

# CIREC

## MONTHLY NEWS

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

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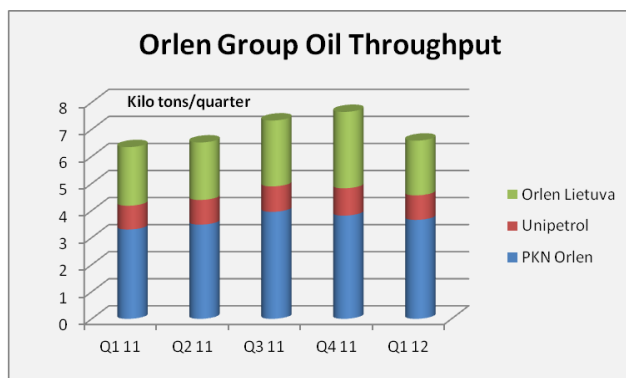
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# CENTRAL & SOUTH EAST EUROPE

## Petrochemicals



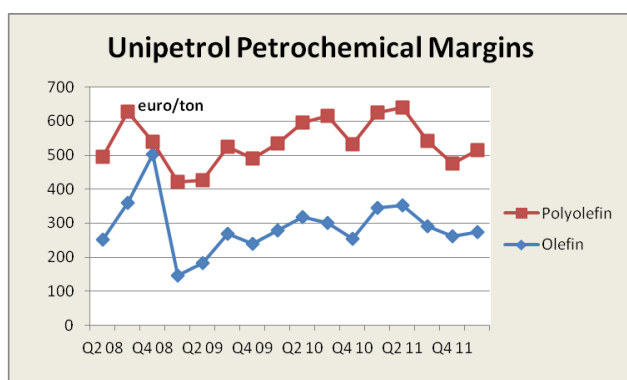
### Orlen's oil margins increase in Q1

PKN Orlen has abandoned plans to sell Orlen Lietuva after having been disappointed by offers taken for the asset. PKN Orlen could return to its divestment plans should market conditions improve. Crude oil throughput in the Orlen Group increased by 4% to 6.7 million tons in the first quarter in 2012 against the same quarter in 2011. The Plock refinery increased utilisation by 3% against the same period in 2011, mainly due to start up of the PX/PTA complex and the lack of a hydrocracking shutdown such as took place in the first quarter 2011.

PKN Orlen's model refining margin in March rose to \$2.8/bbl from \$2.4 in February and \$1.30 in March 2011. Downward pressure on oil prices has helped short-term petrochemical margins which increased from €607/ton in February to €700/ton in March, although this remains lower than in March 2011 when it was €772/ton. Petrochemical margins recorded its highest level in March 2012 since July 2011, as prices of ethylene, propylene and butadiene increased due to higher demand. However, the mid-term petrochemical margin still remains low in comparison to levels recorded in 2010.

Unipetrol increased its refining utilisation by 2% in the first quarter in 2012 against the same period in 2011, mainly due to lack of maintenance shutdowns of hydrocracking and FCC units as happened in the first quarter of 2011. However, production increases were offset by a maintenance shutdown at the HDS unit at Kralupy and a shutdown of Paramo refinery due to economic aspects. Orlen Lietuva in Lithuania reduced its utilisation ratio by 6%, as a result of a maintenance shutdown of the FCC unit.

The Orlen group's sales volumes increased across the board in the first quarter in 2012 by 2% against last year. The increase was largely the result of retail sales growth and record high sales in the petrochemical division. Refining sales, however, fell by 2% mainly due to sustained high crude oil prices. A 10% increase in petrochemical sales was recorded by the Orlen group, achieved mainly due to PTA sales which only started in the second quarter in 2011. Other factors included higher sales of olefins, polyolefins and fertilisers.

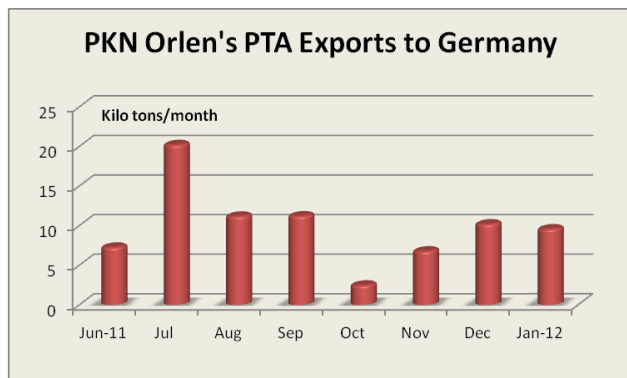


### Unipetrol Q1 2012

Unipetrol has reported a provisional loss of Kc 25.450 million in the first quarter this year against Kc 23.090 million in 2011. The main factors that influenced performance of the refining division included a better refining margin, although this was counterbalanced by lower oil throughput of 906,000 tons which was 10% down on the previous quarter. This was the result of the Paramo refinery winter stoppage. Sales volumes of refinery products fell by 11% against the fourth quarter this year amounting to 751,000 tons.

The main factors that influenced the petrochemical division were higher olefin and mainly polyolefin margins by 4% and 12% respectively. Significantly higher PE-ethylene and PP-propylene spreads took place in polyolefins. However, they were still materially lower against the same period in 2011, by 21% and 15% respectively.

Despite a loss in the first quarter Unipetrol expects a positive pre-tax profit for 2012 based on steady production volumes through the year, continued cost-cutting, and staff reductions. Unipetrol plans to reduce costs by Kc 100 million this year while keeping crude oil at the same level with 2011. In the second quarter the company plans four short refinery shutdowns and one petrochemical shutdown.



#### PKN Orlen-PTA maintenance

PKN Orlen is undertaking requests for proposals to perform repair work during the planned scheduled stoppage for the plant PTA at Wloclawek, which is to run from 6 to 31 July. Having only started in the middle of last year, it has come as a surprise that the plant already requires maintenance. Orlen has invited interested parties to submit tenders for the renovation work at the PTA plant at Wloclawek covering electrical and cleaning equipment and insulation work. In 2011, Orlen sold a total of 340,000 tons of PTA helping to drive up profits in the petrochemical division. PTA exports from Wloclawek were sent last year mainly to

Germany, Lithuania Russia and China.

#### Lotos considering xylene project

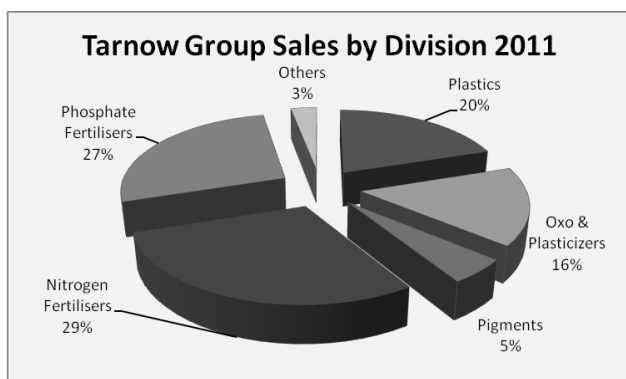
The Lotos refinery at Gdansk could start a project for the construction of a xylene plant with a capacity of 120,000 tpa which would mark the beginning of the company's presence in the petrochemical industry. Less demand for gasoline and naphtha for Lotos has meant that the company is looking for new products, and xylenes have been identified as a potential profitable outlet. Lotos aims to construct a 120,000 tpa for the production of paraxylene, with Mitsubishi in Germany having already agreed to purchase a large proportion of the output from Gdansk. The paraxylene plant will be constructed on the remodelled basis of the gasoline reforming unit.

#### Oltchim sale receives four offers

Romania has so far received four preliminary non-binding bids for a majority stake in Oltchim. PCC SE, which already owns a minority stake in Oltchim, a Russian company TISE and two Romanian companies, Pegamont SA and AISA Invest SA, submitted offers. Romania's government has already pledged to the IMF and the EU to sell stakes in state-owned companies, mostly energy producers, to help ease the budgetary financing burden.

The auction for Oltchim is intended to take place on 31 May, and the Ministry of Economy intends to sell the whole package of shares held at Oltchim of 54.8% of capital. The government extended the Oltchim sale from an original date of 30 April to wait for the European Commission's approval of a debt-to-equity swap, aimed at increasing the company's capital before the stake sale. Oltchim is intended to be privatised in seven stages, based on preliminary offers. The potential investors interested in the stake also have the option to negotiate with OMV Petrom on a takeover of its Arpechim refinery to create a fully integrated company. The government aims to sell its entire 54.8% stake in Oltchim, while Petrom seeks to fully close the Arpechim refinery this year as part of a cost-cutting programme.

### Chemicals



#### Tarnow Group-synergy goals

As an important emerging chemical group in Poland, ZA Tarnow, ZAK and ZCh Police are concentrating on a number of functions besides production in order to reduce costs and increase efficiency. These include services and transport, both of which are areas where the Tarnow Group considers that it is possible to make significant cost reductions. In order to manage services, two divisions have been established at Kedzierzyn and Tarnow in order to help streamlining of operations and at the same time reducing the tax bill. A more centralised approach is expected to enable it to control maintenance shutdowns and costs.

The Tarnow Group is planning a major overhaul of chemical transportation operations, particularly in view of the distance between the three plants comprising the group. Kedzierzyn-Kozle and Tarnow are about 200 km apart, which is relatively manageable, but ZCh Police is located in the far north of the country and this presents the main logistical challenge for the group. An assessment has started to see what measures could be implemented to

minimise costs and to eliminate supply side difficulties. Ammonia supply for example has been a problem recently.

Through the process of merger the Tarnow Group has united transport divisions such as Koltar which belongs to ZA Tarnow and the Kedzierzyn based railway company CTL Chemkol. Both companies have been in operation for over a decade and serve the local chemical plants where they are located. ZA Tarnow hopes to achieve revenues of zł 6.5 billion in 2012, up from zł 5.3 billion in 2011.



### ZCh Police-cost challenges

ZCh Police has largely recovered from its gas supply problems suffered in February due to adverse weather. In February and early March, ZCh Police received a third less gas than requested for a period of 33 days. The company for this reason suffered significant losses. ZCh Police expects lower profits in 2012 due to the effect of increases in gas prices and the impact of the reduction in gas supplies in February. Losses from reducing the production of ammonia in isolation amounted to about zł 9 million, but other products and operations were affected.

Polish Chemical Production (unit-kilo tons)		
Product	Jan-Mar 12	Jan-Mar 11
Caustic Soda Liquid	71.7	69.4
Caustic Soda Solid	15.2	11.6
Soda Ash	267.2	246.7
Ethylene	136.9	141.0
Propylene	93.2	92.6
Butadiene	15.7	17.7
Toluene	5.9	39.3
Phenol	11.4	10.6
Caprolactam	42.9	43.2
Acetic Acid	1.5	2.5
Polyethylene	97.0	98.5
Polystyrene	23.6	31.4
PVC	74.9	63.1
Polypropylene	69.0	59.3
Synthetic Rubber	50.0	46.0
Ammonia (Gaseous)	348.0	308.2
Ammonia (Liquid)	348.0	286.1
Pesticides	7.1	7.5

The company had assumed that a 10% gas price increase would take place this year, but in fact this has been closer to 15%. These higher costs will reduce the company's efforts to restructure, but higher gas costs could be partially offset by a lower purchase price for phosphate rock. The company will try to partially translate higher costs for gas purchase price of the final product.

