Chemical Information Resources for East Europe and CIS

# CIREC MONTHLY NEWS

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

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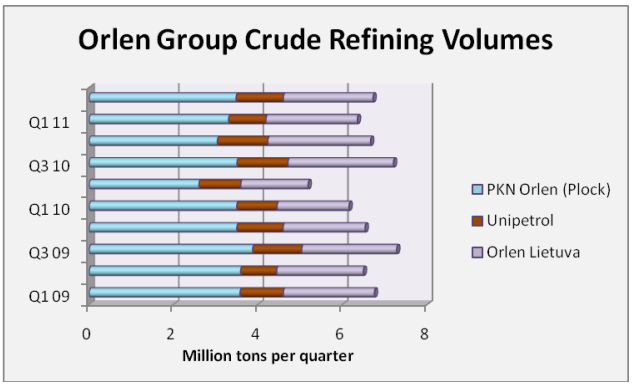
## FEATURES FROM THIS ISSUE

# CENTRAL & SOUTH EAST EUROPE

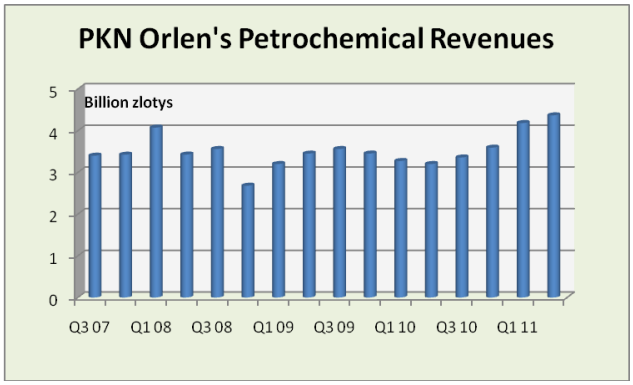
## Petrochemicals

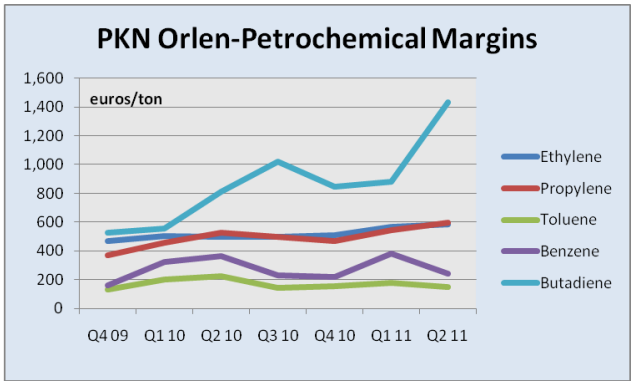



### PKN Orlen, Q2 2011

Second-quarter operating profit in 2011 for the Orlen group edged down from the first quarter to zl 1 billion, the main cause of which was attributed to lower margins for oil products and reduced production levels. PKN Orlen stated that maintenance at its main Plock refinery lowered group refining output by 2%. Significantly the overall margin, including the refining margin and the Ural-Brent oil price spread, down 34%. PKN Orlen refines cheaper Ural oil, while its products are priced on more expensive Brent.

The petrochemical division for the Orlen group recorded an operational profit of zl 521 million in the second quarter in 2011, which was up by zl 399 million against the same period last year. Revenues increased by 13% due primarily to high product prices. The divisional increase from sales amounted to zl 231 million due to higher volumes of fertilisers and more significantly the introduction of PTA to the group's product portfolio. Furthermore, the positive effect of changes in prices of petrochemical products on inventory valuation added zl 44 million to second quarter profits. The refining division did not perform so well, generating an operating profit of zl 510 million against zl 983 million in the same period last year.



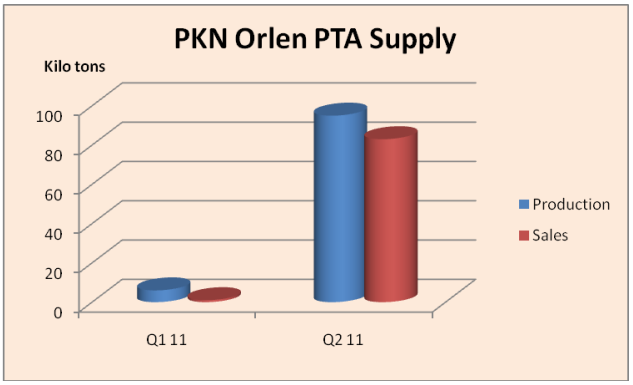

PKN Orlen's petrochemical division thus accounted for a large part of the group profit in the second quarter, with the EBIT up zl 400 million against the same period last year. The Orlen group's performance was under pressure in the second quarter from a 50% rise in crude prices coupled with a decline in refining margins. The second quarter of the year saw an improvement of petrochemical margins by €74/ton over the same period in 2010 to €795/ton and this represented a key factor in performance.

The Orlen group underwent a range of shutdowns at all subsidiaries in the first half of the year. Orlen Lietuva in Lithuania improved its operating performance by maximising its processing capacities and maintaining high fuel yields. In the second quarter in 2011, Orlen Lietuva generated an operating profit of zl 4 million, which was an improvement against the zl 13 million loss in 2010. For the first six months of 2011 Orlen Lietuva's EBIT advanced by zl 220 million.

In Q2 2011, the operating profit of Unipetrol's petrochemical division grew by 56%. The company also reported record-high sales of diesel oil and considerably improved sales of Verva high-margin fuels. However, the effect of higher volumes was offset by the difficult conditions in the refining sector as well as lower retail margins. The market environment had an adverse effect on Unipetrol's operating profit which retreated year on year to zl 30 million for the first half of the year.

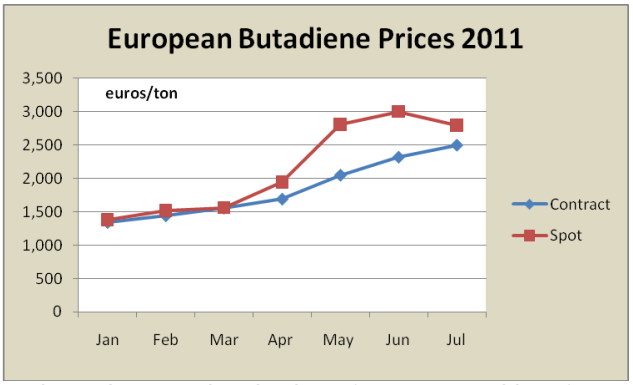
### Orlen's petrochemical division, Jan-Jun 2011

In the first half of 2011, the Orlen Group satisfied the requirements set out by the REACH programme which is designated to replace majority of the most hazardous chemical substance with their safer substitutes.




During the second quarter Orlen's petrochemical divisional capital expenditure amounted to zl 101 million. The most significant investments comprised the completion of the PX/PTA complex, the construction of synthesis gas drying installation at Anwil, as well as pyrolysis furnace reconstruction and power transformers replacement at the olefins Installation at Litvinov. In the first half of 2011, PKN Orlen launched the paraxylene plant at Płock and the PTA plant at Wloclawek. The PX/PTA installation has a production capacity of 600,000 tpa which constitutes around 20% of European production.

In the second quarter a total of 95,000 tons of PTA was produced of which 83,000 tons was sold on a contract basis to customers including Indorama which completed the acquisition of PET producer SK Evrokhim at Wloclawek from SK Chemicals in March. Indorama Ventures now plans to build a 220,000 tpa PET expansion project at its site in Wloclawek, which will raise PET capacity to 360,000 tpa. The project is expected to be completed in 2013. Indorama Ventures intends to source PTA mostly from PKN Orlen's new PTA plant at Wloclawek. Other consumers of PTA include Mitsubishi Heavy Industries which provided the technology for the plant and could take up to 150,000 tpa of PTA.



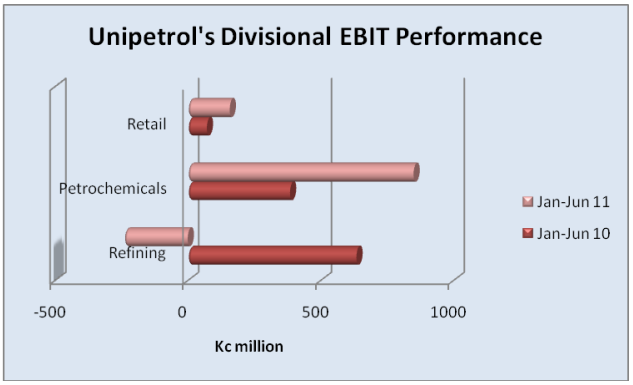

Butadiene prices, contract and spot, rose significantly in the second quarter helping to drive up profits in the petrochemical division, particularly for Unipetrol. The EBIDTA increased by 111.4% in the first half of 2011 against the same period last year. Contract prices for butadiene rose in Europe from €1690/ton in April to €2320/ton in June.

At the end of June crackers in Europe were still running at high rates taking advantage of low naphtha prices and consequently higher margins. Unfortunately demand was not there to match supply and producers also had to face competition from the Middle East and Asia who had excess material because of the weak Asian market. In Europe the contract price for propylene in July was reduced by €75/ton to €1130/ton delivered. Supply is long and spot prices have been under severe pressure during July.

## PKN Orlen-EBRD

PKN Orlen and the EBRD have signed an agreement for a €250 million loan to be used by PKN Orlen to finance environmental protection projects and improve the energy efficiency of the power plant (CHP) in Płock. The planned investments are expected to reduce compounds emissions from the CHP plant by 90%. The financing will be available until 2018. This reduction will only be possible through the construction of new facilities including the installation of wet desulphurisation, catalytic denitrogeneation, etc.

In order to cover the increasing demand for power supply at Płock, the construction of a steam boiler of 300MWt is being undertaken. Its start-up should take place in 2012. The new boiler will meet environmental requirements for emissions of sulphur dioxide, nitrogen oxides and dust.




