

# CIREC

## MONTHLY NEWS

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

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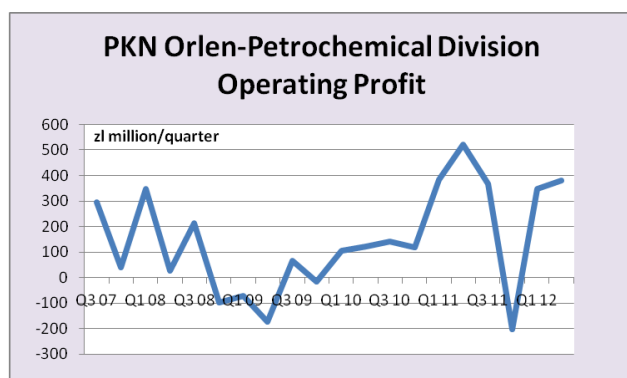
Issue 261, 15 August 2012

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## CENTRAL & SOUTH EAST EUROPE

### Petrochemicals



#### PKN Orlen, Jan-Jun 2012

PKN Orlen's petrochemical division recorded an operating profit of zł 379 million in the second quarter of 2012, which was zł 142 million lower than the same period in 2011. The fall was due mainly to the negative effect of changes in prices of petrochemical products and the impact on inventory valuation. At the same time lower model margins were compensated by beneficial changes in exchange rates. Overall, the results from the second quarter reflected a marked improvement against the second half of last year.

In terms of individual products, PTA sales have stood out with the plant having only started in the middle of last year together with a new paraxylene plant. In the second half of 2011, these two units ran at close to full capacity which has continued into 2012. A 3% year-on-year decline in the petrochemical division's sales was attributed by Orlen to the fact that the market was anticipating a price reduction on the back of depressed oil prices. In consequence of lower sales, the operating profit of Orlen's petrochemical division was zł 379 million, down by zł 142 million compared to the same period in 2011.

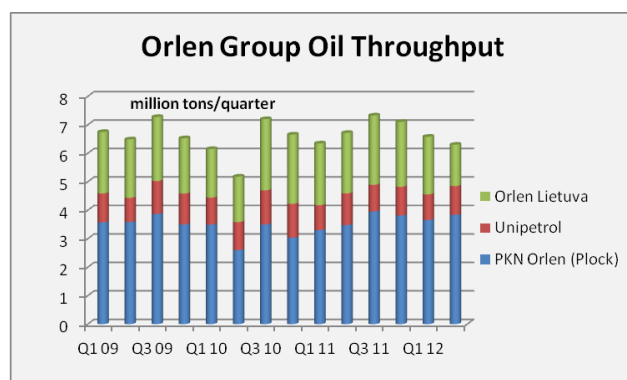
#### PKN Orlen Product Group Sales (unit-kilo tons)

| Product     | Jan-Jun 12 | Jan-Jun 11 |
|-------------|------------|------------|
| Monomers    | 251        | 251        |
| Polymers    | 412        | 425        |
| Aromatics   | 180        | 190        |
| Fertilisers | 592        | 637        |
| Plastics    | 183        | 199        |
| PTA         | 259        | 83         |

Aside fertilisers and PTA, chemical production for the Orlen group achieved similar volumes in the first half of 2012 against the same period last year. The success of the PTA and paraxylene plants that were started last year at Wloclawek and Plock, respectively has stimulated interest by PKN Orlen in expanding its petrochemical division. However, the group is yet to identify a product line where any funds would be invested. There is some interest in expanding the capacity and modernising the polyethylene facilities at Litvinov, but this is yet to be confirmed.

The most significant investments undertaken in the second quarter at Plock comprised the modernisation of pneumatics and automation in the phenol division, work on the ethylene oxide II unit, whilst at Litvinov a cracker furnace was reconstructed.

The key factors affecting PKN Orlen's second quarter performance this year included a twofold rise in the model refining margin, the weakening of the zloty against the US dollar, and an 8% year-on-year drop in the refining division's sales on the back of the maintenance shutdown at Orlen Lietuva. As a consequence, the group posted a zł 1.2 billion operating profit, up by zł 463 million on the same quarter in 2011. Revenues amounted to zł 28 billion, up by 9%.



The one-month maintenance shutdown at the Mazeikiu refinery in Lithuania and the winding up of production at the inefficient Paramo refinery in the Czech Republic significantly affected Orlen's refining division sales, which were down by 8% relative to Q2 2011. Orlen Lietuva reduced refining from 2.123 million tons in the second quarter last year to 1.454 million tons in the same period in 2012.

The refining division's result was also driven by oil price fluctuations (inventory valuation was higher by zł 955 million). The lower refining volume had a major influence on second quarter results, and as a

result the division's consolidated EBIT was negative at zł 66 million.

**Unipetrol's Petrochemical Sales  
(unit-kilo tons)**

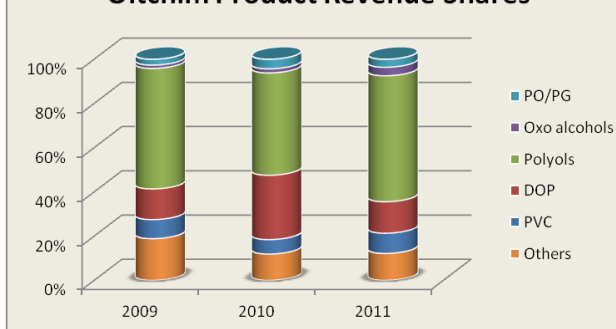
| Product   | Jan-Jun 12 | Jan-Jun 11 |
|-----------|------------|------------|
| Ethylene  | 39.0       | 44.0       |
| Propylene | 12.0       | 11.0       |
| Benzene   | 51.0       | 58.0       |
| Urea      | 48.0       | 52.0       |
| Ammonia   | 30.0       | 36.0       |
| Butadiene | 17.0       | 14.0       |
| HDPE      | 72.0       | 68.0       |
| PP        | 61.0       | 58.0       |
| C4        | 19.0       | 20.0       |

**Unipetrol, Jan-Jun 2012**

Unipetrol's results in the second quarter were helped by higher refinery and petrochemical margins. Compared to the first quarter, Unipetrol increased revenues, mainly due to higher sales volumes of fuels and other refinery products. However, sales volumes of petrochemical products were affected by low market demand. In the refinery division the volume of processed crude oil increased by 12% from 906,000 tons in the first quarter to 1,013,000 tons in the second quarter.

The refinery division recorded an EBIT of Kc 359 million in the second quarter, with results affected by inventory revaluation and lower crude prices. The EBIT in Unipetrol's petrochemical division amounted to Kc 80 million in the second quarter. Group sales of petrochemical products declined by 7%

against the first quarter to 411,000 tons, mainly due to weak markets. The main factors that influenced the petrochemical division in the second quarter 2012 were significantly higher model olefin margins. Olefin model margins rose to €400/ton against €274/ton in the previous quarter, which is the highest figure since 2008.

**Chemicals****Oltchim Product Revenue Shares****Oltchim-enters special administration**

The privatisation procedure for Oltchim is to begin with an offer envelope auction on 14 September, in which any interested investor can participate. In the meantime, the government has decided to enter Oltchim into a special administration that will manage the company's affairs. The plant has accrued debts of €580 million, and wages have been subsequently been affected. The Ministry of Economy, which owns a 54.8% majority stake in Oltchim, wants to privatise the company bundled with Arpechim but this would depend on OMV Petrom. Several parties remain interested, but aside PCC none of the parties are well known.

**Oltchim Raw Material Purchases  
2011**

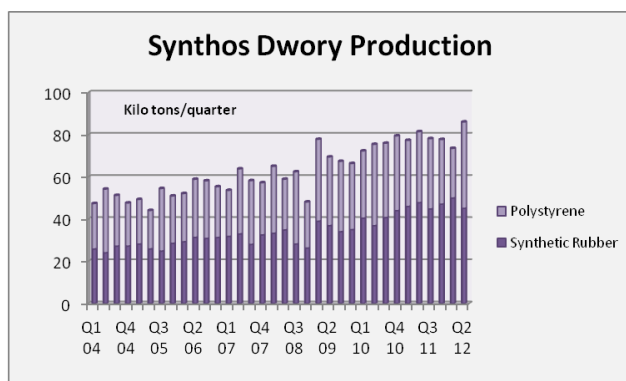
Oltchim concluded a net loss of 82.8 million lei in the first quarter this year, 30 times higher than reported in the same period in 2011 (2.68 million lei). The mandate of the special administrator appointed to Oltchim will include identifying unused assets that can be sold or transferred.

The company faces extreme difficulties in securing raw materials, partly due to inactivity of the Pitesti cracker and partly due to a lack of working capital. Propylene supply is currently purchased from either Rompetrol or imported sources. Polyols form the major source of revenue at present, accounting for nearly half of

Oltchim's income in 2011 and this is a product area which the company wishes to expand. Should the potential buyer wish to bundle the assets of Oltchim together with Arpechim, it would have to negotiate directly with OMV Petrom which owns the petrochemical facilities.

**Synthos scraps Pulawy bid, considering other options**

Synthos has now dropped its bid for ZA Pulawy, conceding defeat in the face of a rival bid from the Tarnow Group. In June, Synthos launched its zł 1.96-billion (\$597 million) offer to buy ZA Pulawy, but the Treasury Ministry (which oversees state assets) wants instead to consolidate the sector by merging ZA Pulawy with bigger state-controlled rival ZA Tarnow. ZA Tarnow, itself a target of an unsolicited bid from Russian fertiliser group Akron, made a counter offer for Pulawy in July, with Tarnow shareholders also approving a share increase. Synthos had planned to buy at least 80% of ZA Pulawy, offering zł 102.5 per share in the first 12 days of the bid period that started on 9 July. Having accepted defeat Synthos is now considering other options on how to expand into other areas, and is considering investment outside of its existing facilities in Poland and the Czech Republic.



Over the past few years Synthos has gradually expanded its production of synthetic rubber and polystyrene at its Oswiecim site. In 2015 Synthos Dwory aims to start a new production line with a capacity of about 90,000 tpa of SSBR rubber, licensed by Goodyear. Aside this development the group and is keen to diversify from its core areas of rubber and polystyrene.

#### Polish gov't supports Tarnow-Pulawy merger talks

It has been observed by the Polish government that should ZA Tarnow and ZA Pulawy complete their

consolidation the group has a chance to become one of the largest fertiliser producers in Europe. The consolidation of such a wide range of assets in both the Tarnow and Pulawy groups could take much longer to undertake than the acquisitions made by those companies themselves, such as ZAK, ZCh Police and Phosphor at Gdansk. Although the group would be heavily oriented towards fertilisers there are a number of other combined strengths including caprolactam, oxo alcohols and melamine. Complications appear in the execution of the merger plan; the respective unions are concerned over what it could mean for jobs whilst management personnel in both the Tarnow and Pulawy groups are keen to maintain their positions.

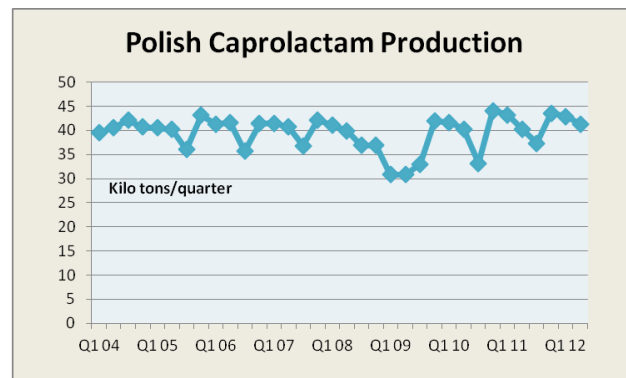
The Treasury is not keen on the possibility of Russian ownership of its chemical assets, and by combining the Tarnow and Pulawy groups to some extent negates that possibility at least for the medium term. However, Akron has sealed a 12% stake in ZA Tarnow which means that Russian presence is already established in a limited form. Moreover, as tariffs on Russian and Belarussian fertilisers into the EU area have recently had duties removed it puts extra pressure on Polish fertiliser producers as they have to pay more for gas.