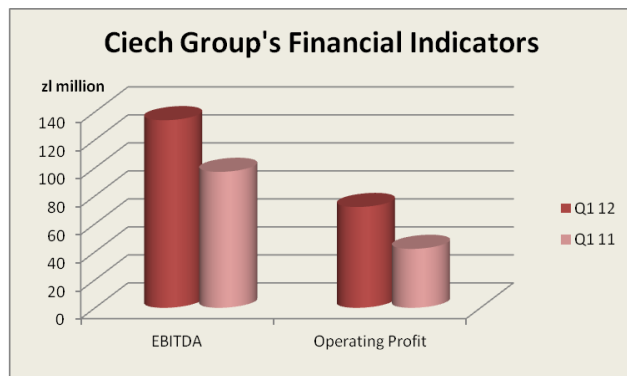
### Siarkopol-Tarnow

The Tarnow Group has started to examine the financial situation of the sulphur producer Siarkopol based at Grzybowo. The Tarnow Group has several weeks to submit a final offer. Sulphur is used by ZA Tarnow to produce sulphuric acid, carbon disulphide, pesticides, rubber vulcanisation, etc. The lack of good quality sulphur in the EU means that it is necessary to import this material from the USA, and the Tarnow Group is keen to acquire the sole Polish producer.

Sulphur extracted by Siarkopol is considered to be high quality and up to 75% of the Tarnow Group's products contain sulphur of varying percentages. The Tarnow Group fears that if it does not buy Siarkopol, the company could be taken over by another supplier that could increase sulphur prices.

### Ciech Q1 2012

After undertaking a significant part of its restructuring programme Ciech increased its EBITDA by 38% in Q1 2012 against the same period last year to zł 134 million. The operating profit increased by 71% to zł 72 million and net income by 250% to zł 10 million. Revenue increased by zł 50 million to zł 1.2 billion. The restructuring programme has yet to be completed, particularly in the organic division where losses have been incurred in the past two years. The group in the first quarter this year benefited from the rising prices of soda ash in European markets and improved performance was achieved despite the sale of the Gdansk phosphate plant to ZA Pulawy. The main factor negatively influencing the results of the first quarter were the rising prices of raw materials and energy although



the Ciech Group has minimised increases in costs by centralising purchases and contracts.



### **Ciech-Zachem improved results Q1 2012**

Ciech has received a first concrete price offer for the purchase of Zachem, which is close to the minimum of the group's expectations. In the past few years Ciech has been struggling with falling price of TDI, which is the largest organic product in the group. The capacity for TDI production internationally is expected to increase significantly in the near future due to new capacities coming onstream and thus the challenges to Zachem are expected to intensify. As a result, Ciech has concluded that it might be expedient to sell Zachem should the right offer be received.

Although Ciech wishes to sell Zachem, the company achieved an EBITDA of zł 1.69 million in the first quarter this year against a loss of zł 7.29 million in the same period in 2011. Revenues were down from zł 250.280 million achieved in Q1 2011 to zł 207.950 million in the first quarter this year, and this was due to offloading unprofitable assets and operations. Last year, Ciech sold part of the polyurethane foam division of Zachem to Transclean, in addition to 75% of the maintenance division and the plastics centre. The result of this divestment programme has been to reduce revenues significantly, but to also improve profitability. Despite the improvement in 2012, Ciech remains keen to offload Zachem as it does not harmonise with the group's main strategy and objectives.

### **NCHZ-Spolchemie**

The Slovak Ministry of Industry has agreed to sell Novacke chemické závody (NCHZ) to Via-Chem, which already owns Spolchemie in the Czech Republic. The deal is required to be approved by the Antimonopoly Office, but is expected to progress to conclusion. Via Chem Slovakia has agreed a price of €2.2 million for NCHZ, belongs to the Czech Via Chem Group. The company also owns the production of synthetic resins at Spolchemie in Usti nad Labem. NCHZ is technically bankrupt but there have been no special cuts or layoffs and production is running normally.

NCHZ descended into financial trouble after the European Commission decided that NCHZ would have to pay a large fine with other European chemical companies for operating a cartel for calcium carbide. NCHZ also produces PVC and caustic soda and is a supplier of chemical raw materials for a wide range of industries.

### **Spolchemie-HCL plant reconstruction**

Spolchemie plans to reconstruct its hydrochloric acid plant and expand the capacity from 184,620 tpa to 300,000 tpa. However, before the project can proceed an environmental assessment will be required by the relevant authorities. The new technology includes not only the replacement of old equipment at Usti nad Labem with new and modern elements, but also further enhances safety. Spolchemie utilises hydrochloric acid mostly in the production of organic dyes and plastics.

### **Chimcomplex approves membrane modernisation**

Shareholders of Chimcomplex at Borzesti have approved bank guarantees for improving energy efficiency in membrane electrolysis under its so-called M. Hydrate project. This key project for the company is scheduled to be completed by October 2013. Its objective is to increase energy efficiency and achieve savings of around 17% based on current expenditure. This means that Chimcomplex is virtually installing a new electrolysis plant replacing the current second generation plant based on ion-exchange membrane. The first generation membrane plant Soda M was started in 1996.

Chimcomplex is the largest consumer of electricity in eastern Romania, after the Galati steel mill. The share of electricity in the product cost of caustic soda is 52% based on 2011 data. The company completed the first cogeneration plant in November 2010, financed partly by the EBRD. The cogeneration plant, based on leading technologies, reduces the purchase price of energy by 40% from the price of purchased energy market. The cogeneration plant uses natural gas as raw material, having the possibility of excess supply of hydrogen obtained from the electrolysis plant. Chimcomplex started operations in 1959 and produces around twenty products of which it is the sole producer in Romania of twelve products. The current electrolysis plant, Soda M, was achieved by the largest investment in the Romanian chemical industry in 1996, with over \$100 million, and was the first in the region to use ion exchange membrane technology to produce chlorine.

### **PCC Rokita preparing second phase of chlorine conversion**

PCC Rokita is currently preparing for a second phase of conversion of electrolysis from mercury to membrane technology at Brzeg Dolny. The investment is seen not only in terms of environmental advantages, but also for reducing energy consumption which accounts for 17-18% of total costs of the company. Even a 1-2% reduction in energy consumption has been estimated by PCC Rokita to achieve serious financial savings. The first phase of the project was undertaken in 2010.

## RUSSIA

### Russian chemical production, Jan-Mar 2012

Russian chemical production fell by 1.44% by volume in January to March 2012 compared to the same period in 2011. In the first quarter in 2012 Russian production of mineral fertilisers dropped 8% to 4.4 million tons. Production of in March fell 4.8% in comparison with March, but increased by 13.8% compared with February. Production of ammonia dropped 7.2% to 3.4 million tons, soda ash rose 7.3% to 726,000 tons, and caustic soda rose 8.2% to 276,000 tons.

Production of plastics in the first three months of 2012 dropped 4.4% to 1.3 million tons, and synthetic rubber increased by 7%, to 342,700 tons. In other product areas the production of polyesters, polycarbonates, alkyd and epoxy resins decreased by 1% to 128,600 tons, polyamide 24% to 28,100 tons. Production of formaldehyde resins increased by 2.5% to 229,800 tons. In application areas, the manufacture of paints and varnishes based rose by 8.1% up to 155,000 tons, whilst chemical fibres and filaments decreased by 8.8% to 34,100 tons.

<b>Product</b>	<b>Jan-Mar 12</b>	<b>Jan-Mar 11</b>
Acetic Acid	38.5	42.0
Ammonia	3,370.5	3,677.9
Benzene	302.6	304.8
Butanols	66.5	71.4
C Black	121.0	175.5
Caustic Soda	270.3	223.1
Ethylene	598.2	645.8
Methanol	861.5	790.3
PET	101.7	75.9
Phthalic Anhydride	25.0	29.2
Polyethylene	367.6	413.0
Polypropylene	146.4	168.0
Polystyrene	75.7	84.8
Propylene	293.5	328.1
PVC	169.0	144.7
Soda Ash	726.7	676.8
Styrene	145.8	136.1
Synthetic Rubber	342,700	320.5

Production of polyethylene fell 12% in the first quarter to 367,600 tons due principally to the Stavrolen outage, which looks set to last at least until August. Other minor reductions were noted at Ufaorgsintez, Angarsk Polymer Plant and Nizhnekamskneftekhim. Polypropylene production fell 14% to 146,400 tons, whilst PVC production increased by 14.6% to 169,000 tons due to improved feedstock deliveries. At the same time, the production of polystyrene increased by 0.5% to 75,696 tons.

### Russian chemical industry-WTO

Russian chemical producers are concerned that the negative aspects of Russia's entry into the WTO will outweigh the potential positive gains. One of the government's main objectives in WTO entry is that Russia will be able to participate in the formulation of rules to energy trade, and this is probably more important to the country than any other sphere of activity. However, the chemical industry is also likely to benefit from WTO entry even if some smaller chemical companies may find competition harder. Opinion is divided, but taking the example of China which entered over ten years it has not prevented anti-dumping duties being applied if thought necessary, and at the same time the industry benefited in terms of fairer pricing.

Thus, possibly the Chinese situation needs to be examined in closer detail to understand what Russia might win and lose from WTO entry. Ultimately it represents a major step forward in creating more export opportunities, access to the latest goods, technologies and services, and most importantly, partnerships with foreign investors.

The Ministry of Industry has stated that it will support the chemical industry after WTO accession, by subsidising the costs of the producers in relation to energy, natural gas and rail transport. The larger chemical groups which supply a significant portion of their production for export are capable of surviving alone, but the Ministry of Industry fears that the smaller and medium sized companies may face a harder transition.

## Feedstocks & Petrochemical Projects

### Feedstock infrastructure West Siberia

SIBUR's plan to develop a railway infrastructure at Tobolsk has been approved. The project involves the construction of not less than 25 km of track with a microprocessor centralization of gridiron, associated engineering works and utilities, buildings, industrial and domestic purposes. The planned target date for commissioning the infrastructure is the fourth quarter in 2014. The new railway links will allow the export of products from Tobolsk both from the expanded capacity for gas fractionating and the new polypropylene plant.

Agreement has been reached between the Yugra administration in West Siberia and the local indigenous groups over the proposed product pipeline to be constructed between Novatek's Purovsky Plant and SIBUR's Yuzhnyi-

Balyk station. The significance of this agreement is that it will allow construction of the pipeline from Purovsky that will transport additional liquids to Tobolsk for the proposed cracker project planned in the next few years.

The pipeline for transporting natural gas liquids will be held in the territories of the Indigenous Peoples in Khanty-Mansiisk, district of Surgut. The SIBUR subsidiary Zapsibtransgaz has signed the necessary agreements for use the land for the construction and operation of the pipeline. The pipeline Purovsky Plant-Yuzhniy Balyk will allow the transportation of natural gas liquids of up to 4 million tpa. Construction of the product pipeline is an integral part of the infrastructure for SIBUR to transport refined products from associated gas from the Yamal region to Tobolsk-Neftekhim.