## Unipetrol, Jan-Jun 11

The Unipetrol group posted an operational profit (EBIT) of Kc 224 million in the first half of 2011. Revenues of Kc 25.948 billion represented an 11% increase on the same period in 2010. As the graphic opposite illustrates the refining performance incurred losses in the first half of this year, whilst the operating profit for petrochemicals surged ahead.

The second quarter was difficult especially for

refinery sector, whilst the EBIT achieved in the petrochemical division increased by 56% during the second quarter and more than doubled in the first half of 2011. The Group results were also positively influenced by significant cost decrease and the lower consumption of allocated CO2 allowances. The overall reduction in EBIT was caused mainly by worse refinery margins, whilst the group's petrochemical division was the biggest contributor to the total EBIT (Kc 465 million).

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

| *Product* | *2010* | *2009* |
|---|---|---|
| Acetic acid | 9,270 | 6,255 |
| Acetone | 22,593 | 21,825 |
| Acetylene. | 5,638 | 6,523 |
| Acrylic polymers | 9,618 | 6,766 |
| Alkyd resins | 12,812 | 16,796 |
| Ammonia | 1,070,000 | 1,004,084 |
| Benzene | 135,266 | 138,138 |
| Butadiene-1,3 | 62,501 | 54,794 |
| Caprolactam | 159,307 | 144,974 |
| Caustic Soda Liquid | 223,022 | 295,090 |
| Caustic Soda Solid | 51,189 | 71,595 |
| Chlorine | 275,926 | 330,099 |
| Epoxy resins | 24,581 | 16,796 |
| Ethylene | 501,801 | 516,288 |
| Formaldehyde | 97,837 | 96,289 |
| Glycerol | 13,065 | 15,084 |
| Hydrochloric acid | 76,741 | 74,015 |
| Isobutanol | 16,720 | 11,695 |
| Latex | 9,618 | 8,665 |
| N Butanol | 27,149 | 28,053 |
| Nitric acid, technical | 2,209,000 | 2,139,417 |
| Oleum | 215,000 | 217,000 |
| Orthoxylene | 5,078 | 21,164 |
| Paraxylene | 0 | 100 |
| Phenol | 34,000 | 33,107 |
| Phosphoric acid | 293,353 | 141,322 |
| Phthalic anhydride | 16,699 | 17,233 |
| Polystyrene | 142,051 | 127,281 |
| Polyamides | 87,159 | 70,511 |
| Polyethylene | 370,342 | 347,398 |
| Polypropylene | 241,223 | 267,001 |
| Propylene | 337,070 | 358,192 |
| PVC | 195,836 | 258,086 |
| Soda Ash. | 1,010,000 | 889,000 |
| Sulphuric acid | 1,686,000 | 1,243,000 |
| Synthetic rubber | 168,248 | 135,746 |
| Toluene | 97,874 | 100,726 |

Unipetrol's volume of crude oil processed increased by 3% in the first six months from 1.082 million tons to 1.112 million tons as the nominal utilisation ratio reached 87%. Performance of the refinery division was negatively affected by higher differential between Brent and other sweet crude oils which more than doubled in price against the same period last year. The division was positively influenced by the improvement in the Brent-Ural differential.

In the first half of 2011, the Unipetrol Group continued cooperation with Polymer Institute Brno focusing on the innovative aspects of polyethylene and polypropylene production. In laboratory studies, a new kind of polyethylene (blow moulding PE) was put into trial production with a view towards establishing commercial operations at a later date.

### Petromidia modernisation

KazMunaiGaz announced that last phase of the programme to increase refinery capacity at Petromidia has started. The Rompetrol Group and its sole shareholder KazMunaiGaz aims to consolidate and build presence in Central and East Europe and after modernisation of the main operational setting, the processing volume at Petromidia is to be increased from 4 to 5 million tpa of oil. This year, Rompetrol Rafinare also plans to modernise the installation for gas cleaning, vacuum cleaning installation conversion and distillation in the treatment plant for diesel fuel. Other projects include the construction of new facilities for the production of nitrogen and a new flare system. The Rompetrol Group is cooperating with licensees, such as the IPIP Romania, UOP, Axens, Technip, Haldor Topsoe, and LGI.

## Chemicals

### Oltchim-finance prevents operating rates

Oltchim was forced to cut output to 30% of installed capacity in August as it could not finance its working capital. In order to finance investments and working capital, Oltchim is considering whether to borrow up to €250 million. Around €100 million is proposed for financing projects already started, and for other investments to be carried out at Ramnicu Valcea. The remaining €150 million is intended to be used as working capital. Part of the investment programme involves Linde Gas Romania building a plant to supply oxygen-nitrogen gas at the Arpechim site at Pitesti. In other investments, Oltchim intends to expand its capacity for VCM storage and is undergoing environmental risk assessment for the project.

### Polish chemical company performance Q2 2011

Polish chemical companies improved their results in Q2 2011, with Synthos topping the list with the likely Q2 net profit of zl 226.8 million representing a 5% increase over 2010. .Despite high butadiene prices Synthos has managed to achieve high profits from rubber sales in particular. ZA Tarnow and ZA Pulawy also managed to hike their respective profits significantly based on fertiliser and caprolactam prices, ZA Tarnow increased profits by 150% against the same period in 2010 to zl 53.7 million and ZA Pulawy increased by 50% to zl 104.7 million.

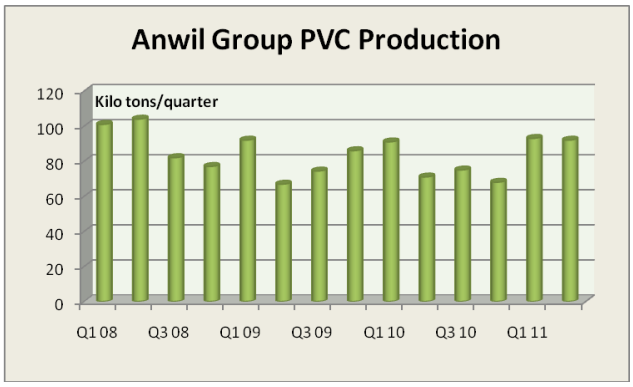
| Polish Chemical Production (unit-kilo tons) | | |
|---|---|---|
| ***Product*** | ***Jan-Jun 11*** | ***Jan-Jun 10*** |
| NaOH Liquid | 146.2 | 141.4 |
| NaOH Solid | 27.4 | 32.2 |
| Soda Ash | 497.0 | 471.5 |
| Ethylene | 273.7 | 239.3 |
| Propylene | 182.2 | 152.6 |
| Butadiene | 31.7 | 27.9 |
| Toluene | 48.0 | 41.9 |
| Phenol | 20.9 | 14.4 |
| Caprolactam | 83.5 | 82.0 |
| Polyethylene | 182.9 | 164.6 |
| Polystyrene | 65.1 | 68.8 |
| PVC | 142.3 | 105.7 |
| Polypropylene | 121.7 | 106.5 |
| Synthetic Rubber | 93.8 | 79.0 |

## Ciech-acquisitions and investments

Ciech and three other companies have submitted a binding offer for the purchase of the silicate producer ZCh Rudniki. Other bidders include Dr.Woellner Holding, PCC and Tonaso Holding. The Polish Treasury wants to sell shares representing 85% in the Rudniki plant, with a decision expected to to reached in the fourth quarter of 2011. The company's main activity is production and sale of sodium and potassium silicate. In 2010, the company recorded zl 90.7 million of revenues against zl 93.3 million in 2009.

Ciech has also been increasing its shares in current subsdiaries including Organika-Sarzyna, Zachem and ZCh Alwernia. This represents part of the restructuring of the Ciech group aimed at increasing transparency in adddition to profitability.

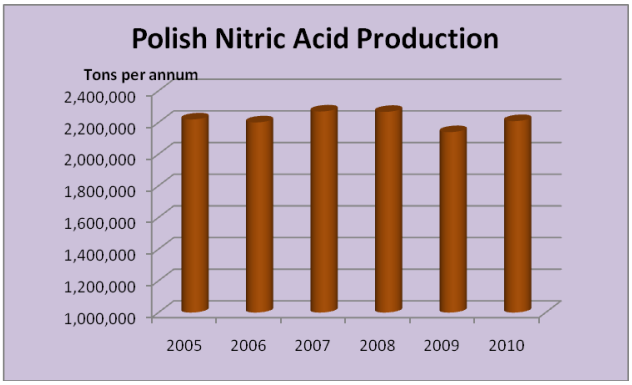
The investment strategy of the group rincludes the modernisation of Janikowo power plant linked to the soda ash plant. Approximately zl 231 million (including EU funding of about zl 31 million) is planned for this project, which is scheduled for completion in 2012, The second major project involves the production of plant protection agents MCPA and MCPP-P at Organika-Sarzyna, for which zl 103 million has been allocated (including funds from the EU of about zl 40 million). Completion is scheduled for 2012. Other projects planned by the Ciech group include the expansion of soda ash capacity, for which zl 12 million is to be invested, and the expansion of the TDI facilities at Zachem.




## Anwil-PVC production increases

Anwil's PVC production stabilised in the first half of this year after the difficulties encountered at Wloclawek in the second half of 2010. Due to a serious failure on the electrolysis plant at Wloclawek in June last year output was affected for the third and fourth quarters. In order to minimise the limitations in the production of PVC, PVC and soda lye the output at Spolana was maximised whilst external sources of raw materials were increased. The sales of suspension PVC constitutes a substantial share of the Anwil Group's sales' revenues. The trade name of PVC produced at Wloclawek is Polanvil, whilst Spolana at Neratovice uses the brand-name Neralit.

In the first half of 2011, the Anwil Group continued efforts to comply with the provisions of law to the extent of eliminating Freon R-22 from cooling systems. In the cooling systems of the VCM-PVC unit Freon R-22 will be replaced with its ecological substitute, which will contribute to higher process safety.