Russian producers of fertilisers pay at least five times less than their Polish counterparts, and thus when prices of fertilisers drop the impact could be heavily felt in Poland. Poland buys gas at the highest price in Europe at more than \$550 per thousand cubic metres, which is about \$100 more than Germany. It is significantly more than the Russian companies are paying (see issue no 260 for net gas prices paid by Russian chemical companies for 2011). Thus, Polish fertiliser producers could face extreme pressure to resist further attempts by Russian investors, and possibly the only way to avert this prospect is by diversifying into added value product areas which reduce the significance of gas costs and other raw materials.

#### ZAK-PGNIg power project

The Polish anti-monopoly office has approved a JV between PGNIg Termika (80%) and ZAK (20%) for a new power plant to be constructed at Kedzierzyn. ZAK will now negotiate with PGNIg for gas supplies and prices, as the latter will determine whether the project is viable. The new plant is intended to produce electricity and heat in a newly built block in the ZAK gas-steam. ZAK has reserved zł 3 million to prepare a feasibility study for investments for a gas block-power plant with a capacity of 170 to 200 MW. The two different capacities depend on the type of turbines. PGNIg is able to supply gas under long-term agreements under the proposed JV.

The new power plant could form a major part of ZAK's strategy in the next few years. The capacity of the power plant should cover the needs of the chemical plant and also the local area. The main issue is the availability of gas which at current delivery rates is just enough to run the unit with a capacity of 170 MW. If agreement is reached on the supply of coke oven gas from a nearby coking plant at Zdzeszowice this would allow a higher capacity to be designed. The new facility is intended to be not only cheaper to run than the current power station, but the impact on the environment will be significantly less harmful.



#### ZA Tarnow faces benzene prices pressures

ZA Tarnow is facing weak margins on caprolactam and polyamide in current market conditions. Last year's high prices of caprolactam, when the price reached up to \$3,500/ton, were not normal and the prospects for profits in the third quarter for 2012 do not appear promising. Moreover shutdowns at Kedzierzyn, involving fertilisers and oxo alcohols in July/August will

affect results. In view of the consolidation activity taking place ZA Tarnow continues to evaluate whether to build a



new plant for caprolactam in Poland rather than pursue the Asian project that it has been assessing with ZA Pulawy. Currently, the plant at Tarnow produces 102,000 tpa and ZA Tarnow is considering constructing another 50,000 tpa of capacity. In recent years caprolactam production has remained broadly within the same range and both Polish producers wish to expand volumes for export and domestic demand.

**Polish Chemical Production  
(unit-kilo tons)**

| <b>Product</b>      | <b>Jan-Jun 12</b> | <b>Jan-Jun 11</b> |
|---------------------|-------------------|-------------------|
| Caustic Soda Liquid | 154.9             | 121.1             |
| Caustic Soda Solid  | 32.1              | 21.6              |
| Soda Ash            | 544.8             | 405.3             |
| Ethylene            | 259.2             | 229.6             |
| Propylene           | 176.2             | 152.1             |
| Butadiene           | 31.3              | 26.2              |
| Toluene             | 8.9               | 46.9              |
| Phenol              | 21.8              | 17.6              |
| Caprolactam         | 84.2              | 72.6              |
| Acetic Acid         | 4.5               | 4.5               |
| Polyethylene        | 180.5             | 156.3             |
| Polystyrene         | 64.7              | 53.5              |
| PVC                 | 146.2             | 119.2             |
| Polypropylene       | 131.6             | 99.8              |
| Synthetic Rubber    | 95.1              | 77.9              |
| Ammonia (Gaseous)   | 667.0             | 537.9             |
| Ammonia (Liquid)    | 691.5             | 488.0             |
| Pesticides          | 12.2              | 11.2              |
| Nitric Acid         | 1178.0            | 856.9             |

**Ciech-Zachem**

Ciech has reiterated its intention to sell Zachem after restructuring of the backbone of the group. Ciech core companies now include Govora, Soda Polska, Soda Deutschland, and Organika Sarzyna. The rest of the group assets is to be offered for sale, for which Ciech is aiming to receive in the range of zł 200-250 million.

Ciech wants to provide a recovery plan for Zachem, but at the same time wants to sell the company which itself is not proving so straightforward. The local Bydgoszcz administration and unions are concerned over the implications for the sale of the plant in relation to job security.

**Via Chem Slovakia-NCHZ**

Via Chem Slovakia finally took over Novacke chemické závody (NCHZ) from the start of August, with 1,400 employees transferred to the new company which could be renamed to Fortischem. There are no plans in the short term to make major personnel changes, or changes in production. However, bankruptcy proceedings will continue and the company will be required to fulfil the obligations arising from the binding legal regulations. The Antimonopoly Office approved the sale of to the Via Chem Group through its subsidiary Via Chem Slovakia, on the basis of contracts concluded in mid-January this year. The decision was finalised on 20 July after the Antimonopoly Office examined whether there would be

complications in markets for hydrochloric acid and caustic soda.

Via Chem Slovakia acquired NCHZ for €2.2 million. Its holding company Via Chem Group owns Spolchemie at Usti nad Labem. NCHZ is a supplier of chemical raw materials for a wide range of industries, and has operated under a status of bankruptcy for more than two and a half years. The core business is manufacturing and selling products based on chlorine production and processing, the production of calcium carbide and technical gases, and the production of PVC and its processing products. The company, which currently employs about 1,400 employees, exports its products to over 50 countries worldwide. Revenues last year reached about €180 million.

**Spolchemie-membrane investment**

Spolchemie has confirmed that it plans to invest around Kc 1.6 billion invested in new equipment for the production of chlorine at Usti nad Labem. The current technology for the production of chlorine, which is based on mercury, can only be used until 2015 according to agreements made by Spolchemie. The company has announced a tender for the supply of new technologies, which it hopes to select in the next few weeks. The introduction of membrane electrolysis equipment for the production of chlorine will comply with environmental requirements and pledges to reduce industrial pollution.

Construction of the new plant could start in October this year, if the tender proves successful. The company has also invested Kc 130 million in a new power substation, as the new plant will be energy intensive. This new substation serves to supply the centre of Usti nad Labem. Spolchemie supplies resins to the automotive and aerospace industries, in addition the manufacture of paints and construction. Last year, Spolchemie achieved record sales of Kc 5.1 billion and its profit was Kc 186 million. For 2012, results are expected to be lower due to weaker demand.

**PKN Orlen-power station**

PKN Orlen aims to pick a general contractor by the end of the third quarter this year for construction of a gas-fired power plant with a capacity of up to 500 megawatts. The power plant is to be located at Wloclawek. The value of the turn-key investment is estimated at around zł 1.5 billion and the plant is being targeted to produce power for sale and to supply Anwil. Another power plant is under review at Plock.

## RUSSIA

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

| Product            | Jan-Jun 12 | Jan-Jun 11 |
|--------------------|------------|------------|
| Acetic Acid        | 77.5       | 71.9       |
| Ammonia            | 6,983.0    | 7,331.8    |
| Benzene            | 559.0      | 576.7      |
| Butanols           | 135.6      | 110.3      |
| C Black            | 364.8      | 358.9      |
| Caustic Soda       | 525.4      | 459.4      |
| Ethylene           | 1,142.0    | 1,252.1    |
| Methanol           | 1,703.9    | 1,516.5    |
| PET                | 231.6      | 162.3      |
| Phenol             | 137.9      | 132.0      |
| Phthalic Anhydride | 43.9       | 54.4       |
| Polyethylene       | 692.3      | 806.7      |
| Polypropylene      | 320.8      | 341.9      |
| Polystyrene        | 170.4      | 158.6      |
| Propylene          | 629.6      | 709.5      |
| PVC                | 322.9      | 264.4      |
| Soda Ash           | 1,430.3    | 1,380.1    |
| Styrene            | 266.5      | 251.5      |
| Synthetic Rubber   | 639.2      | 628.6      |
| Urea               | 2,941.7    | 3,126.7    |

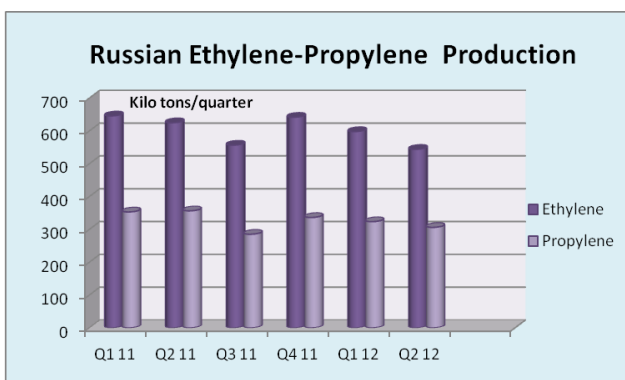
### Russian chemical production, Jan-Jun 2012

The index of Russian chemical production in June 2012 was up 2.3% over June 2011, whilst overall output for the first half of 2012 was 1.1% higher. Russian production of polyethylene dropped 13.6% in the first six months in 2012, down to 752,000 tons, due mainly to the lack of operation at Budyennovsk. Production of polypropylene fell less by 7.8% to 335,900 tons, but polystyrene production rose by 9.2% to 178,000 tons and PVC rose by 15% to 356,600 tons. In total, plastics production in primary forms dropped by 2.3% to 2,625 million tons in the period January-June 2012. In this timeframe, the production of synthetic rubber increased by 1% to 741,000 tons.

In other product areas the production of polyesters, polycarbonates, alkyd and epoxy resins in Russia declined by 4.4% against 2011 down to 256,700 tons, and polyamides dropped by 21.8% to 59,800 tons. This was due mainly to extended maintenance by Kuibyshevazot. Production of amino-formaldehyde resins increased by 3.8% to 448,100 tons.

Ethylene production fell by 9.5% in the first six months to 1.142 million tons, propylene by 12.7% to 629.600 tons and xylenes fell by 8.3% to 253,400 tons. Production of benzene totalled 547,500 tons, the same as in 2011, whilst styrene rose 6% to 266,500 tons and phenol to 137,700 tons. Production of artificial and synthetic fibres fell by almost 7% compared to January-June 2011. In particular, the production of synthetic fibres fell by 9% to 58,600 tons, whilst production of synthetic fibres and filaments grew by 5.8% to 10,500 tons. The manufacture of rubber products in January-June 2012 decreased by 2% over the same period in 2011.