#### **Rosneft Nakhodka petrochemical project**

Construction of the Nakhodka petrochemical complex in the Russian Far East is scheduled to start in 2013. Design work has already been started of which the first stage of the project, valued in the range of several billion USD, will be targeted on developing a plant to process 3.4 million tpa of crude oil from the nearest refinery. The project is being undertaken by Rosneft's daughter company Eastern Petrochemical Company (VNHK). The design plan for the petrochemical complex will be completed by the end of 2012, after which the documentation will be sent for a state environmental review and discussion with the public.

Rosneft expects that VNHK will become the nucleus of one of the six main regional petrochemical clusters in Russia, 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.

Far East coast at Primorsk. Potential importers of propylene from Primorsk could include countries such as China, South Korea, Japan and Taiwan.

#### **Sumitomo-Khabarovsk propylene?**

Sumitomo Corporation of Japan is considering building in Khabarovsk refinery gas to propylene. The company is currently negotiating with the authorities of the Khabarovsk Territory, and has begun to develop a feasibility study for the project. Dimethyl ether could also be included in the project.

The Khabarovsk Krai government has offered Sumitomo the possibility of construction of petrochemical facilities at four areas. These locations include De Castries, where the Exxon Neftegas terminal is situated, whilst two others are located in the Komsomolsk region. A fourth site has been identified near Lazo. A number of projects are under review by Japanese investors including fertilisers which will have a strong export orientation of around 70-80% of production.

In addition to Khabarovsk, Sumitomo is considering building a plant to produce propylene on the Russian

#### **United Petrochemical Company-Proposed Projects (unit-kilo tons)**

Product	Capacity
Acetone	16
Acetone	79
Aniline	149
Benzene	126
Bisphenol A	60
Carbon Dioxide	45
Chlorine	116
Ethylene	500
HDPE	200
LDPE	90
MDI	200
MMA	200
Nitrobenzene	196
Phenol	53
Phosgene	160
Polycarbonate	60

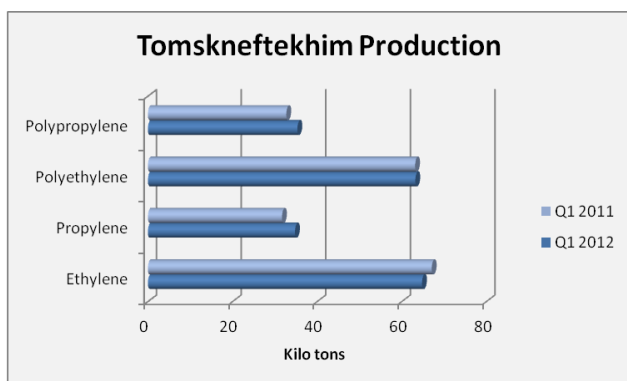
#### **United Petrochemical Company**

The Board of Directors of United Petrochemical Company, which comprises Yakov Goldovsky's Petrochemical Holding and Bashneft, have endorsed the strategy of the company involving a wide range of chemical projects and a merger of assets. The shareholders of United Petrochemical Company are to consider the transfer of Ufaorgsintez from Bashneft on 3 May, with the transaction approved in advance by the FAS. Bashneft and Yakov Goldovsky's Petrochemical Holding (Vienna) agreed to establish a jv in December 2011, in which Bashneft holds 74.99% in shares.

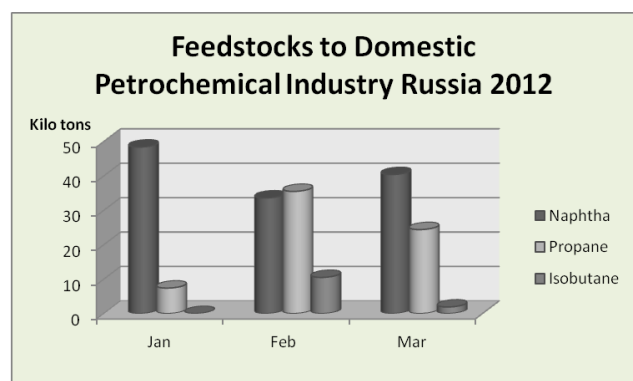
United Petrochemical Company and Bashneft have laid out a series of ambitious plans for chemical projects in Russia, some of which appear more realistic than others. By investing in projects in the Dzerzhinsk region the new holding group intends to supply the main Moscow market with raw materials, but also large-scale projects are also planned for Ufa around Ufaorgsintez.

The projects have come under close scrutiny from competitors inside Russia and it is clear that there a range of question that need to be answered in relation to technology licenses and feedstock balances. Some of the project ideas are seen as a revival of plans that have previously been discounted,

but even so United Petrochemical Holding does already possess production facilities at Dzerzhinsk and Ufa and thus hopes to expand its range of products from these base assets. Former Mayor of Moscow, Yuri Luzhkov, has been appointed to the board for United Petrochemical Company. In addition to the listed projects, the board has made reference to PET and PTA projects.

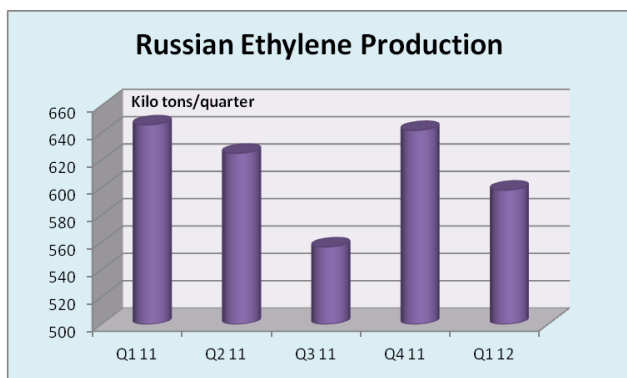


31% in March against February to 24,400 tons due mostly to petrochemical producers making more usage of NGLs. Naphtha supplies to the petrochemical industry also increased 20% over February and totalled 40,400 tons. SIBUR's plants increased their purchases of naphtha, while reducing the processing of propane and normal butane. Domestic naphtha sales declined 33% in the first quarter to a total of 351,000 tons, most of which went



into the fuel sector. The declines in naphtha sales were due largely to the Stavrolen outage. Although Togliattikavuk purchased more product from domestic sources it also has started buying fractions product from Azerkhiymya. In the first week of April the company purchased 2,010 tons from Azerbaijan, which was 3.9 times more than in March. Nizhnekamskneftekhim increased its imports of butylene-butadiene goods by 5%, to 7.25 tons in March. For the first quarter the main supplier of fractions to Russia were Ukraine (52% of gross imports), Belarus (24%) and Azerbaijan (19%).

Domestic purchases of isobutane dropped in March by 16% against February, down to 29,600 tons. Reduced supplies were attributed to lower shipments to Tomskneftekhim, which bought only 1,900 tons in March against 10,500 tons in February. As a result of lower domestic sales Tobolsk-Neftekhim resumed the exports of isobutane in March to Turkey amounting to 4,300 tons. Despite the decline in gross supply to the domestic market, producers of MTBE increased their consumption by 13% in March to 26,100 tons. Nizhnekamskneftekhim purchased 6,030 tons of the product against 1,160 tons in February), Ektos-Volga-9,440 tons against 4,480 tons and Togliattikavuk 5,270 tons which was 1,300 tons down.



whilst SIBUR-Neftekhim increased ethylene output due to additional volumes of natural gas liquids. Kazanorgsintez recorded the largest increase, achieving 136,800 tons against 95,400 tons in 2011. Full cracker and derivative production volumes can be seen on the Statistical Database at [www.cirec.net](http://www.cirec.net)

### Russian propylene market, Q1 2012

Russian propylene production totalled 293,500 tons in the first quarter in 2012, which is 10% less than in the same period in 2011. The Stavrolen outage has forced other propylene producers to increase production levels, i.e.,

### Tomskneftekhim-feedstock fluctuations

Tomskneftekhim feedstock balance has been fluctuating sharply over the past few months, with natural gas liquids accounting for a larger share of pyrolysis hydrocarbons. Naphtha usage has been falling, and the increase in the use of natural gas liquids has allowed Tomskneftekhim to ramp up production and increase butylene-butadiene fractions to Togliattikavuk. The use of propane has increased propylene and polypropylene production for Tomskneftekhim.

### Russian petrochemical feedstocks, Q1 2012

Propane sales to the petrochemical industry dropped 31% in March against February to 24,400 tons due mostly to petrochemical producers making more usage of NGLs. Naphtha supplies to the petrochemical industry also increased 20% over February and totalled 40,400 tons. SIBUR's plants increased their purchases of naphtha, while reducing the processing of propane and normal butane. Domestic naphtha sales declined 33% in the first quarter to a total of 351,000 tons, most of which went

into the fuel sector. The declines in naphtha sales were due largely to the Stavrolen outage. Butylene-butadiene fraction sales to the domestic market totalled 23,100 tons in March, 10% up on February. The increase was facilitated by higher volumes from Tomskneftekhim and SIBUR-Neftekhim, after increased processing volumes of NGLs and naphtha. In addition to SIBUR subsidiaries, Angarsk Polymer Plant increased the volume of shipments by 6% to 5,800 tons. Increased domestic sales of butylene-butadiene fractions culminated in lower imports, down 27% against February to 8,690 tons.

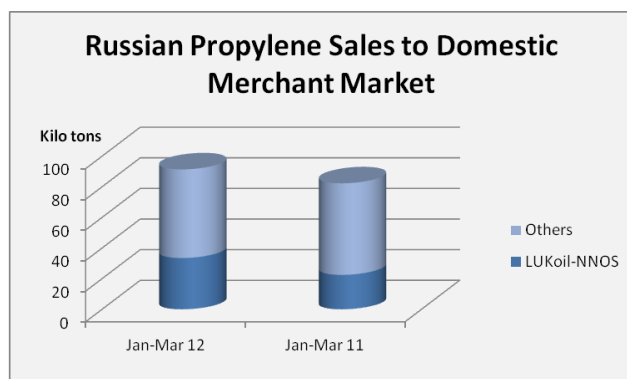
Although Togliattikavuk purchased more product from domestic sources it also has started buying fractions product from Azerkhiymya. In the first week of April the company purchased 2,010 tons from Azerbaijan, which was 3.9 times more than in March. Nizhnekamskneftekhim increased its imports of butylene-butadiene goods by 5%, to 7.25 tons in March. For the first quarter the main supplier of fractions to Russia were Ukraine (52% of gross imports), Belarus (24%) and Azerbaijan (19%). Domestic purchases of isobutane dropped in March by 16% against February, down to 29,600 tons. Reduced supplies were attributed to lower shipments to Tomskneftekhim, which bought only 1,900 tons in March against 10,500 tons in February. As a result of lower domestic sales Tobolsk-Neftekhim resumed the exports of isobutane in March to Turkey amounting to 4,300 tons. Despite the decline in gross supply to the domestic market, producers of MTBE increased their consumption by 13% in March to 26,100 tons. Nizhnekamskneftekhim purchased 6,030 tons of the product against 1,160 tons in February), Ektos-Volga-9,440 tons against 4,480 tons and Togliattikavuk 5,270 tons which was 1,300 tons down.

