

# CIREC

## MONTHLY NEWS

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

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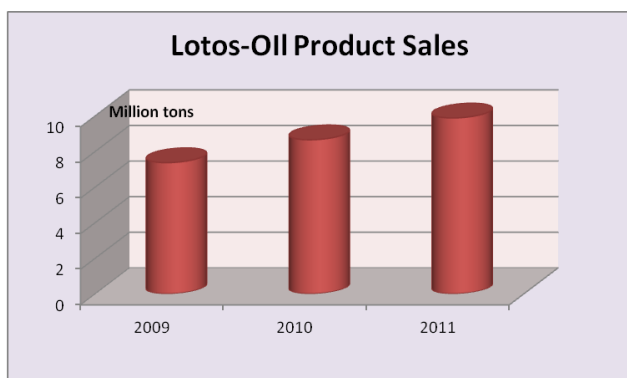
Issue 260, 19 July 2012

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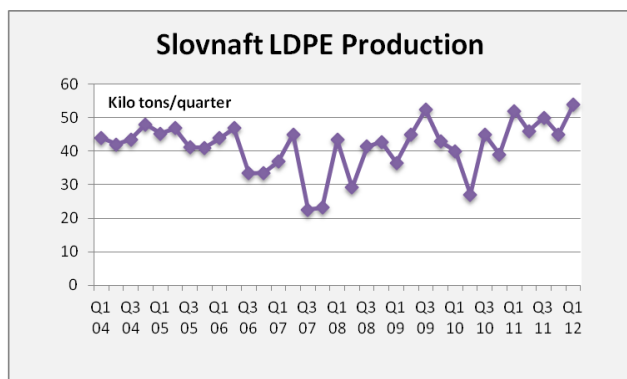
## CENTRAL & SOUTH EAST EUROPE

### Petrochemicals



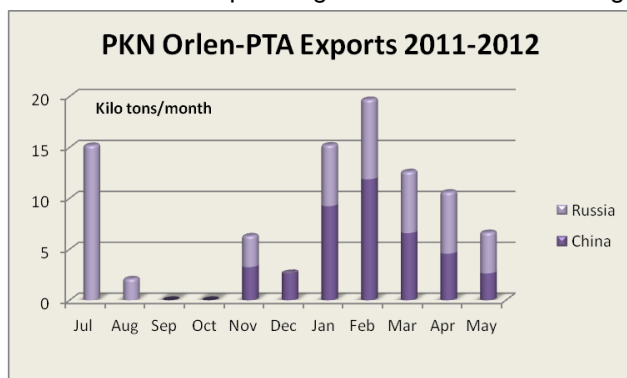
rising by an average of 10% per annum. In addition to PET and polyesters, xylenes are used for the production of solvents used in industrial paints and varnishes.

The extraction of xylenes for Lotos allows a reduction in the aromatic content of components in the gasoline pool. By constructing an installation to separate xylenes the company has added a new revenue stream which provides a higher return than reformat exports from the refinery. Lotos is now expected to examine other areas of potential in petrochemicals. Following the launch of new processing capacities in 2011 Lotos increased oil product sales by 1.225 million tons to 9.874 million tons.



produced.

In order to support lower energy consumption, the EBRD has agreed to loan the MOL Group \$150 million for improving energy efficiency at Slovnaft. A \$150 million, 8.5 year loan will support Slovnaft in financing a number of improvements in energy efficiency and environmental performance. Lower energy consumption will be facilitated by the new technology which should translate into a significant drop in emissions. The new LDPE unit 4 is one of the most upcoming investments in the MOL group. At the same time, the steam cracker at Bratislava will be upgraded with the goal of making it highly carbon efficient. The construction of the new LDPE unit is scheduled to begin in 2013, and its launch is planned for 2015.



#### Lotos xylene fraction plant starts

Lotos at Gdansk opened its xylene fraction plant in July, which will supply Mitsubishi International GmbH 120,000 tpa of xylenes for a period of 3.5 years. Lotos signed a contract initially with Mitsubishi International GmbH in 2010 to cover the sale of xylene fractions, as soon as the facility at Gdansk was ready.

The new unit is part of the expansion of Lotos in the petrochemical industry, with xylenes in particular seen to offer strong potential for polyester production. PET packaging production in Central Europe increased by 8% in 2011, whilst xylenes consumption in Poland is

#### MOL agrees deals for Slovnaft

MOL and a consortium of companies comprising Tecnimont, and Tecnimont Planning and Industrieanlagenbau, have signed a contract for the construction of new units to produce polyethylene worth €204 million at Slovnaft. The new production unit (LDPE 4) will be built using the best available technology and will replace seven older lines, increasing capacity by 40,000 tpa to 220,000 tpa. In the past few years Slovnaft's LDPE production has been fairly stable, averaging between 40-50,000 tpa per quarter. The project not only adds new capacity but will also include the change in the quality of the types of polyethylene

#### PKN Orlen, chemical plant outages

PKN Orlen's production units for phenol and acetone were shut on 22 June for maintenance, with production expected to restart on 1 August. The capacities of the units are 55,000 tpa for phenol and 35,000 tpa for acetone. Orlen's scheduled maintenance shutdown at Plock coincided with a shutdown undertaken by Domo

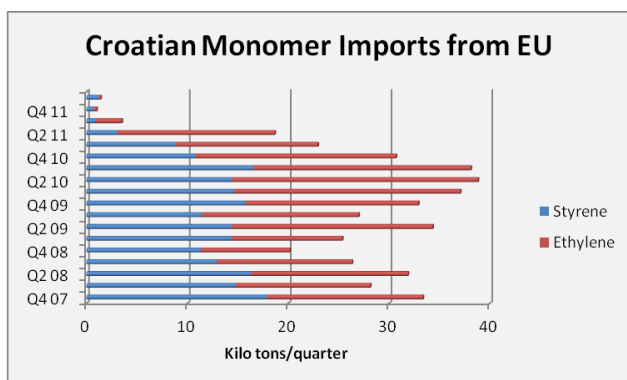
Caproleuna at Leuna where the phenol and acetone plants were shut at the start of July for annual maintenance. The capacities for the phenol and acetone plants at Leuna comprise 150,000 tpa and 90,000 tpa respectively.

PKN Orlen also started a scheduled stoppage on 6 July for the PTA plant at Wloclawek, which is to run for three to four weeks. Aside deliveries to China, Orlen ships PTA to Kaliningrad for Alko-Naphtha. Indorama Ventures plans to carry out maintenance at its Wloclawek PET plant for three weeks in October this year. The plant at Wloclawek has a capacity of 140,000 tpa. At Klaipeda, Indorama plans a stoppage of its 200,000 tpa plant for 20-30 days in September.

#### Dioki-seeking buyer

Dioki's owner Advance is now virtually bankrupt leaving doubts over the future of the petrochemical facilities on Krk Island, whilst possibly marking the end of production at Žitnjak, near Zagreb. The Žitnjak ethylene and polyethylene plant was established in 1963 based on local ethane supplies. Although INA argues that there is not enough ethane these days, it seems that it is more profitable to sell ethane in a mixture of natural gas than shipping to Dioki.

Swiss company United Energy has taken steps to pay off some of the debts for Dina, paving the route towards restarting production. United Energy has agreed to pay €5 million to clear outstanding wages and invest another €15 million for working capital and other costs of restarting operations at Dina's petrochemical facilities. After this process has been completed the Advance Group will go into bankruptcy. Although this provides a solution to one part of the Dioki chemical assets, the Žitnjak plant has received no interest from a strategic investor. No equity details have been released over United Energy, but it seems improbable that investments of around €20 million would be undertaken without some guarantees.



The Dina petrochemical facilities on the island of Krk have been idle since late 2011 due to unpaid bills and a lack of working capital. Omisalj has been the site for an LNG project which came to a halt last year. If it resumes construction it will at least exclude OMV which was originally involved in the project.

Croatia accounted for 27% of EU ethylene exports in 2011, which amounted in total to 461,570 tons, but this year no shipments have been made. Styrene exports from the EU to Croatia amounted to 10% of 120,400 tons, but similarly have been affected by the financial problems facing Dioki.

#### NIS-Petrohemija

Petrohemija at Pancevo has run into problems over feedstock deliveries again, forcing a stoppage in July. NIS provided Petrohemija with only 3,000 tons of naphtha in July, and the petrochemical plant was forced to stop production due to a shortage of raw materials. Petrohemija expects to restart on 1 August, but problems could start to re-emerge in September due to planned refinery maintenance at Pancevo. Petrohemija normally buys around 12,000 tons of naphtha from NIS per month, supplemented by another 8,000 tons from other sources. In order to avoid problems Petrohemija needs to focus on stock inventory over the next few weeks.

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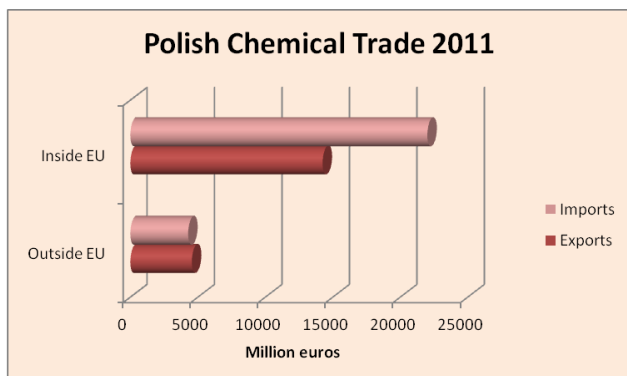
### Chemicals

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#### Polish chemical trade balance 2011

The trade balance for chemical products overall in Poland continues to be in deficit, although for some products such as oxo alcohols and caprolactam exports play a key part in maintaining production rates. The import value of chemical products into Poland in 2011 increased by 11.8% against 2010 to a total of €27.1 billion. Around 84% of imports were sourced from the EU-27 countries. The biggest product groups for imports included pharmaceutical products, (€4.3 billion in 2011) plastics in primary forms (€4.3 billion) and articles of plastics (also €4.3 billion in 2011). The value of exports from Poland amounted to €18.8 billion and was 17.7% higher than in 2010. The most important product groups were plastics articles (€4.3 billion in 2011), rubber and its articles (€3.6 billion) and essential oils and perfumery (€1.9 billion). A total of 76% of Polish chemical exports was directed to EU-27 countries.

As in the previous years the chemical industry in 2011 maintained a surplus of import over the export, and the negative balance of foreign trade increased by €40 million to €8.3 billion. Positive balance values were generated, as in the previous year, by: rubbers and rubber articles, essential oils, perfumery, soaps and washing preparations, fertilizers and explosives. The largest deficit was recorded for plastics in primary forms (€2.7 billion), pharmaceuticals (€2.7 billion) and organic chemicals (€1 billion).



#### ZA Tarnow-ZA Pulawy

Whilst Russian fertiliser producer Akron has increased its offer for ZA Tarnow (ZAT), shareholders in ZAT are speculating over the possibility to merge with ZA Pulawy, and are considering the huge synergies that could be possible by uniting the two groups. In the meantime, Akron has purchased a 12% stake in ZA Tarnow.

In the ongoing attempts by Akron and Synthos to buy shares in ZAT ZA Pulawy, one option that has been voiced is that the assets of both companies should be combined to create a huge fertiliser and chemical conglomerate. This option was initially written off as highly unlikely, as the possible merger could be rejected out of hand by the Office of Competition and Consumer Protection and the European Commission. However, ZA Tarnow does not seem unfazed by the scale of the task and is assessing possible ways of financing a potential merger.

Polish Chemical Production (unit-kilo tons)		
Product	Jan-May 12	Jan-May 11
Caustic Soda Liquid	127.8	94.1
Caustic Soda Solid	25.9	16.4
Soda Ash	455.2	330.7
Ethylene	224.5	185.4
Propylene	152.7	121.9
Butadiene	26.4	22.8
Toluene	7.7	45.3
Phenol	19.3	14.2
Caprolactam	72.6	57.8
Acetic Acid	4.0	3.5
Polyethylene	156.5	127.0
Polystyrene	52.3	42.9
PVC	121.0	92.1
Polypropylene	112.6	78.6
Synthetic Rubber	81.7	61.7
Ammonia (Gaseous)	571.0	421.0
Ammonia (Liquid)	603.0	385.9
Pesticides	11.2	9.6
Nitric Acid	1048.0	856.9

Tarnow's management believes that the synergies will be achieved by centralising management in common areas, particularly trade in fertilisers, caprolactam and derivatives. Advantages could include the purchase of strategic raw materials, the purchase of utilities, including natural gas, the organisation of the investment process, and the organisation of logistics services for the group.