### Feedstocks & Petrochemical Projects



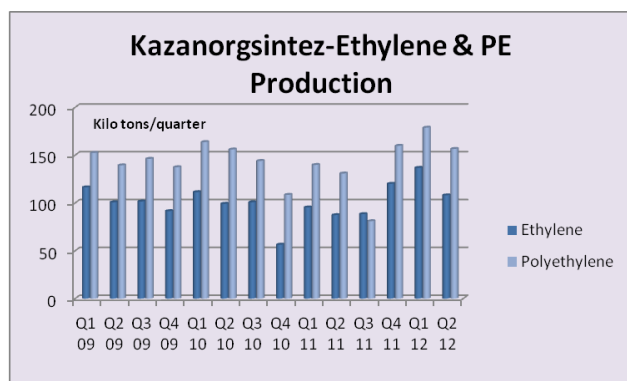
are available on the Statistical Database at [www.cirec.net](http://www.cirec.net)

### Russian olefin supply, Jan-Jun 2012

Russian ethylene production totalled 1.142 million tons in the first six months in 2012 which is 9% down on the same period last year. The Stavrolen outage at Budyennovsk has been compensated to some extent by additional production at Kazanorgsintez and SIBUR-Khimprom, but not enough to avoid an overall decline. Planned shutdowns in June also affected overall volumes. Both SIBUR at Kstovo and SANORS at Novokuibyshevsk closed for maintenance in June, reducing production to 1,900 tons and 2,000 tons respectively. Full quarterly results by individual producer for ethylene and other mainstream chemicals

Propylene production has also been affected by the absence of a key player and production was subsequently down in the first half of the year. The market has been helped to a large degree by the sale of propylene by LUKoil-NNOS at its Kstovo refinery, which has been running since the end of 2010. This plant sold 72,000 tons of propylene to the merchant market in Russia in the period January to July this year.

Stavrolen is set to launch its petrochemical cracker and related plants in September after being idle since December last year. The polypropylene plant has been running since March based on merchant propylene, but the remaining units have been undergoing large-scale repairs. The restart of the Budyennovsk is not likely to add much to third quarter Russian olefin production, but should be more evident in the fourth quarter.



### Kazanorgsintez, Jan-Jun 2012

Kazanorgsintez increased its net profit two-fold in the first half of 2012 up to 1.3 billion roubles after the company's revenue grew by 20% to 22.2 billion roubles, and costs up by 15% to 17.4 billion roubles. Gross profit for Kazanorgsintez rose by 40% in the period January to June, up to 4.8 billion roubles, whilst profit before tax rose twice to 1.7 billion roubles. The long-term debt of Kazanorgsintez dropped by 6% to 27.7 billion roubles, while the short-term debt rose by almost 3 times to 765.7 million roubles. The controlling stake in the company belongs to the group TAIF.

| Nizhnekamskneftekhim Production (unit-kilo tons) |            |            |
|--|------------|------------|
| Product  | Jan-Jun 12 | Jan-Jun 11 |
| Ethylene   | 320.1      | 317.1      |
| Propylene  | 160.7      | 159.4      |
| Benzene  | 96.4       | 100.2      |
| Polyethylene                                     | 103.5      | 97.9       |
| Polypropylene                                    | 105.7      | 106.6      |
| Polystyrene                                      | 95.4       | 94.4       |
| Synthetic Rubber                                 | 264.9      |            |

### Nizhnekamskneftekhim, Jan-Jun 2012

Nizhnekamskneftekhim increased production by 4.2% in the first half of 2012 against last year. The main growth was provided by synthetic rubber and butadiene production, whilst monomers and polymers remained at the same level as last year. In the first six months this year the company earned 12.8 billion roubles of profit before tax.

### NIPIgaz prepares design for Nizhnekamskneftekhim cracker

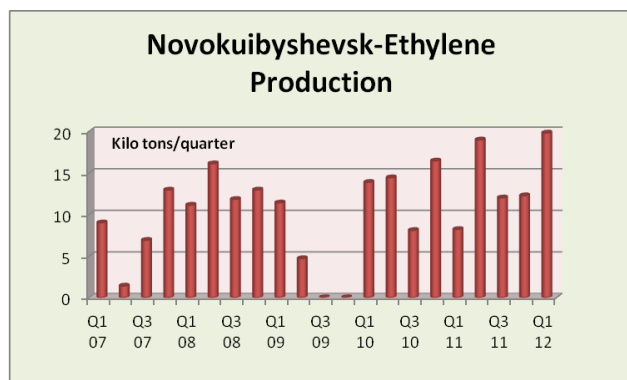
NIPIgaz has begun to develop a set of design documents for the 1.0 million tpa cracker which is to be constructed for Nizhnekamskneftekhim. The general designer of the plant is US

company Chicago Bridge & Iron NV, with Lummus providing the technology. NIPIgaz will perform certain sections of the FEED and project documentation and will also provide project documentation for the Russian government body Glavgosekspertiza. This year, the NIPIgaz completed the construction of the Yamal LNG plant in conjunction with Chicago Bridge & Iron NV, comprising a capacity of 16.5 million tpa.

### SANORS-petrochemical expansion plans

Samara chemical holding Samaranefteorgsintez (SANORS) has outlined a strategy focused on increasing revenues four-fold over the next two years to 24-26 billion roubles for 2014. Having started from a relatively small base the growth in revenues has to date been quite dynamic, particularly as some units had been previously idle. The key project under group consideration is to build a new cracker with a capacity of 500,000 tpa which will process about 2 million tpa of raw materials. The current cracker belonging to SANORS is located at Novokuibyshevsk under Neftekhimya, which was introduced firstly in 1983.

Initially the plant was constructed on the basis of 300,000 tpa of ethylene, with equipment and technology provided from former states Czechoslovakia and East Germany. In the 1980s funds started to dry up, even before the collapse of the USSR, and project was never completed. Officially around 85% of the project was undertaken, but in reality only about 50% was achieved and production has only ever achieved modest levels. Production of ethylene totalled 19,300 tons in the first quarter this year, the highest figure in the past decade.



SANORS is now considering revival of this platform to construct a 500,000 tpa cracker, utilising the infrastructure already in place. The group also hopes to construct a benzene plant with a capacity of 200-250,000 tpa with further development into bisphenol A and polycarbonate. SANORS was created in 2011 on the basis of Samaraorgsintez, Neftekhimya and Novokuibyshevsk Petrochemical Company.

### Gazprom-Kovytko

Gazprom has stated that it may be ready to help foreign investors build a gas chemical complex in the Irkutsk

region. Recently VIPIgazdobysha won the tender for the feasibility study of integrated gas project for the southern Irkutsk region, including gas processing and chemical facilities. For the past decade Sayanskkhimplast has been considering how to extract ethane from the Kovytko gas condensate field, but complications over the ownership of the field have prevented progress on constructing the gas processing facilities. Kovytko is the not the only source of potential feedstock in the Irkutsk Oblast as the Chikanskoye field also can offer large reserves of C2 feedstocks,

but this alone is not sufficient to justify the investment. Another option is that SIBUR could construct a gas processing plant to process associated gas from a Rosneft controlled oil field 600 km from Sayansk. However, Rosneft is not keen on assisting measures that eventually may lead to Sayanskkhimplast producing its own ethylene and eliminating its dependency on Angarsk Polymer Plant which is controlled by Rosneft.

According to calculations made by Sayanskkhimplast, the extraction of ethane and other hydrocarbons from 24 billion cubic metres of Kovytko gas could yield 1.4 million tpa of ethylene and producing more than 2 million tpa of various polymers. The sole petrochemical producer in the Irkutsk region is Angarsk Polymer Plant which lacks the capacity to deal with such feedstocks. Consequently there would be a need to construct new facilities.

**Main Russian Chemical Exports to China  
(unit-kilo tons)**

| Product            | Jan-Jun 12 | Jan-Jun 11 |
|--------------------|------------|------------|
| LDPE               | 49.7       | 40.9       |
| n-butanol          | 43.3       | 57.4       |
| iso-butanols       | 40.8       | 45.2       |
| Phthalic Anhydride | 10.3       | 9.9        |
| 2-EH               | 7.8        | 4.6        |
| PP                 | 11.4       | 0.1        |
| Acrylonitrile      | 14.6       | 7.4        |
| Caprolactam        | 101.0      | 64.7       |
| Polycarbonate      | 11.7       | 9.5        |
| Styrene            | 6.1        | 6.6        |
| Orthoxylene        | 2.9        | 1.0        |
| Acetone            | 3.5        | 3.7        |
| Bisphenol A        | 18.0       | 13.5       |
| Polyamide          | 17.5       | 27.7       |

**SIBUR petrochemical project update**

SIBUR has started the process of installing the first column of the new gas fractionation plant, which is under construction at Tobolsk-Neftekhim in West Siberia. The distillation column has been installed for the separation of ethane-propane fractions, and the next stage of the operation involves alignment and configuration. A special crane is being delivered from Germany, via Perm, in order to deal with such large-scale equipment. The scheme of the project is to add 2.8 million tpa of gas fractionating capacity to the existing 3.8 million tpa plant, producing gas liquids for the petrochemical industry and most probably for Zapsibneftekhim at Tobolsk.

Regarding the Zapsibneftekhim petrochemical project, which involves the construction of a 1.5 million tpa cracker at Tobolsk, a final decision on investment is not expected prior to the second quarter in 2013, or possibly later in the year. For the current polypropylene project at Tobolsk, Tobolsk-Polymer had achieved 96.7% of construction by July with the full project expected to be completed in September. The entire project has involved 5,500

workers, and preparations are underway for the launch of production equipment for the dehydrogenation of propane and production of polypropylene. Commissioning should take several months with the first polypropylene expected to be seen at the start of 2013.

For the RusVinyl project, the EDC unit has now been installed. The oxychlorination reactor weighing 170 tons, a length of 21.1 metres and a diameter of 5.5 metres was originally brought by water to the Kstovo port of Mihalchikovo, and then using special equipment transferred to the construction site at RusVinyl.

**SIBUR, TNK-BP**

SIBUR and TNK-BP have reached an indefinite extension in the continued operations for the JV Yugrazpererabotka (51% owned by SIBUR, 49% TNK-BP). This company processes associated gas from the fields of TNK-BP, which itself receives all the produced volume of dry stripped gas whilst SIBUR receives the gas liquids. Yugrazpererabotka is a major supplier of gas liquids to SIBUR and further expansions are expected in future. In 2013, SIBUR intends to buy a 25% stake of shares owned by TNK-BP's gas processing plant Zaykinsky. Also, TNK-BP and SIBUR are in talks on LPGs from TNK-BP's Rospan gas project in the Yamal region, with Tobolsk being the eventual destination. The agreement on strategic partnership, TNK-BP and SIBUR will benefit the activities of both companies.

**Mitsui-Eastern Petrochemical Company**

Mitsui is interested in participating in Rosneft's petrochemical project (Eastern Petrochemical Company) in the Russian Far East, with a view to providing technologies, expertise and markets. Rosneft is working a plan to build a petrochemical complex at Nakhodka worth around \$5 billion. A provisional start of production has been targeted for December 2016, but this is chiefly a reference guide at this stage of the investment cycle. At the end last year Rosneft selected Angarskneftehimproekt as the general designer of the petrochemical complex in the Primorsk region at Nakhodka, and the licensors of all technical processes although this information is not yet available. The project envisages production of polymers (polyethylene and polypropylene), benzene, olefins and other petrochemical products. The capacity of the first refinery stage of the project will amount to 3.4 million tpa.

Ultimately the complex will produce 1.4 million tpa of ethylene, 600,000 tpa of propylene and 190,000 tpa of butadiene. In the first phase of the project 3.5 million tpa of naphtha and LPGs will be processed, with deliveries from the refineries at Komsomolsk, Achinsk, and Angarsk refinery. The second stage involves delivery of 1.5



million tpa of gas condensate, produced under the project Sakhalin-3, and another 5 million tpa of oil to be transported via the pipeline Eastern Siberia-Pacific Ocean (ESPO). The target markets for the petrochemical complex should be the Far East and South-East Asia, primarily China. For the shipment of finished products for export Rosneft plans to build a specialised marine terminal.