At the end July PKN Orlen purchased another 559,569 shares in Anwil, constituting 4.15% share capital of the company. As a result of the transaction PKN Orlen's share in share capital of Anwil increased to 94.5%. These measures have been taken with a view towards selling Anwil, although it may be that Spolana will be sold off separately.

## ZA Tarnow restores nitric acid production

ZA Tarnow resumed full production at the fertiliser plant on 14 July, after problems with the nitric acid plant from January were resolved. The supply of nitric acid from ZAK allowed ZA Tarnow to operate the nitrate plant in part utilisation in the first half of the year.

Although yet to receive Treasury approval if ZA Tarnow is able to acquire ZCh Police questions may arise over the future direction of ZA Tarnow, particularly as the Police plant is located around 600 km away. Controlling prodcution assets at Tarnow and Kedzierzyn has been helped as both locations are in the sourthern part of Poland, but Police is almost on the coast and could potentiually act as the headquarters of the Tarnow group. This propsect seems to be unlikely in view of the costs of transferring the managing part of the group.

### ZA Pulawy-melamine market

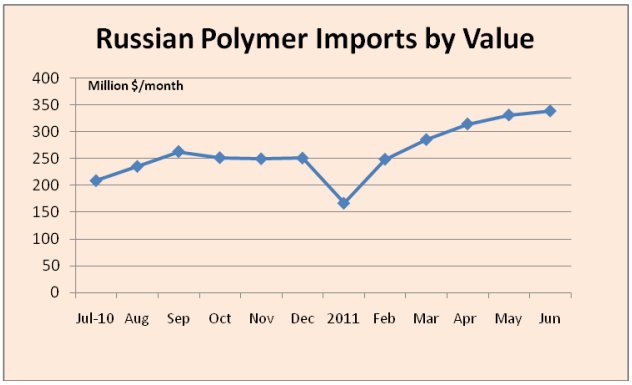
Regarding melamine sales, the EU has imposed a five-year tariff on melamine from China to help Polish, Dutch and Austrian producers compete with cheaper imports. The duty of €415 ($593) per ton penalises Chinese exporters of melamine for selling it in the EU below cost. ZA Pulawy, OCI Melamine and Borealis Agrolinz Melamine account for about 90% of EU melamine production, and placed a request to the EU to impose sanctions. Poland exports only small volumes of chemicals to China such as caprolactam and isocyanates, which could possibly be redirected to other markets should the Chinese government respond with retaliatory measures.

ZA Pulawy maintains an optimistic outlook for the future development of the melamine market particularly in relation to applications for laminates, wood adhesives, etc. An important advantage of Central and East Europe is the strong presence of timber processing plants and furniture manufacturers located in the area, whilst access to wood is much easier than in West Europe. ZA Puławy is the world's third largest producer of melamine with capacity of 96,000 tpa.

# RUSSIA

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

| *Product* | *Jan-Jun 11* | *Jan-Jun 10* |
|---|---|---|
| Acetic Acid | 71.9 | 75.1 |
| Ammonia | 7,227.2 | 6,090.8 |
| Benzene | 576.6 | 526.3 |
| Butanols | 104.2 | 135.5 |
| C Black | 357.9 | 310.3 |
| Caustic Soda | 459.4 | 542.8 |
| Ethylene | 1,251.9 | 1,263.8 |
| Methanol | 1,600.8 | 1,517.8 |
| PET | 162.3 | 149.7 |
| Phenol | 132.0 | 119.1 |
| Phthalic Anhydride | 54.4 | 50.9 |
| Polyethylene | 811.7 | 846.2 |
| Polypropylene | 341.1 | 320.2 |
| Polystyrene | 154.6 | 138.0 |
| Propylene | 656.5 | 524.9 |
| PVC | 269.0 | 294.7 |
| Soda Ash | 1,380.1 | 1,305.0 |
| Styrene | 257.7 | 253.1 |
| Synthetic Rubber | 639.9 | 565.0 |




### Russian production & trade, Jan-Jun 2011

Chemical production rose for most products in the first half of 2011 against the same period last year, with most of the increases marginal rather than significant. Some new capacity has been added, such as the start-up of the new PET plant at Kaliningrad but for the most part production increases have been achieved through improved utilisation. Propylene production was helped by the start-up of the new plant at Kstovo under the management of LUKoil, where capacity is 150,000 tpa, but ethylene production was slightly down on last year. Certain products saw more noticeable falls including butanols, caustic soda and PVC. Synthetic rubber production rose in response to increased domestic demand for tyres.

In terms of trade, Russia reduced the physical amount of exports of petrochemicals by 16% in the first half of 2011, down to 1.102 million tons. In value terms, exports fell by 8% to $863.157 million. The chief reason for reduced export activity has been higher domestic demand which has reduced the need to export products. This is most evidently seen in shipments to China where volumes have been down substantially in the first half of 2011. Only caprolactam, isobutanols and polycarbonate recorded increases in the first half of the year, whilst in comparison all the main polymers were well down on 2010 or even zero in the case of HDPE. Even polyamide sales from Kuibyshevazot to China were down this year despite the start-up of a fourth line, indicating the increase in sales potential in the Russian market.

Whilst export activity has been restrained import activity has been robust with a constant growth in the value of imports, thereby affecting the country's balance of

payments. Polymers continue to flow into the country for products such as PVC, HDPE and EPS where domestic producers are unable to meet full demand. HDPE and EPS markets are changing as new capacity has been introduced, at locations such as Salavat and Perm respectively in the past year. PVC imports are expected to continue growing for at least another two years until the RusVinyl project is brought onstream. Evidence suggests that imports are unlikely to be phased out immediately but will be edged out gradually, particularly if other companies such as Kaustik and Sayanskkhimplast are able to expand their capacities.

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

| *Product* | *Jan-Jun 11* | *Jan-Jun 10* |
|---|---|---|
| HDPE | 0 | 31,885 |
| LDPE | 40,870 | 110,820 |
| n-butanol | 57,366 | 52,512 |
| iso-butanols | 45,217 | 41,364 |
| PVC | 340 | 2,266 |
| Phthalic Anhydride | 9,905 | 26,342 |
| 2-EH | 4,838 | 12,073 |
| PP | 122 | 23,260 |
| Acrylonitrile | 7,411 | 8,388 |
| Caprolactam | 64,709 | 51,966 |
| Polycarbonate | 9,518 | 0 |
| Styrene | 6,611 | 5,119 |
| Orthoxylene | 1,048 | 39,174 |
| Paraxylene | 0 | 14,636 |
| Acetone | 3,749 | 3,528 |
| Epichlorohydrin | 0 | 9,523 |
| Bisphenol A | 13,545 | 18,486 |
| Polyamide | 27,696 | 30,225 |
| Polystyrene | 207 | 2,500 |

The share of chemical products in the commodity composition of imports in Russia amounted to 16.7% in the first half of 2011 (against 18.3% in 2010). However, the value of imports of chemical products increased by 34.6% over last year whilst the physical shipments of organic chemical compounds increased by 42.9%. In some of the chemical application industries imports of pharmaceutical products rose by 15.0% (including medicines 14.3%), paints and varnishes by 5.0%, soap and detergents by 7.7%, plastic materials by 32.5%, and finally rubber and rubber products by 50.0%.

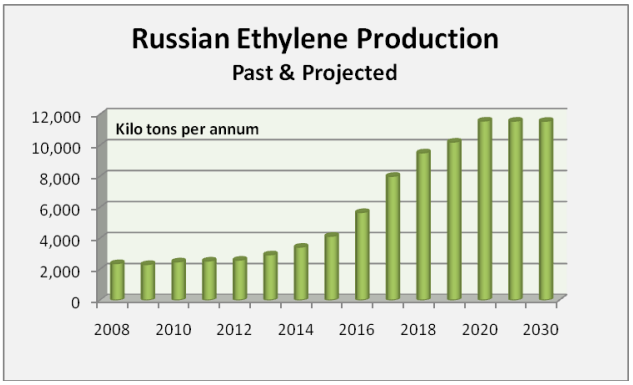
## Feedstocks & petrochemicals

### Russian LPG market

Russia increased production of propane and butane by 6.7% in the first half of 2011 against the same period in 2010 to 5.333 million tons. SIBUR reduced production by 3% to 1.466 million tons due to lower production at Tobolsk-Neftekhim whilst capacity expansion was underway. Gazprom plants reduced production by 0.6% to 1.298 million tons, whilst production of propane and butane at Nizhnekamskneftekhim remained about the same as last year and amounted to 463,300 tons.

LUKoil increased production by 23% to 564,500 tons, whilst Surgutneftegaz increased 2.5 times and amounted to 454,200 tons. Gazprom Neft produced 222,900 tons, increasing production by nearly 10%. Tatneft has increased production by 4.6% to 160,800 tons. Production of propane and butane by TNK-BP increased by 6% and amounted to 132,400 tons. Rosneft produced 127,500 tons, as well as for the same period last year.

The export duty on LPGs was increased 6% in August compared to July up to $182.8 per ton. From July 2010 to February 2011 the duty on the export of LPG has risen stage by stage and has increased almost tenfold from $20.5 per ton to $198.8 per ton.




### Russian ethylene production targets 2030

Russian ethylene capacity is predicted to rise by around four-fold in the next two decades driven partly by feedstock availability and partly from the need to meet rising demand from the domestic economy.

In accordance with the long-term programme of development of the petrochemical industry, the Russian Ministry of Energy expects ethylene production capacity to reach 11.548 million tpa by 2030. However, this prediction not only assumes proposed plant investments are undertaken, but also that considerable sums are invested in infrastructure including product pipelines, road and rail. As the graphic above shows most of the expansion in capacity is predicted by the Ministry of Energy to take place by 2020 thereafter remaining unchanged. However, in reality some of the planned projects will take longer than expected and the increase to 11.548 million tpa (as forecast) will occur on a more step by step basis well into the next decade.

The Russian government is contemplating the various options for its chemical industry programme, as far as 2030, covering in particular the development of gas deposits and feedstock transportation. The amount of work and investment required to develop the feedstock base and related infrastructure is considered to be of such a scale that it is likely to require most of the next two decades to undertake.