### Russian ethylene market, Q1 2012

Russian ethylene production totalled 598,200 tons in the first quarter this year, 8% down on the same period last year due mainly to the idle cracker at Budyennovsk. Ufaorgsintez was forced to reduce production in March due to lower feedstock availability from the Ufa refineries



Angarsk Polymer Plant increased output by 14% in March to 10,000 tons and SIBUR-Neftekhim increased by 10% to 11,700 tons.



months in 2012 shipments totalled 91,400 tons.

Russian propylene exports totalled 12,330 tons in the first quarter in 2012, 9% down on the same period last year. Although LUKoil-NNOS has increased export activity, in addition to domestic sales, the Stavrolen outage has impacted on availability from other producers. Omsk Kaucuk reduced propylene exports in March by 3.3 times against February to 1,070 tons, whilst SIBUR-Neftekhim reduced export shipments by 37% to 923 tons.

Russian supplies of propane-propylene fractions to the domestic market totalled 41,800 tons in January-March 2012, 14% down on 2011 and this was due mainly to the Stavrolen outage. The supply of propane-propylene fractions to the Russian market dropped 45% in March from February to 8,800 tons. The reduction of shipments was due to maintenance at Slavneft-YANOS and reduced shipments from Ryazan by 49% against February. The Ryazan refinery, owned by TNK-BP, has significantly increased exports of propane-propylene fractions to Ukraine to the Lisichansk polypropylene plant. In addition, Gazprom Neft at the Omsk refinery has reduced the supply of propane-propylene fractions to domestic consumers by 16% against February to 3,900 tons.



#### Nizhnekamskneftekhim-Lummus cracker contract

Nizhnekamskneftekhim signed an agreement with Lummus Technology Heat Transfer on 28 April, for a license and contract for design of the new one million tpa cracker. The selected technology meets modern requirements of energy saving, environmental protection and industrial safety. The large-scale project investments planned for Nizhnekamsk, involving the construction of a one million tpa cracker, forms the central tenet of the company's strategy in the next five to ten years. The strategy has been interpreted in some quarters as risky in the sense that the company is well-placed to record profits under the current production

structure, but may incur higher costs to revenues from the new facilities that are being envisaged.



#### Russian styrene supply, Q1 2012

Production of styrene totalled 145,800 tons in the first quarter, up from 136,000 tons in 2011. Output totalled 46,500 tons in March which was similar to February but lower than January. Angarsk Polymer Plant increased production in March by 29% to 3,400 tons, whilst Nizhnekamskneftekhim increased by 7% to 15,900 tons.

Russian styrene exports totalled 37,400 tons in the first quarter in 2012, 9% less than the same period last year. The main consumers of Russian styrene in the first quarter included Finland (62%), Turkey (21%) and China (12%). Russian exports to the EU region

comprised 16% in 2011 of 431,800 tons.

Gazprom Neftekhim Salavat is currently working on the re-benzene transalkylation unit, after which the company will be able to increase the production of ethylbenzene and styrene by 10%. Styrene production at Salavat totalled 132,900 tons in 2011 and comprised 27.3% of gross Russian production. The benzene unit at Salavat is to undergo a transition from gas phase to liquid-phase transalkylation, which will reduce energy and resource consumption, increase the efficiency of the process and receive an additional 10% of ethylbenzene and styrene. The project for the ethylbenzene unit is scheduled for completion later in 2012.

## Bulk Polymers

### Russian Polypropylene Production (unit-kilo tons)

Producer	Jan-Mar 12	Jan-Mar 11
Ufaorgsintez	29.2	23.0
Stavrolen	3.5	31.1
Neftekhimya	29.0	28.5
Nizhnekamskneftekhim	52.9	52.7
Tomskneftekhim	35.3	32.7
Totals	149.9	168.0

### Russian polypropylene, Q1 2012

Russian imports of polypropylene totalled 52,000 tons in the first quarter in 2012 which was slightly lower than in the same period last year despite the Stavrolen outage in the first couple of months in the year. Low demand was noticeable in the first couple of months in 2012, but then imports of polypropylene into the Russian market totalled 19,500 tons in March which was 16% higher than February. The increase was due to seasonal market activity. In addition to low production at Stavrolen, imports from Ukraine have dropped this year due to raw material problems for

Linik. During early April, Russian polypropylene imports were dominated by shipments from Turkmenistan.

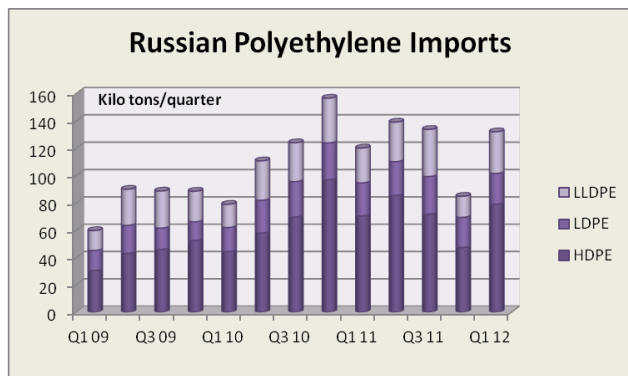
Imports are expected to increase in May and June, or at least until the Stavrolen plant regains high utilisation rates. Even so, some Russian processors are not willing to pay higher prices for polypropylene currently being quoted, and this means that volume sales are good but not particularly remarkable. The Budyennovsk plant produced 3,500 tons in March based on merchant propylene, but it would need to produce much more to have an effect on the supply/demand balance. Many Russian companies are actively buying polypropylene in Asia and the Middle East due to availability and price. Ufaorgsintez, in Bashkortostan, stopped the production of polypropylene for routine maintenance from 20 April for about a week and that contributed to some balancing in the Russian market.

### Omsk polypropylene plant-reactor

The Polyom reactor at Omsk is scheduled to be commissioned in May-June this year, but Polyom does not expect to produce significant volumes of polypropylene until the start of next year. After the first line has been installed preparations will start for a second line which is intended to expand capacity to 265,000 tpa, in either late 2013 or in 2014. Polyom has stated that it aims to produce a total of 78 brands of polypropylene. Volkswagen is ready to consider proposals for the purchase of polypropylene from Omsk for the manufacture of auto parts plant at Kaluga.

Around 70% of total capacity of the first line of 180,000 tpa is expected to be focused on homopolymer, whilst the remainder will be apportioned between random and block copolymers. In terms of feedstocks, propane-propylene fractions will be supplied from Gazprom Neft at the Omsk refinery. After the launch of the polypropylene production line at Polyom at Omsk, a line will be installed for the production of polyethylene bags for packaging polymer granules.

### Russian Polyethylene Imports



### Russian polyethylene market, Q1 2012

Russian polyethylene production totalled 367,600 tons in the first quarter in 2012, against 413,000 tons in 2011. The decline was due to the continued downtime at Budyennovsk. At the same time imports of polyethylene into Russia rose to 132,000 tons against 120,200 tons in the first quarter last year. In March, the volume of imports increased to 57,300 tons which was 16% higher than February. The largest increase was recorded for LLDPE, and this was due to the current absence of domestic production and the fact that it is still the fastest growing sector in polyethylene. Imports of LDPE continue to be necessary to meet demand for multilayer

films and cable insulation. Imports of LDPE totalled 22,400 tons in the first quarter this year, against 24,122 tons in the same period in 2011.

Imports of HDPE in Russia in first quarter rose by 11% compared to same period last year, exceeding 79,000 tons. Even so, the December accident at Stavrolen has not led to such a significant increase in imports of HDPE as might have been expected, aside film grade which rose 2.5 fold. Imports of HDPE in March rose to 29,300 tons due to the demand for HDPE for extrusion coating of steel pipes and injection moulding. Kazanorgsintez suffered short term problems in March in the production of PE 100 pipe, whilst there were also supply problems of HDPE from other domestic producers. Russian imports of polyethylene pipe fell 9% in the first quarter in 2012 to 16,800 tons.

Imports of LLDPE increased 20% in the first quarter in 2012 against the same period last year to a total of 30,600 tons. Imports comprised 90% of LLDPE film grade as opposed to 86% in 2011. Due to a lack of production of butene LLDPE Russian companies are actively seeking contracts in the Middle East material for the production of irrigation and blown film. The two Russian producers of LLDPE, Kazanorgsintez and Nizhnekamskneftekhim, have not produced LLDPE since November last year preferring to produce HDPE. Production of LLDPE in Russia totalled 54,500 tons in 2011.



### Russian LDPE market 2011

Russian LDPE production totalled 642,000 tons in 2011 from plant capacities of 679,000 tpa. Consumption amounted to 589,700 tons against 576,100 tons in 2010. A total of 480,000 tons of LDPE was supplied to the domestic market in 2011 from domestic producers, with imports totalling 98,400 tons. Thus, the share of Russian domestic LDPE production in total consumption for 2011 amounted to 83%.

Belarus provides the largest share of imports, largely to the close technical specifications to Russian requirements of LDPE which is produced by Polymir at

Novopolotsk. Other importers in 2011 included Borealis, Ineos and Dow. Grades from Western manufacturers are used for the production of cables, pipes, and high-quality films that cannot be obtained by using domestic LDPE. In addition, a niche has emerged for specialised European brands of LDPE, products of which are highly resistant to temperature extremes, puncture, the effects of various chemicals, radiation, etc. The products of these brands are used, for example, in medicine, where there are requirements for particularly high quality.

In terms of exports, Russia shipped 175,328 tons of LDPE in 2012 which is around a quarter of production primarily to emerging markets in China, Ukraine and Kazakhstan. Russian LDPE exports are expected to continue to the same markets this year. In the first quarter, Russian LDPE exports to China totalled 34,734 tons against 30,715 tons in 2011.

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

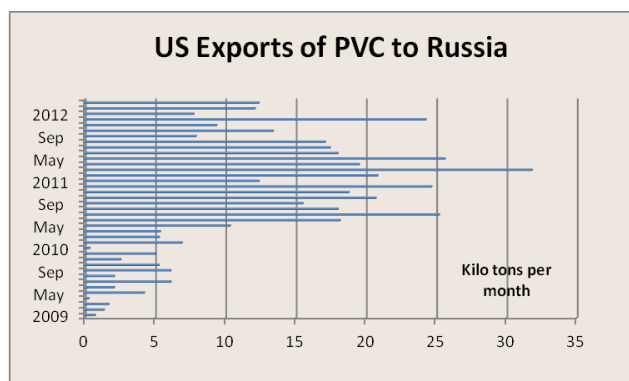
Product	Q1 2012	Q1 2011
PET	32.547	15.731
PVC	5.318	3.009
Exp PS	6.663	5.585
HDPE	15.067	17.029
LDPE	6.141	8.359
PP	4.357	3.828
ABS	5.63	5.585

### Novy Urengoy chemical cluster

Novy Urengoy Gas and Chemical Complex aims to establish a cluster following the start-up of the polyethylene plant. The project was expected to be completed by 2013, but there is some doubt about the start-up date and further delays could be possible. The plan outline is that the Chempark Yamal-polymer will produce products of polyethylene and will start to operate in 2014. Novy Urengoy Gas and Chemical Complex intends to cooperate with companies that decide to participate in the cluster, having concluded that it represents a cost-effective way of selling polyethylene. This strategy is not expected to replace the need to sell to other regions in Russia, or export, but principally to channel production into local applications and reduce the dependency on long haul shipments.