## Bulk Polymers

### Russian Polymer Markets (unit-kilo tons)

| <b>HDPE</b>          | <b>Jan-Jun 12</b> | <b>Jan-Jun 11</b> |
|----------------------|-------------------|-------------------|
| Production           | 351.8             | 439.8             |
| Exports              | 38.9              | 37.3              |
| Imports              | 180.7             | 155.9             |
| Market Balance       | 493.6             | 558.4             |
| <b>LDPE</b>          | <b>Jan-Jun 12</b> | <b>Jan-Jun 11</b> |
| Production           | 329.6             | 339.6             |
| Exports              | 90.7              | 67.7              |
| Imports              | 64.1              | 48.8              |
| Market Balance       | 303.0             | 320.7             |
| <b>LLDPE</b>         | <b>Jan-Jun 12</b> | <b>Jan-Jun 11</b> |
| Production           | 7.0               | 39.8              |
| Exports              | 0.0               | 0.7               |
| Imports              | 72.3              | 54.7              |
| Market Balance       | 79.3              | 93.7              |
| <b>Polypropylene</b> | <b>Jan-Jun 12</b> | <b>Jan-Jun 11</b> |
| Production           | 320.8             | 341.9             |
| Exports              | 26.4              | 34.8              |
| Imports              | 118.0             | 99.7              |
| Market Balance       | 411.3             | 406.8             |
| <b>Polystyrene</b>   | <b>Jan-Jun 12</b> | <b>Jan-Jun 11</b> |
| Production           | 170.4             | 154.6             |
| Exports              | 24.3              | 23.9              |
| Imports              | 77.8              | 76.0              |
| Market Balance       | 221.8             | 206.7             |
| <b>PVC</b>           | <b>Jan-Jun 12</b> | <b>Jan-Jun 11</b> |
| Production           | 322.8             | 269.0             |
| Exports              | 1.9               | 1.9               |
| Imports              | 228.8             | 283.5             |
| Market Balance       | 549.7             | 550.5             |
| <b>PET</b>           | <b>Jan-Jun 12</b> | <b>Jan-Jun 11</b> |
| Production           | 231.6             | 162.3             |
| Exports              | 38.8              | 25.1              |
| Imports              | 101.8             | 169.4             |
| Market Balance       | 294.5             | 306.5             |

### Russian polystyrene market, Jan-Jun 2012

Polystyrene consumption in Russia showed an increase of 9% in the first half of 2012 over the same period last year. 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 amounted to 12,500 tons, which is 17% lower than in January-June 2011. In June 2012 imports of general-purpose polystyrene totalled 6,676 tons, whilst imports of high-impact polystyrene doubled compared to May 2012 and amounted to 3,339 tons.

Russian production of high-impact polystyrene and general purpose polystyrene amounted to 128,800 tons in the first half of 2012, 3% down on the same period last year. Nizhnekamskneftekhim produced 95,000 tons in the first six months, of which general purpose polystyrene accounted for 56.5% and high-impact polystyrene 43.5%.

Pizhi Prof produced 21,100 tons of general purpose polystyrene, which is the same in the first half of 2011. Gazprom Neftekhim Salavat produced 12,641 tons of polystyrene in the first six months of which 6,555 tons were high-impact polystyrene and 6,086 tons general purpose polystyrene. In July, Gazprom Neftekhim Salavat suspended production for planned engineering works, which will last until 28 August.

### SIBUR-Khimprom to launch EPS unit

SIBUR plans to hold an official opening of the second EPS line at Perm in early autumn. The 50,000 tpa plant has already been completed and is awaiting necessary approvals. Through its product Alphapor SIBUR-Khimprom's share in the Russian domestic EPS market is currently estimated at 39% of total consumption. By the end of 2012 the company plans to increase its share to around 50% of the market, with aims to produce almost 9,000 tons per month. The production of Alphapor is used in flame retardants and product quality is reported to match international standards.

### Nizhnekamskneftekhim-polystyrene expansion

Nizhnekamskneftekhim and Toyo Engineering signed a license agreement for the fourth polystyrene line at Nizhnekamsk. The contract covers detailed design of the base and the supply of equipment for construction of the plant. In 2003, 2006 and 2008, the company has successively put into operation three lines for the production of polystyrene. In 2011, Nizhnekamskneftekhim produced 187,500 tons of polystyrene which was around 60% of total Russian output.

### Nizhnekamskneftekhim-ABS project close to completion

Nizhnekamskneftekhim has begun installation of its ABS plant, in which four reactors are set to be installed. To date about 20% of equipment installation has been completed with about a third of pipeline requirements undertaken. The ABS plant at Nizhnekamsk is being designed with a capacity of 70,000 tpa, and Nizhnekamskneftekhim hopes to complete the project before the end of 2012. Two types of product will be produced including extrusion and injection moulding

which will challenge imported plastics that dominate the Russian market. In 2011, imports of ABS accounted for

72% or 36,600 tons in Russian consumption. ABS imports totalled 17,500 tons in the first half of 2012, 15% up versus 2011.

| <b>Russian Polypropylene Production<br/>(unit-kilo tons)</b> |                   |                   |
|--|-------------------|-------------------|
| <b>Producer</b>  | <b>Jan-Jun 12</b> | <b>Jan-Jun 11</b> |
| Ufaorgsintez   | 59.1              | 47.6              |
| LUKoil-Neftekhim   | 30.2              | 64.1              |
| Neftekhimya, Moscow  | 56.4              | 56.4              |
| Nizhnekamskneftekhim   | 105.7             | 106.6             |
| Tomskneftekhim   | 69.3              | 67.3              |
| Totals   | 320.8             | 341.9             |

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

Production of polypropylene in Russia in the first half of this year totalled 320,800 tons, down 9% up on the same period last year. Ufaorgsintez recorded the largest increase, whilst other producers operated at similar levels as in 2011. The Budyennovsk plant started producing polypropylene later this year due to the cracker outage, which is the main cause of the decline.

Stavrolen has been running its plant on merchant propylene and has started recently to achieve utilisation rates of 96%, but overall

volumes are down on 2011. Stavrolen produced 9,640 tons of polypropylene in June, 6% up on May. Planned maintenance took place in July, thus reducing production by 1,500 tons against June. The capacity utilisation in July ran at 72% against 108% in June.

| <b>Russian Polypropylene Imports<br/>July 2012 (unit-kilo tons)</b> |               |
|---|---------------|
| <b>Producer</b>   | <b>Volume</b> |
| Borealis  | 2,898         |
| SABIC   | 1,265         |
| LyondellBasell  | 1,250         |
| Turkmenbashi NPZ  | 1,000         |
| Hyosung   | 527           |
| Braskem   | 516           |
| ExxonMobil Chemical   | 371           |
| LG Chem   | 290           |
| Honam   | 221           |
| Total Petrochemicals  | 206           |
| Ineos   | 164           |
| Caltex  | 68            |
| BP  | 58            |
| Sirmax  | 55            |
| GS Caltex   | 44            |
| SK Corporation  | 36            |
| Unipetrol   | 36            |
| Rajiv Plastic   | 26            |
| Petkim Petrokimya Holding   | 23            |
| Schulman  | 22            |
| TVK   | 21            |
| Neftekhim (KZ)  | 2             |
| Henkel  | 2             |
| Total   | 9,101         |

Nizhnekamskneftekhim produced 17,760 tons of polypropylene in June, which was 3% up on May, and overall production volumes were virtually the same as last year for the first six months. Ufaorgsintez undertook a scheduled shutdown in mid-July, lasting up to seven days.

Tomskneftekhim has been recently affected by an unplanned stoppage due to the excessive heat in the Tomsk region, which made it dangerous to continue operation. This will affect third quarter volumes. The polypropylene plant at Moscow, which is managed by SIBUR, matched production against the first six months in 2011. The capacity of the polypropylene plant at the Moscow refinery was originally 100,000 tpa, but this has been increased to 114,000 tpa after modifications. Gazprom Neft provides part of the propane-propylene fractions required from Slavneft-Yaroslavnefteorgsintez (YANOS) at Yaroslavl. However, the bulk of raw materials to the plant are supplied through the catalytic cracking unit of the Moscow refinery.

Similarly to polyethylene, polypropylene consumption was affected by the knock-on effects of the Stavrolen cracker inactivity in the first half of 2012, despite Stavrolen starting polypropylene production in February. Even so consumption was slightly up on the first half of 2011. Imports totalled 118,000 tons in the first half of 2012, with second quarter volumes totalling 74,944 tons despite increases in production at Stavrolen.

The share of imports of Russian polypropylene consumption in June amounted to 36% of 84,320 tons, whereas the previous month it was only 31% of the market. However, high inventory across the market meant that imports in July dropped accordingly. For July, imports totalled 9,101 tons with a wide range of sources as shown in the table opposite.

In terms of exports from Russia, Belarus and Ukraine are important destinations but the volumes are relatively modest. Exports totalled 26,400 tons in the first half of 2012 against 34,800 tons in same period last year. This position is expected to see changes in the next 6-9 months in view of the expected start-up of the Omsk and Tobolsk plants.

#### **Stavrolen-copolymer production to start**

Stavrolen plans to introduce the production of propylene copolymers in October. Currently the company only produces homopolymers and now the company wishes to produce copolymers after start-up of the cracker in the next month or so. Stavrolen possesses the capacity to produce 120,000 tpa of polypropylene, and by moving into copolymers it will follow other Russian polypropylene producers Nizhnekamskneftekhim, Tomskneftekhim and Ufaorgsintez. Stavrolen produced 30,200 tons of polypropylene in January to June 2012 against 64,700 tons in 2011.

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

| Product       | Jan-Jun 12 | Jan-Jun 11 |
|---------------|------------|------------|
| PET           | 37.645     | 66.826     |
| PVC           | 6.186      | 17.165     |
| Exp PS        | 12.201     | 18.621     |
| HDPE          | 37.934     | 28.598     |
| LDPE          | 16.293     | 13.647     |
| PP            | 10.246     | 9.188      |
| Polycarbonate | 3.386      | 1.264      |
| ABS           | 12.669     | 13.416     |

the dominant factors behind the lower aggregate consumption measured against the same period last year. If Stavrolen restarts production in September, availability of HDPE should rise in the fourth quarter with a subsequent impact on consumption. Overall though, it does appear as if the market for polyethylene will be lower this year than in 2011.

**Russian polyethylene market, Jan-Jun 2012**

Polyethylene markets in Russia have tended to stall and even decline in the first half of 2012, with HDPE particularly affected by the Stavrolen outage. Had the plant been running normally the fall, if any, in HDPE consumption in the first half of this year would have been far more modest. Polyethylene markets in Russia have also been affected by a lack of liquidity amongst consumers. HDPE imports rose in the period January-June 2012 to 175,500 tons from 155,900 tons in the same period last year, but this was not enough to compensate for the declines in production. South Korea was one of the main suppliers to the Russian market, increasing exports from 28,598 tons in January-June 2011 to 37,934 tons in the same period this year. LDPE consumption in Russia dropped slightly in the first half of the year, but the falls in HDPE and LLDPE production were

**Aromatics & derivatives****Russian Benzene Production  
(unit-kilo tons)**

| Producer                    | Jan-Jun 12 | Jan-Jun 11 |
|-----------------------------|------------|------------|
| Altay-Koks                  | 10.2       | 17.6       |
| Angarsk Polymer Plant       | 43.5       | 40.7       |
| Chelyabinsk MK              | 9.8        | 7.8        |
| Gazprom Neft                | 44.3       | 51.6       |
| Koks                        | 7.3        | 11.3       |
| LUKoil-Neftekhim            | 0.0        | 31.0       |
| LUKoil-Permnefteorgsintez   | 17.5       | 23.8       |
| Magnitogorsk MK             | 33.3       | 28.2       |
| Nizhnekamskneftekhim        | 96.4       | 100.2      |
| Novolipetsk MK              | 9.4        | 14.4       |
| Gazprom Neftekhim Salavat   | 48.8       | 56.6       |
| Severstal                   | 18.4       | 19.5       |
| SIBUR Kstovo                | 29.2       | 36.4       |
| Slavneft-Yaroslavlorgsintez | 32.3       | 24.6       |
| Surgutneftegaz              | 34.7       | 29.7       |
| TNK-BP                      | 19.0       | 13.0       |
| Ufaneftekhim                | 41.5       | 41.0       |
| Ural Steel                  | 2.9        | 4.0        |
| Uralorgsintez               | 29.4       | 32.5       |
| Zapsib                      | 30.8       | 0.0        |
| Others                      | 6.1        | 0.0        |
| Total                       | 564.7      | 583.9      |

**Russian benzene market**

Benzene production was down slightly in the first half of 2012 due to plant outages, some more extensive than others. Although Stavrolen did not produce, it was largely compensated by production at Zapsib (West Siberian Metallurgical Combine) which had been completely idle in the first half of 2011. Regarding recent performance, benzene sales on the Russian domestic market amounted to 57,800 tons in June, 13% up on May.