The general thesis of the strategy includes the construction of new pipelines and the modernisation of existing feedstock links, in addition to important measures required to be introduced for the scientific and educational support of the industry. The Ministry of Energy has been granted responsibility for the construction of projects for pipeline transportation of hydrocarbons to existing and new oil-and gas-chemical complexes.

The Russian Ministry of Industry has taken responsibility for the formation of regional clusters, which are intended to promote domestic consumption through the establishment of industrial parks and special economic zones. Russia estimates that it consumes petrochemicals around three times less per capita than in the developed world, whilst imports currently account for around 40% of total plastics consumption. This figure is slightly distorted by export activity which reduces the net import dependency, but it would appear on the surface that both huge opportunities exist for the increase in domestic consumption and production.

**Russian Ministry of Energy-feedstock pipeline options**

The Russian Ministry of Energy has sent a government analysis of construction projects for the options for transportation pipelines for NGLs and feedstocks from West Siberia. The document contains an analysis of five projects for transportation of hydrocarbons.

- The first involves the construction of the NGL pipeline West Siberia-Ural-Volga region. The initiator of the project is TAIF
- The second includes a project for ethane gas transportation of Valanginian deposits horizons from Urengoy and Yamburg, which is owned by Gazprom. The initiator of the project is Tatneftekhiminvest holding and the concept involves transportation to Tatarstan.
- The third project is known as TransValGaz and involves the use of wet gas supplied by Gazprom and the independent companies for the production of liquid fractions in a new gas processing plant at Cherepovets. The liquid fraction will then be transported to a proposed petrochemical complex on the Baltic coast in the Ust-Luga region.
- The fourth project is called Chord, and providing transport of NGLs from West Siberia to the shores of the Baltic Sea and its further processing at petrochemical complex at Ust-Luga.
- The fifth project involves the construction of a pipeline in West Siberia from Yuzhniy Balyk for the supply of NGLs to Tobolsk-Neftekhim.

***According to the Ministry, the pipeline project to Tobolsk is the most cost-effective project after analysis. It involves the construction of a 417 km pipeline, which could transport up to 8 million tpa of NGLs with the possibility of further expansion.***

The government target has been set to improve the level of integration in the Russian chemical and petrochemical industry, as constituting one of the key economic sectors in the country. For achieving this goal the major challenges lie in the transportation of gas liquids and other petrochemical feedstocks to the petrochemical plants, and ensuring that all investments comply with environmental regulations.

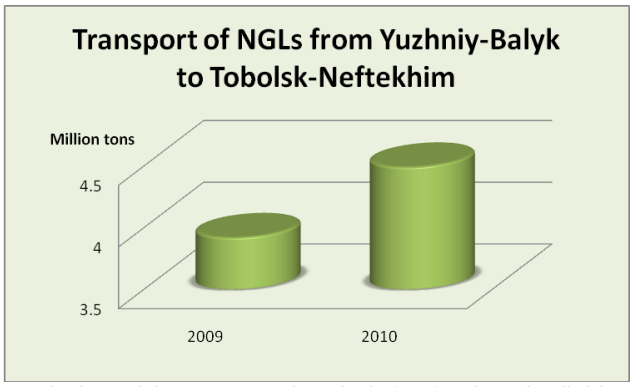
These core regions include the Privolzhskiy (Volga region), the Caspian, North-West, West Siberia, East Siberia and the Far East. The respective Ministries state that these clusters will not only provide the outlet for the raw material potential, which is yet to be monetised, but it will also contribute significantly towards GDP growth and the creation of new jobs. Whilst ethylene capacity is forecast to rise four-fold the production of propylene is also expected to increase approximately 4.5-fold, partly from cracker developments and partly through refinery projects. However, forecasting propylene capacity is more difficult than ethylene, particularly in relation to cracker feedstocks, and thus long term capacity forecasts could prove unreliable.

**Tobolsk-Neftekhim-expansion of gas fractionating**

Tobolsk-Neftekhim (included in SIBUR Holding) has recently completed a project to expand the capacity of the central gas fractionation plant (TSGFU) from 3.0 to 3.8 million tpa. Already in 2011, Tobolsk-Neftekhim plans to process 3.75 million tons of hydrocarbons. The increase in refining capacity will help to create a reliable source of raw materials for the polypropylene unit under construction at Tobolsk-Polymer, as well as facilitate the execution of state programmes to increase the volume of associated gas. TSGFU products include propane

fraction, isobutane fractions, fractions of normal butane, isopentane fraction, normal pentane and hexane fractions.

SIBUR plans to launch Tobolsk-Neftekhim's second gas fractionation unit (TSGFU-2) by 2015, with a capacity of 2.8 million tpa. The second gas fractionation unit connects Tobolsk-Neftekhim to Yuzhniy-Balyk GPP in the Khanty-Mansiisk region where associated gas processing capacity is being expanded and developed. In order to support the new fractionating plant three distillation columns were delivered in May this year from the Tobolsk industrial port area to Tobolsk-Neftekhim. The largest of these columns has a height of 90 metres and a weight of 611 tons. Columns are designed to highlight the ethane-propane and isobutane-butane fraction in the preparatory work for the construction of TSGFU-2. Regarding TSGFU-1, the existing fractionating plant, capacity is being increased through new columns and will rise to 3.8 million tpa.




After the two plants are up and running by 2015 Tobolsk-Neftekhim will thus be capable of processing 6.6 million tpa. Since 2005, the capacity of TSGFU has gradually increased, reaching 3.0 million tpa in 2009 and 3.5 million tpa in 2010. The expansion of gas processing facilities is ultimately part of SIBUR's plan to develop a gas-chemical complex at Tobolsk, involving ethylene and polyethylene. SIBUR is considering building an ethylene cracker of 1 million tpa at Tobolsk which will require around 3-4 million tpa of gas feedstocks.

Yuzhniy Balyk acts as a key hub for feedstocks linking Tobolsk with processing plants at Gubkinsky, Noyabrsk and Nyagangazpererabotka. These plants all belong to SIBURTyumenGaz which also owns 51% of Yugragazpererabotka (the jv with TNK-BP) and 50% in the Yuzhniy Priobsky GPP. SIBUR has invested 8.5 billion roubles in expanding the Yuzhniy-Balyk GIC, increasing the processing capacity by 1.5 billion cubic metres of associated gas per annum from local oil deposits.

### Tatarstan and Bashkortostan concede defeat on NGL pipeline

**Tatarstan and Bashkortostan have virtually conceded defeat in trying to lobby for the construction of the Privolzhskiy** (West Siberian-Ural-Volga) NGL pipeline. **It appears that the two regions have not found a satisfactory way to convince the owner of raw materials, namely SIBUR, to send raw natural gas liquids from Tobolsk in the direction of the Volga and Ural regions.**

**In contrast, SIBUR advocates constructing a pipeline to the Baltic coast which bypasses the** two republics, and is directed via Cherepovets in the Vologda region. This could facilitate plans to construct a large chemical complex at Cherepovets, in addition to acting as a conduit link for feedstocks. Regarding the Volga-Urals region other measures would need to be taken in order to support future investments in the petrochemical sector. The deficiency of NGLs and LPGs in the Volga-Urals region, according to the governments of Bashkortostan and Tatarstan, amounted to around 6 million tons in 2010. By 2020, this figure will have risen to around 8 million tons. The two parliaments from Bashkortostan and Tatarstan have requested the Russian Prime-Minister Vladimir Putin to authorise the construction of a Nizhnekamsk-Nizhnevartovsk-product pipeline and to support the idea of building a gas processing plant in Tatarstan. This latter prospect is related to the subsequent delivery of ethane for petrochemical producers in Tatarstan and Bashkortostan.

Both Tatarstan and Bashkortostan view Tobolsk as being located in a much stronger position for a prospective new ethylene complex. Moreover, the regions have not found the arguments that could convince SIBUR to send raw natural gas liquids from Tobolsk in the direction of the Volga. For the current production operations in Tatarstan and Bashkortostan raw material sources are by and large sufficient, although may not be the most cost-effective. Naphtha supply is more than adequate for regional consumption although ethane availability is constricted by capacity at Orenburg. Gazprom aims to expand the Orenburg Gas Processing Plant with the aim to provide more ethane and thus this would mitigate the need for a gas liquids pipeline.

Questions have arisen though over the necessity of the feedstock requirements in the Privolzhskiy region. SIBUR has been strongly opposed claiming on the one hand that Russia requires a more northerly pipeline route that would connect West Siberia with the Baltic coast. SIBUR also argues that the Privolzhskiy region is for a

large part self-sufficient and extra volumes are sufficiently available by rail transport. The main premise of demands for the pipeline to be constructed through the Privolzhskiy region appears to have been based above all for reducing feedstock costs. For example based on current costs NGLs range from 10-12,400 roubles per ton against 20-24,000 roubles per ton for naphtha. According to the Ministry of Energy, the average price of naphtha in the Russian market amounted to 20,860 roubles per ton in Q2 2011 which explains why producers such as Nizhnekamskneftekhim are interested in switching to LPG or NGLs.

**Ethylene Production in Privolzhskiy region 2010**

| Producer | Production (ktons) | % of Russian Total |
|---|---|---|
| Gazprom Neftekhim Salavat | 228.7 | 9.7 |
| Kazanorgsintez | 367.0 | 15.6 |
| Nizhnekamskneftekhim | 595.7 | 25.3 |
| Neftekhimya | 33.4 | 1.4 |
| SIBUR-Neftekhim | 243.0 | 10.3 |
| SIBUR-Khimprom | 52.4 | 2.2 |
| Ufaorgsintez | 92.9 | 3.9 |
| Totals | 1613.1 | 68.5 |

The Privolzhskiy region accounted for 67.7% of Russian ethylene production in 2010 and thus remains the core region for the petrochemical industry in Russia. Moreover, Tatarstan and Bashkortostan aim to carry out construction of additional facilities for production of ethylene, which could add up to 2 million tpa of capacity.