### Russian PVC market, Q1 2012

Imports of suspension PVC dropped 11% in the first quarter this year against the same period in 2011 to 101,765 tons. This can be partly attributed to higher domestic production and partly to market forces which are not quite as strong as at the start of last year. Imports from the USA declined to 32,319 tons from 65,109 tons in January-March 2011, whilst shipments from China fell from 32,440 tons to 22,350 tons. Imports from Ukraine were more noticeable in the first quarter, with Karpatneftekhim shipping 12,540 tons in March.



helping to restrict the market.

The PVC market traditionally improves in the second quarter, and signs of an improvement were noted at the end of March when converters started to increase their purchases of domestic and imported PVC. Russian imports totalled 45,522 tons in March, which was 1.4 times higher than February. A significant increase in supplies from abroad was due to mainly to seasonal factors as PVC traders and polymer processors formed stocks in anticipation of forthcoming demand. Most converters held back on purchases in the first quarter due to low demand, but May is expected to see the peak of buying interest. Some buyers are facing liquidity problems preventing purchases and this is

Scheduled maintenance was completed by Khimprom at its PVC paste plant at Volgograd in April, but other problems have since arisen affecting production. Maintenance took place in the middle of April, but at the end of the process on 21 April LUKoil Volgogradenergo refused to supply steam to Khimprom due to outstanding debts.

The steam provided by LUKoil Volgogradenergo is essential for most of Khimprom's chemical units and production may need to be halted if a solution is not found. Khimprom is the sole producer of PVC paste in Russia, following the closure of the Usolyekhimprom plant. The Volgograd plant possesses a capacity of 24,000 tpa and produces the brand EP6602S, which is used in the manufacture of floor coverings, awnings, imitation leather. The two largest domestic consumers of these products comprise Tarkett and Komitex Lin.

## Aromatics & derivatives

### Russian benzene market, Q1 2012

Benzene production in Russia totalled 309,100 tons in the first quarter, against 312,000 tons in 2011. Production was down slightly due to the Budyennovsk problems, but higher volumes have been seen at other plants thus reducing the losses. Demand remains positive and Russian benzene imports totalled 11,460 tons in the first quarter in 2012, twice higher than the same period last year. Shipments increased 1.9 times in March against February to 5,220 tons due the worsening shortage of product in the domestic market. Kazanorgsintez resumed the purchase of aromatic feedstocks from Kazakhstan, purchasing 479 tons. In addition, Samaraorgsintez purchased 1,840 tons of benzene in March, 2.4 times higher than in February, whilst Kuibyshevazot increased its imports by 53% to 2,900 tons. Kuibyshevazot has been forced to import larger volumes as normally it purchases benzene from Stavrolen, which is currently idle and may not restart until August. Karpatneftekhim has recently agreed to provide a large amount of benzene to Kuibyshevazot.

Scheduled plant outages in the next few months are taking place at Uralorgsintez, Gazprom-Neft and LUKoil-Permnefteorgsintez. The main outage is planned for LUKoil-Permnefteorgsintez, lasting from 15 May to 15 July during which capacity will be expanded from 50,000 to 75,000 tpa. Repairs to Kirishinefteorgsintez will be held from 20 May to 2 July, and thus June is expected to be very tight.

The April deficit for the Russian market was estimated at 6,000 tons and for May is estimated to comprise around 8,000 tons. Ufaneftekhim began to ship the benzene in the domestic market in April for the first time since May 2011. Product has been shipped to Samaraorgsintez for cumene and Gazprom Neftekhim Salavat for ethylbenzene.

#### Russian Benzene Market (unit-kilo tons)

	2011	2010	2009
Production	1196.2	1196.5	1118.2
Exports	21.1	31.0	0.0
Imports	37.7	6.8	11.9
Market Balance	1212.8	1172.3	1130.2

Russian consumption of benzene increased by 3% in 2011 over 2010 to 1.212 million tons. Imports rose from 6,800 tons in 2010 to 37,800 tons in 2011, which was attributed partly to the extended shutdown at the West Siberian Metallurgical Combine. Production at the SIBUR subsidiaries increased by 48,600 tons in 2011, which helped offset the lower coal based benzene production in West Siberia.

Expanding derivative capacities at Samaraorgsintez and SIBUR-Khimprom for phenol and ethylbenzene respectively, has led to an increase in purchases and contributed to the



growth of imports of benzene in Russia. In the event of shortages in the domestic market Russian consumers are forced to seek additional quantities of raw materials in countries such as Ukraine, Kazakhstan and even Israel and Turkey.

The accident at the Stavrolen cracker on 15 December last year is the main cause of the current supply side tightness. Stavrolen shipped 66,600 tons of benzene to the domestic market in 2011, constituting 9% of Russia's gross supply. The market situation has been helped by the restart of the West Siberian Metallurgical Combine in November last year and imports. Benzene from Ukrainian plants Yasinovsky Coke and Zaporozhkoks is regularly shipped to Samaraorgsintez and Kuibyshevazot as an alternative source of raw materials.

#### Russian Paraxylene Market (unit-kilo tons)

	2011	2010	2009
Production	319.9	324.4	327.7
Exports	133.5	160.4	180.2
Imports	0	0	0
Market Balance	186.4	164	147.5

xylene production of paraxylene was 66% (61,000 tons), and orthoxylene 34% (31,600 tons).

#### Russian paraxylene market 2011

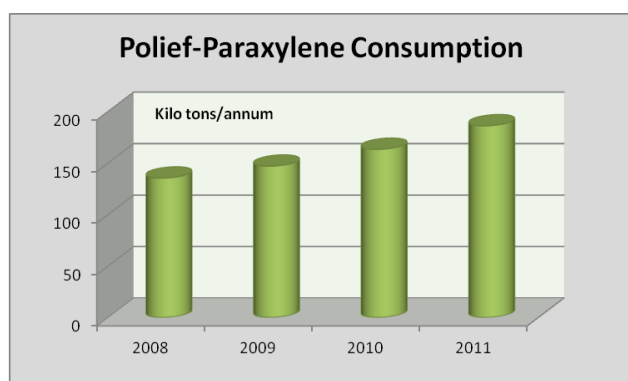
The Russian paraxylene market saw lower exports in 2011, as domestic consumption accounted for a larger share of production. In 2011, the production of xylenes amounted to 496,300 tons which is 4% lower than in 2010. Paraxylene accounted for 64% of xylene production, or 319,900 tons, whilst orthoxylene comprised 36% or 176,400 tons. In the first two months of 2012 Russian production of xylenes totalled 92,600 tons which is 3% more than the same time period last year. The share in the production of paraxylene was 66% (61,000 tons), and orthoxylene 34% (31,600 tons).



Russian export volumes of paraxylene have been steadily declining in recent years, with the share of exports totalling 42% in 2011 against 58% in 2008. Exports totalled 133,500 tons in 2011, 17% less than in 2010. Russian export volumes exclude Belarus and deliveries to Mogilevkhimvolokno.

In the first two months in 2012 Russia exported only 24% of production which amounted to 14,400 tons, and this was 42% less than for the same period last year. Ufaneftekhim sold virtually all paraxylene to Polief, whilst Kirishinefteorgsintez exported its entire production. Only Gazprom Neft at Omsk actively sells both in

domestic and foreign markets.

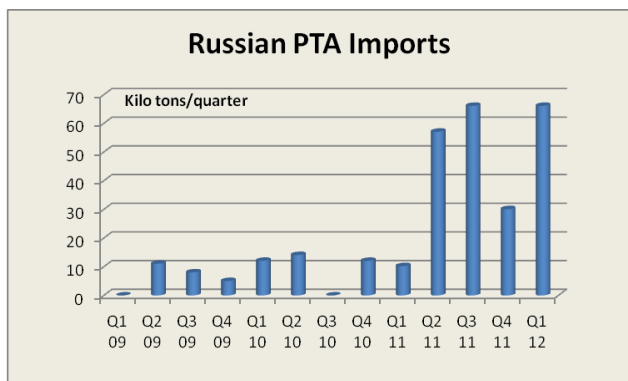


Gazprom Neft accounted for 57% of exports in 2011, with Kirishinefteorgsintez accounting for the remaining 43%. In the first two months of 2012, these shares reversed themselves with Gazprom Neft taking 35% and Kirishinefteorgsintez 65%. In the domestic market Polief purchased 186,300 tons of paraxylene in 2011, 14% up on 2010. For the first two months in 2012 the volume of purchases rose 35% against the same period in 2011 to 46,600 tons. Rising demand for PTA has pushed Polief into ramping up utilisation rates and production volumes.

In terms of paraxylene supply, Gazprom Neft started maintenance at the Omsk refinery from 25 April which will last until 28 May. Aromatic production has been suspended in this period. The refinery produces the full range of aromatics including benzene, xylenes and toluene.

#### Russian orthoxylene exports, Q1 2012

Orthoxylene exports from Russia amounted to 10,130 tons in the first quarter in 2012, 38% lower than for the same period last year. Export activity dropped 61% in March against February to 2,850 tons, and was 8% lower than in March 2011. Shares of major Russian suppliers of orthoxylene exports included Kirishinefteorgsintez 71% and Ufaneftekhim -29%. The destinations for Russian exports included Finland (71% of gross exports), Ukraine (25%) and China (4%). The main domestic consumer of orthoxylene in Russia is the phthalic anhydride producer Kamteks-Khimprom.



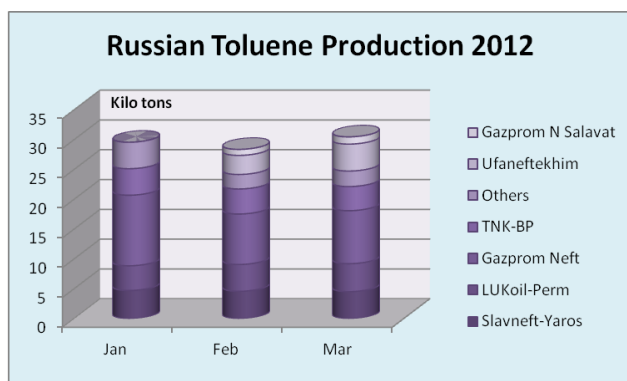
maximum value from the PX-PTA chain in that it may also need to produce PET. It is possible that some form of co-operation with SIBUR might be considered, as SIBUR already holds a key position in the marketplace through SIBUR-PETF and Polief. Further details could be made available later in the year.

### Ethan, PET & PTA

The Plant of Pure Polymers Ethan, which is building a PET plant in the region of Kabardino-Balkaria, plans in the long term to build its own PTA plant. However, this is unlikely to be available prior to 2018. For the first few years of operation of the PET plant, which is expected to start in 2014, Ethan will need to depend on purchases of PTA from either Polief or alternatively from imports. An agreement for PTA supply has been reached in principle with KP Chemical and is also in the process of preparing an agreement with BP Aromatics. For MEG, agreements have been reached with Nizhnekamskneftekhim. Ethan's own PTA plant, if it materialises, could be located about 11km from the PET plant.