#### Synthos-ZA Pulawy

ZA Pulawy's management stated in early July that the offer made by Synthos to purchase 100% of its assets is too low and does not reflect the value and potential of the company. The Polish Treasury is scheduled to decide on the offer by 20 July, but the opinion of the management and union may prove the decisive. Until the offer was analysed as too low there were some indications suggesting the deal might go through, although support for the takeover by Synthos has been far from unanimous. Synthos is not considering an increased offer, whilst in the meantime ZAT has emerged as a potential buyer. The takeover by Synthos has been described as hostile by some opponents, but the two companies do not compete in any of the product areas. Synthos has stated that it wants to develop the field of engineering plastics, using caprolactam produced by ZA Pulawy to produce polyamide.

#### Polish Competition body clears Synthos for Pulawy takeover

The President of the Competition and Consumer Protection in Poland cleared the takeover of ZA Pulawy by Synthos on 17 July. However, the Polish Treasury now favours the acquisition of ZA Pulawy by ZAT at Tarnow. In terms of competition Synthos and ZA Pulawy are working in different product groups and do not operate in the same markets, whilst the Tarnow Group works in many of the same product areas as ZA Pulawy. In addition to fertilisers and ammonia, the two groups both produce caprolactam and AdBlue. If the Competition body in Poland approves the merger of ZAT and ZA Pulawy, in that it will not harm the Polish consumer then it is possible that this could lead to the creation of a very large player in the global fertiliser market. Whichever offer is accepted by the Treasury for ZA Pulawy, the transaction will need approval from Brussels.

#### ZA Pulawy-value chain

The management of ZA Pulawy has had reservations about the Synthos offer in view of how it might affect the strategy of the company that has been pursued in recent years. It may also be against an offer from ZA Tarnow,



despite potential synergies that could be created in the field of caprolactam for example. Both groups have been working together since last year on a possible joint caprolactam plant in Asia, which aside Germany represents the key market for Polish exports.



ZA Pulawy views its development as largely unfinished. It has been building up business after investments in chemical plants and the acquisition of the Gdansk Phosphor plant from Ciech last year and Adipol at Chorzow. ZA Pulawy itself is interested in other divisions belonging to Ciech such as Organika Sarzyna and Alwernia.

Where ZA Pulawy has been active is examining the possible opportunities for adding value to some of its product chains. ZA Pulawy a few months ago signed an agreement with the Fertilizer Institute in Pulawy for cooperation in the commercial use of advanced

biotechnology processes. The project is part of the so-called Green Chemistry programme.

#### **NCHZ-ViaChem purchase complications**

The Slovak Antimonopoly Office is yet to approve the sale of NCHZ to the Czech company Via Chem, which has created some uncertainty whether the deal will be finalised. The company faces serious financial issues, with debts outstanding to a number of major creditors. Should the ViaChem deal not go through it would raise questions about future operations at Novaky.

#### **Spolchemie –financing arrangements**

Spolchemie has returned to standard financing arrangements with banks after signing a refinancing deal that puts an end to the series of standstill agreements on debts that threatened insolvency. Three banks have agreed a long-term and sustainable financing structure which will refinance total current debts of Kc 2.2 billion (\$109.0million, €86.1 million) and will allow Spolchemie to pursue its medium to long-term strategy. Spolchemie during the restructuring had to reduce the number of employees from 1,000 to about 850 even though its production has since recovered. In 2011 the company recorded sales of Kc 5.14 billion.

#### **PCC Rokita-dry port at Tczew**

PCC Rokita has started work on the construction of a dry port at Tczew, which is the first of its kind in Central and East Europe. The investor, Gdynia PCC Intermodal is estimated that the investment will be ready in 2014. The estimated investment cost is around zł 200 million. Intermodal Container Yard, dry port, which will Tczew terminal is to be one of the main hubs of national and European network of intermodal (rail-car). It has a logistic function as ports of Gdansk and Gdynia. PCC Intermodal already bought land development in logistics and distribution operations with an area of 63 hectares. The new terminal will cover an area over 20 hectares.

Zachem at Bydgoszcz is to start its new unit for the production of epichlorohydrin in August. The new technology will reduce production costs by 28% over the current plant. The technology is mostly based on the Zachem team's own research, supported by the Institute of Blachownia Heavy Organic Synthesis. The investment will also enable further integration with the TDI production unit. The production process involves a replacement of chlorine and hydrogen chloride with glycerine. The entire cost of the project amounted to zł 70 million, of which zł 27 million was provided from EU funding. The installation will reduce energy consumption whilst the manufacturing cost becomes independent from the price of oil as it is using waste glycerine. The plant provides raw materials for the production of resins by Ciech subsidiary Organika-Sarzyna.

Constructing a new power plant forms a central part of the company's strategy. This will increase gas consumption from around a billion cubic metres per annum at present to two billion, taking around 15% of total Polish gas consumption. At the same time, most importantly, gas energy will minimise the costs associated with CO<sub>2</sub> emissions and overall reduce the costs of the company. ZA Pulawy wants to invest about zł 300 million in the financial year 2012/2013 focused on a liquid fertiliser plant, ammonia storage and a flue gas desulphurisation plant. All these plans could be disturbed in the event of a possible takeover.

#### **PCC Exol-share issue to raise funds**

PCC subsidiary PCC Exol has offered shares in July for individual investors with the aim to raise funds for capacity expansions and product diversification. The company intends to spend heavily on the construction of units for non-ionic surfactants and to increase the production of bulk surfactants. PCC Exol requires around zł 35 million to complete these investments which could be completed in two years. PCC Exol currently runs four plants, three of which are located at Brzeg Dolny and the other at Plock.

PCC also intends to create a new company engaged in the production of polyurethanes, which will include one of the existing divisions of PCC Rokita. The start of the non-ionic surfactant project is expected in 2012, with an estimated construction period of 1.5-2.5 years. The project is estimated to cost about zł 35 million. The share issue will help achieve PCC Exol's long-term strategy and to establish itself as a market leader in Central Europe.

#### **Zachem-epichlorohydrin unit starts in August**

## RUSSIA

**Russian Gas Prices Paid 2011  
(per thousand cubic metres)**

Company	Location	\$ Av Price
Akrlat	Dzerzhinsk	120.0
Akron	Novgorod	97.1
Azot	Novomoskovsk	83.9
Kamteks-Khimprom	Perm	90.5
Kaustik	Sterlitamak	83.9
Kaucuk	Sterlitamak	98.0
Kazanorgsintez	Kazan	101.0
Galopolymer	Perm	88.5
GNS	Salavat	90.1
Metafrax	Gubakha	80.1
Kuibyshevazot	Samara	79.8
Polief	Blagoveschensk	96.3
Togliattiazot	Togliatti	102.8

### Russian WTO entry ratified

The Russian State Duma ratified entry to the WTO in July, which lays the basis for full incorporation and conclusion of the legal process. WTO accession, in principle, means strengthening the attractiveness of the Russian domestic market to foreign investors, helping the stability of conditions for businesses, and reducing costs for imported raw materials and equipment for manufacturers. Foreign trade should be expected to rise as a consequence of membership and compliance of rules. However, reactions from many industrial sectors are mixed over the possible effects on Russian industry.

The process of entry will be managed on a gradual transitional process rather than an immediate full application of the new rules and conditions. Within two to three years after WTO entry Russia has committed to lowering tariffs on imports of most bulk polymers from 10% at present to 6.5%. However, some duties will be raised from 0% to 6.5%; such changes will affect LLDPE and polystyrene. Duty on unplasticized and plasticized PVC will drop from 10% to 6.5% in 2013, whilst polyvinyl acetate and copolymers of vinyl acetate will change in 2015, followed by

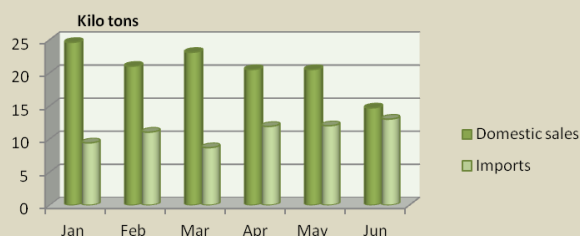
fluoropolymers in 2016. The duty on PET has been targeted to be reduced from 5% to 4% in 2013, whilst the duty on polyurethanes in 2015 will be reduced from 10% to 6.5%. Also, in the years 2014-2018 Russia will reduce import duties on products from polymers, including pipes, films, plates, sheets, containers, etc. Probably there will be losers from entry, but overall the chemical industry is expected to benefit from WTO membership.

## Feedstocks & Petrochemical Projects

### Russian petrochemical feedstocks, Jan-Jun 2012

Deliveries of propane-propylene fractions to the Russian domestic market amounted to 18,000 tons in June, which was 1.7 times higher than in May. The main reason for increasing the supply has been the restart of activity at the Ryazan oil refinery after a lengthy repair outage. In June, the Ryazan refinery shipped 7,000 tons of propane-propylene fractions to Russian consumers, which was 10.8 times higher than in May. In addition, Slavneft-YANOS at Yaroslavl boosted the sales of propane-propylene fractions by 17%, to 3,800 tons. Despite the increase in June, shipments dropped from 90,700 tons in the first half of 2011 to 78,600 tons in 2012.

**Russian Butylene-Butadiene Market  
2012**



For butylene-butadiene fractions, shipments to the Russian domestic market declined by 28% to 14,700 tons in June against May due to maintenance shutdowns. In the first half of 2012 shipments to the domestic market totalled 124,600 tons which was 30% down on the same period last year. The decline is due to the prolonged outage at Stavrolen. In the first six months in 2011 the Budyennovsk plant produced 43,600 tons but to date has not produced at all in 2012.

Omsk Kaucuk has been importing the largest amount amongst consumers. In the first half of 2012 Russian imports of butylene-butadiene fractions totalled 65,300

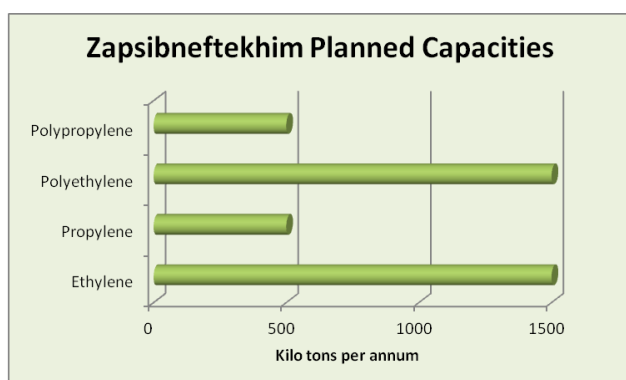
tons, which was 2.3 times higher than the same period last year.

Rail shipments of SHFLU, or natural gas liquids, dropped 21% in June against May to 184,500 tons. Most of the liquids were sold to power stations in Russia or exported. The decline in June was due to reduced shipments from Langepasneftegaz in the Perm region and Tobolsk-Neftekhim due to repairs. Zapsibtransgaz (included in SIBUR-Holding) completed the overhaul of submarine navigation main product pipeline Yuzhniy-Balyk-Tobolsk-Neftekhim, to allow an improvement in July.

The gas plant Langepasneftegaz, which is part of LUKoil, undertook repairs for 20 days starting in June and this reduced the supply to Permneftegazpererabotka. Sales of liquids amounted to 55,100 tons in June, nearly 30% of total deliveries, but were down 14% against May. A planned outage at SIBUR's Kstovo petrochemical complex reduced the requirements, whilst Gazprom Neftekhim Salavat reduced its purchases due to its planned monomer outage for July.