Whilst these projects are not solely dependent on the gas liquids pipeline from Tobolsk, other measures would need to be taken to provide the feedstocks for expansion. Although volumes of liquefied hydrocarbons and other light mixtures are available from West Siberia by railroad the cost attraction is largely reduced after rail tariffs have been added.

## Tatarstan-Yamal feedstocks

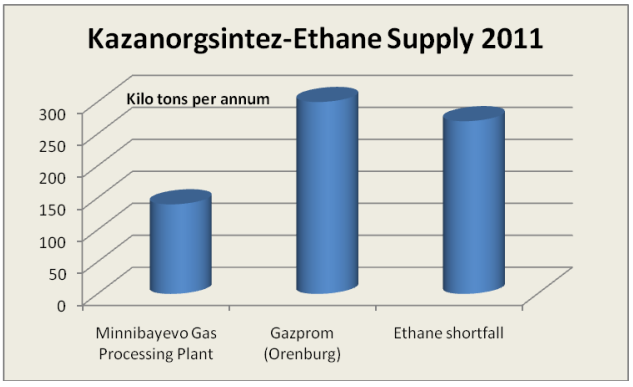
Partly under the assumption that gas liquids pipeline will not be directed through the Privolzhskiy region Tatarstan has invited Gazprom to construct a pipeline from the Yamal region to transport ethane fractions from the Urengoy and Yamburg deposits to the republic, where further processing will be applied at the Minnibayevo Gas Processing Plant. Around 28 billion cubic metres of gas of Valanginian origin could potentially be transported to Tatarstan, allowing the processing of ethane to support Kazanorgsintez in particular and possibly Nizhnekamskneftekhim.

**Tatneft Gas Production (unit-kilo tons)**

| *Product* | *2010* | *2009* | *2008* |
|---|---|---|---|
| Ethane | 87.3 | 95.6 | 91.8 |
| Propane | 205.5 | 197.4 | 200.0 |
| Isobutane | 40.2 | 39.4 | 40.8 |
| N-Butane | 111.8 | 109.5 | 111.2 |
| Isopentane | 10.6 | 4.5 | 6.6 |
| Pentanes | 29.1 | 63.0 | 41.7 |

Gazprom aims to decide next year how ethane supply can be increased from the Orenburg Gas Processing Plant in order to supply the Privolzhskiy region where demand outstrips availability. Gazprom could possibly consider working with other companies in the Privolzhsky region to bring them in as co-investors. Kazanorgsintez is the most important ethane consumer in the Privolzhsky region used in the production of ethylene. The Ministry of Energy supports the expansion in the production capacity of ethane at Orenburg, in which Gazprom has confirmed the readiness to invest. Tatneft itself is unable to meet the demands of the local petrochemical industry, although has invested in Minnibayevo which will alleviate some pressure on Kazanorgsintez.

Another development that could contribute to towards the feedstock balance for the Ural region involves TNK-BP's plans to double capacity at the Zainsk gas processing plant bringing it to a total of 2.2 billion cubic metres per annum. Completion of construction works on the second urn Zainsk GPP is planned for 2012. Zainsk is linked to Orenburg by pipeline, where TNK-BP is active and planning, inter alia, the construction of additional infrastructure for collection, transportation, preparation of associated gas.




## Minnibayevo-ethane expansion

The Minnibayevo Gas Processing Plant (GPP), which is part of Tatneft, has now increased the supply of ethane for Kazanorgsintez from 90,000 tpa to 140,000 tpa. Despite the increase Kazanorgsintez still remains short of ethane supply, as it requires 710,000 tpa to run its ethylene capacities at 100%. Currently Gazprom supplies around 300,000 tpa of ethane from Orenburg. Gazprom Mining Orenburg plans to build new facilities that will increase the separation of ethane. Whilst

Kazanorgsintez is unable to meet full demand for ethane it is forced to utilise other more expensive feedstocks such as propane and butane.

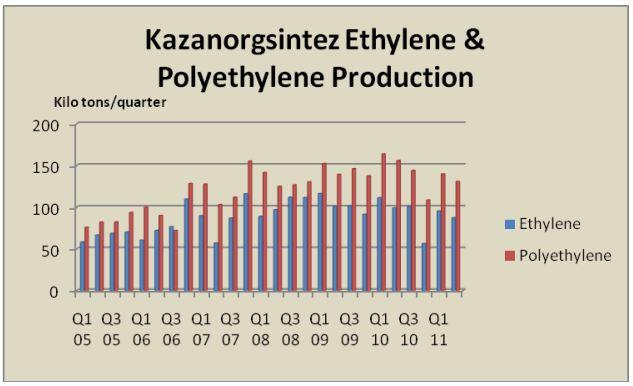
### Rosneft-Far East petrochemical complex

The construction of a marine terminal at Nakhodka in the Russian Far East has been approved, which will act as a key part of the petrochemical complex that Rosneft is planning with a planned capacity of up to 3.44 million tpa. In May 2011, the Primorsk Territory Administration announced the preliminary conditions for the complex which will cover an area of 16.8 square kilometres, and should necessary requirements be met it is assumed that construction will begin in second half of 2012.

The project in the first phase intends to use mixed naphtha and LPGs from the Komsomolsk refinery, the Achinsk Refinery and Angarsk Petrochemical Complex. All of these refineries are based in the Russian Far East or East Siberia. In the second phase, Rosneft intends to start processing gas condensate flowing through the pipeline East Siberia-Pacific Ocean (ESPO). Rosneft intends to produce a range of petrochemicals including MEG, polypropylene, alpha olefins, aromatic hydrocarbons and ethylbenzene.

Regarding its refinery investments in other parts of Russia Rosneft expects to complete the construction of a catalytic cracking unit at the Kuibyshev and Syzran refinery by 2013, and to build a catalytic reformer at the Novokuibyshevsk refinery with a capacity of 3.7 million tpa. A key project of the company in 2011 includes the Komsomolsk refinery with the completion of the delayed coker plant with a capacity of 1 million tpa. Rosneft will also start the reconstruction of the Tuapse Refinery.

In terms of associated gas targets, Rosneft is probably the least advanced of the Russian oil companies and is clearly unable to meet the 2012 goal of 95% utilisation. The present level of utilisation for associated gas is among the lowest of the oil producers in Russia at 54%. Surgutneftegaz and Tatneft have already reached the required level of utilisation of associated gas. Rosneft does not expect to reach 95% prior to 2014.




### Kazanorgsintez income down

Similarly to Gazprom Neftekhim Salavat Kazanorgsintez was affected by currency fluctuations. Kazanorgsintez reduced net income in the first half of 2011 by 30% against 2010 to 655.9 million roubles. In the first quarter the company recorded a net profit of 522.9 million roubles followed by 133.016 million roubles in the second quarter. Agreements have been signed between Kazanorgsintez and Sberbank for two existing lines of credit totalling 18.8 billion roubles for up to seven years. It also signed agreements on opening new lines of credit worth up to 10 billion roubles for up to five years. This latter agreement relates to refinancing debt funds raised by Kazanorgsintez for upgrading existing and building new facilities. In terms of production polyethylene operating rates were restricted by the shortages of ethylene, although the lack of utilisation at the Kazan cracker was compensated by additional volumes from Nizhnekamskneftekhim.

**Gazprom Neftekhim Salavat-Petrochemical Production (unit-kilo tons)**

| *Product* | *Jan-Jun 11* | *Jan-Jun 10* |
|---|---|---|
| Ethylene | 137.4 | 115.8 |
| Propylene | 48.6 | 35.3 |
| Benzene | 56.7 | 55.5 |
| Styrene | 66.3 | 72.9 |
| Butanols | 51.3 | 61.9 |
| HDPE | 35.8 | 6.7 |
| LDPE | 24.9 | 21.5 |

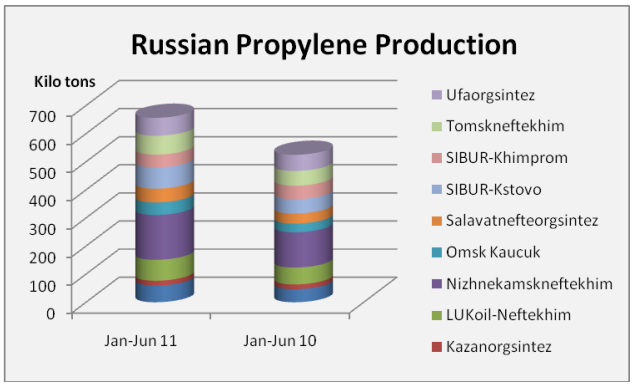
### Gazprom Neftekhim Salavat, Jan-Jun 2011

Gazprom Neftekhim Salavat increased net profit in the second quarter by 44% over the same period last year to 2.688 billion roubles. In the first quarter Gazprom Neftekhim Salavat's net profit amounted to 3.028 billion roubles, totalling 5.716 billion roubles for the first half of the year and almost twice higher than the first half than in 2010. Profits in the second quarter were affected by high customs duties on naphtha exports as well as the negative effects of exchange rate factors.

### SIBUR-Kstovo, further cracker modernisation

SIBUR-Kstovo continues to modernise the EP-cracker at Kstovo, which forms a key part of the supply arrangements for the RusVinyl PVC project. The company has received equipment from France for the cold block related to the reconstruction of facilities for the production of ethylene. The cold box is used in the rectification process for gas separation plants. Mounting the unit on the platform and connecting to the existing equipment are planned for 2012-2013; last year SIBUR-Kstovo received equipment from Mitsubishi Corporation for the cracker.

The capacity for ethylene production will increase from 260,000 tpa to 360,000 tpa for the first phase and up to 450,000 tpa in the second phase. SIBUR-Kstovo, the main production asset of which is a petrochemical plant, was created from the reorganisation of SIBUR-Neftekhim.