Gazprom Neft at Omsk returned to full production in June after the maintenance shutdown, and increased sales 2.5 times to 6,200 tons. In addition, Zapsib increased sales by 34% to 5,700 tons, and Slavneft-YANOS 31% up to 5,800 tons (31%). SIBUR-Neftekhim reduced shipments by 3.6 times to 1,600 tons. In total, sales of benzene to the domestic market totalled 373,700 tons which is 2% down on the same period in 2011. As the third quarter started Ufaneftekhim shipped record amounts of benzene in the domestic market in July, selling 952 tons to Kazanorgsintez and 467 tons to Kuibyshevazot.

**Russian orthoxylene exports**

Total exports of orthoxylene from Russia amounted to 26,120 tons in the first half of 2012, which is 28% down on the same period last year. Exports of orthoxylene from Russia decreased significantly in June, and amounted to only 3,700 tons but were still higher in the second quarter

against the first and totalled 15,985 tons. Despite the lower export activity Russian sales of orthoxylene on the domestic market totalled 64,950 tons in the first six months in 2012, 3% down on 2011. The higher premiums achieved for paraxylene sales, either on the domestic market or for export, have tended to reduce the interest of xylene producers in orthoxylene production.

**Russian Caprolactam Market  
(unit-kilo tons)**

|                | Jan-Jun 12 | Jan-Jun 11 |
|----------------|------------|------------|
| Production     | 177.9      | 165.0      |
| Exports        | 122.8      | 81.7       |
| Imports        | 0.0        | 0.0        |
| Market Balance | 55.1       | 83.3       |

**Russian caprolactam production, Jan-Jun 2012**

Caprolactam production totalled 178,000 tons in the first half of 2012, slightly up on 2011. Domestic consumption was significantly reduced due to the extended downtime at Kuibyshevazot's polyamide plant.

Export activity was strong in the first half of the year and caprolactam production could have risen more were it not

for the supply side tightness in raw materials such as benzene and phenol. Kuibyshevazot accounted for 52% of caprolactam production in the first half of 2012, followed by Azot at Kemerovo with 30% and Shchekinoazot with 18%. For the remainder of the year the growth rates of production at domestic plants will remain constrained by a lack of raw materials.

| <b>Russian Phenol Production<br/>(unit-kilo tons)</b> |                   |                   |
|---|-------------------|-------------------|
| <b>Producer</b>                                       | <b>Jan-Jun 12</b> | <b>Jan-Jun 11</b> |
| Ufaorgsintez  | 36.9              | 36.0              |
| Kazanorgsintez  | 29.9              | 32.6              |
| Samara  | 38.0              | 37.9              |
| Omsk Kaucuk   | 33.1              | 31.3              |
| Total   | 137.9             | 137.7             |

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

In the first half of 2012 Russian phenol production totalled 137,900 tons against 137,700 tons in the same period last year. Omsk Kaucuk increased production by 6%, Ufaorgsintez by 3% whilst Kazanorgsintez reduced production by 8%. Omsk Kaucuk has begun to mount an additional third reactor at the phenol site, which in addition to improving quality will increase volume of production. Phenol and acetone plants will shut for a two week maintenance outage from the middle of September.

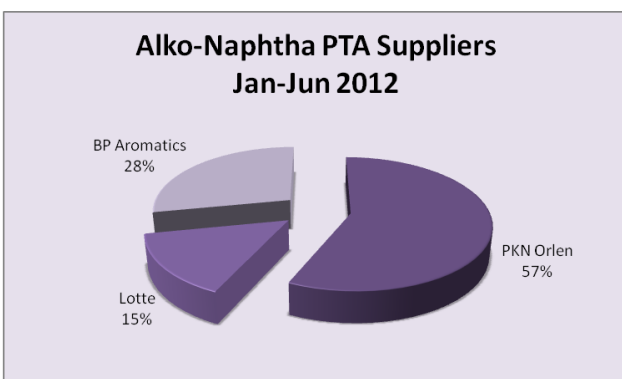
In the first half of 2012 sales of phenol in the domestic market of Russia amounted to about 70,000 tons, which is only 4% above the level recorded in the same period last year. Phenol production in Russia amounted to 21,500 tons in June, 6% over May due to the resumed operation at Kazanorgsintez following scheduled maintenance. Omsk Kaucuk also increased production due to resumed benzene supplies from the Omsk oil refinery after a planned outage. Ufaorgsintez and Samaraorgsintez cut operating time of phenol by 12% and 11% respectively in June.

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 domestically produced 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, followed by Kuibyshevazot.

#### **Russian phenol price issues 2012**

Since the beginning of 2012 Ufaorgsintez has been quoting lower prices in the domestic Russian market than its competitors, causing some consternation amongst other players. Samaraorgsintez and Omsk Kaucuk, which both sell merchant phenol, believe that the sales strategy adopted by Ufaorgsintez is contrary to market principles and is unfair. Currently, the cost of phenol in the Russian market is based on European prices coupled with the cost of delivery. Most consumers of phenol are located in the Volga Federal District, and therefore the formation of market prices as a rule is based on the cost of shipping from the plant in the Volga Federal District.

Ufaorgsintez has maintained the lowest price in the Russian market, and the company claims that this policy is in line with its global product quotes. However, other domestic producers do not agree due to conflicting data. As a result, there are allegations of Ufaorgsintez selling at dumping prices. If product was in surplus there would be some degree of logic in these prices, but the market is indicatively leaning towards the tight side. This means that other producers are not required to follow pricing set by Ufaorgsintez, but it does create issues with consumers. The presiding conclusion from this scenario is that price formation techniques need to be refined, and using the European price series plus a premium for delivery is possibly not going to cover all exigencies.



#### **Russian PET-PTA**

Alko-Naphtha imported 68,603 tons of PTA in the first six months in 2012, after starting PET production last July. The main supplier to the PET plant at Kaliningrad this year has been PKN Orlen, supplying 38,000 tons in the first six months. Alko-Naphtha accounted for roughly 50% of Russian PTA imports in the first six months in 2012, followed by the Senezh plant in the Moscow region.

Polief undertook a major maintenance shutdown at Blagoveshchensk in July, and the company will next undertake a scheduled outage in 2014. Polief has been striving towards a two year cycle for maintenance in place of the annual shutdown. During this year's maintenance shutdown work involved replacing machinery and components, equipment cleaning, etc, which will cover the PTA-PET facilities for two years.



**Kuibyshevazot-Production  
(unit-kilo tons)**

| Product                  | Jan-Jun 12 | Jan-Jun 11 |
|--------------------------|------------|------------|
| Polyamide-6              | 58.3       | 72.8       |
| High Tenacity Tech Yarns | 5.6        | 6.7        |
| Tyre Cord Fabric         | 3.0        | 3.1        |
| Caprolactam              | 95.3       | 95.3       |
| Ammonia                  | 322.0      | 318.7      |
| Urea                     | 175.3      | 176.4      |
| Ammonium Nitrate         | 385.7      | 279.8      |
| Ammonium Sulphate        | 243.8      | 234.4      |

**Kuibyshevazot, Jan-Jun 2012**

Kuibyshevazot increased the sales of marketable products by 6.5% in the first half of 2012 up to 15.6 billion roubles. Net profit of the company amounted to 2.5 billion roubles, which is higher than in 2011 but showing slower growth than in previous years. This is mainly due to the reduced polyamide and yarn production which was caused by extended maintenance.

Polyamide production dropped 20% to 58,300 tons in the first six months in 2012, whilst yarns and cords were affected also. Caprolactam production remained unchanged, but ammonia rose slightly.

**Synthetic Rubber**

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

| Product             | Jan-Jun 12 | Jan-Jun 11 |
|---------------------|------------|------------|
| ABS                 | 17.5       | 15.2       |
| Acetic Acid         | 11.7       | 7.5        |
| Benzene             | 23.4       | 20.6       |
| BOPE                | 32.8       | 48.5       |
| BOPP                | 18.1       | 17.5       |
| Caustic Soda Liquid | 20.5       | 17.3       |
| Caustic Soda Solid  | 10.8       | 16.3       |
| HDPE                | 180.7      | 155.9      |
| LDPE                | 64.1       | 48.8       |
| LLDPE               | 72.3       | 54.7       |
| PET                 | 101.8      | 169.4      |
| Phosphoric Acid     | 3.9        | 3.7        |
| Phthalic Anhydride  | 2.6        | 1.4        |
| Plasticizers        | 0.0        | 7.3        |
| Polypropylene       | 115.9      | 99.7       |
| Polystyrene         | 76.6       | 76.0       |
| PTA                 | 136.7      | 67.3       |
| PVC                 | 228.8      | 283.5      |
| PVC films           | 38.9       | 36.8       |
| Soda Ash            | 185.7      | 182.4      |
| Synthetic Rubber    | 32.0       | 34.5       |
| Titanium Dioxide    | 34.0       | 51.0       |

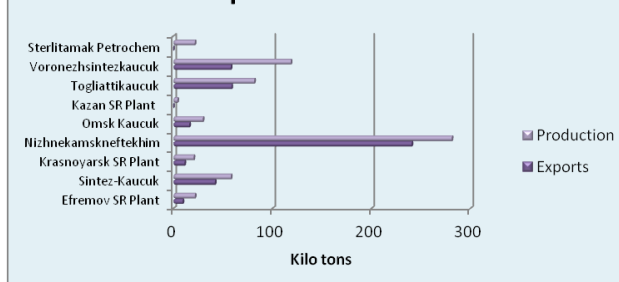
**Russian synthetic rubber market, Jan-Jun 2012**

In the first half of 2012 Russian production of synthetic rubber totalled 639,200 tons against 628,500 tons in the same period last year. Russian production of synthetic rubber totalled 95,500 tons in June which was 8% down on May and 2% lower than in June 2011. Lower demand in the second quarter this year has reduced pressure on the Russian rubber plants, resulting in lower utilisation. Only Efremov Synthetic Rubber Plant increased production in June, 4.3 times higher than in May after a maintenance shutdown. In terms of consumption Russian consumers purchased 45,500 tons of synthetic rubber in June, 5% down on May. Imports totalled 6,800 tons in June this year which was 17% less than in May. Exports fell by 11% against May and amounted to 56,800 tons, which was 16% less than in June 2011. In the first half of 2012 Russian exports of synthetic rubber totalled 404,900 tons against 395,200 tons in the same period last year.

In the second quarter rubber prices declined against the same period last year due to the reduction in butadiene prices in the world markets. Moreover, demand has been lower over the summer months when traditionally an increase in sales is seen during this period. Weaker export opportunities in the EU area have also been encountered, and other global factors have played their part in reducing prices. High inventories by tyre manufacturers has helped push down demand for rubber and thus at the end of the second quarter this year the supply of rubber exceeded demand. The tendency to reduce the cost of

rubber could play into the hands of the domestic tyre manufacturers which purchase Russian raw materials.