### **Tobolsk-Neftekhim & feedstock supplies**

Novatek plans to supply the first batch of SHFLUs from the Purovsky Gas Processing Plant to the Yuzhniy Balyk Gas processing Plant from the start of 2014. This pipeline represents a key part of the feedstock provision base for the proposed cracker and olefins complex at Tobolsk, to be managed by SIBUR's subsidiary Zapsibneftekhim. Novatek is currently in the process of expanding capacity at the Purovsky plant, including the introduction of two stages at the end of 2013 and in 2015 respectively. The result of this expansion will increase capacity from 5 million tpa at present to 12 million tpa.



The pipeline under construction from Purovsky to Yuzhniy Balyk will comprise a capacity of 4 million tpa of SHFLU, and is being constructed by the Russian company Stroytransgaz. The pipeline is termed the northern section of the Purovsky-Tobolsk connection, which extends in total to 1100 km. The southern section is longer of the two sections from Yuzhniy-Balyk to Tobolsk, and will replace the existing pipeline. The capacity of the southern section is 8 million tpa.

Russian engineering institute NIPIgaspererabotka has performed geotechnical engineering and geodetic surveys on behalf of SIBUR TyumenGaz for the construction of the product pipeline from Yuzhniy-Balyk pump station (STS) to Tobolsk-Neftekhim. NIPIgaspererabotka carried out research on the product pipeline infrastructure for access to roads, and overhead power lines. NIPIgaspererabotka has passed the findings on to Glavgosekspertiza, the Russian state organisation responsible for safety and related issues.

The aim of the pipeline between Yuzhniy-Balyk and Tobolsk is to ensure safe and reliable transportation of SHFLU from gas processing plants in the Yamal-Nenets region for uninterrupted operations at Tobolsk-Neftekhim. As soon as the new pipeline is completed and ready to start the existing pipeline, built in the 1980s, is expected to be closed.

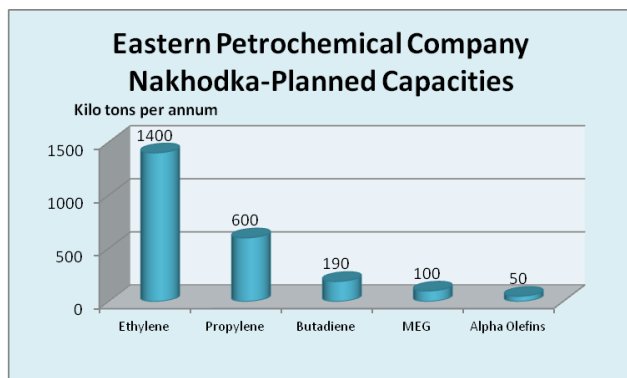
In addition to feedstocks from SIBUR's gas processing plants in the Yamal region, Tobolsk-Neftekhim receives additional feedstocks from the gas processing plants Belozern and Nizhnevartovsk further south in the Yugra region. These two plants are included in the JV Yugragazpererabotka. NIPIgaspererabotka has offered four options to expand production at Belozern Gas Processing Plant, and to widen the availability of SHFLU's containing ethane. The pipeline connection from Belozern and Tobolsk interlinks with the Nizhnevartovsk Gas Processing Plant before reaching the Yuzhniy Balyk pumping station. Yugragazpererabotka plans to increase associated gas processing to 11.5 billion cubic metres per annum, dry stripped gas to 10 billion cubic metres per annum and natural gas liquids to 3.1 million tons which are supplied to SIBUR.

### **Zapsineftekhim technology licenses and FEED documents**

Linde has agreed with SIBUR to provide FEED for the Tobolsk olefin project, although it is not yet clear if SIBUR's plan for 1.5 million tpa of ethylene will be managed by Zapsibneftekhim or another subsidiary Zapsib-2. The project is not solely based on petrochemicals, but it includes the design and construction of the main pipeline infrastructure to transport light hydrocarbons from Yuzhniy Balyk through Tyumen to Tobolsk. SIBUR's vision is that the Tobolsk petrochemical complex plays the role of the anchor for the processing of associated gas, natural gas and gas condensate production in West Siberia.

Linde will prepare a set of FEED documents (Front End Engineering Design), as well as develop the relevant sections of the project documentation. SIBUR has previously selected licensors and partners for the FEED stage for other units of the Zapsibneftekhim complex. Ineos has agreed to provide licenses for various grades of polyethylene with a total capacity of 1.5 million tpa, with Technip providing the full FEED documentation. Full polyethylene capacity is expected to total 1.5 million tpa to balance with the cracker plans. A second polypropylene plant of 500,000 tpa is planned for construction, after the Tobolsk-Polymer project which should

start in 2013, and this second plant has received a license from LyondellBasell with ThyssenKrupp Uhde providing the FEED documentation. .



#### **Eastern Petrochemical Company-Nakhodka**

Environmental opposition continues to question Rosneft's proposed petrochemical complex at Nakhodka in the Russian Far East, but the design process is continuing with the aim of constructing a cracker with an eventual capacity of 1.4 million tpa of ethylene. It may start up in stages rather than a one-off introduction, and the project outline should be clearer when the design stage is completed by the end of 2012. The construction of the coastal petrochemical plant under the management of Rosneft's subsidiary Eastern Petrochemical Company (VNHK) is expected to begin in 2013. The first stage of the project involves processing

3.4 million tpa of crude, probably to be sourced from Rosneft's refineries at Komsomolsk, Achinsk and Angarsk.

The Nakhodka complex is being created to will produce polymers (polyethylene and polypropylene) and other petrochemical products such as alpha olefins and MEG. Rosneft expects that VNHK will become the nucleus of the regional petrochemical cluster as set out by the Russian Ministry of Energy. The Far East cluster will be developed on the raw material base in Yakutia, in part involving raw materials from other fields in East Siberia as well as resource based ESPO pipeline system. It is assumed that initially the VNHK complex will process naphtha supplied from the Komsomolsk and Achinsk refineries and Angarsk Petrochemical Company, before moving to the second phase involving gas feedstocks. The local Primorsk Krai administration is a keen supporter of the petrochemical complex at Nakhodka.

VNHK announced in July that it is to build a modern thermal power plant at Nakhodka to provide heat and electricity not only to the future petrochemical complex, but also adjacent residential areas. The new modern facilities are to be constructed using gas turbines supplied by GE Energy Products France SNC.

#### **Angarsk-gas feedstocks for petrochemicals**

Angarsk Petrochemical Company (part of Rosneft) is evaluating plans to accept and process up to 3 billion cubic metres of gas per annum by 2015, as part of the programme to create a gas-chemical complex. One of the priorities of the Angarsk region is expanding the use of natural gas fields in East Siberia, including its use as a process feedstock. Modernisation of the existing plans and the creation of new chemical plants in the Irkutsk region is planned. The region possesses the necessary prerequisites for development including resources, transportation infrastructure, and trained personnel.

#### **Angarsk Polymer Plant 2011**

Angarsk Polymer Plant processed 729,500 tons of raw materials in 2011 and produced 467,500 tons of commercial products. The company produced 126,100 tons of ethylene, 68,900 tons of propylene, 57,900 tons of LDPE, 20,200 tons of styrene, 19,400 tons of polystyrene, and 56,700 tons of benzene. Investments by the company for the period 2010

2011 amounted to 2.99 billion roubles. Funds were used to pay for the license and basic engineering of new installations, design work for the production of polypropylene, as well as to maintain the health and safety.

The Irkutsk region is one of main centres included in the plan for the development of gas and petrochemical industry in Russia. Angarsk Polymer Plant and Sayanskkhimplast in the region are the only companies focusing 100% on chemical products, whereas the Angarsk Petrochemical Company is essentially a refinery that produces small volumes of methanol, butanols and MTBE.

The development of gas chemistry in the Irkutsk region is targeted largely on the basis of the Kovytkha field. At present, processing of natural gas in the Irkutsk region is not undertaken but the Kovytkha field contains a significant amount of ethane, propane, butanes, etc. Potentially the Irkutsk region could see the development of a polyolefin complex with the capability to produce up to 2 million tpa. Various options are being considered for a complex in the region, which could include both Sayanskkhimplast and Gazprom.

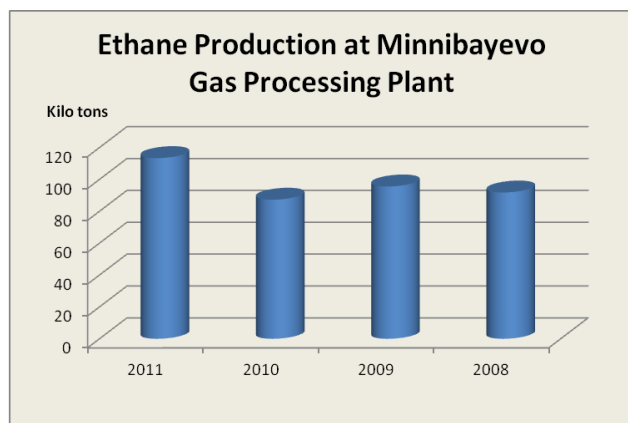
#### **Taneko progressing to 14 million tpa refining capacity**

Tatneft recently approved an updated master plan to increase the capacity of Taneko's refinery to 14 million tpa, although financial questions may hinder the project. This stage of the project is intended to enhance processing for the production of gasoline and aromatic products benzene and paraxylene. The company wants to build a



catalytic reforming unit with continuous catalyst regeneration, isomerisation of light naphtha, catalytic cracking, which will produce up to 1.5 million tpa of gasoline. In 2011, Taneko processed 5.4 million tons of oil.

In July this year, Taneko received process furnaces and air heating systems totalling 2,120 tons of freight intended for the increase in capacity to 14 million tpa. The furnaces were supplied by Chempex at Brno in the Czech Republic. For the aromatics projects that were part of the original Foster Wheeler plan for Taneko and were later abandoned, there is a possibility of reviving investments at some stage. Taneko has yet to confirm the details of construction of the benzene and paraxylene units.



plant to exceed 100,000 tons of ethane for the first time, but the project was not completed and delayed until this year. Cryogenic technology for advanced processing of dry stripped gas addresses issues of marketable gas calorific value. It also provides nitrogen removal with increases the depth of sampling ethane fraction to 91% of its capacity. Kazanorgsintez will be the beneficiary of the extra ethane supply of 50,000 tons, although it will not be enough to absolve the requirement for purchasing propane-butane feedstocks.

#### **SIBUR-Kstovo, ethylene equipment update**

SIBUR has to date supplied around 70% of the equipment necessary to complete the reconstruction of the EP-300 cracker at Kstovo, which is linked closely to the RusVinyl project. In May-June this year equipment was delivered to Kstovo by water, including five large heat exchangers, as well as some associated storage equipment. A new column has arrived, also equipped with internal devices for the separation of methane from the flow pyrogas.

During a pre-planned maintenance shutdown, running from 1 June to 29 June, the company carried out preparations for the installation of the column at the site. Also during the overhaul, and as part of the reconstruction project, heat exchangers were replaced in order to increase the heat transfer surface. The first part of the completed reconstruction of the EP-300 cracker will raise capacity from 240,000 to 360,000 tpa, thus providing the necessary raw materials for the RusVinyl project.



shipment of propylene to the merchant market by 40% over last year to 63,300 tons. The Kstovo propylene plant, owned by LUKoil-NNOS as part of the refinery, has become an important player in the Russian market since start-up in 2010. Russian propylene exports have dropped 40% in the first half of 2012 to 14,300 tons which is due largely to the continuing outage at Budyennovsk. The cracker has been scheduled to restart in August or September, but confirmation is pending.

#### **Minnibayevo expansion completion**

After expanding ethane output to a record level in 2011, Tatneft aims to conclude its project this year for the cryogenic plant for processing of dry gas at the Minnibayevo Gas Processing Plant. The installation and commissioning of the cryogenic control system is designed with a capacity of 395 million cubic metres of gas per annum.