### Russian propylene market, Jan-Jun 2011

Propylene exports from Russia in the first half of 2011 totalled 23,300 tons which was 15% less than in the same period in the past year. Despite an increase in production demand has also increased which has reduced the availability for exports. The major exporters of propylene monomer include Omsk Kaucuk, SIBUR-Neftekhim and Stavrolen, with Romania being the main end-destination. Imports amounted to 7,600 tons in the first half of 2011 which still was very low but was seven times higher than in the same period last year. Saratovorgsintez is the main consumer of imported propylene, sourced from Azerbaijan and Ukraine, which it uses for the production of acrylonitrile.

### Duties waived for imports of styrene, butadiene and PTA

The Russian sub-commission on customs tariff and non-tariff regulation found it appropriate to repeal the import duties on styrene, butadiene and PTA. Currently, the import duty on all these products stands at 5%. The decision has been taken in response to pressure and lobbying from consumers who argue that supply of these products is insufficient to meet demand.

Styrene is partly affected by pressure on the synthetic rubber industry, and the lack of available merchant product. Butadiene supply is facing challenges in the latter part of 2011, which will need imports to increase. The main consumers of imported butadiene include Omsk Kaucuk which accounted for 51% of purchases in the first half of this year. Other important consumers include Efremov Synthetic Rubber Plant and Kazan Synthetic Rubber Plant, and all are increasing demand for butadiene as rubber plants run at higher rates.

For PTA, the major development this year has been the start-up of the Alko-Naphtha PET plant at Kaliningrad which depends 100% on imports. As the sole PTA producer in Russia Polief has reduced its amount available for sale on the merchant market as it has increased PET production at Blagoveshchensk. Thus, whilst Polief's PTA production has risen this year so has PET and the Senezh plant near Moscow has been forced to import PTA. The Senezh plant was the first Russian PET producer to request an abolition of duties on PTA imports, but probably Alko-Naphtha will be the biggest beneficiary of the decision taken by the Russian customs commission.

## Bulk Polymers

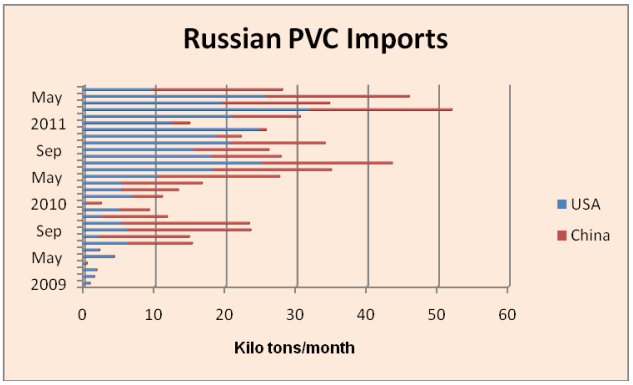
### RusVinyl-zero rate duties on equipment imports

The Russian Ministry of Industry has offered a zero VAT rate on the import of equipment for the RusVinyl project. This includes the VCM-PVC facilities and the chlorine and caustic soda plant using membrane electrolysis. The licensor of technology is SolVin and commissioning of RusVinyl is scheduled for 2013, including 330,000 tpa of PVC and 235,000 tpa of caustic soda. Foreign companies will benefit from the decision. Technip is managing the design, equipment supply and construction of the project, whilst Air Liquide will provide oxygen, nitrogen and dry compressed air for the production of PVC. Construction of a logistics platform for the PVC plant is being undertaken by the German logistics company Karl Schmidt. The project cost is 48 billion roubles, or about €1.25 billion.

### SIBUR-RusVinyl ethylene schedule agreement

Shareholders of SIBUR Holding have approved an agreement on supplies of ethylene to be provided to RusVinyl when the PVC plant starts up. The agreement has been concluded according to the formula price, which will be set within two defined parameters. Under the agreement, SIBUR will deliver 100,000 tpa of ethylene from within three months from the date of commercial operation of the PVC plant at Kstovo.

These volumes will increase per rata in each of the subsequent following three quarters up to 110,000 tpa, 130,000 tpa and 140,000 tpa respectively. After 12 months of operation the RusVinyl plant can expect to receive around 156,000 tpa of ethylene which will be raised to 226,000 tpa during the second year.




## Russian PVC imports

Russia imported 250,500 tons of PVC in the first half of 2011, 1.8 times higher than for the same period last year. Imports were for the most part purchased in advance of the main selling season for windows, pipes, etc, but consumers have encountered some problems with payments which has restricted end-usage. Imports from South East Asia have increased 1.5 times this year to 76,000 tons in the first six months, of which China supplied 58,000 tons. However, the largest increase has stemmed from US imports, which rose 3.8 times in the first six months to 120,000 tons. Deliveries from West Europe, by contrast, declined by 7% to 22,600 tons. In July, the Russian market saw the first volumes of PVC from Karpatneftehim amounting to around 800 tons, thus adding competition against Chinese and US import sources. Imports of PVC paste have been sourced largely from Germany this year.

**Russian Polyolefin Balances (unit-kilo tons)**

| *HDPE* | *Jan-Jun 11* | *Jan-Jun 10* |
|---|---|---|
| Production | 439.78 | 444.80 |
| Exports | 76.24 | 25.68 |
| Imports | 126.36 | 102.29 |
| s/d balance | 489.9 | 521.4 |
| | | |
| *LDPE* | *Jan-Jun 11* | *Jan-Jun 10* |
| Production | 332.10 | 346.24 |
| Exports | 45.70 | 116.73 |
| Imports | 61.89 | 41.57 |
| s/d balance | 348.3 | 271.1 |
| | | |
| *LLDPE* | *Jan-Jun 11* | *Jan-Jun 10* |
| Production | 39.78 | 27.58 |
| Exports | 0.74 | 0.00 |
| Imports | 44.50 | 45.90 |
| s/d balance | 83.5 | 73.5 |
| | | |
| *Polypropylene* | *Jan-Jun 11* | *Jan-Jun 10* |
| Production | 341.93 | 310.54 |
| Exports | 20.06 | 45.84 |
| Imports | 63.69 | 49.22 |
| s/d balance | 385.6 | 313.9 |

## Plastkard-Q2 2011

PVC producer Plastkard at Volgograd (owned by Nikokhim) recorded a net loss of 38.88 million roubles in the second quarter, after recording a net profit of 6.437 million roubles in the first quarter. In the first half of last year the company showed a net profit of 43.67 million roubles. The increase in net loss for the second quarter this year is due to the decline in sales' revenues by more than 5 million roubles. This was due largely to a 12.7% fall in revenues from PVC suspension sales. Physical volumes were down 18% due to the planned outage in May. Another important reason for the reduced performance for Plastkard is the rise in costs for raw materials and equipment for maintenance.

## Russian polypropylene exports

Russia imported 73,100 tons of polypropylene in the first half of 2011, which is 1.5 times higher than for the comparable period in 2010. Increasing the supply of the polymer has been due primarily to the expectations of traders of higher sales' volumes. Despite this hope demand has not materialised as strongly from processors which has resulted in a surplus on the market. Imports from West Europe declined from 13,300 tons in the first half of 2010 to 11,900 tons this year, due in part to some products being covered by Tomskneftekhim and Nizhnekamskneftekhim. At the same time Ukraine increased exports to Russia 2.3 times to 16,500 tons, whilst Turkmenistan increased exports 1.6 times to 27,000 tons.

The Russian market for polypropylene over several years has shown a steady upward trend, and was not adversely affected by the global financial crisis in 2008. In 2010 consumption expanded by 22% over 2009. Some Russian consumers are pressuring the Russian government to review import duties for polypropylene, which they argue restrict development of the internal economy.

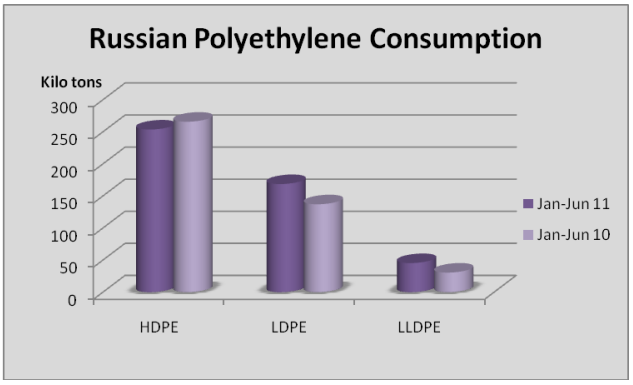
In Russia today, the demand for polypropylene is greater than its supply. The import share in total Russian consumption has risen in the first half of 2011 by 19%. At the same time Nizhnekamskneftekhim and Tomskneftekhim are working on expanding and upgrading their product range to compete with imports. Notwithstanding, Russian polypropylene imports increased 46% in the first half of 2011 totalling 73,000 tons, and foreign market participation is expected to remain an influence for the short term future. Whilst imports have been rising exports been falling in recent years, and this year are expected to be much lower than the total of 68,600 tons in 2010.

As for the current market traders and producers see significant stocks of the polymer in warehouses which may constrain import activity in the second half of the year. Signs have already been given the market could start to soften with imports already affected. A proportion of consumers have limited purchasing

power and thus shipments have been reduced in recent months as many of the products such as pipes, films, sheets, etc, are not viewed as necessities. For imports this year more than two-thirds of homopolymers into Russia have been sourced from Turkmenistan, Ukraine and Poland. The Turkmenbashi refinery in Turkmenistan provided 34% of imports in the first half of 2011, followed by Linik in Ukraine with 23%.

### Tomskneftekhim-polyolefin targets 2011

Tomskneftekhim aims to produce 123,000 tons of polypropylene and 241,000 tons of LDPE in 2011, against 119,000 and 239,000 tons respectively in 2010. The polyolefin facilities were shut down on 22 July for annual preventative maintenance, for a period of four weeks. In addition to polypropylene and LDPE, Tomskneftekhim produces butylene-butadiene fraction, heavy pyrolysis resin, liquid pyrolysis products, as well as ethylene and propylene for in-plant consumption. Tomskneftekhim has expanded its polypropylene into seven new grades. By producing new brands of premium polypropylene the company can offer products with high stiffness and high transparency by injection moulding. The new grades will allow Tomskneftekhim to compete with imported product for part of the higher priced polypropylene market.




