol Market (unit-kilo tons)

	Jan-Nov 22	*Jan-Nov 21*
Production	489.5	331.4
Exports	448.3	252.5

Azerbaijan-petrochemical production Jan-Sep 2022

In January-September 2022 Azerbaijan produced 92,600 tons of propylene, 94,900 tons of polyethylene, and 97,500 tons of ethylene. From the propylene production 88,500 tons was sold mostly to SOCAR Polymer which then produces polypropylene. Propylene production in Azerbaijan dropped 12.1% in the first nine months in 2022 and merchant propylene sales by 10.3%. The production of ethylene and polyethylene decreased by 21.2% and 22%, respectively.

Petrochemical capacity increases in Azerbaijan
Azerkhimya is close to completing the modernisation and expansion of its petrochemical capacities at Sumgait which is expected to lead to higher production in 2023. Ethylene capacity is being increased from 110,000 tpa to 190,000 tpa with a further rise to 210,000 tpa, and propylene from 65,000 tpa to 187,000 tpa. The plant is currently undergoing post-modernisation assessment to see if these capacity expansions are working properly and if there is any need to replace equipment to increase ethylene production. Azerkhimiya also produces LDPE at the Ethylene-Polyethylene plant with a capacity of 60,000 tpa. The entire modernisation of the Ethylene-Polyethylene plant is expected to be completed fully in the first quarter in 2023.

Azerbaijan-petrochemical exports Jan-Nov 2022

Azerbaijan exported 335,228 tons of polymer products in the first eleven months in 2022, 5.6% less than in the same period in 2021.

Polyethylene exports amounted to 105,161 tons in January to November for $131.439 million whilst polypropylene exports amounted to 63,487 tons for $84.794 million. Propylene copolymer exports totalled 29,932 tons for $44.356 million.

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