Regarding paraxylene for the proposed PTA plant, Ethan indicates that it could use the surplus from Omsk and Kirishi that exist at present, although the position at Omsk could change if Gazprom Neft builds its own PTA plant. Ethan has also suggested that paraxylene could be sourced from Atyrau in Kazakhstan, where an aromatics complex is under construction at present. The distances between Atyrau and Nalchik, where Ethan is based, amount to around 960km.

Regarding PET, Ethan hopes to launch the first stage of 162,000 tpa in 2013, rising to 288,000 tpa in 2014 and 486,000 tpa by 2015. Ethan is aiming to build a regional plant for recycling of PET waste, and is considering the possibility of development of the textile areas. The technology for the PET plant is being supplied by Buhler.



company purchased 1,010 tons, but this was lower than the February purchases of 2,030 tons. The Ya.M.Sverdlova plant at Dzerzhinsk purchased 840 tons against 820 tons in February. Around 30% of shipments in March was purchased by trading companies, 12% by manufacturers of paints and varnishes and 9% for the production of fuels and lubricants.

### Russian phenol market, Q1 2012

In the first quarter 2012 phenol production increased 4% over the same period in 2011 to 65,842 tons, with Omsk Kaucuk increasing usage by 11%. Ufaorgsintez and Kazanorgsintez increased production by 7% and 5% respectively whilst Samaraorgsintez reduced volumes by 4%. Omsk Kaucuk undertakes a shutdown from the end of April for phenol production due to the planned maintenance at the Omsk refinery. Imported phenol from Finland (Borealis) has started to appear expensive against domestic product. Borealis exported 660 tons in

### Gazprom Neft-reorganisation and possible PTA plant

Gazprom Neft is considering the construction of PTA and PET plants at the Omsk refinery, where paraxylene is produced and either exported or sold on the domestic merchant market. PTA is a product in short supply in Russia with imports roughly pro rata operating at around 300,000 tpa at present. At the same time Russia exports a considerable volume of paraxylene. Building a PET plant may be less viable as already imports have started to fall since the start-up of the Kaliningrad plant last year. There is also a large-scale PET plant starting construction in southern Russia in the Nalchik region. However, Gazprom Neft believes that to secure the

### Russian toluene market, Q1 2012

Production of toluene in Russia totalled 88,500 tons in the first quarter this year, 20% up on 2011. Russian shipments of toluene to the domestic market in the first quarter in 2012 totalled 35,230 tons, which was 29% more than in the same period in 2011. Toluene domestic shipments by rail to Russian consumers totalled 14,200 tons in March which is 32% more than in February and 42% up on March 2011.

The main consumer of toluene in March was industrial explosive manufacturer Biysk oleum plant. The

March, which was 30% down on February. Shchekinoazot buys the largest share of imported phenol, followed by Kuibyshevazot and MetaDynea.

## Synthetic Rubber

### Kazan Synthetic Rubber plant-silicon

Kazan Synthetic Rubber Plant (KSRP) quadrupled investment in 2011 in the production of silicone materials. In 2010 KSRP invested 1.5 billion roubles in its silicon subsidiary and this increased to 5.9 billion roubles in 2011. Russia imports silicone materials that are used in rubber compounds for aircraft, machinery and instrument. The main suppliers include Wacker, Dow Corning and Chinese companies. The domestic market is estimated in the range of 34,500 tpa in physical terms and 5.7 billion roubles per annum in financial terms. By 2015, the Russian market could grow to about 50 000 tons, and KSRP is looking to construct a plant of 35-37,000 tpa. The plant is scheduled to start in 2014 and to reach full capacity in 2016.

### Russian tyre news

Prices of synthetic rubber increased in March affecting tyre producers. Costs of synthetic rubber have risen 5-6%, whilst natural rubber costs have risen 1-2%. The main suppliers of tyres into Russia this year will remain Asian countries, particularly Japan, China and South Korea. Last year, the share of products imported to Russia from these countries in total imports amounted to 46%.

Altay Tyre Plant intends to put into operation a line for the production of tyres worth €3.7 million. The new facility will produce tyres of the four compounds, which combine four different functions and thus affect the quality of the product. Altay Tyre Plant was founded in 2004 through the merger of the Altai tyre company with the Barnaul Plant of Technical Carbon. The plant produces a total of 67 models of tyres for domestic and import vehicles and agricultural machinery. In addition, the product range includes 38 models of plant aircraft tyres for civil and military aviation. The company sells 75% of its production in the domestic market, and 25% is exported.

Avtovaz and Tatneft have signed a strategic partnership agreement in March to last until 2015. Trade house Kama will supply passenger car tyres for Lada cars and the volume of shipments from Nizhnekamskshina in 2012 will amount to 2.5 million tyres, increasing to 3 million in 2013 and 3.5 million in 2014. Kordiant (formerly SIBUR-Russian Tyres) is considering possible cooperation with Tatneft at Nizhnekamskshina, and could even merge the assets.

### Russian synthetic rubber market, Q1 2012

Synthetic rubber production increased 7% to 342,700 tons in the first quarter this year. In total, the manufacture of rubber products in the first quarter this year dropped 2.7% over the same period in 2011 which was mainly due to the production of tyres for trucks, buses and trolley buses falling by 18.8% up to 1.852 million units, and for tractor tyres by 13.8% to 378,000 units. At the same time, the production of tyres, pneumatic tyres for passenger cars in grew in the first quarter by 11.2% to 8.4 million units. The production of cells and solid rubber or cushion tyres, interchangeable treads and flaps, and grew by 40.9% up to 1.911 million units.

The accident at Togliatti may only affect production for a short period, but may impact enough on supply to force cable plants using rubber insulation to reconsider their pricing policies. In particular, Rybinsk Cable Plant has already reported that the market faces a shortage of material and expects cable prices to rise from 1 May in line with higher synthetic rubber prices.

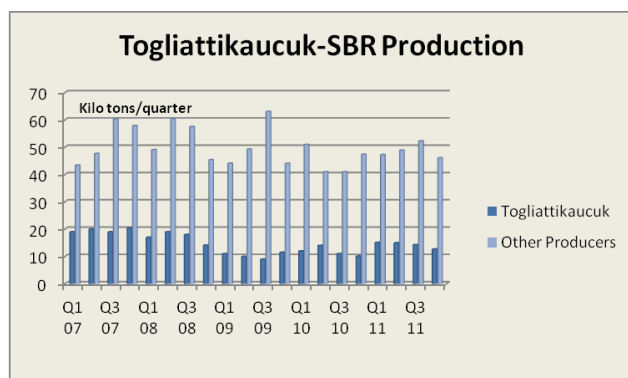
### SIBUR-Togliatti chemical park

SIBUR intends to open an industrial park at Togliatti based on production from Togliattikaucuk and the service company Toglattisintez. Togliattikaucuk is seen as the anchor of the chemical park, occupying about 285 hectares. The unused area of 150 hectares will be allocated to external organisations, possibly in a JV format. Residents will be offered two packages of service including mandatory (which includes fire protection and other services) and optional (equipment repair, engineering, staffing). The chemical park is intended to focus on the processing of rubber from Togliattikaucuk, whilst Toglattisintez will provide back-up services for the residents.

### Togliattikaucuk accident halts production

Togliattikaucuk stopped production after a serious fire at a transformer substation broke out on 22-23 April. According to the preliminary version, there was a depressurisation of the pipeline supplying isobutane. Production is expected to be down until early May, and the company hopes that second quarter volumes will not be badly affected. In terms of supply side significance, Togliattikaucuk accounts for around 15-20% of Russian production for butadiene styrene rubbers as shown in the graphic opposite.

Togliattikaucuk uses isobutane for MTBE, which is closely aligned with the isoprene plant. Togliattikaucuk possesses 48,000 tpa capacity for butyl rubber, 60,000 tpa for butadiene, isoprene monomer 90,000 tpa and isoprene rubber 60,000 tpa. The production of



isobutylene-isobutane fractions stands at 105,000 tpa and sobutene capacity of 40,000 tpa. MTBE capacity at Togliatti stands at 75,000 tpa. Production is likely to be restarted on a phased process, beginning with butadiene and gradually progressing to rubber copolymers.

### **Nizhnekamskneftekhim-rubber production 2011**

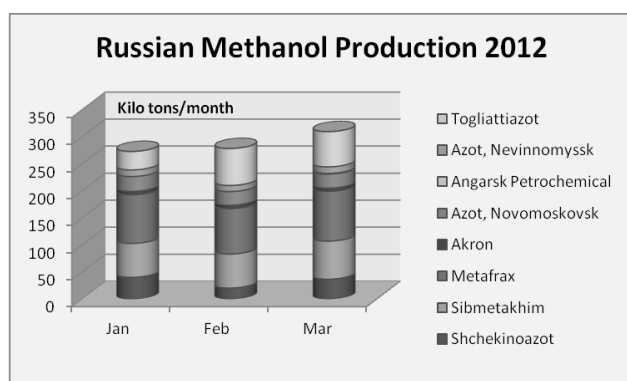
Production of synthetic rubber by Nizhnekamskneftekhim was up in 2011 over 2010, due to strong demand and capacity utilisation rates being increased. Polybutadiene production has seen the largest increase in the past two years. Currently, Nizhnekamskneftekhim produces seven types of synthetic rubber, and is continuing to modernise production and improve the consumer properties of rubber. Nizhnekamskneftekhim is operating a new pilot plant for ethylene propylene rubber aimed at producing elastomers and high-purity chemical products.

The company has recently commissioned a second line for halobutyl rubber at the butyl rubber plant, and is increasing capacities to 100,000 tpa and 200,000 tpa respectively. About 93% of halobutyl rubber produced at Nizhnekamsk is exported. Nizhnekamskneftekhim cooperates with the largest foreign tyre companies such as Michelin, Goodyear, Pirelli, Continental, Bridgestone and Belshina (Belarus).

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## **Methanol & related chemicals**

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### **Russian methanol market, Q1 2012**

In the first quarter 2012 Russian methanol production totalled 861,500 tons, which is 8% higher than the same period last year. Togliattiazot increased production by 22%, the most significant change in terms of supply. Export volumes of methanol amounted to 343,000 tons in the first quarter, an increase of 4% over 2011.

The seasonal increase in demand for methanol and its derivatives started to take effect in March, with methanol production rising 10% over February to 310,000 tons. Shchekinoazot reduced production to around 20,000 tons in February due to problems with the local safety

regulations, but then recovered in March to produce around 37,000 tons of which around 75% was exported. A fire took place at Shchekinoazot in April in the new methanol plant.

### **Metafrax-Sberbank and project plans**

Metafrax has been in consideration with Sberbank for a number of investment projects, probably resins at Gubakha and financing of a new production unit for pentaerythritol. However, there are even larger projects such as urea to support. In the next few years the company sees huge potential in the production of phenolic resins used in the production of plywood, insulation and other industrial purposes.