### Russian polyethylene market, Jan-Jun 2011

Russian polyethylene production totalled 811,000 tons in the first half of 2011, 2% more than the same period in 2010. Consumption rose from 433,000 tons in the first half of last year against 467,000 tons in 2011, with HDPE volumes slightly down. HDPE production dropped 5,000 tons to 439,800 tons despite the extra output from the Salavat plant.

Feedstock difficulties at Kazanorgsintez acted as the primary cause behind the fall in HDPE production. With a number of outages planned for the autumn, it would appear that this trend will continue into the second half of the year. Nizhnekamskneftekhim produced 26,300 tons in the first six months in 2011.

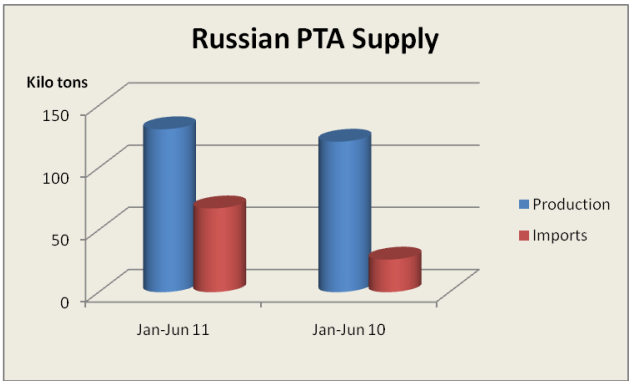
## Aromatic derivatives

**Russian PET Production (unit-kilo tons)**

| *Producer* | *Jan-Jun 11* | *Jan-Jun 10* |
|---|---|---|
| Evroplast (Senezh) | 49.3 | 47.6 |
| SIBUR-PETF | 36.3 | 35.3 |
| Alko-Naphtha | 7.4 | 0.0 |
| Polief | 69.3 | 66.8 |
| Total | 162.3 | 149.7 |

### Russian PET raw materials

Both PTA production and imports in Russia increased in the first half of 2011, due to the rise in output at Polief and the start of PET production by Alko-Naphtha. PET production rose slightly in the first six months, but as the Alko-Naphtha is now running at higher rates of utilisation the increase is expected to be much larger in the second half of the year. The cancellation of import duties for PTA, which has been approved in early August, will help importers such as Senezh and Alko-Naphtha. PTA imports into Russia more than doubled in the first half of the year.




### Kabardino-Balkaria PET project

The Russia Investment Fund has agreed to fund the infrastructure around a new PET plant in Kabardino-Balkaria, with an estimated construction cost of 12 billion roubles. The project envisages the establishment of a plant Ethan for the production of PET with a capacity of 486,000 tpa, to be located in the May district of Kabardino-Balkaria. The project will be financed through a combination of sources including the Russian Investment Fund and the local republic.

Construction is forecast to take 30 months, with Buhler AG providing the technology. Currently, preparations are made and pre-design work underway; the area where the project is considered as a future industrial park. The project to create the Ethan plant was included in the list of priority investment and social projects (measures) in 2010-2013 as part of the strategy for socio-economic development of the North Caucasus Federal District until 2025.

### Kuibyshevazot 1st half of 2011

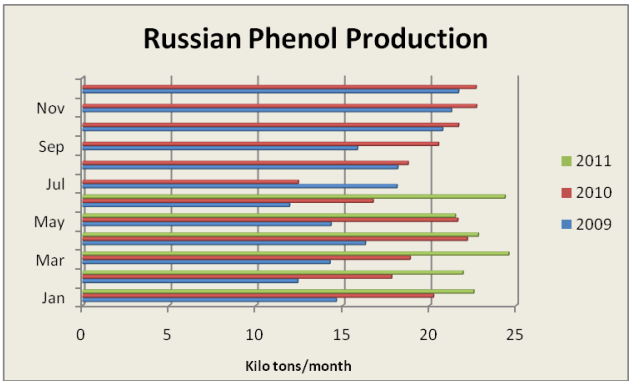
The net profit of Kuibyshevazot in the first half of 2011 increased by 2.9 times compared to the same period last year up to 2.74 billion roubles. Proceeds from sales amounted to 14.64 billion roubles which was an increase of 41% against the same period last year. The main influence for higher revenues has been the combination of product prices and the introduction of a fourth line for polyamide production.

Kuibyshevazot has recently introduced a new installation in the oxidation of cyclohexanone, which could reduce caustic soda consumption by up to 40% in the process. Last month Kuibyshevazot announced a jv with DSM to undertake work on the technology of production of cyclohexanone and to construct an energy-efficient production unit for cyclohexanone.

Kuibyshevazot has completed the acquisition of 100% of the German company STFG Filamente GmbH. The purchase is consistent with the long term objectives of the strategic programme for Kuibyshevazot to increase processing and increase the production of caprolactam. Buying a German manufacturer has allowed the company to gain access to Europe. The capacity for STFG Filamente GmbH makes more than 4,000 tpa of nylon and Kuibyshevazot intends to ramp up production. The main consumers of STFG Filamente GmbH include manufacturers of technical textiles in various industries.

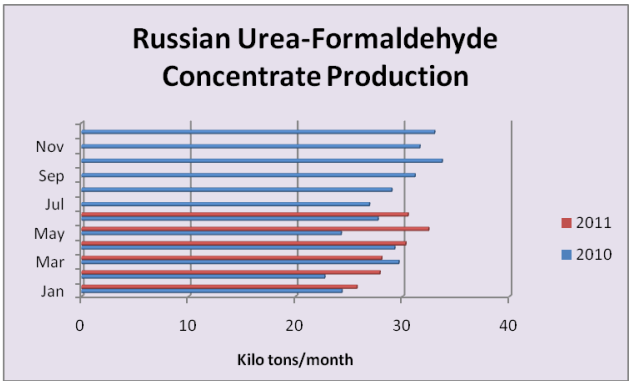
### Shchekinoazot-caprolactam expansion

Shchekinoazot is reconstructing its caprolactam plant aimed at improving production costs and capacity. Currently, the company is selecting contractors, ordering materials and equipment of which most is expected to come from Japan. Koch-Glitsch has reached agreement to supply devices for internal columns and separators in the renovated oxidation hall, as well as other units including the caprolactam plant. The Japanese company Yokogawa has concluded contracts to produce a significant part of instrumentation and automation for Shchekinoazot, and will also take responsibility for providing services for contract supervision. In April 2012, Shchekinoazot will halt the production of caprolactam and install high-heat-transfer equipment, perform work on piping, installation of valves, etc. Towards the latter part of next year the modernisation project should be completed.




### Russian phenol supply

Phenol supply in Russia remains tightly balanced despite the fact that production was 16% higher in the first half of 2011 to 138,000 tons. Volumes of production of phenol have increased this year due to the modernisation of the plant at Samaraorgsintez. However, increased captive consumption for bisphenol A and resins has left the merchant market on the edge of deficit. The main merchant sellers Samaraorgsintez and Omsk Kaucuk will stop production in early autumn for maintenance which may increase the amount of phenol imports, although this would be from a very low base.




### Russian urea-formaldehyde concentrate

Russian urea-formaldehyde concentrate increased 11% in the first half of 2011 to 174,850 tons. The main producers in Russia include Metafrax TOAZ and Shchekinoazot. This year Shchekinoazot has increased formaldehyde production for processing into phenol-formaldehyde resins, and has thus had less urea-formaldehyde concentrate available for merchant sales.

This has reduced the share of Shchekinoazot in Russian production for urea-formaldehyde concentrate from 13% in the first half of 2010 to 10% this year. Metafrax has tended to take more market share, but essentially there is less material available which may have been otherwise exported. In September, the market for urea-formaldehyde concentrate in Russia is expected to witness seasonal increases in demand leading possibly to higher production. However, if methanol prices on the world market rise then Russian producers may be less interested in derivatives

## Methanol & related chemicals

### Shchekinoazot-methanol plant close to starting

Shchekinoazot is preparing to launch its new methanol installation M-450 in mid-August. This represents a major investment for the company and will not only increase production volumes but will also substantially reduce costs in future production. Total capital investment in all projects up to 2015 being planned by Shchekinoazot is estimated in the range of 15 billion roubles and includes a range of projects including methanol and caprolactam derivatives. Part of the plan includes the construction of a new hydrogen production unit and the reconstruction of the cyclohexane oxidation unit. The start of new plants will significantly reduce the cost of hydrogen, energy consumption, natural gas, oxygen, and reduce the burden on the environment by using the most up to date technology.

**Russian Methanol Production (unit-kilo tons)**

| *Producer* | *Jan-Jun 11* | *Jan-Jun 10* |
|---|---|---|
| Shchekinoazot | 87.8 | 75.0 |
| Sibmetakhim | 184.1 | 192.4 |
| Metafrax | 259.0 | 266.0 |
| Akron | 18.7 | 18.6 |
| Azot Novomoskovsk | 71.4 | 62.2 |
| Angarsk Petrochemical | 3.5 | 5.7 |
| Azot Nevinomyssk | 32.6 | 26.7 |
| Togliattiazot | 133.2 | 164.0 |
| Total | 790.3 | 810.5 |

### Metafrax-H1 2011

Metafrax recorded a net profit under in the first half of 2011 of 572.8 million roubles, up 44% over the same period in 2010. Revenue grew by 17.7% to 4.485 billion roubles. The share of exports in total sales was 42% against 36.6% in the first half of last year. Metafrax started a 45 day shutdown for its methanol plant from 29 July, although could finish the maintenance earlier. Metafrax has indicated that it may be considering an IPO in the 2012-2013 timeframe in order to raise capital for further expansion and development.