After the completion, production of ethane at Minnibayevo should be capable of reaching 140,000 tons per annum, whilst the production of dry gas could rise up to 198 million cubic metres. Part of the modernisation was completed last year allowing the

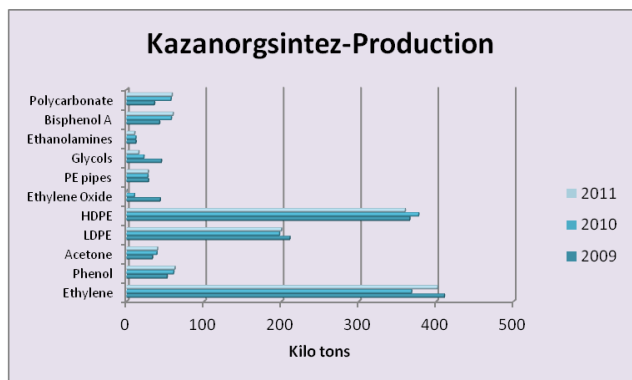
#### **Russian propylene market, Jan-Jun 2012**

Russian shipments of propylene to the merchant domestic market dropped by 28% in June against May to 21,400 tons. The primary reason for the drop in shipments was due to the outage at SIBUR's Kstovo cracker. Angarsk Polymer Plant also reduced its deliveries to the domestic market, dropping 30% against May to 3,800 tons.

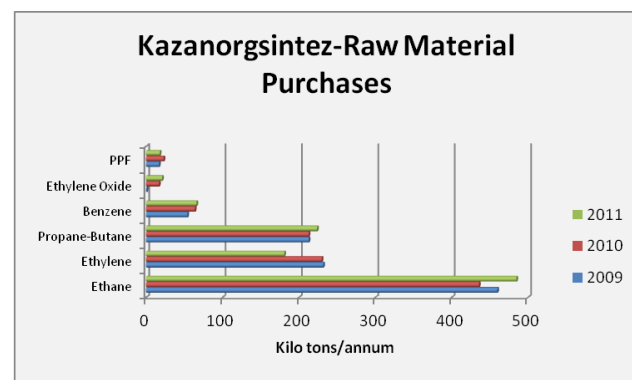
In the first half of 2012 sales of propylene on the merchant market rose by 15% against the same period of 2011 to 152,300 tons. LUKoil-NNOS boosted

### Kazanorgsintez, Q1 2012

Kazanorgsintez recorded an increase in profits in the first quarter this year despite ethane availability problems at the Minnibayevo Gas Processing Plant. The gas processing plant belongs to Tatneft and provides up to a quarter of ethane supply for Kazanorgsintez. The contract with Gazprom provides for 292,000 tons of ethane for 2012, but Gazprom has started to exceed this level due to increased production at the Orenburg gas processing plant. Tatneft hopes to resolve the supply of ethane at Minnibayevo later this year, which helps Kazanorgsintez marginally but not enough to significantly reduce the dependence on Gazprom. As a result, ethylene purchases are still required to meet the demand at Kazan. Purchases of additional ethylene from Nizhnekamskneftekhim totalled 164,000 tons in 2011 against agreements at the start of the year to supply 180,000 tons.



Ethane is the raw material from which Kazanorgsintez generates profit. The cost of ethylene from Nizhnekamskneftekhim and other suppliers is reflected in zero profit by the time polyethylene and polyethylene pipes are sold on the market. The average price of ethylene without VAT ranges from 31-32,000 roubles plus processing costs of 10-12,000 roubles, whilst the cost of polyethylene sold on the market is around 42,000 roubles. Propane provides an alternative feedstock for Kazanorgsintez, but it is more expensive than ethane. Kazanorgsintez mixes propane with ethane, but this only when ethane is not available.

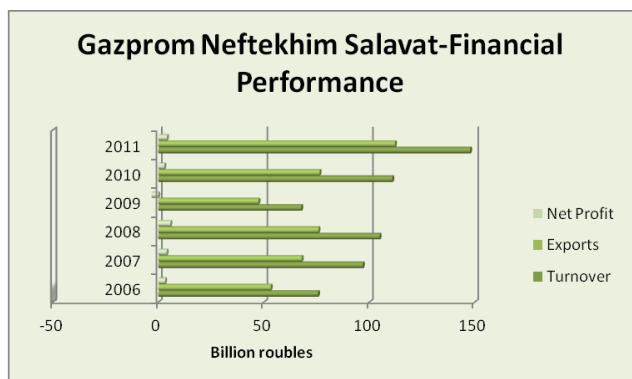


In terms of projects Kazanorgsintez has suggested instead of building a new one million tpa cracker considers it appropriate to construct two units of ethylene at 500,000 tpa each at Kazan and Nizhnekamsk. Nizhnekamskneftekhim decided to build a complex of ethylene at 1 million tpa, but Kazanorgsintez has advocated two separate 500,000 tpa crackers which would be more beneficial for Tatarstan. Tatneft may be attracted to the proposal put forward by Kazanorgsintez, but Nizhnekamskneftekhim

has set up its plans for a one million tpa cracker which it aims to start in 2016.

### Gazprom to consolidate Gazprom Neftekhim Salavat

Gazprom plans to consolidate 100% of Gazprom Neftekhim Salavat in September this year. Minority shareholders have agreed to relinquish their assets, increasing Gazprom's stake from 87.51% to full control.



Turnover totalled 147.832 billion roubles for Gazprom Neftekhim Salavat in 2011, 33.3% up on 2010. Exports accounted for 112.277 billion roubles which was 46.9% up on the previous year. Diesel fuel accounted for 39.1% of total exports.

Net profits as a ratio of turnover are smaller in comparison to other players in the petrochemical industry such as Nizhnekamskneftekhim. Nizhnekamskneftekhim achieves lower revenues, lower gross profits but higher net profits and this seems to be largely attributable to very high business and administration costs being met by Gazprom Neftekhim

Salavat. Raw material costs are similar between the two companies. Thus, without Gazprom's involvement, the Salavat refining and petrochemical complex could struggle to maintain liquidity.

The company depends on oil and gas supplies primarily from Gazprom, LUKoil, Surgutneftegaz, and TNK-BP. A main priority for Gazprom Neftekhim Salavat in the past two years has been the introduction of the ELOU-AVT-6 unit with a capacity of 6 million tpa. The main function of ELOU-AVT-6 Unit consists in primary processing to produce light oil products and gasoil cuts: rich gas, gasoline, kerosene, diesel fuel, light vacuum gasoil, heavy vacuum gasoil, and flux oil. Gazprom Neftekhim Salavat processed 6.493 million tons of crude, producing 677,000 tons of naphtha, 2.146 million tons of diesel fuel and 1.820 million tons of mazut.

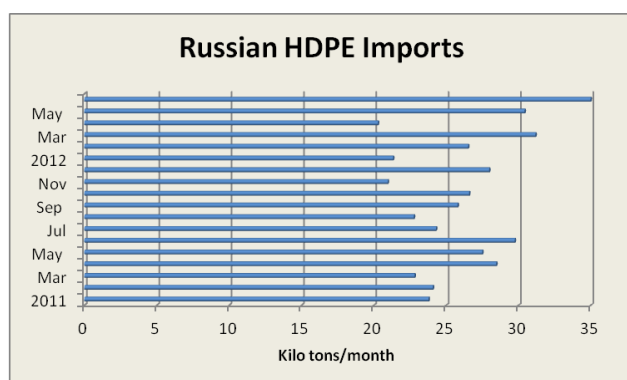
Comparisons GNS vs. NKNH (billion roubles)		
Gazprom Neftekhim Salavat		
	2010	2011
Turnover	110.9	147.8
Gross Profit	35.3	48.2
Net Profit	2.9	4.1
Nizhnekamskneftekhim		
	2010	2011
Turnover	94.4	122.7
Gross Profit	19.4	27.7
Net Profit	7.7	14.4

In terms of projects planned in the short term Gazprom Neftekhim Salavat is constructing an isomerization unit with a capacity of 434,000 tpa to produce high-octane components of gasoline based on Axens license. This is scheduled to be completed in 2012. A catalytic cracking unit with a capacity of 1.2 million tpa, in which the company is working with Shell, is scheduled for completion in 2015. An alkylation unit linked to the isomerization unit, with a capacity of 200,000 tpa, is planned for 2016 involving the processing of isobutane and butane. A shortage of hydrogen for the Salavat complex will be addressed by the construction of a new unit by 2014, whilst a sulphuric acid plant is planned for 2015.

The major part of the company's development programme in chemicals and petrochemicals is the expansion of the existing 300,000 tpa cracker to 380,000 tpa, and preparations for larger production plants for ethylene and propylene. In the chemical division, Gazprom Neftekhim Salavat is building a new unit for acrylates, including acrylic acid, butyl acrylate, etc, which is scheduled for 2016 completion. The acrylate division is based on Mitsubishi license and will have a capacity of 70,000 tpa, which is more than double the existing Russian producer Akrlat at Dzerzhinsk. In the fertiliser division, Gazprom Neftekhim Salavat is constructing a unit for granulated urea based on Toyo's license which should be completed later this year.

All of these projects are aimed at increasing values from the complex and raising the ratio between turnover and operating profits. Oxo alcohols, for example, are mostly exported which does not provide a good return for the company at present. The production of butanols and 2-EH will become more valuable after the start-up of the acrylate facilities, helping to create the full chain of production.

## Bulk Polymers



### Russian polyethylene market, Jan-Jun 2012

Polyethylene imports into Russia totalled 288,000 tons in the first half of 2012, 11% up on 2011. Production was down by around a quarter against 2011 to 343,000 tons. June saw a sharp rise in import activity, with HDPE volumes up 15% over May to 35,000 tons. Of the total, more than 12,000 tons was imported for the supply of polyethylene for pipes, and about 8,800 tons of film grade HDPE.

In the LDPE sector, imports amounted to 11,800 tons in June, bringing the total for the first half year to 61,100 tons which was 21% up on 2011. Imports of LLDPE to

rose in June by 13% over May and reached 14,000 tons. For the six months of this year imports of LLDPE to Russia amounted to 73,400 tons.

HDPE supply for injection moulding has become tight in the Russian market due to the combination of planned outages and the extended force majeure at Stavrolen. Moreover Kazanorgsintez and Gazprom Neftekhim Salavat have been focusing on other types of production. Imports of HDPE injection moulding grades from the Shurtan plant in Uzbekistan were suspended in April and May and only resumed in mid-May, and this also impacted on supply.

Tomskneftekhim has decided to stop production for a scheduled maintenance outage in the first week of August for 12 days. The company intended to move to a biennial cycle of non-stop operation in 2008. However, the investment projects worth around 200 million roubles were postponed due to the change in economic conditions

from 2008 onwards. In 2011, Tomskneftekhim undertook scheduled maintenance at various sites for 25 to 27 days. The company produced a total of 243,000 tons of LDPE and 128,000 tons of polypropylene last year.

Gazprom Neftekhim Salavat postponed a planned outage for its HDPE and LDPE plants from 11 July to 23 July. Angarsk Polymer Plant has decided to start renovation work from 13 August for around 50 days, which will stop LDPE production. During this period, the company will halt production of ethylene (where the average monthly production is 17,200 tons), propylene (9,700 tons) and benzene (7,500 tons). Due to the outages being undertaken in the Russian market import levels are expected to remain high for the next couple of months.

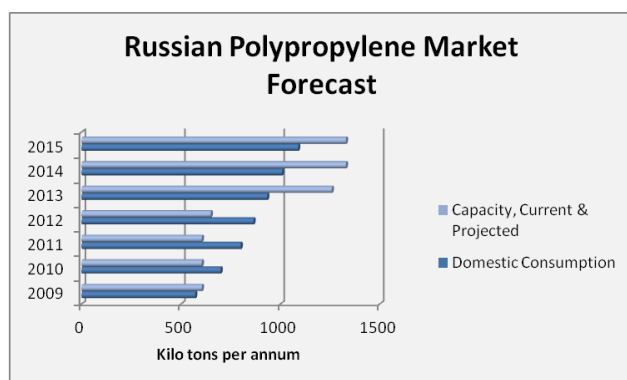
**South Korean Polymer Exports to Russia  
(unit-kilo tons)**

Product	Jan-May 2012	Jan-May 2011
PET	32.239	60.245
PVC	5.288	11.695
Exp PS	9.162	12.875
Polystyrene	8.475	6.723
HDPE	32.476	21.902
LDPE	14.153	10.824
PP	8.202	2.072
ABS	10.373	10.75

**Novy Urengoy LDPE project**

Gazprom continues to attract funds for the construction of the petrochemical facilities at Novy Urengoy Gas and Chemical Complex. In March, Gazprom issued a guarantee for a period up to March 2016 from the Bank of Tokyo-Mitsubishi, amounting to 10.6 billion roubles, whilst in July last year Gazprom agreed for guarantees of 11.2 billion roubles from Sumitomo Mitsui Finance Dublin in addition to other loans from the Bank of America Securities, etc. The Novy Urengoy Gas and Chemical Complex has been constructed over a period of two decades, but even now the earliest start-up date predicted is 2013 and even this date is in question.