Metafrax and Dynea have two jvs MetaDynea at Gubakha and Karbodin at Orekhovo-Zuyevo, which produces urea and phenolic resins. Currently, MetaDynea is represented in Russia by two manufacturing sites that produce a wide range of urea-formaldehyde, phenol-formaldehyde resins and melamine-urea resins. Total production capacity is 435,000 tpa, of which 50,000 tpa consists of phenol-formaldehyde resins for insulating materials. At both sites MetaDynea uses Perstorp low methanol formaldehyde with a concentration of 55%.

Metafrax hopes to buy a Ukrainian company that consumes methanol, which may be Dneproazot. Metafrax now recycles 35% in high-margin chemical products and plans to increase stake to 50%. In terms of an IPO there is nothing definite, nothing concrete. The start of construction of its own urea plant could be undertaken by Metafrax due to the dilapidated state of the pipeline Chusovaya-Berezniki-Solikamsk in the Perm region.

Metafrax plans in 2012 to build and commission a new installation of micronized methenamine and pentaerythritol with an average particle size of about 40-60 microns. Feedstock for micronized products will include methenamine and pentaerythritol, manufactured at the company. It should be noted that these products have not been produced previously in Russia.

Shredded methenamine is used in the tyre industry and the production of Bakelite plastics. These products are intended to be exported to European countries. Micronized pentaerythritol is used in production of flame retardants and fire-resistant paint. Production is planned to sell in the domestic market and abroad. Regarding



the project Metafrax is in talks with the German company Netzsch over equipment purchases estimated at a cost of around 50 million roubles.

#### **Azot commissioning melamine plant**

Azot at Nevinomyssk has started commissioning its new melamine plant which has a capacity of 50,000 tpa plant, and the first products are expected to be shipped in the next month or two. Russia imports about 35,000 tpa of melamine at present and thus the new plant will in theory at least cover the full needs of Russia and the CIS. The volume of investment by Evrokhim in this project will amount to about 10.5 billion roubles. The latest technology has been used for the project leading to the production of low-pressure melamine.

The holding company Evrokhim also plans to invest around \$1 billion in Azot at Nevinomyssk to build a fertiliser complex including ammonia at 700,000 tpa, in addition to derivative plants. Ammonia from the new complex will be shipped to Belorechensk Minudobrenya, which is also part of Evrokhim. This project could take four to five years to construct.

<b>Russian Urea Production (unit-kilo tons)</b>		
<b>Producer</b>	<b>Jan-Mar 12</b>	<b>Jan-Mar 11</b>
Akron	120.7	124.0
Azot Kemerovo	132.9	128.4
Azot Novomoskovsk	131.8	148.2
Azot (SIBUR)	179.4	174.3
Kuibyshevazot	335.6	363.6
Minudobrenya	55.3	47.3
Azot Nevinomyssk	89.0	90.2
Azot Cherepovets	173.5	169.2
Gazprom N Salavat	148.9	160.2
Togliattiazot	111.3	183.4
Total	1478.4	1588.8

#### **Russian urea project news**

Akron started its new 335,000 tpa urea plant at the start of April at Novgorod to add to the existing facilities of 450,000 tpa. The rise in capacity to 785,000 tpa will not only increase sales of commercial urea, but also expand production capacity of urea-ammonia up to 1 million tpa and increase the production of urea-formaldehyde resins. The company started the project Urea-1000 in 2008, and a full-scale construction of a new urea unit was started in 2010. The total investment in the project totalled \$95 million.

The company plans to build a new ammonia plant with a capacity of 700,000 tpa which should be completed in 2015 and could require \$400 million. Akron is also focused on the reconstruction of the methanol plant to increase capacity to 600 tons per day. Gas prices have been increasing in the past two years as part of

Gazprom's transition to the regulation of wholesale prices.

Gazprom Neftekhim Salavat has completed construction of a urea granulation and received an experimental batch of about 60 tons in February. In early March, granulated urea will be produced on experimental-industrial run. In total the project has cost 1.2 billion roubles. Granular urea is superior in its characteristics being several times stronger, less cake and easy to transport over long distances. In the long-term plans of the company include the export of granulated urea. A license for the new production unit was provided Toyo Engineering Corp.

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### **Organic chemicals & plastics**

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#### **Gazprom Neftekhim Salavat-acrylic acid project to start 2015**

Gazprom Neftekhim Salavat intends to start production at its new plant under construction for acrylic acid and acrylates by 2015. The new complex will include the production of crude acrylic acid capacity of 80,000 tpa, butyl acrylate with a capacity of 80,000 tpa and glacial acrylic acid capacity of 35,000 tpa. In October 2011, Gazprom Neftekhim Salavat signed an agreement with Mitsubishi Heavy Industries, including the support of Mitsubishi Chemical Corporation and the Japanese trading house Sojitz Corporation, for a license and basic engineering of acrylic acid and acrylate complex.

Raw materials for the new complex include propylene, styrene and butanol, all of which are produced at Salavat. Gazprom Neftekhim Salavat plans to develop the recycling of acrylic acid and acrylates in two main directions including water-dispersion paints and superabsorbents. Currently, the only producer in Russia of acrylic monomers is Akriat at Dzerzhinsk, now part of SIBUR, which has a capacity of 35,000 tpa of acrylates. The project to construct an acrylic acid plant will be included in the Monomer division, one of four included in the structure of Gazprom Neftekhim Salavat.

The general contractor performing construction is Salavatneftehimremstroy, with part of the equipment being supplied by Salavatneftemash. The project is scheduled to be completed by 2015, after which further processing will be developed such as consumer market paints and personal care products.

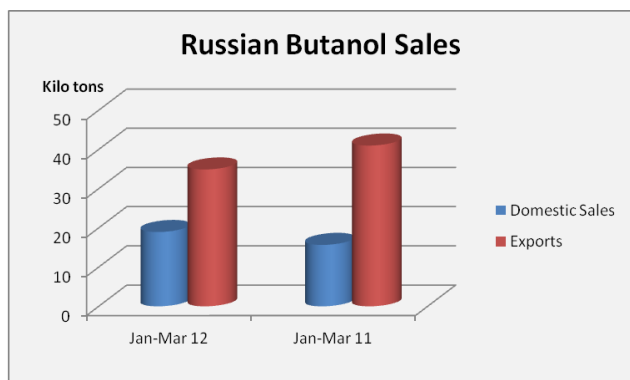
### SIBUR-Neftekhim and Aktilat to merge

The FAS has granted SIBUR-Neftekhim the right to merge with Aktilat. The main raw material for the Aktilat plant at Dzerzhinsk is propylene which is already supplied from SIBUR's Kstovo petrochemical cracker by pipeline. Having bought Aktilat in the latter part of 2011, SIBUR sees a merger of the acrylic acid and ester facilities together with SIBUR's petrochemical facilities in the Nizhniy Novgorod region.

The capacities for Aktilat include 25,000 tpa of acrylic acid and 36,000 tpa of heavy esters (butyl acrylate) and 10,000 tpa of light esters (methyl and ethyl acrylate). The production sites of Aktilat and SIBUR-Neftekhim are located in Eastern Industrial Zone of Dzerzhinsk and are two kilometres apart. Since July 2010, Aktilat has operated on a processing scheme with SIBUR. Its main activity was the processing of raw material (propylene, alcohols, acrylic acid) acrylic acid and esters.

### SNF-polyacrilamide project

French company SNF is maintaining its plans for the construction of a polyacrilamide unit at the Saratovorgsintez site. Following the meeting between the government of Saratov region and SNF, an agreement was signed over cooperation on the project which was initially announced in 2011 through its subsidiary SNF Baltreagent. The project cost is estimated at €50 million and the launch of the first production line is scheduled for late 2014 or early 2015. The capacity is being designed at 10,000 tpa.



### Russian butanols, Q1 2012

Domestic sales of butanols totalled 18,950 tons in the first quarter in 2012, 21% higher than for the same period in 2011. Normal butanols comprised 90% of sales inside Russia and isobutanols 10%. Major consumers include the Dmitrievsky chemical plant which uses butanols for the production of butyl acetate, and Aktilat at Dzerzhinsk which uses butanols in the production of butyl acrylate.

The main supplier of butanols to the domestic market is Gazprom Neftekhim Salavat, having accounted for 58% of deliveries in the first quarter. Gazprom Neftekhim

Salavat stopped production of DOP on 17 April to conduct routine maintenance. Production was originally scheduled to restart on 10 May, but the outage has since been extended up to 14-15 May. Gazprom Neftekhim

### Russian Chemical Imports (unit-kilo tons)

Product	Jan-Mar 12	Jan-Mar 11
ABS	7.2	6.4
Acetic Acid	5.4	2.5
Benzene	10.8	4.6
BOPE	18.0	22.2
BOPP	7.9	7.9
Caustic Soda Liquid	9.6	8.2
Caustic Soda Solid	5.4	12.0
HDPE	79.1	70.5
LDPE	22.4	24.1
LLDPE	30.6	25.6
PET	38.9	74.4
Polypropylene	41.0	54.5
Polystyrene	29.3	30.5
PTA	66.1	10.2
PVC	101.8	113.8
PVC films	17.1	16.7
Soda Ash	71.8	87.0
Titanium Dioxide	16.4	22.5

Salavat accounted for 49% of exports in the first quarter, SIBUR-Khimprom 27%, Angarsk Petrochemical 23% and Azot at Nevinomyssk 1%. Normal butanols accounted for 51% of sales abroad and isobutanol 49%.

### Russian DOP & PA markets, Q1 2012

The seasonal increase in demand for plasticizers caused the resumption of supplies of imported DOP on the Russian market in March. In the first quarter, however, DOP imports were down 17 times against the same period last year to 176 tons. A significant decrease in imports has taken place due to a decrease in consumption of DOP plasticizers in Russia. In May last year, one of the largest consumers of DOP in Russia Tarkett ceased using DOP in production and increased recycling of DINP.

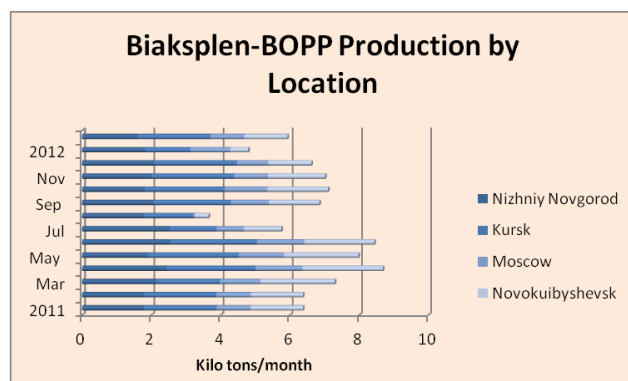
Tarkett's cessation of DOP usage has also affected domestic production which dropped 28% in the first quarter in 2012 against 2011, and totalled 15,000 tons. A seasonal uplift occurred in March when DOP sales rose 2.5 times over February to 7,200 tons, but the general trend has been downwards. The increase in production was due to a seasonal increase in demand for plasticizers.