**Russian Synthetic Rubber Production  
vs Exports-Jan-Jun 2012**



Despite the fact that rubber prices have fallen significantly, the prices of tyres produced in Russia has remained stable. Butadiene prices started to rise in July which will help prices for styrene-butadiene rubbers, but this only increases the costs of raw materials which tyre manufacturers find hard to pass on to consumers. Third quarter consumption is expected to exceed second quarter levels.

**Omsk Kaucuk-starts new rubber grade**

Omsk Kaucuk has started the production of a first industrial batch of new hi-tech rubber grade BMKM-15.

An experimental batch of green rubber of 40 tons was produced in May, and the company has started producing BMKM-15 commercially at 3 tons per hour. Rubber BMKM-15 is designed for use in the tyre industry and meets the requirements for raw materials by foreign tyre producers.

Omsk Kaucuk produced 30,200 tons of synthetic rubber in January to June 2012, up by 5% over the same period in 2011. The main consumers of rubber produced by Omsk Kaucuk include domestic tyre products. Omsk Kaucuk has scheduled a maintenance shutdown for mid-September, involving a number of units.

| Russian Chemical Exports<br>(unit-kilo tons) |            |            |
|--|------------|------------|
| Product                                      | Jan-Jun 12 | Jan-Jun 11 |
| ABS  | 0.2        | 1.1        |
| Acetic acid                                  | 41.7       | 24.7       |
| Acetone                                      | 17.8       | 16.9       |
| Ammonia                                      | 1,350.2    | 1,565.1    |
| BOPE   | 0.1        | 0.8        |
| BOPP   | 5.1        | 4.2        |
| Calcium Chloride                             | 4.1        | 9.1        |
| Caprolactam                                  | 122.8      | 84.7       |
| Carbon Black                                 | 231.3      | 230.3      |
| Caustic Soda Liquid                          | 147.3      | 123.0      |
| Caustic Soda Solid                           | 41.6       | 36.4       |
| Isobutanol                                   | 40.1       | 40.7       |
| N Butanol                                    | 43.7       | 49.0       |
| Orthoxylene                                  | 13.8       | 33.3       |
| Paraxylene                                   | 51.8       | 63.1       |
| PET  | 38.8       | 25.1       |
| Phthalic Anhydride                           | 25.4       | 29.8       |
| Polyamide                                    | 36.2       | 42.7       |
| Polypropylene                                | 24.0       | 34.8       |
| Polystyrene                                  | 24.3       | 23.9       |
| Propylene                                    | 9.9        | 14.2       |
| PVC  | 1.9        | 1.9        |
| PVC Films                                    | 0.2        | 0.2        |
| Soda Ash                                     | 290.8      | 317.2      |
| Styrene                                      | 61.0       | 79.3       |
| Synthetic Rubber                             | 404.9      | 395.2      |
| LDPE   | 90.7       | 67.7       |
| HDPE   | 40.1       | 37.3       |
| LLDPE  | 0.0        | 0.7        |

#### Nokian Tyres increases synthetic and natural rubber purchases

Nokian Tyres reduced purchases of raw materials in June in accordance with the reduced demand for tyres. Synthetic rubber purchases amounted to 807 tons in June, 39% down on May. Natural rubber imports also fell, dropping 71% against May to 838 tons. Overall Nokian Tyres has increased consumption of synthetic rubber this year due to the introduction of two new lines of 1.5 million pieces per annum, raising total capacity from 8 million to 11 million pieces.

The company imports more than half of its synthetic rubber requirements, purchasing 8,600 tons in the first half of 2012 against 4,800 tons in the same period last year. The largest supplier to Nokian Tyres is a German player, accounting for 59% of purchases in the first half of 2012. Natural rubber purchases amounted to 12,900 tons in the first half of 2012 against 8,800 tons in 2011. The main suppliers to Nokian Tyres include Malaysian company Kian Lee SMR (46% of gross supply) and the Indonesian company PT Bumi Asri Pasaman 40%).

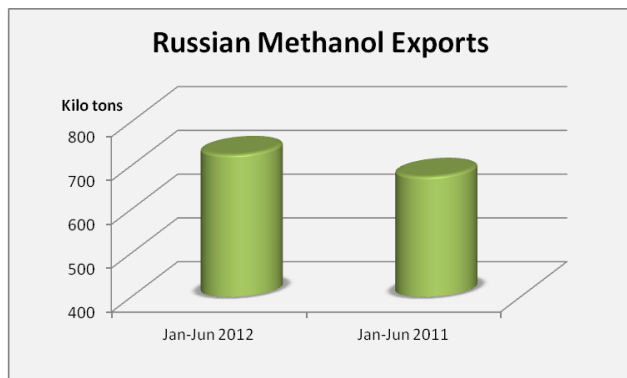
#### Kordiant-Omsk expansion

Holding Kordiant (formerly SIBUR-Russian Tyres) is to increase capacity in the near future for car tyre production at its Omsk plant from 2.7 million to 3.7-4 million pieces per annum. Kordiant-East hopes that the first 400,000 pieces from the expansion should be available in the fourth quarter this year. The holding company Kordiant includes Yaroslavl Tyre Plant, Voltyre-Prom (Volzhskiy, Volgograd region), Omskshina, Kordiant-East (Omsk) and Uralshina (Ekaterinburg). The Yaroslavl Tyre Plant will launch mass production of all-steel truck tyre capacity of 650,000 units per annum in the fourth quarter of this year. In other business, Kordiant is completing the sale of Uralshina in the programme to exit non-core assets.

#### Methanol & related chemicals

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

Russian exports of methanol in the period January-June 2012 increased 9.3% against the same period last year to 724,800 tons, according to data from the Russian Federal Customs Service. From the total exports, 703,600 tons were shipped outside of the CIS. Revenues for Russian methanol exports in the first half of the year rose 11.5% to \$208.3 million.



The cost of methanol exported from Russia depends primarily on the direction of supply and in the first half of 2012, the price varied in a wide range of \$220-390/ton DAF border of the Russian Federation. The average price from January to June has been \$285/ton against \$282/ton in 2011.

Despite increasing consumption of methanol in the domestic market export remains the most cost-effective sales option for Russian methanol producers. However, as gas prices are expected to continue rising from their

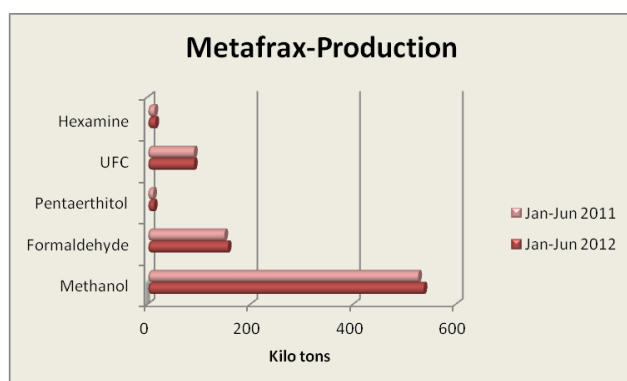
low base this situation may start to change in the coming years. Export activity was very strong in the second quarter this year, partly helped by the embargo on Iranian methanol into the EU area.

**Shchekinoazot, Jan-Jun 2012**

Shchekinoazot increased the production of methanol by 26% in the first half of 2012 over the same period in 2011 due to commissioning of the installation of a new M-450 plant. Also, ammonia production by Shchekinoazot increased by 6.8%, and caprolactam increased by 8.5%.

Shchekinoazot increased chemical exports by 18% in the period January-June 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.

**Metafrax increases profits in first half of 2012**

Metafrax has set a target for a net profit of at least 2 billion roubles in 2012, rising 1.6 times against 1.256 billion roubles. In the first half net profit of the company rose more than two-fold against the same period in 2011 and amounted to 1.3 billion roubles. During that time, prices of primary products increased on average by 10-15%, whilst costs rose at slightly slower rates. Revenues are forecast to rise 20% over 2011 to 11 billion roubles.

Metafrax produced 537,000 tons of methanol in the first half of 2012, 2% up on 2011, whilst formaldehyde rose 4.5% to 156,000 tons. Pentaerythritol increased 12% to 12,000 tons, hexamine by 13% to 14,800 tons, and the production of urea-formaldehyde concentrate stayed at the same level as last year at 90,000 tons. Metafrax consumed 302,000 tons of methanol captively in 2011, and 8,500 tons in daughter companies. Due to growth in pentaerythritol production, Metafrax has embarked on a policy of reducing costs and to meet the requirements of industrial safety regulations through reconstruction of warehouse shop for pentaerythritol.

Production of urea-formaldehyde concentrate takes place at three plants in Russia, including Togliattiazot, Metafrax, and Shchekinoazot with a total capacity of 400,000 tpa. In 2011, consumption totalled 197,400 tons which was 22,600 tons more than in 2010. The main consumers for urea-formaldehyde concentrate sold by Metafrax include MetaDynea, Karbolit, Cherepovets Panel Combine, etc. Metafrax uses technology provided by Perstorp Formox for the production of urea-formaldehyde concentrate.

**Organic chemicals & plastics****Russian Butanol Balances**

| <i>N-Butanol</i>  | <i>Jan-Jun 12</i> | <i>Jan-Jun 11</i> |
|-------------------|-------------------|-------------------|
| Production        | 85.6              | 85.5              |
| Exports           | 43.7              | 49.0              |
| Imports           | 0.0               | 0.0               |
| Market Balance    | 42.0              | 36.5              |
| <i>Isobutanol</i> | <i>Jan-Jun 12</i> | <i>Jan-Jun 11</i> |
| Production        | 49.9              | 59.4              |
| Exports           | 40.1              | 40.7              |
| Imports           | 0.0               | 0.0               |
| Market Balance    | 9.9               | 18.7              |

**Russian butanols market, Jan-Jun 2012**

Russian exports of butanols totalled 83,750 tons in the first half of 2012 which was 20% down on 2011. China accounted for 51% of exports followed by Finland with 36%. In terms of producer shares, Gazprom Neftekhim Salavat accounted for 56% of exports, Angarsk Petrochemical Company 22%, SIBUR Khimprom 21%, and Azot at Nevinomyssk less than 1%. The breakdown in exports comprised 52% for normal butanols, and 48% for isobutanol. Exports of butanol from Russia rose in June by 9% over May to 14,690 tons. Normal butanols accounted for 63% of butanol exports, whilst 44% of total exports went to China followed by Finland with 33%, India 10% and Poland 7%. Gazprom Neftekhim Salavat accounted for 67% of exports in June.

Total sales on the domestic market amounted to 38,890 tons in the period January-June 2012, which is 28% higher than the same period

last year. Normal butanols accounted for 88% of sales, followed by isobutanol with 12%. Regarding the current quarter, domestic demand remains stable although this could start decline in September due to seasonal patterns.

#### PPG-assessing coatings plant in Russia

PPG Industries is considering the construction of a coatings plant in the Ryazan region. Similarly to other international paint manufacturers PPG consider Russia as a country with huge potential in the sales of coatings. Seven companies of the 10 largest suppliers of imported industrial coatings have either produce goods in the country, or being finished production. Last year Jotun announced the construction of facilities in Russia, and this plant is planned for completion by early 2014.

In 2011 the market for coating materials totalled 307,500 tons, of which almost half were source through imports. PPG's main challenge is raw material supply; whilst Russia produces acrylate esters, butanols, etc, which would be used in the production list many of the raw materials required are not produced on a commercial scale and thus imports would be required.