Notwithstanding the local administration in the Novy Urengoy region has started to consider the establishment of an industrial park where small processing companies could take advantage of the polyethylene that is to be produced. The intention is to create a gas-chemical cluster for the Yamal region. The administration wants to create a chemical park by developing logistics, commercial and financial infrastructure for the efficient development of small and medium-sized industrial enterprises. By establishing these facilities before polyethylene production starts, the hope is that some customers will already be in place ready to start purchases from the plant.

**Projections for polypropylene consumption**

Russian polypropylene producers have forecast that polypropylene consumption in Russia could rise in the next few years at annual rates of 8-9%. Consumption in 2011 stood at around 800,000 tons, with imports accounting for around 25% of the market. At average growth rates of 8%, Russian consumption could total just under 1.1 million tons by 2015 and achieve around 1.6 million tons by 2020.

SIBUR currently produces polypropylene at two plants, through its subsidiary SPE Petrochemicals at the Moscow refinery and Tomskneftekhim. In the coming

months new plants will be started at Tobolsk through the SIBUR subsidiary Tobolsk-Polymer and at Omsk which is managed by Titan subsidiary Polyom.

These two projects will add a combined capacity of 680,000 tpa to existing supply, marking more than double than present capacity and almost inevitably these changes should affect imports. Russia is expected to import more than 200,000 tons of polypropylene this year, but lower numbers may be seen in 2013. The introduction of these two plants at Tobolsk and Omsk takes Russian capacity into the territory of surplus from deficit, but it is not clear how much output will be produced in the first year of operation.

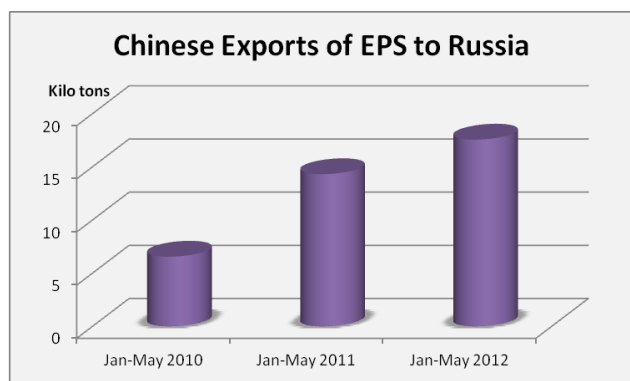
**SIBUR selects licenses for polyolefins at Tobolsk**

Ineos Technologies has licensed its Innovene G process and Innovene S process for the manufacture of LLDPE and HDPE at SIBUR's Zapsibneftekhim subsidiary at Tobolsk. The two 400,000 tpa Innovene G plants and the two 350,000 tpa Innovene S plants will produce the full range of Ziegler monomodal, Ziegler bimodal, Chromium and metallocene products. Another division of SIBUR at Tobolsk, Tobolsk-Polymer, is expected to start the production of polypropylene from its new 500,000 tpa plant in the next few months.

Zapsibneftekhim has selected the Spheripol process technology from LyondellBasell for a new 500,000 tpa single-line polypropylene plant to be built at Tobolsk, with start-up projected after 2017. This will be the largest capacity



plant built to date using the Spheripol process technology, and will provide Zapsibneftekhim an economical method to produce a wide range of premium-quality PP grades.



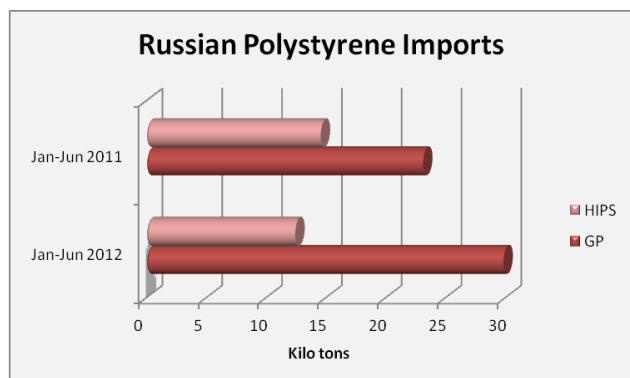
#### Russian EPS market

Russian consumption of expandable polystyrene is expected to rise 10% in 2012 over 2011 due to strong demand from the construction industry and heat-insulating materials. Around 80% of expandable polystyrene (EPS) in Russia is used in the building materials market which is still import dependent despite the presence of new domestic capacity at Perm. In the first four months of 2012 Russia imported 30,000 tons of expandable polystyrene, against 22,000 tons in the same period last year. The share of imports in consumption from January to April 2012 comprised 65% against 59% last year. Despite the fact that the

SIBUR-Khimprom has recently begun to produce EPS, domestic production remains insufficient to meet demand.

Russian EPS Market (unit-kilo tons)		
	Jan-Apr 12	Jan-Apr 11
Production	20	16
Exports	4	0.2
Imports	30	22
Market Balance	50	38

SIBUR-Khimprom hopes to launch its second 50,000 tpa unit for EPS at Perm this year. Exports are currently minimal and might increase after start-up of the second unit until SIBUR-Khimprom is able to replace imports. In terms of size the domestic market was estimated at 140,000 tons in 2011 and should surpass 150,000 tons in 2012. The Alphapor product produced by SIBUR-Khimprom competes primarily with imports from Chinese and Korean sources. Domestic sources in small quantities are also available from Plastik at Uzlovaya and Angarsk Polymer Plant.



#### Russian polystyrene market, Jan-Jun 2012

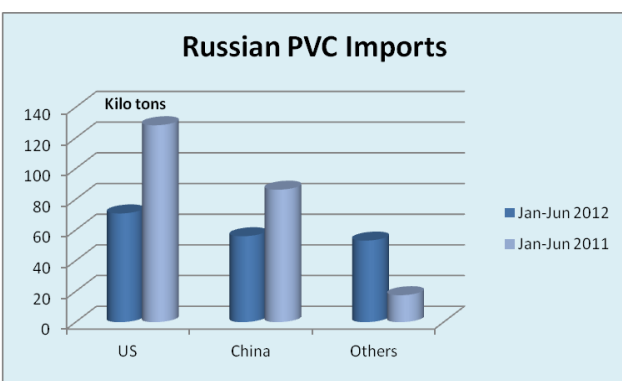
Whereas growth rates for HIPS and general purpose polystyrene are not as strong as EPS, they remain products of potential in the Russian market. Imports of general purpose polystyrene in January-June amounted to 25,900 tons, which is 29% higher than in the first half of 2011. However, imports of high-impact polystyrene, and amounted to 12,500 tons, which is 17% lower than in January-June 2011.

Nizhnekamskneftekhim produced 73% of HIPS and GPPS of Russian output in 2011, followed by Pizhi Prof with 16% and Gazprom Neftekhim Salavat with 11%.

Pizhi Prof supplies a significant part of its production to Penoplex for further processing. XPS-board is the largest application of GPPS, with the main players being Penoplex and Technonikol. Penoplex this summer is scheduled to start production in Irkutsk Oblast and Khabarovsk with lines of 100,000 cubic metres. Technonikol is expanding its facilities at Yugra whilst other producers are also undertaking increases in capacity.

Aside insulation boards polystyrene is used for sandwich panels, removable decking, cladding and decorative materials. In 2011 Russia introduced 62.3 million square metres of polystyrene which was 6.6% more than in

2010. In 2012, this is expected to rise to at least 67 million square feet metres of housing, and the construction sector is expected to see growth rates of polystyrene consumption of 10% annually for the next few years.



#### Russian PVC market, Jan-Jun 2012

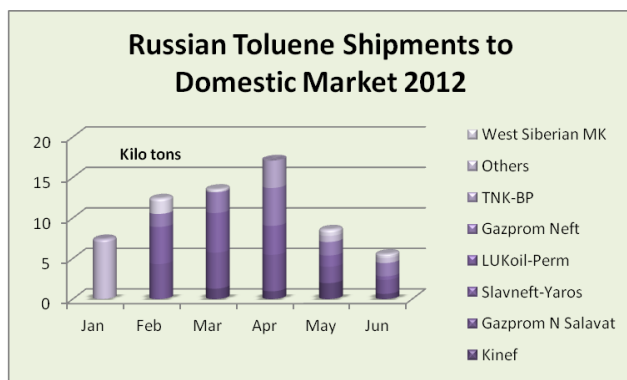
Russian imports of PVC suspension totalled 180,000 tons in the first half of 2012, 29% down on the same period in 2011. The reduction in imports has been partly a consequence of higher domestic production, partly moderate demand and partly due to limited working capital amongst consumers. Imports from the US and

China have declined this year at the expense of sources from other regions.

US imports have been affected by the weakening rouble, making supplies more expensive for Russian buyers. Prices for PVC imports from the US have been changing monthly, with July and June numbers down on May but expected to rise again in August. Suppliers have already announced price increases for August shipments. Prices for PVC from the USA to Russia were being done at around \$1050-1090/ton in May, but this fell to \$860-880/ton by mid-June. July saw a small rise over June, but the underlying problem for US exporters has been the weakening of the rouble against the dollar.

PVC production in Russia for the first five months this year increased by 23% and amounted to 266,600 tons. Suspension grade PVC production totalled 258,430 tons in the first five months, rising 25% over 2011, whilst PVC paste fell by 9% to 8,100 tons. The fall in paste production was due to the sole producer Khimprom at Volgograd operating at lower rates due to outdated equipment and financial problems. Purchases of VCM on the open market have allowed Khimprom to recover volumes slightly. Regarding suspension grade PVC, Kaustik at Sterlitamak underwent preventive maintenance on its PVC line from 10 July for about two weeks.

### Aromatics & derivatives



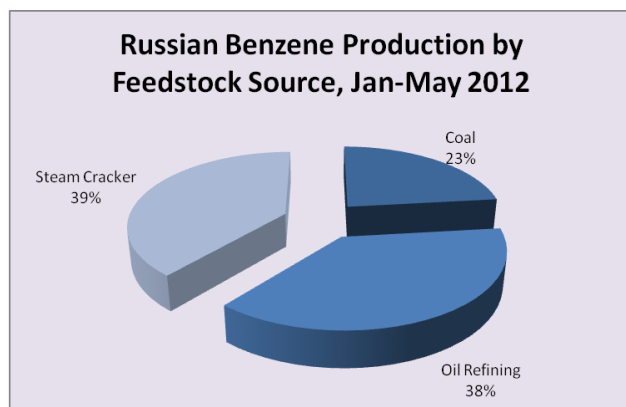
#### Russian toluene market, Jan-Jun 2012

Russian shipments of toluene to the domestic market declined in June by 34% against May and totalled 5,590 tons. The market is currently very tight for supply due to the outage at LUKoil-Permnefteorgsintez, which started in June and lasted until the second half of July. For the first six months this year shipments amounted to 64,730 tons against 58,203 tons in the same period in 2011. Russian toluene production totalled 153,900 tons in the period January to June, 9% up on the same period in 2011.

The largest supplier to the domestic market in the first half of 2012 was Slavneft-YANOS with 26% of total sales, followed by LUKoil-Perm and Gazprom-Neft at Omsk. The main consumer of toluene in the Russian Federation in June was the manufacturer of industrial explosives Ya.M.Sverdlova. The company purchased 550 tons, whilst the second largest consumer was the Zagorsk Paint Plant, which acquired 410 tons. Whilst explosives and paints are the key outlets, the range of applications for toluene in Russia is widening.