Tarkett increased purchases of plasticizers, a combination of DINP and DOP, by 10% over the first quarter in 2011 to 12,800 tons. Production of DOP by Gazprom Neftekhim Salavat dropped by 76% to 2,200 tons due to changing demand patterns.

Russian phthalic anhydride production totalled 26,595 tons in the first quarter this year, with Kamteks-Khimprom producing 25,600 tons. Exports of phthalic anhydride from Russia amounted to 17,270 tons in the first quarter in 2012, 23% higher than in the same period last year. The main destinations of export included China (46% of gross exports), Turkey (16%), India (13%), Poland (11%) and Ukraine (6%). Russia exported 5,930 tons of phthalic anhydride in March, 10% higher than in February.

Russian Market for Styrene-Acrylic Dispersion (unit-kilo tons)		
	2011	2010
Production	23.8	20.6
Export	0.04	0.3
Import	50.4	37.5
<b>Market Balance</b>	<b>74.0</b>	<b>57.7</b>
% of Imports in consumption	68%	65%

the strongest sector. The volume of imports of styrene-acrylic dispersions into Russia totalled 50,400 tons which is 34% more than in 2010. Its share in domestic consumption increased from 65% in 2010 to 68% in 2011. The main sources of imports in 2011 came from Germany (35%), Finland (20%), France (10%), Turkey (8%), Sweden (7%) and Netherlands (5%).



group. Start-up is scheduled for the fourth quarter of 2013. At group level this will raise total capacity to 136,500 tpa against 106,000 tpa at present.

SIBUR has completed a deal to acquire the second 50% of chartered capital in the Biaksplen group. SIBUR bought into Biaksplen's chartered capital initially in 2009, negotiating a deal to purchase 50% of the company, and has therefore become the single owner of the film producer. In 2011, the aggregate production of the Biaksplen Group totalled 82,000 tons. The Biaksplen Group companies acquired more than 65,000 tons of polypropylene from SIBUR.

## Chlorine

### Soda and Kaustik to cooperate on derivatives

Soda and Kaustik at Sterlitamak, both part of the Bashkchim Group, are planning projects for hydrogen peroxide and sodium percarbonate. The main advantage of creating facilities for the production of hydrogen peroxide and sodium percarbonate at Sterlitamak is the availability of raw materials needed to produce these products.

Kaustik produces hydrogen, caustic soda, whilst Soda produces soda ash which would minimise the cost of commercial products. In addition, these companies have developed an engineering infrastructure and the free territory to accommodate the new facilities.

### Khimprom at Volgograd faces energy problems

Energy company LUKoil-Volgogradenergo has suspended the supply heat to Khimprom (Volgograd) due to unpaid debts, affecting the chlorine electrolysis line. Debts are estimated at more than 360 million roubles. Due to equipment downtime, the possibility exists for damages which may require huge funds to rectify. Khimprom only started producing perchloroethylene on 20 March, and has been forced to stop production until heat is resumed to the chlorine plant.

**Galopolymer-De Nora**

Galopolymer has contracted the Italian engineering company Gruppo De Nora for the upgrade of the conversion of the mercury electrolysis plant at Kirovo-Chipetsky. This investment forms a temporary stage prior to the company's main project for a new membrane plant which will entail an expansion of chlorine capacity from 90,000 tpa to 200,000 tpa. The introduction of a system of mercury electrolysis by De Nora will reduce the loss of mercury and the volume of power consumption per unit of output during the transition period to membrane electrolysis.

**Ukraine****Ukrainian Chemical Production (unit-kilo tons)**

Product	Jan-Mar 12	Jan-Mar 11
Acetic Acid	33.2	43.6
Ammonia	1170.4	1326.6
Benzene (-95%)	53.2	46.4
Benzene (+95%)	35.6	39.8
Caprolactam	17.0	16.5
Caustic Soda	40.1	34.8
Ethylene	52.0	48.9
Formaldehyde	8.9	6.3
Methanol	46.3	39.0
Polyethylene	27.5	27.3
Polypropylene	20.8	26.8
Polystyrene	0.0	4.2
Polyvinyl Acetate	1.2	0.8
PVC	71.4	0.0
Propylene (merchant)	21.3	23.1
Soda Ash	153.0	192.2
Titanium Dioxide	37.7	38.1
Toluene	1.4	1.5

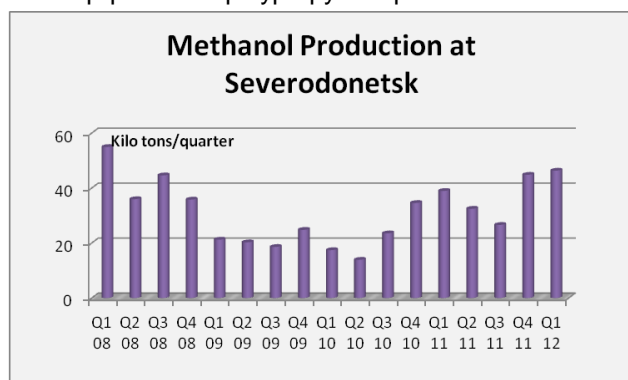
**Ukrainian polypropylene market, Q1 2012**

TNK-BP is considering the transfer of polypropylene plant from Lisichansk refinery to Yaroslavnefteorgsintez (YANOS), which TNK-BP owns together with Gazprom Neft. Linik stopped production of polypropylene on 16 April due to a lack of propane-propylene fractions and does not intend to restart until 20 May. Imports of polypropylene totalled 3,240 tons in February which was 26% less than January. The monthly demand by Linik for propane-propylene fractions is around 2,400 tons, but with the refinery closed and the shortage of surplus fractions in Russia the polypropylene plant cannot operate.

Polypropylene production in Ukraine totalled 20,800 tons in the first quarter in 2012, against 26,800 tons in the same period in 2011. Feedstock problems caused the lower production volumes, a position that seems unlikely to change in the near future. TNK-BP announced the end of March that due to loss-making at the Lisichansk refinery the company plans to suspend the processing of crude oil. This could lead to a mothballing of the site or the possible sale of the refinery, and even relocation of the polypropylene plant.

Imports of polypropylene are very expensive at present due to the tight international market and subsequently some Ukrainian converters are delaying purchases. The impact of this event in the Ukrainian market, which is consumed on a monthly basis 7-8,000 tons of polypropylene, is clear. The polypropylene market traditionally picks up in April to June and the closure of the Linik plant is thus a major inconvenience for converters who are now forced to import. The raw material problems for Linik, which look set to drive up prices for polypropylene produced at Lisichansk, are expected to slow down consumption this year. In

March, the sale price of polypropylene from Lisichansk rose by 20% over February, whilst prices of imported product rose even more.

**Ukrainian methanol production**

Azot produced 46,300 tons of methanol in the first quarter in 2012, 11% higher than the same period in 2011. Production remains lower than in the first quarter in 2008, but has improved particularly since Azot entered the DF Group. The main application area for methanol in Ukraine is the gas industry which accounted for 75% of consumption. The sector for formaldehyde and its derivatives accounted for about 23% of gross

consumption. Ukrainian methanol prices rose in March by around 10% due to higher costs.

**Ukrainian phthalic anhydride production restarts**

The sole Ukrainian producer of phthalic anhydride Lizinvest resumed production of phthalic anhydride in March, after being idle since June 2011. Lizinvest produced 966 tons of phthalic anhydride in March, helped by improved orthoxylene supplies which the company buys mainly in Russia. Imports of phthalic anhydride amounted to 660 tons in March, 54% down on March 2011 although higher than in February. The largest consumers in March included a trading company, Impress (accounting for 32% of the gross imports), DOP producer Polikem (30%), a



manufacturer of semi-finished alkyd paint producer Impulse (27%). Imports into Ukraine were divided between Kamteks-Khimprom (62%) and Lakokraska (38%).

<b>Ukrainian Benzene Production +95% (unit-kilo tons)</b>		
<b>Producer</b>	<b>Jan-Mar 12</b>	<b>Jan-Mar 11</b>
Karpatneftekhim	11.9	9.3
Zaporozhkoks	9.4	9.3
Yasinovsky Coke	8.9	9.1
Makeevsky Coke t	3.5	3.9
Ukrtatnafta	1.9	8.2
Total	35.6	39.8

#### **Ukrainian benzene production & imports**

Benzene production increased in the first quarter in Ukraine due to higher output at Karpatneftekhim, although crude benzene dropped slightly. Exports opportunities to Russia have arisen this year due to the Stavrolen outage. One of the smaller producers Zarya at Rubezhnoye increased sales by 30% over February to 533 tons to Azot at Severodonetsk for the restart of adipic acid production. Ukrtatnafta from Kremenchug has not supplied any benzene in recent months to the domestic market due to the lack of demand from Rivneazot for adipic acid production.

Azot at Cherkassy reduced benzene imports in March 4.3 times against February to 728 tons, due in part to purchases of domestic product. At the same time, Rivneazot increased imports by 1.9 times to 2,150 tons for adipic acid production. Imports of benzene totalled 8,740 tons in the first quarter in 2012, 23% down on the same period last year. The main reason for reducing the imports has been due to the absence of Azot at Severodonetsk from the adipic acid market.

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### **Central Asia**

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#### **Atyrau gas-chemical project**

The construction of the polypropylene plant at Atyrau should begin this year, together with the polyethylene plant as part of the first phase of gas-chemical project costing \$2.002 billion. A loan of \$1.380 billion was provided by the Export-Import Bank of China, forming a large part of the financing. The first phase of the project envisages construction of a propane hydrogenation capacity of 550,000 tpa of propylene polypropylene production unit with a capacity of 500,000 tpa. The second phase is expected to start next year.

Kazakhstan in 2010 began the foundations for construction of gas-chemical complex to produce ethylene, propylene and benzene near Atyrau. Its cost is estimated at between \$5.3 billion to \$7.5 billion. The complex is centred on an ethylene capacity of 1.2 million tpa. Logistics are so important with this project that the rail and shipping routes to market need to be identified and established much earlier than in other projects.

Stockholders of the consortium Kazakhstan Petrochemical Industries (KPI) include SAT & Company with a share of 49% and KMG Exploration and Production with 51%. The first phase of the complex worth about \$2 billion in 2015 to being built by Sinopec Engineering, which will give opportunity to produce 500,000 tpa of propylene.

#### **Southern Kazakh chemical sector**

In southern Kazakhstan efforts are to be undertaken to develop a chemical cluster by 2014. A total of three projects on which construction is planned in the industrial area of Shymkent: These include the production of phosphorus trichloride, the herbicide glyphosate, used in agriculture to control weeds and the production of caustic soda and chlorine.

**Relevant Currencies**

Czech crown. Kc. \$1= 18.75. €1= 24.76: Hungarian Forint. Ft. \$1= 216.26. €1= 286.73: Polish zloty. zl. \$1=3.14. €1=4.17: Bulgarian leva: \$1= 1.5956. €1= 1.9596: Romanian Lei. \$1= 3.4151. €1= 4.187: Croatian Kuna HRK. \$1= 5.67. €1= 7.52: Ukrainian hryvnia. \$1= 7.97. €1= 10.57: Rus rouble. \$1=29.31. €1= 38.95

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