Domestic market sales of butanols amounted to 7,740 tons in June, which is 8% higher than in May and 2.1 times higher than in June 2011. The share of normal butanols comprised 86%. Gazprom Neftekhim Salavat sold 5,450 tons which amounted to 70% of gross deliveries. The largest volume (4,680 tons) of butanols on the domestic market in June were shipped to the Dmitrievsky chemical plant, which uses these products to produce butyl acetate, and also supplies butanols for export on behalf of Gazprom Neftekhim Salavat. Another 840 tons was delivered to Akrlat at Dzerzhinsk for the production of butyl acrylate. Other butanol consumers included Volzhskiy Orgsintez which bought 470 tons for application in flotation reagents; Molomsky Wood-Chemical plant 450 tons for butyl acetate, and Sredneuralskiy (Central Ural) copper smelter 360 tons for flotation reagent.

#### Foreign Paint Supplies to the Russian Market 2011 (k-tons)

|                     |       |
|---------------------|-------|
| Akzo Nobel          | 18.64 |
| BASF                | 16.31 |
| PPG                 | 9.14  |
| Helios              | 8.84  |
| Becker              | 6.96  |
| Jotun               | 6.81  |
| Hempel              | 6.39  |
| Du Pont             | 5.91  |
| Valspar             | 5.18  |
| Beckers             | 4.25  |
| KCC Korp            | 3.74  |
| International Paint | 3.04  |
| Tikkurila           | 2.89  |
| Steelpaint          | 2.78  |
| HB Body             | 2.14  |
| Others              | 44.08 |
| Total               | 147.1 |

#### Gazprom Neftekhim Salavat-acrylic project design completed

Gazprom Neftekhim Salavat and Mitsubishi Heavy Industries have completed the basic design of the acrylic acid and acrylate complex. The complex is intended to be operational by 2015 and will start to replace imports as soon as production is underway. The total area for the project site is 133,000 square metres and the acrylic acid plant will be located in the company's monomer division. Gazprom Neftekhim Salavat is assessing options for reducing project costs, including structures that are not required and yet do not compromise safety.

For the plant itself two 400-ton reactors will be transported from Germany to St. Petersburg, and then by rivers to Nizhnekamsk. It will then be transferred to Ufa where a bulky cargo jetty is to be constructed, before making the journey south to Salavat. Whilst production is expected to start in 2015 full design capacity is not anticipated until the fourth quarter of that year. At that stage Gazprom Neftekhim Salavat has signalled its aim to develop further downstream into the processing of the processing chain of acrylic acid and acrylates.

The new complex will include the production of crude acrylic acid with a capacity of 80,000 tpa, butyl acrylate (acrylic acid ester and butanol) capacity of 80,000 tpa and glacial acrylic acid with a capacity of 35,000 tpa. The raw materials for the new complex are propylene, butanol and styrene, the production of which is on the same production site.

#### Russian DOP market

The Russian DOP market has undergone important change in the past year, particularly since Tarkett in the Samara region stopped using the DOP in 2011 and increased application of more environmentally friendly plasticizers. As the company was one of the largest consumers of phthalate plasticizers in Russia, his transition to the use of DINP has significantly affected the Russian market for DOP.

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

|                | Jan-Jun 12 | Jan-Jun 11 | Jan-Dec 11 | Jan-Dec 10 |
|----------------|------------|------------|------------|------------|
| Production     | 31.4       | 36.5       | 69.7       | 79.2       |
| Exports        | 0.1        | 0.3        | 0.3        | 1.5        |
| Imports        | 0.8        | 5.8        | 8.7        | 16.1       |
| Market Balance | 32.1       | 42.1       | 78.0       | 93.8       |

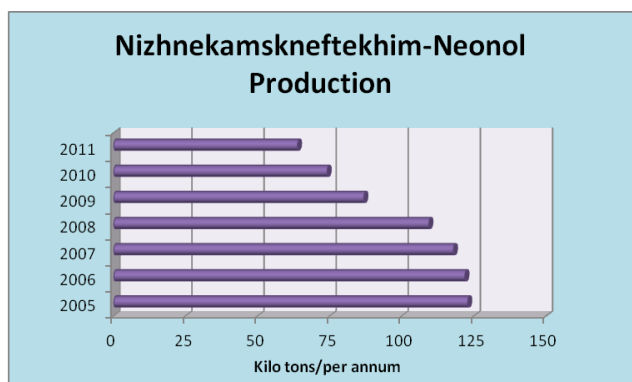
In the first half of 2012 the Russian market dropped 24% against 2011 to 32,100 tons. The decline in demand has led to a decrease in sales of imported and domestic DOP in the country. Imports, in particular, have been affected dropping 87% to 758 tons. Amongst the domestic producers Gazprom Neftekhim



Salavat suspended operations between mid-December 2011 and March 2012 whilst the Ural plant of plasticizers did not produce in February.

In contrast to DOP, consumption of DINP and DIDF rose 33% in the first half of 2012 to 29,500 tons. DINP and DIDF use C9 and C10 alcohols, and both products possess lower levels of volatility than DOP, which means they can and can be used with the production of vinyl wallpaper, linoleum and other products made of PVC. Tarkett has become the main consumer of DINP and DIDF, replacing its DOP purchases. Consumption of DINP and DIDF in the manufacture of cable PVC plasticized is insignificant, but demand is growing in this sector.

Price is the main advantage of DOP, as DINP and DIDF are about 10-20% more expensive. Imports play a more important role for these products. The sole Russian producer of DINP is the Roshalsky plant which produced 963 tons in the first half of 2012 (56% up on 2011), accounting for around 3% of the Russian market. Demand for these products seems destined to grow, particularly as new rules as part of WTO membership will require producers of PVC decorative materials to use DINP as opposed to DOP. In the medium term at least demand for imported DINP and DIDF is expected to remain strong.



#### **Nizhnekamskneftekhim-neonols**

Nizhnekamskneftekhim celebrated 25 years of its neonol unit in July, construction of which began in 1984 and start-up took place on 21 July 1987. Since then the plant has produced and sold more than 1.5 million tons of various grades of neonols, most of which has been directed to exports. In recent years, due to lower demand output in neonols has been reduced, thereby releasing capacity in the oligomers division to produce other products. Also since polypropylene production was started at Nizhnekamsk there have been other more profitable outlets for propylene consumption.

### **Chlorine**

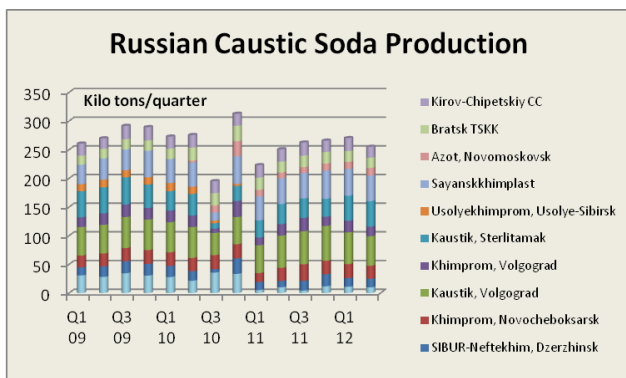
#### **Russian Caustic Soda Market (unit-kilo tons)**

|                | Jan-Jun 12 | Jan-Jun 11 |
|----------------|------------|------------|
| Production     | 525.4      | 474.0      |
| Exports        | 206.0      | 210.8      |
| Imports        | 31.3       | 16.3       |
| Market Balance | 350.7      | 279.4      |

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

Russian caustic soda production increased by 50,600 tons in the first half of 2012 against the same period last year. Production was particularly low in the first quarter in 2011 whereas this year plants have run with less interruptions. Capacity utilisation for the Russian caustic soda producers amounted to 74% in the first half of 2012, normally utilisation ranges between 70-80% of capacity. Market consumption was higher in the first six months in 2012 due to demand from chemical producers and the paper industry. In terms of new investments the

focus is on conversion from mercury to membrane, rather than capacity increases, but the RusVinyl project at Kstovo will start next year which includes 235,000 tpa of caustic soda. In the short term this may see an increase in export activity.



Kaustik at Volgograd shipped 5,370 tons of liquid caustic soda to the Russian domestic market in June, 45% up on May. Kuibyshevazot purchased 1,950 tons of caustic soda, Korund 641 tons, Volzhskiy Orgsintez 467 tons, and Arkhangelsk PPM 285 tons.

#### **Khimprom-chlorinated paraffins**

Khimprom at Volgograd produced more than 2,100 tons of chlorinated paraffin in January-June 2012, which is 13% higher than the same period last year. Using inventory built up at the end of last year the company sold 2,300 tons in the first half of 2012 against 1,675 tons in the same period in 2011. Production has been rising in

recent months. Chlorinated paraffins are used in the manufacture of PVC plastisol and pastes, as a plasticizer emulsion resin, a liquid filler for cheapening the cost of the product; secondary plasticizer of PVC compounds, etc.

Khimprom produces over 100 products of industrial and household chemicals. The company is 51% owned by the Federal Agency for Federal Property Management, whilst another 35% is owned by Renova Orgsintez.

#### **Other Products**

##### **Shchekinoazot-tank-containers**

Shchekinoazot has recently begun the transportation of chemicals (sulphuric acid, urea-formaldehyde concentrate) using tank-containers. The main reasons for tank-containers are to reduce the cost of transport, whilst providing greater flexibility in handling throughout the transportation process. Chemical companies have found that this type of transportation has another advantage in the ability to maintain the temperature for the product. The company has already sent 34 tank containers of sulphuric acid and 8 tank-containers with urea-formaldehyde concentrate.

##### **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.

Shchekinoazot faces a difficult second half of 2012, with modifications still continuing on the new 450,000 tpa methanol plant although this does not affect production. Total savings of raw materials and energy over the past six months amounted to 64 million roubles, but Russian gas prices rose 15% from 1 July which affects methanol margins for the company. The caprolactam plant will undergo repairs in the next three months moreover, requiring investments of around a billion roubles. In addition to these internal factors, new capacity has been introduced in China which could affect export opportunities for Shchekinoazot whilst the general economic outlook remains weak. As a result, Shchekinoazot is trying to be cautious in its expectations for the second half of 2012, with a hope for improvement in the first half of 2013.

##### **Kuibyshevazot-Linde**

Kuibyshevazot and Linde are negotiating the establishment of the Samara region of the JV for the production of industrial gases. Linde owns shares in Yekaterinburg Ural Plant of Industrial Gases; the company also owns Balashikha oxygen plant in the Moscow area, and acetylene plant in Kaliningrad. These assets were purchased in 1994 by the Swedish company AGA, which in 2000 became part of Linde.

##### **Korund-sodium cyanide investments**

Korund (controlled by the Austrian Petrochemical Holding GmbH) is to invest in two stages of production of sodium cyanide at Dzerzhinsk. The company has scheduled the start of the first plant for sodium cyanide with a capacity of 40,000 tpa. Equipment installation for the second phase is planned to start in September 2013. The market for sodium cyanide is growing much faster than production not only in Russia but also abroad. For instance, demand is rising in Kazakhstan where imports come from China and South Korea and Korund views this market as an opportunity. The second unit will also have a capacity of 40,000 tpa. At present, Korund is operating its old 10,000 tpa sodium cyanide unit, and this might be closed after the second unit starts production.

##### **Galopolymer-chloroform project**

Galopolymer is currently working on a project for the production of chloroform at Kirov-Chipetskiy, and has to date invested 1.6 billion roubles. The project is scheduled to be completed in early 2013, which will involve the transfer from alcohol from the current plant to methane technology. The project includes the construction of a new chloroform unit from natural gas, which has a higher performance and lower production costs. The capacity of the new plant is 45,000 tpa. Chloroform is the main feedstock in the production of freon-22, fluoropolymers, and fluoroelastomers at Kirov-Chipetskiy.