#### Russian benzene market

Benzene commodity sales on the Russian domestic market totalled 57,800 tons in June, 13% higher than May. The main reason for the increase was the restart of deliveries from Gazprom Neft at Omsk after the maintenance shutdown in May. Deliveries from Omsk rose 2.5 times in June against May to 6,200 tons, whilst the West Siberian Metallurgical Combine increased shipments by 34% to 5,700 tons. Slavneft-YANOS increased shipments by 31% to 5,800 tons, whilst at the same time SIBUR-Kstovo reduced sales by 3.6 times to 1,600 tons. This was due to maintenance at Kstovo.



In the first half of 2012 deliveries of benzene to the domestic market totalled 373,700 tons, 2% up the same period in 2011. Imports totalled 24,040 tons in this period, 9% up on last year. Imports from Ukraine continue to play a role in the Russian market, followed by Kazakh supplies. In the first half of this year, Kazakh steel producer ArselorMittalTemirtau supplied 1,190 tons of crude benzene to the Russia of which 90% was acquired by Kazanorgsintez and 10% by Kuibyshevazot.

Recently the Ministry of Economic Development approved the introduction of export duties on crude benzene in order to protect the domestic market.

Benzene is tight in the domestic market, caused largely by demand rising faster than supply. Although the

average capacity utilisation of benzene plants in Russia is less than 75%, the possibility for increasing those rates is constricted by the age of the equipment and to some extent by which feedstocks petrochemical plants use. Unless petrochemical plants use benzene captively, there is little incentive for these companies to produce more benzene using naphtha as the feedstock rather than cheaper alternatives such as gas liquids. Refineries possess the largest capability to increase production volumes, but changing regulations on benzene content in gasoline act as a disincentive to produce volumes of benzene.

<b>Producer</b>	<b>Jan-May 12</b>	<b>Jan-May 11</b>
Altay-Koks	10.2	17.6
Angarsk Polymer Plant	37.4	40.7
Chelyabinsk MK	8.4	7.8
Gazprom Neft	36.5	44.0
Koks	7.3	11.3
LUKoil-Neftekhim	0.0	23.2
LUKoil-Perm	17.5	20.4
Magnitogorsk MK	28.5	28.2
Nizhnekamskneftekhim	79.9	82.7
Novolipetsk MK	7.6	12.2
Gazprom N Salavat	37.4	49.7
Severstal	15.4	16.1
SIBUR Kstovo	29.2	36.4
Slavneft-Yanos	26.7	19.6
Surgutneftegaz	27.7	24.5
TNK-BP	16.1	10.2
Ufaneftkhim	34.6	34.2
Ural Steel	2.9	4.0
Uralorgsintez	29.4	25.7
Zapsib	26.3	0.0
Others	6.1	0.0
<b>Total</b>	<b>485.1</b>	<b>508.5</b>

The coke plants thus play an important role in maintaining the supply/demand balance in Russia, particularly for those consumers that are not integrated and need to rely on merchant market purchases. In 2011, Russian coke plants produced 320,000 tons of benzene of which around 220,000 tons was consumed domestically. Around 19% of total benzene production in Russia was based on coal in 2011, but the percentage has increased this year due to the outage at Stavrolen. In 2011 Russia imported 39,400 thousand tons of benzene for synthesis, and this demand could be met from current crude benzene exports as long as consumers are ready to pay the same price as oil based benzene. Supply should be boosted next year in the assumption that Stavrolen will operate normally and LUKoil-Permnefteorgsintez will increase production after reconstruction.

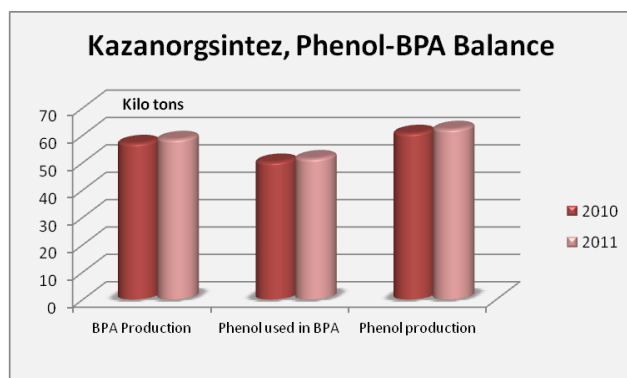
#### **Russian orthoxylene domestic market, Jan-Jun 2012**

Russian sales of orthoxylene on the domestic market totalled 64,950 tons in the first six months in 2012, 3% down on the same period last year. Sales rose sharply in June to 9,850 tons, which was 43% higher than in May and 7% higher than in June 2011. Sales were divided amongst Gazprom Neft at Omsk with 49% of gross deliveries (4,780 tons), Kirishinefteorgsintez with 27% (2,680 tons), and Ufaneftkhim 24% (2,340 tons). Kamteks-Khimprom is the largest consumer of orthoxylene

in Russia. Other than phthalic anhydride, orthoxylene is consumed in the production of paints, fuels and pharmaceuticals.

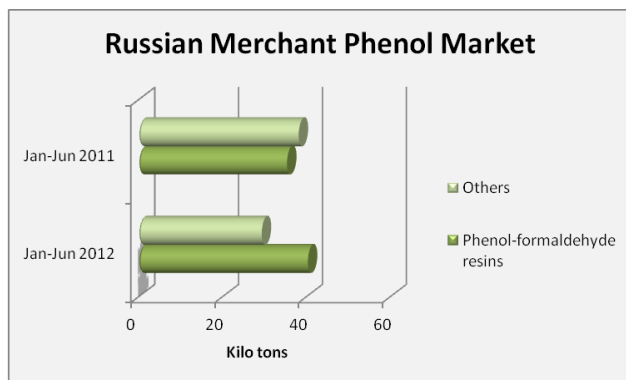
#### **Russian phenol market, Jan-Jun 2012**

Domestic consumers purchased 11,700 tons of phenol in June against 8,500 tons in May. The downturn in May was attributed to lower demand from Europe for plywood from Russia, thus reducing the demand for phenol-formaldehyde resins. Ufaorgsintez increased sales in June by 2.5 times over May, offering the lowest price available. Omsk Kaucuk sold 5,300 tons in June, 21% up on May, and Samaraorgsintez sold 3,500 tons which was 20% up. The main outlet for domestic phenol sales in June was phenol-formaldehyde resins, where manufacturers in this sector purchased 8,300 tons against 5,100 tons in May. Manufacturers of alkylphenols and antioxidants, by contrast, reduced volumes of phenol purchases by 13% and 65% against May respectively.



Sales of phenol on the Russian domestic market amounted to 70,000 tons in the first six months in 2012, which is around 4% higher than the same period last year. Samaraorgsintez reduced phenol shipments by 8% over last year to 24,500 tons. Kazanorgsintez increased sales by 62% over 2011, although volumes remain relatively small and Ufaorgsintez by 22%. Kazanorgsintez consumes most of its phenol in the production of bisphenol A. Kazanorgsintez ran its bisphenol A plant at 85% of utilisation in 2011, producing 59,700 tons. The plant is closely integrated with the polycarbonate plant, leaving a small surplus of phenol available for merchant sales. The production of

bisphenol A was started in 2007 and now accounts for most of the phenol produced by Kazanorgsintez.



Phenol-formaldehyde manufacturers accounted for 40,500 tons of phenol sales in the period January-June 2012, which was 14% up on 2011. Imports of phenol from Finland have been rising in recent months, due partly to the high prices of Russian phenol. In June, Borealis shipped 440 tons of phenol to Russia, which is almost 33% more than May. The main consumer of phenol from Finland is Shchekinoazot, which purchased 277 tons in June. The remaining 37% was bought by Kuibyshevazot.

#### Kuibyshevazot, Jan-May 2012

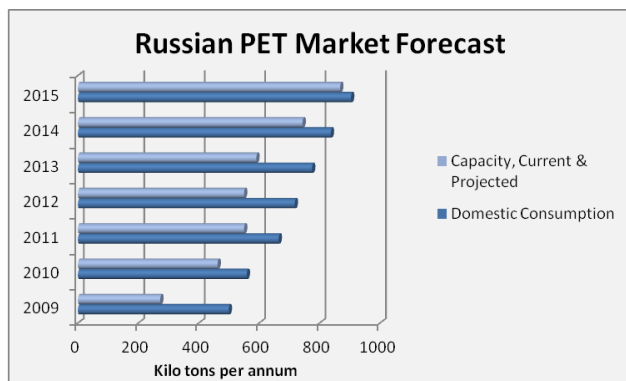
Kuibyshevazot increased revenues by 5.6% in the period January to May 2012 over last year, totalling 13.3 billion roubles. In recent years the company has recorded constant strong increases in revenues, but this year the increase has been more modest largely due to reconstruction activities. Polyamide-6 production was particularly affected, down by 209% in the first five months against the same period in 2011.

#### Russian PET market, beer and projects

The ban on using PET for beer packaging in Russia was delayed from its introduction at the start of July for the Eurasian Customs Union, due to the fact that agreement with Belarus had not been possible. The Customs Union includes Russia, Belarus and Kazakhstan, and the Belarus was the sole member to disagree with the ban. Russian brewers have thus been granted a reprieve for PET packaging, but it is not clear for now long.

Despite the concerns over the ban on using PET in beer packaging and possible effects, Ethan is continuing with its plan for a PET plant in southern Russia at Kabardino-Balkaria near Nalchik. In addition, SIBUR aims to raise capacity both at Tver and Blagoveshchensk in the next few years.

Other parties have shown interest in PET capacity, such as Marubeni in Tatarstan and Gazprom Neft at Omsk, but there are some important questions to be clarified over consumption levels and also raw materials.



Whilst there is sufficient paraxylene to feed new PTA capacity to an extent, the problems start to emerge in relation to MEG which is no longer in surplus in Russia. As a result securing sufficient MEG supplies could provide challenges for producers of PET.

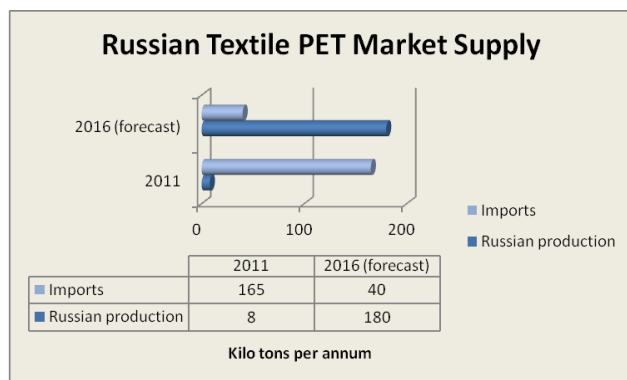
Russian PET production capacity has risen rapidly in recent years, particularly following the start-up of the Alko-Naphtha plant at Kaliningrad last year, helping to reduce the local market on imports from countries such as South Korea and China. Imports continue to play a part in Russian consumption, but much less than

previous years when they dominated the market. SIBUR-PETF started production at Tver in 2005, followed a year or so later by the Senezh plant near Moscow and Polief in 2008-2009. In addition to these plants the Russian market is supplemented from the Belarusian producer Mogilevkhimvolokno, which almost assumes domestic status.

As a result of these developments imports of PET into Russia have declined in the past eight years from 100% to 45%. Last year was the turning point for the industry after Alko-Naphtha started its 220,000 tpa plant. PET consumption was estimated at 582,000 tons in 2011 with total capacity standing at 529,000 tpa. Alko-Naphtha ships some product to the Russian market and some product is exported to European markets. The company currently produces 600 tons per day, with a maximum of 660 tons.

The possible ban on using PET for beer packaging represents a threat to future demand levels as beer accounts for around 30% of PET bottle consumption at present. In addition to the environmental case for restricting plastic bottles, the government argument is aimed at restricting alcoholic consumption, but imposing the ban could have adverse effects the PET production chain. Brewing companies argue that the ban is illegal and contravenes competition laws both domestically and in the WTO which Russia has now joined. Furthermore, the problem of alcoholism is likely to shift from beer to vodka if a ban is introduced.





imported textile PET.

### Ivanovo-PET project

Plans for a textile PET project in the Ivanovo region have been outlined with investment costs estimated in the range of 10.260 billion roubles. The proposed plant at Ivanovo is intended to act as a basis for a cluster of textile processing companies. German company EPC Engineering has devised a design study for an 180,000 tpa plant for PET, followed by the production of textile filament yarn and staple fibre. The main idea of the project is to create conditions for mass replacement of imported raw materials for the domestic textile industry. If the project progresses to completion by 2016 the Ivanovo plant could replace large volumes from

## Synthetic Rubber

Russian Synthetic Rubber Market (unit-kilo tons)		
	Jan-May 12	Jan-May 11
Production	541.7	530.4
Exports	348.1	327.2
Imports	32.0	26.4
Market Balance	225.6	229.6

### Russian synthetic rubber market

Imports of synthetic rubber into Russia increased 21% in the period January to May 2012 against last year, and amounted to 32,700 tons. Imports were 8,300 tons in May, which was 31% up on April and 46% more than in May 2011. The main import sources in the Russian market include South Korea and Germany.

Exports of synthetic rubber from Russia totalled 348,100 tons in January to May 2012, against 327,200 tons in the same period last

year. Export markets include Belgium, China, Poland and Latvia. In monetary terms exports totalled \$1.253 billion which was down slightly on last year. Overall, the market balance shows a slight decline in consumption for the first five months. At the same time producers such as Nizhnekamskneftekhim and Voronezhskintekaucuk are selling higher added value grades.

For the Russian tyre producers prices of raw materials from foreign sources has increased in the past month, although the cost of tyres produced in Russia has not changed. Competition from imported tyres has prevented domestic producers from increasing prices. Demand for truck tyres is expected to rise in August and September as in line with seasonal trends, but the volumes are not expected to exceed the same period in 2011. The car tyre industry has seen demand slow in the summer, which is also consistent with seasonal trends, and consumption is expected to rise again in September. Domestic production of synthetic rubber has recorded some minor falls in pricing in the past couple of months, which is helping margins for the car tyre producers.

### Russian tyre news

Yokohama Rubber Company intends to increase the annual supply of tyres in Russia from 3 million to 6 million units over the next three years, from its new production base inside the country. At present Yokohama occupies around 7-8% of the car tyre market in Russia, but this could rise in the next few years. In May this year the company opened its first Russian tyre plant at Lipetsk.

Pirelli has announced its intention to invest €100 million in the Voronezh tyre plant, mostly for modernisation. Pirelli aims to start production in 2014. In February this year SIBUR transferred the Voronezh tyre plant to the jv Pirelli and Russian Technologies.

### Titan transfers Ekoil to Omsk Kaucuk 2011

Titan subsidiary Ekoil has transferred the MTBE facilities to Omsk Kaucuk. The capacity of the MTBE facilities is 300-330,000 tpa, and combining the unit will make Omsk Kaucuk more attractive to investors. Last year Ekoil produced 219,900 tons of MTBE, with capacity operated at 81.1% of utilisation. The Omsk plant produced 22% of Russian MTBE output last year and is the largest producer in the country.

Omsk Kaucuk increased synthetic rubber production by 21.7% in 2011 than 2010, even though capacities are still not fully used. Up to 30% of synthetic rubber produced is exported to China, but these volumes may be threatened in future by Chinese regulations. As a result the company is looking to reduce its dependence on synthetic rubber sales by moving into LPGs and now MTBE.

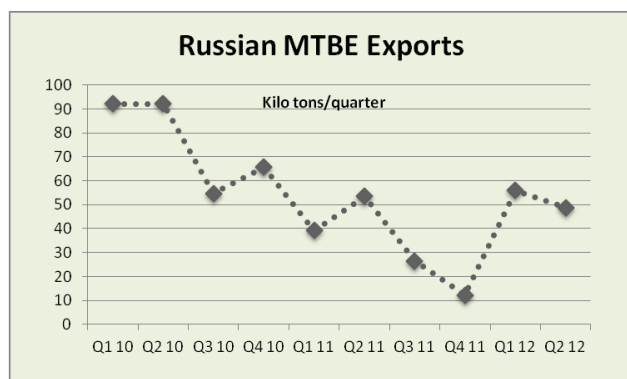
## Methanol & related chemicals

### Russian methanol market, Jan-Jun 2012

From January to May 2012 exports of methanol from Russia amounted to 614,700 tons, an increase of 19.2% over the same period last year. In monetary terms, values were up 21% to \$175 million. Production of methanol totalled 1.45 million tons in the first five months in 2012, 8% up on the same period last year.

In June exports totalled 135,000 tons, 10% down on May. The main Russian exporters of methanol in June were Metafrax, Sibmetahim and Shchekinoazot, accounting for 76% of shipments. Metafrax sold 36,000 tons, 14% down on May whilst Shchekinoazot reduced exports by 6% to 32,500 tons. Sibmetakhim exported about 35,000 tons of methanol, which is 5% below May. The largest reduction was seen by Togliattiazot which reduced shipments 30% to 13,000 tons due to higher sales on the domestic market. Azot at Novomoskovsk increased exports by 12% in June to 18,500 tons to 18,500 tons, whilst the smallest exporter Akron increased volumes by 55% to 500 tons.

In terms of destination the largest importer of methanol from the Russian Federation is still Finland, accounting for about 55% of the total exports in June translating into 72,000 tons. Italy, which had previously been sourcing methanol from Iran, started to buy Russian product in June. The EU embargo on petrochemical exports has created some opportunities for Russian exports, although Italy only purchased 9,000 tons in June. Other countries Slovakia, Poland and Lithuania increased their purchases of Russian methanol compared to May by 16%, 55% and 34%, respectively. The largest fall in volumes were recorded for exports to Romania by 62% against the previous month.



### Russian MTBE market, Jan-Jun 2012

Russian MTBE exports were down 7% in the period January to May 2012 to 105,000 tons, due in part to higher demand in the domestic market. Lower prices in the world market have also impacted on Russian exports, and shipments dropped 30% in June against May to 6,300 tons. The largest Russian exporters in June were Omsk Kaucuk and Tobolsk-Neftekhim, accounting for 73% of shipments. Tobolsk-Neftekhim reduced its overall volumes in June due to maintenance. Togliattikaucuk exported 1,400 tons against 461 tons in May.

In the first half of 2012 exports of Russian MTBE totalled 111,500 tons, down by 16% against 2011. The main reason for the reduction of exports from Russia MTBE has been a higher premium on product sales in the domestic market.

### Mendeleevsk methanol project

The ammonia and methanol project at Mendeleevsk in Tatarstan is progressing to schedule, involving mostly Russian contractors but based on foreign licences. Power lines have been completed to the construction site, in addition to the installation of some of the base equipment. Temporary roads and other services have been established to cover the period of construction. Subsidiaries of Kamgesenergostroy (UMS and KamgesFundamentSroy) have completed work on the device and piling excavation for foundations for the compressor. Another Russian company Volgopromprodukt is involved in the project.

The construction project for the production of ammonia, methanol and granulated urea is being implemented on the existing industrial complex owned by Ammonium. The complex is being designed to produce 717,500 tpa of ammonia in total, or 455,000 tpa of ammonia and 238,000 tpa of methanol. In addition facilities are being constructed for 717,500 tpa of granulated urea and to increase the existing unit for ammonium nitrate to 450,000 tpa.

### Fosagro merges Ammophos and Azot at Cherepovets

Fosagro has completed the reorganisation of its subsidiaries Ammophos and Azot Cherepovets Nitrogen in the form of a merger. The new company has been entitled Cherepovets-Fosagro. Ammophos and Azot Cherepovets have ceased to exist as legal entities and their shareholders have become shareholders in Cherepovets-Fosagro. The merger has created a vertically integrated producer of phosphate fertilisers

where synergies can be achieved due to cost optimisation within a single legal entity. The company is now considering the possibility of incorporating Fosagro group member Agro-Cherepovets. Cherepovets-Fosagro is Europe's largest producer of phosphate fertilisers, as well as one of the leading producers of ammonia and ammonium nitrate in Russia.



#### **Akron, Jan-Jun 2012**

Akron increased production by 7% in the first half of 2012 over 2011 to 3.115 million tons. In the organic division, methanol, formaldehyde and urea-formaldehyde resins all recorded increases in production. Most of the methanol and formaldehyde is consumed captively, whilst nearly all of the urea formaldehyde resins are sold either domestically or through exports. Akron has been attempting to purchase ZA Tarnow and its subsidiaries in Poland, but seems unlikely to succeed even if the offer has been increased. It is possible though that Akron could take up a minority shareholding position in ZA Tarnow.

#### **Shchekinoazot-hydrogen unit close to completion**

Shchekinoazot plans to complete the installation of its new hydrogen unit in the near future. Commissioning of the new hydrogen unit will then commence which is seen by the company as important to reduce the cost of caprolactam production. Moreover, a new scheme for ammonia will significantly reduce the cost of its production, which should have a positive impact on the cost of caprolactam. It is expected that the new plant will allow a 55% reduction in the cost of producing hydrogen and 45% in the production of ammonia. The main part of the project was undertaken by Haldor Topsoe, with the general designer Dzerzhinsk NIIK.

<b>Russian Butanol Exports Jul 11 to Jun 12 (unit-kilo tons)</b>		
Month	N-Butanol	Isobutanol
Jul	8.831	4.347
Aug	14.208	9.328
Sep	10.152	6.897
Oct	5.987	5.651
Nov	9.698	7.52
Dec	10.411	9.007
Jan	4.709	5.344
Feb	4.93	6.332
Mar	7.621	5.971
Apr	10.385	10.231
May	6.785	6.749
Jun	9.244	5.45

Shchekinoazot increased chemical exports by 18% in the period January-May 2012 over the same period last year, including a 10% rise in caprolactam sales and 18% for methanol. The start of the new methanol plant in October last year has increased availability with focus on exports. Shchekinoazot continues to undertake a strategic programme for the modernisation of the caprolactam unit, which should be completed in the fourth quarter in 2012. Renovation is scheduled to start in July on the cyclohexanone plant, reducing caprolactam production to around 140 tons per day. Modernisation will include the installation of a new ammonium sulphate dryer.

Shchekinoazot signed a jv in June with the German group PCC for the construction of dimethyl ether in the Tula region. The plant, which will be built on the Shchekinoazot site, is scheduled for launch in 2014. Apart from providing the location Shchekinoazot's part in the jv is to ensure uninterrupted supply of methanol for production.

#### **Russian DOP production**

DOP production in Russia declined significantly in June, dropping 34% against May to 3,870 tons. Reduced production at plants at Perm caused the decline, producing only 1,200 tons. Due to the suspension of production of phthalic anhydride by Kamteks-Khimprom, the production of DOP fell by 38%. At the Roshalsky plant, moreover, repairs were carried out on the DOP unit in June and thus did not produce during the month. Kamteks-Khimprom, which also produces DOP, decreased production by 70%. The only plant on which to increase production in June was Gazprom Neftekhim Salavat, which increased shipments by 3.1 times against May after a three week stoppage for maintenance.

### **Chlorine & Other Products**

#### **Russian soda ash market, Jan-Jun 2012**

In June, Russian producers supplied 134,750 tons of soda ash on the domestic market, 5% less than in May. Soda at Sterlitamak shipped 62,980 tons (2% up), Berezniki Soda Plant 28,520 tons (19% down), Achinsk plant 25,990 tons (13 % down) and Pikalevo Soda 14,460 tons (14% up). In the first six months of 2012 domestic consumers purchased 824,980 tons of soda ash, which was 4% lower than the same period in 2011.

**Russian Soda Ash Market (unit-kilo tons)**

	<b>Jan-May 12</b>	<b>Jan-May 11</b>	<b>Jan-Dec 11</b>	<b>Jan-Dec 11</b>
Production	1191.0	1145.2	2822.0	2662.3
Exports	248.0	245.5	602.0	474.0
Imports	149.0	156.8	390.0	354.5
Market Balance	1092.0	1056.5	2610.0	2542.8

Plant shipped to Russian consumers 81,900 tons, which is nearly a quarter up on the same period last year.

**Galopolymer-Teflon sales in US market**

Galopolymer began the first shipments of Teflon in the US market in July, through its subsidiary Galopolymer-Trading. Sales of 120 tons of PTFE were completed in the first couple of weeks.