##### **Other inorganic products**

In the first half of 2012 Yaroslavl Pigment produced 3,000 tons of iron oxide pigment, 3% higher than in the same period in 2011. Export volumes of pigment for the same period decreased by 15% to 47,800 tons and imports by 13% (to 13,900 tons). As a result, the apparent consumption of iron oxide in the first half of 2012 was 16,900 tons, 11% less than in the same period in 2011.

Russia imported 1,040 tons of hydrochloric acid in June, 17% higher than in May. Dniproazot sold 662,600 tons on the Russian market at a price of \$79-90 per ton, whilst Kemira in Finland supplied 380,900 tons at \$73-75 per ton. In the first half of 2012 Russian consumers imported 4,000 tons of hydrochloric acid, 219% up on the same period last year. Ukraine accounted for 70% of imports and Finland 30%.

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#### **Ukraine**

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##### **Karpatneftekhim-delayed outage**

LUKoil has delayed its planned maintenance shutdown for Karpatneftekhim for a few weeks, which was supposed to start in August and will take place in September-October. The delayed maintenance outage has been determined by the necessity to build inventory as product has tightened. As Karpatneftekhim's main export

| <b>Ukrainian Chemical Imports<br/>(unit-kilo tons)</b> |                   |                   |
|--|-------------------|-------------------|
| <b>Product</b>   | <b>Jan-Jun 12</b> | <b>Jan-Jun 11</b> |
| ABS  | 1.9               | 1.4               |
| Phthalic Anhydride                                     | 0.3               | 2.7               |
| Benzene  | 15.8              | 29.3              |
| PET  | 78.4              | 77.3              |
| Polyamide  | 0.6               | 0.9               |
| PVC  | 43.6              | 89.1              |
| Polypropylene  | 34.9              | 25.9              |
| Polystyrene  | 18.1              | 21.9              |
| LDPE   | 43.6              | 56.0              |
| LLDPE  | 31.6              | 29.2              |
| HDPE   | 44.6              | 64.5              |
| Soda Ash   | 3.8               | 14.1              |
| Caustic Soda Liquid                                    | 83.9              | 74.3              |
| Caustic Soda Solid                                     | 6.3               | 8.5               |
| Styrene  | 7.8               | 8.3               |
| MTBE   | 24.0              | 37.4              |

market for HDPE is Russia, shortages are expected in the autumn due to planned outages at Kazanorgsintez and Nizhnekamskneftekhim.

Karpatneftekhim supplies around 7,000 tons of HDPE per month to the Russian market. Earlier it was planned that the company would undertake repairs in August and September. LUKoil is in dispute with the Ukrainian government over unpaid VAT affecting raw material imports. LUKoil imports normal butane and other raw materials from Russia for the cracker at Kalush, and the dispute needs to be settled before Karpatneftekhim resumes production.

#### Ukrainian polymer markets

Ukrainian imports of polypropylene rose in the first half of 2012 to 34,900 tons from 25,900 tons and this was due mainly to raw material and production problems at Linik. Similarly to polyethylene consumers are less solvent than earlier in the year and are seeking suppliers who are prepared to wait longer for payment. In the current market climate high inventory is slowing down new purchases.

HDPE and LDPE imports both declined in the first half of 2012, with HDPE affected by domestic availability and LDPE affected by low solvency amongst consumers. In early August the Ukrainian LDPE market was faced by low demand. The only LDPE plant in Ukraine is located at Severodonetsk; this has been idle since the mid-1990s due to a lack of ethylene and as a result the country is completely dependent on imports. Russia is the largest source of imports of LDPE into Ukraine, supplying 2,400 tons in June, but supply from Azerbaijan rose 2.7 times to 1,100 tons. Other sources included Central European producers such as TVK and Slovnaft.

LLDPE imports were up slightly in the first half of the year. This was despite imports dropping 17% in June against May, amounting to 7,500 tons. This was due to seasonally lower consumer activity and volumes from Saudi Arabia were reduced by 28% against May to 3,500 tons. Supplies from Asia Europe also declined.

| <b>Ukrainian Chemical Production<br/>(unit-kilo tons)</b> |                   |                   |
|---|-------------------|-------------------|
| <b>Product</b>  | <b>Jan-Jun 12</b> | <b>Jan-Jun 11</b> |
| Acetic Acid   | 62.9              | 65.5              |
| Adipic Acid   | 13.5              | 30.9              |
| Ammonia   | 2,475.8           | 2,167.4           |
| Benzene (-95%)  | 89.0              | 73.7              |
| Benzene (+95%)  | 64.4              | 64.2              |
| Caprolactam   | 25.1              | 30.1              |
| Caustic Soda  | 71.1              | 61.4              |
| Ethylene  | 99.8              | 83.1              |
| Formaldehyde  | 21.0              | 14.7              |
| Methanol  | 84.7              | 69.4              |
| Polyethylene  | 54.7              | 45.5              |
| 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 PVC market

Ukrainian exports of PVC rose in June by 19% over May to 12,130 tons. Most of the exports were directed towards Russia. In addition, PVC is shipped from Ukraine to Belarus and Lithuania. Karpatneftekhim has reversed its decision to close in August and September and will now produce PVC until a planned maintenance in October. Imports of PVC suspension totalled 9,800 tons in June, rising 1.4 times over May with the USA the dominant source. Oxy Vinyl supplied 3,470 tons in June. Imports of PVC emulsion fell by 14% in June to 3,280 tons, with Vestolit supplying 35% followed by Vinnolit with 30%.

PVC consumption in Ukraine fell by 4% in June over May to 15,670 tons. This was the result of reduced production by Karpatneftekhim and higher export activity. Russia is the main destination for Ukrainian exports, followed by Belarus and Lithuania.

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

In the first half of 2012 imports of methanol from Russia totalled 8,700 tons, 2.5 times lower than the same period in 2011. Reduced imports are attributed to lower purchases from Karpat Smol for resin production and Linik at Lisichansk for MTBE production. The average price of imported methanol in the first half of 2012 to Ukraine from Russia was about \$340 per ton DAF border Ukraine, about 7% up on 2011.

At the end of the first quarter Ukraine introduced additional import duties on methanol imports from Russia, which has led to a reduction in its supply chain. Karpat Smol resumed purchases of Russian methanol in June, the result of which was an eight-fold increase in imports to 1,700 tons. Ukrainian gas industry companies also

increased their volume of purchases, but less significantly. In June, they bought about 270 tons of Russian methanol (about 16% of all imported products to Ukraine), increasing import of products compared to May almost 66%.

Whilst Russian methanol imports have been in decline this year the sole domestic Ukrainian producer has been increasing its production and market share. In the first seven months Azot at Severodonetsk produced 101,200 tons of methanol which is 18% up on the same period last year. Around 70% of production is used captively, whilst the largest consumers for Azot remain the gas companies, accounting for around 60% of shipments but tend to reduce purchases in the summer months. Other domestic consumers include Stirol at Gorlovka which buys methanol for the production of formaldehyde usually around a thousand tons per month. In total, Azot sold 28,800 tons to the domestic market in the first half of 2012, almost 30% more than the same period last year.

### **Ukrainian DOP market**

In contrast to declining Russian imports of DOP Ukraine increased DOP imports by 16% in the first half of 2012 and amounted to 5,700 tons. The increase in imports was due to reduced production in Ukraine, where output was down 28% to 5,100 tons. DOP imports into Ukraine increased by 12% in June to 1,129 tons due to the increase in purchases by Prominvest Plastik. The company imported 340 tons of DOP in June, 3.1 times higher than in May. However trading Company Galich-Cable reduced purchases by 13% in June down to 386 tons.

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## **Central Asia**

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### **KBR-Uzbek petrochemical project**

KBR has agreed to provide engineering, procurement and construction (EPC) solution and an integrated technology to the flexible feed ethylene facility owned by UzKorGasChemical. The facility is located in the Ustyurt area of Uzbekistan and is being designed with a capacity to produce 400,000 tpa. This ethylene facility will be based on the license of KBR in Uzbekistan, using selective cracking and optimum recovery (SCORE) technology.

KBR will offer SCORE technology license, basic engineering package, support for construction, start-up services and operator training. Additionally, it will offer comprehensive engineering and design solution for the furnace division of the ethylene facility and supply equipment associated with the ethylene furnace. Further EPC solutions will be provided by GS Engineering and Construction for the project. Collaboration between KBR and GS Engineering & Construction will be strengthened by means of this project and will provide EPC solutions to prospective customers.

### **Challenges facing Atyrau polyolefin project**

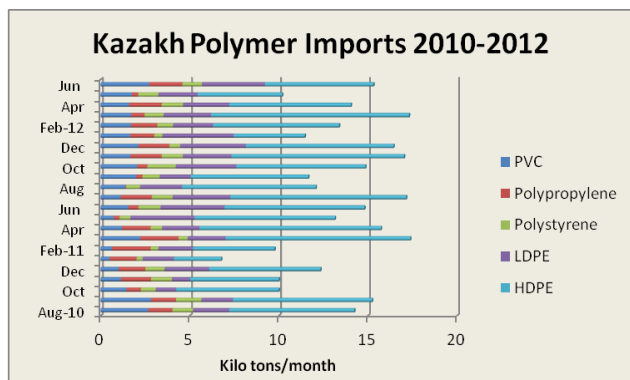
Pressure is mounting on the time-schedule for the gas-chemical and polyolefin complex for Atyrau, due to complications over finance. Planned production capacity of the complex includes 800,000 tpa of polyethylene and 500,000 tpa of polypropylene. The Atyrau polyolefin complex has all the necessary conditions for successful conclusion, but the longer it takes to build the units the more expensive it becomes. Also the construction of the complex needs to correlate closely with the feedstock provisions which are being developed with the gas-chemical complex as its main target for consumption. At present the focus is on the infrastructure, constructing access roads and railways, power lines, etc. The aim is to complete the project by 2016, but even this date is in question in view of delays in financial organisation. In the meantime the project cost escalates, firstly from when the plan was devised in 2005-2006 at \$4 billion and now when it is valued at \$6.3 billion.

In terms of domestic market supply the polyolefin facilities are surplus to requirements, as consumption is quite small. For polypropylene, Kazakhstan already has a plant at Pavlodar, which uses propane-propylene fractions from the local refinery. The initial capacities at Neftekhim at Pavlodar included 30,000 tpa of propylene and 35,000 tpa of polypropylene but this has been raised slightly since. In 2013, the company hopes to expand polypropylene capacity to 100,000 tpa using the gas-phase technology Novolen

### **Kazakh polymer imports, Jan-Jun 2012**

Kazakh polymer imports rose in the first half of 2012 to 81,749 tons against 77,645 tons in 2011. In June this year imports of PVC resin into Kazakhstan rose by 1.5 times in June and amounted to 2,700 tons. China is the main supplier to the Kazakh market. Polypropylene imports totalled 1,870 tons in June, 1,440 tons of which came from Russia.





The Packaging Association of Kazakhstan has proposed a reduced import duty on polypropylene in from 10% to 0%, at least for a transitional period. Prior to Kazakhstan joining the Customs Union it was 0%, but moved to 10% on the suggestion of Russia. Kazakhstan is in the process of constructing its own polypropylene facilities as part of the Atyrau polyolefin complex, but this will not be launched until 2016-2018.

In the intervening years the Kazakh market will depend largely on imports from Russia. This year prices for imported polypropylene have been affected by the outage at Stavrolen, and have risen by around 30%. The 10% duty moreover prevents packaging companies from developing some commodities and thus the request has been made to the government to remove the duty. A decision will be taken on 20 August, which might see duties reduced to zero or at least reduced.

*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=8.100. €1 = 10.140: Rus rouble. \$1 = 31.457. €1= 39.2576

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