A planned maintenance outage at Galopolymer was completed at the end of June, involving all units. Galopolymer is the leading Russian producer in fluorinated products, primarily fluorinated polymers. The company supplies products to more than 30 countries. The composition of Galopolymer includes Kirovo-Chipetsky CC, Perm Galopolymer and Galopolymer Logistics.

Fluoropolymers and Freon products yield the largest margins for the group, with products Freon-22 and PVDF possessing the biggest potential. The chlorine chain provides the base chemistry for these products and guarantees the independence of the group.

**Russian chlorine news**

Chlorine deliveries by rail in the Russian market totalled 9,200 tons in June, 10% less than in May. The main suppliers were Ilimhimprom and Kaustik at Volgograd. Kaustik at Sterlitamak shipped 15,040 tons of liquid caustic soda to the Russian market in June, 2% less than in May.

Volzhskiy Orgsintez bought 2,980 tons, Nizhnekamskneftekhim 2,240 tons, SC Ilim (Koryazhma) 1,190 tons, Korund 1,900 tons, Nizhnekamsk CHP 1.110 tons, Azot at Berezniki 607 tons, Arkhangelsk PPM 468 tons of caustic soda, and International Paper 420 tons, etc.

SIBUR intends to complete the phased closure of the former chlorine production plant at Dzerzhinsk in 2013. The chlorine plant belongs to the old sub-division Kaprolaktam, included in the subsidiary SIBUR-Neftekhim. Stopping chlorine production will lead to a complete cessation of discharges into the White Sea.

The RusVinyl complex at Kstovo will replace the old chlorine facilities at Dzerzhinsk, whilst the old Kaprolaktam site will be converted into an industrial park for polymer processing. The closure of the old plant will be run in parallel with work on the involvement of residents of the park. RusVinyl's new complex will include capacities for 235,000 tpa of caustic soda and 330,000 tpa of PVC.

**Renova-biodegradable polymer plant**

The Renova Group is considering investment of about \$400 million in the construction of a biodegradable polymer plant in the Moscow region. A technical study is currently in process.

According to Renova, the world market for biopolymers is currently worth \$1.3 billion, and is expected to grow by 20-40% annually up to 2020. Several years ago Renova announced large-scale plans for petrochemicals in Russia, based around Volgograd, Novokuibyshevsk and Novocheboksarsk, but most of these projects were abandoned.

Russian supermarket chain Azbuka Vkusa has recently announced the switch to biodegradable bags as part of a move to position itself as a green business. Azbuka's bags are produced at a plant in St Petersburg, based on technology developed by UK company Symphony Environmental Technologies.

safety.

**Omsk Kaucuk-air separation plant**

Omsk Kaucuk has added a new air separation plant with a capacity of 1500 cubic metres per hour of gaseous nitrogen. The new plant has been installed due to the expansion of production at Omsk Kaucuk and the holding company Titan.

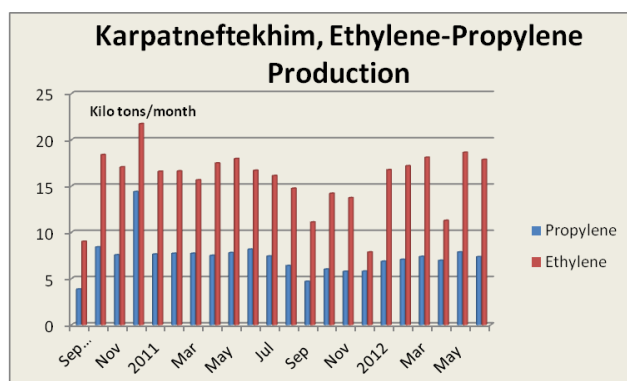
Nitrogen is required not only for MTBE produced by Ekooil, but also for the new Polyom polypropylene plant. Both Ekooil and Polyom form part of Titan. The new equipment will have a reserve of nitrogen and will help to further develop capacities of at Omsk Kaucuk. The total cost of installation was more than 50 million roubles. The manufacturer is the largest Russian company manufacturing technologies and equipment of the air separation Cryogenmash (Balashikha). The equipment meets the requirements of environmental

**Ukraine**

**LUKoil to close Karpatneftekhim for two months**

LUKoil has decided to stop Karpatneftekhim for two months over August and September, and the term of downtime may be extended if LUKoil cannot agree with the Ukrainian government on product duties and also how





to create a system of VAT refunds. During the two month outage at Kalush, a scheduled overhaul will be undertaken by Karpatneftekhim. According to LUKoil, Ukraine needs to conduct an anti-dumping investigation against imports of PVC from the USA, applying a 6.5% duty. At the same time the oil company wants Ukraine to cancel import duties on raw materials such as butane from Russia for the production of ethylene by Karpatneftehim.

Part of the issue being contested is over duties on butane, which LUKoil imports from Russia. Russian supplies of butane to Karpatneftekhim started to rise at

the end of May, and rose to 35,300 tons for the month which was 56% up on April. The increase was due to the resumption of supply of butane production by Gazprom-Neft at the Omsk oil refinery which accounted for delivery of 11,570 tons to Kalush in May. Olefin production at Kalush restarted in September 2010 after a two year shutdown due to poor economic conditions and high feedstock costs.

#### Ukrainian Chemical Production (unit-kilo tons)

Product	Jan-Jun 12	Jan-Jun 11
Acetic Acid	62.9	65.5
Ammonia	2475.8	2167.4
Benzene (+95%)	64.4	64.2
Caprolactam	25.1	30.1
Caustic Soda	71.1	61.4
Ethylene	99.8	83.1
Formaldehyde	17.1	14.7
Methanol	84.7	69.4
Polypropylene	25.5	42.9
Polystyrene	8.4	7.4
Polyvinyl Acetate	2.5	2.1
PVC	71.4	6.4
Propylene	43.5	38.8
Soda Ash	317.8	322.7
Titanium Dioxide	77.0	63.8
Toluene	3.2	2.5

#### Ukrainian benzene market, Jan-Jun 2012

Benzene sales the domestic market in Ukraine dropped 1.9 fold in June against May to 1,240 tons, creating a minor shortage. Despite the resumption of production by Karpatneftehim the plant did not sell to domestic consumers. In the first half of 2012, gross consumption of benzene sales from domestic plants amounted to 21,950 tons in the first six months in 2012. Around 70% of purchases were bought by Azot at Cherkassy for caprolactam production and 16% to Rivneazot.

Both Azot at Cherkassy and Rivneazot suspended caprolactam and adipic acid production in June for maintenance, which has temporarily reduced the demand for benzene. Azot at Severodonetsk is still not operating its adipic acid plant, and the only consuming active plant in the past month has been Zarya at Rubezhnoye which produces its own benzene. In the first half of July, almost the entire volume of benzene produced in Ukraine was exported to the Russian market.

#### Ukrainian methanol market, Jan-Jun 2012

Aside captive consumption Azot sold 28,800 tons of methanol on the domestic market in the first half of 2012, which is 30% more than the same period last year. Azot at Severodonetsk has increased the production of methanol, and produced 84,700 tons in the first half of 2012 against 69,400 tons in the same period last year. The market has been more stable this year whilst at the same time Russian imports have dropped, partly linked to the introduction of new duties applied after the anti-dumping investigation.

Azot's domination of the domestic market is expected to continue for the rest of the year. The company has recently undertaken minor maintenance, but production was not interrupted significantly. Around 60% of gas sales from Azot go to the gas companies, followed by Stirol at Gorlovka which purchases small volumes of methanol for formaldehyde production. Other shipments are sent to the Azov Oil Company.

#### Belarussian Chemical Output (unit-kilo tons)

Fertilisers	Jan-May 12	Jan-May 11
Potassium Fertilisers	2190.6	2359.6
Nitrogen Fertilisers	355.7	339.7
Phosphate Fertilisers	100.5	88.7
Sulphuric Acid	435.5	413.3
Petrochemicals	Jan-May 12	Jan-May 11
Ethylene	98.7	58.8
Benzene	59.3	44.1
Caprolactam	55.5	53.7
Phthalic Anhydride	11.0	8.9
Polyethylene	58.9	56.4
PET	83.4	77.5

#### Ukrainian organic chemicals

Ukrainian imports of DOP amounted to 1,005 tons in May, 16% up on April due to rises in seasonal demand. At the same time domestic production dropped in May due to feedstock bottlenecks. The main suppliers of DOP on the Ukrainian market in May were Polish producers Boryszew (46%), ZAK (13%) and the Czech producer Deza with 40%.

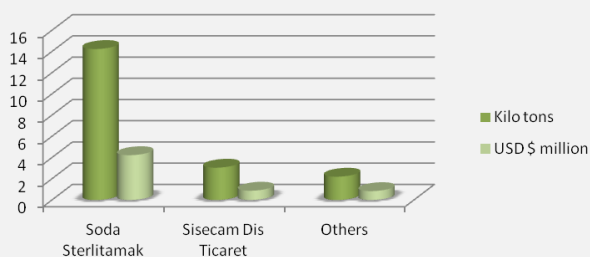
Ukrainian PVC Market (unit-kilo tons)				
	Jan-May 12	Jan-May 11	Jan-Dec 11	Jan-Dec 10
Production	78.1	0.0	84.0	0.0
Exports	57.6	0.0	47.4	0.0
Imports	25.4	41.0	113.0	131.4
Market Balance	45.9	41.0	149.6	131.4

#### Ukrainian PVC market

Karpatneftekhim has been gradually expanding its share in the domestic Ukrainian PVC market, rising to 42% in May against 29% in April. At the same time exports have been declining, falling 20% against April to 10,000 tons in May. Having started

production in 2011, Karpatneftekhim was slow initially to establish itself as a supplier to the domestic market, but local availability has tended to help drive PVC consumption in Ukraine. The PVC plant is expected to be part of the Karpatneftekhim outage in August and September and thus opportunities may emerge for importers to increase shipments whilst the plant is idle.

#### Ukrainian Imports of Sodium Bicarbonate 2011



#### Ukrainian sodium bicarbonate project

The DF Group has started the construction of a unit for production of sodium bicarbonate at Crimean Soda in Ukraine. Currently the product is imported from Russia, and the DF Group is constructing a 20,000 tpa plant. Previously Lisichansk Soda produced sodium bicarbonate, but production was ceased in 2009 together with soda ash. Since then, the Ukrainian consumers have been entirely dependent on imports, which totalled 19,490 tons in 2011. The two largest suppliers included Soda at Sterlitamak, providing 14,240 tons, and Sisecam Dis Ticaret providing 3,050 tons.

#### Ukrainian caustic soda market, Jan-Jun 2012

Ukraine produced 14,800 tons of liquid caustic soda in June, 10% less than in May, of which Karpatneftehim produced 10,800 and Dniproazot 4,000 tons. In the first half of 2012 Ukraine produced 85,900 tons of liquid caustic soda, 14% up on the same period in 2012. In the first half of 2012 the market has expanded due to increased consumption of liquid caustic soda, but purchases of solid caustic soda in this period decreased. The share of imports for solid caustic soda is still significant, and imports consist mostly of liquid caustic soda.

Ukrainian Caustic Soda Market (unit-kilo tons)				
	Jan-May 12	Jan-May 11	Jan-Dec 11	Jan-Dec 10
Production	71.1	61.3	155.6	79.8
Exports	13.9	7.5	19.3	6.1
Imports	36.6	29.3	83.0	113.7
Market Balance	93.8	83.1	219.3	187.3

Despite the increase in domestic production, the share of foreign companies has not been reduced. Currently 42% of products consumed in the country is imported. The main competition to domestic producers are Russian companies such as Kaustik and Khimprom at Volgograd, which accounted for

80% of deliveries in the first five months this year. Other suppliers included Arkema, Petrokimya, and Oltchim.

*Relevant Currencies*

Czech crown. Kc. \$1= 20.753. €1 = 25.833: Hungarian Forint. Ft. \$1 = 229.448. €1 = 288.154: Polish zloty. zl. \$1=3.414. €1 =4.280: Bulgarian leva: \$1 = 1.5956. €1= 1.557: Romanian Lei. \$1 = 3.555. €1= 4.463: Croatian Kuna HRK. \$1 = 5.998. €1= 7.530: Ukrainian hryvnia. \$1=8.07. €1 = 10.140: Rus rouble. \$1= 33.192. €1= 41.867

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