### Russian methanol project plans

Gazprom is considering plans to build plants in the Primorsk Territory in the Russian Far East to produce methanol and fertilisers. Natural gas would be sourced through the Sakhalin-Khabarovsk-Vladivostok pipeline which is currently under construction. SIBUR Holding is considering the construction of a methanol plant at the other end of Russia with a capacity of 2 million tpa at Primorsk on the Baltic coast. It is expected to be based at the Baltic LPG terminal, which SIBUR hopes to acquire from Gazprom Germania.

The SIBUR plan is more likely to provide competition for the other Russian exporters such as Metafrax and Sibmetakhim, in addition to other global players operating in the European market. However, by the time such a plant become operational liberalisation of the gas market in Russia may have partly negated the competitiveness of Russian methanol exports.

### Ammonium complex in Tatarstan to start construction

The Ammonium complex at Mendeleevsk in Tatarstan is scheduled to start production in 2015*, with* contractors having recently started preparatory work. Construction is on the verge of starting and is scheduled to be completed by the end of 2014. The contractors in the project include the Russian company Soyuzkhimproekt and a consortium of Mitsubishi Heavy Industries (MHI), Sojitz Corporation and China National Chemical Engineering Corporation (CNCEC). Design functions are being carried out by the Research and Design Institute of Urea and Organic Synthesis Products (NIIK, Dzerzhinsk).

The entire volume of the project is divided into two parts: the plant itself and offsite facilities and infrastructure. The project is being constructed on the existing production facility, owned by OAO Ammonium. The main investors in the project include the government of Tatarstan and several Japanese banks. The new complex is being designed to include 455,000 tpa of ammonia, 238,000 tpa of methanol and 717,500 tpa of urea.

### Russian acetic acid market, Jan-Jul 2011

Russian exports of acetic acid to Italy increased by 15 times in the first seven months in 2011, totalling 6,200 tons. In the seven months of 2011 shipments to foreign markets from Russia amounted to 25,400 tons, 19% less than the same period in 2010. The fall in exports was due to reduced production and capacity at Nevinomyssk. From January to July of 2011 Italy accounted for 56% of exports followed by Belgium with 22%. In the first seven months of this year a total of 40,100 tons of acetic acid was sold on the domestic market, 2% up on the same period last year. The main consumers of acetic acid in the Russian Federation have included Stavrolen (27% of gross supply), Polief (16%), Amzinsky Wood Combine (14%) and Dmitrievsky Chemical Plant (14%).

## Synthetic Rubber

### Russian synthetic rubber market, Jan-Jun 11

Nearly all Russian synthetic rubber producers increased production in the first six months in 2011, with Nizhnekamskneftekhim showing the largest absolute increase and the Efremov Synthetic Rubber Plant showing the largest proportional increase. Butadiene supply is usually the restricting influence on rubber production at Efremov, and the removal of import duties should help the company secure additional supply if required. Other synthetic rubber plants in Russia recorded modest increases, in response to demand from the tyre industry which showed substantial growth in the first half of 2011. Domestic tyre producers are running at high capacity rates in order to compete with imports. In the first half of 2011 Russian imports of car tyres increased 67% over the same period last year and amounted to 9.27 million units. The main suppliers of tyres included Yokohama» accounting for 14%, Bridgestone» 13%, Michelin 10% and Continental 10%.

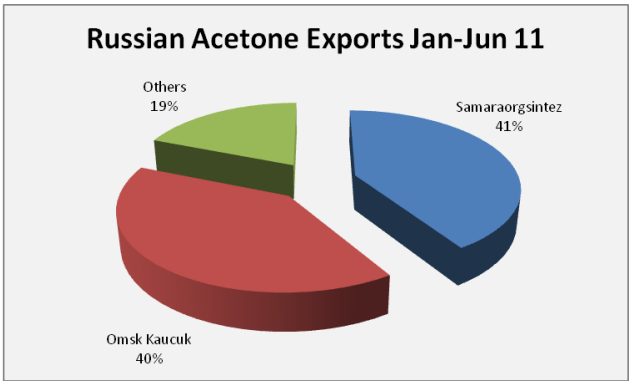
**Russian Synthetic Rubber Production (unit-kilo tons)**

| *Producer* | *Jan-Jun 11* | *Jan-Jun 10* |
|---|---|---|
| Efremov Synthetic Rubber Plant | 25.0 | 7.6 |
| Sintez-Kaucuk | 59.0 | 49.9 |
| Krasnoyarsk Synthetic Rubber Plant | 20.1 | 18.6 |
| Nizhnekamskneftekhim | 264.9 | 238.6 |
| Omsk Kaucuk | 28.7 | 22.2 |
| Plant for Synthetic Rubber | 4.3 | 3.3 |
| Togliattikaucuk | 82.7 | 80.4 |
| Voronezhsintezkaucuk, Voronezh | 118.4 | 121.5 |
| Sterlitamak Petrochemical Plant | 35.9 | 21.5 |
| Ufaorgsintez | 1.1 | 1.3 |

### Nizhnekamskneftekhim-isoprene monomer

For the production of isoprene monomer Nizhnekamskneftekhim has put into operation a fourth dehydrogenation system after reconstruction loaded with an experimental catalyst. The aim is to reduce heat consumption for the production of isoprene, which will reduce its production costs. The technology for producing dehydrogenation catalysts was developed by the Kazan University, which received a state subsidy worth around 250 million roubles. Nizhnekamskneftekhim produces around 16.5% of isoprene output globally. Until now catalysts for isoprene monomer production in Russia have been imported. Nizhnekamskneftekhim recently started pre-start-column distillation plant work on the butylene divinyl fraction plant, aimed at increasing capacity. Nizhnekamskneftekhim will continue the reconstruction of the synthetic rubber facilities for the remainder of this year, including units for the production *of* butadiene rubber SKDN and SKD-A.

## Organic Chemicals & Plastics




### Russian acetone market, Jan-Jun 2011

Russian production of acetone totalled 83,800 tons in the first half of the year which is 13% up on the same period last year. The main stimulus to growth was increased production at Samaraorgsintez which accounted for 28.7% of gross output and Ufaorgsintez with 26.5%. Exports totalled 29,100 tons in the first half of the year which is 25% more than the same period last year. The main exporters included Omsk Kaucuk (40% of exports) and Samaraorgsintez (41%). The major consumers of Russian acetone included Canada (with 33% of gross exports), Finland (30%) and Turkey (15%). Domestic market sales for acetone amounted to 30,500 tons, or 5% less than the same period in 2010. The main consumers included Sintez-Acetone (28%), Dzerzhinsk Orgsteklo (21%) and Novocheboksarsk Khimprom (12%).

### Russian ethylene oxide news

Sulzer Chemtech has reached agreement to upgrade Nizhnekamskneftekhim's ethylene oxide plant by replacing internal column equipment. The largest column is worth over €1 million and will be produced at Sulzer's plant in Russia at Serpukhov. The ethylene oxide and glycol plants and the old Kaprolaktam division have ceased to exist as separate entities and have been incorporated directly into the structure of SIBUR-Neftekhim. SIBUR-Neftekhim was restructured in 2010, divesting the Kstovo division which is now called SIBUIR-Kstovo.

### SIBUR-Akrilat acquisition

SIBUR has taken control of 100% shares in Akrilat, the sole producer of acrylic naked and esters in Russia. The production capacity of Akrilat is 25,000 tpa of acrylic acid and 36,000 tpa of ethers (butyl acrylate) and 10,000 tpa

of light esters (methyl and ethyl acrylate). The production site is located in the eastern industrial area of Dzerzhinsk, and SIBUR already supplies Akrilat with propylene from Kstovo.

The acquisition of Akrilat by SIBUR will give a sustained boost to the development of acrylic derivatives market in Russia and CIS. Akrilat conducted tests on ethyl acetate production in 2010 and is now in the process of obtaining the patent. In addition, Akrilat continues to explore the possibility of deeper processing products by building a facility for the production of dispersions for the coatings industry. This includes anti-corrosion coatings, producing various kinds of polymers of acrylic acid and copolymers.

### Saratovorgsintez-polyacrylamide unit

The French company SNF, a major player in the production of polyacrylamide, wants to build a unit at Saratovorgsintez owned by LUKoil. At this stage a letter of intent has been signed which details investment of around one billion roubles. SNF has explained that Saratov is the only place in Russia which produces acrylonitrile for polyacrylamide production.

### Nuran-Plast-composite plant

Nuran-Plast has opened a polymer composite material plant in Tatarstan with a capacity of 5,000 tpa. The plant is aimed at forming part of a new cluster of hydrocarbon and production of polymeric materials. Investment in the project amounted to 240 million roubles and will be Russia's first plant for production of composites that does not contain chlorine**.** Nuran-Plast is also planning to start developing zeolite deposits in the Drozhannovsk region.

### Russian polycarbonate sales

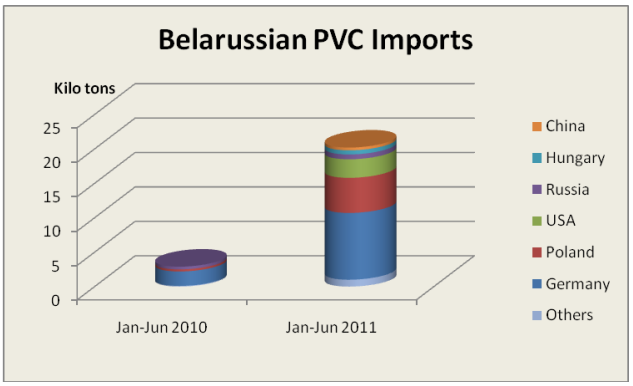
Russian polycarbonate exports declined 85% in the first half of 2011 down to 9,518 tons with increased focus on the domestic market. At the same time polycarbonate imports into Russia rose 47% in the first half of 2011 to 26,750 tons, most of which came from Spain, Germany and the Netherlands. Kazanorgsintez produced new experimental batches in June of polycarbonate brand PC-030 PC-RL and 007. The company shipped 300 tons of an experimental batch of brand PC-030 RL for three users. In the first half of 2011 Kazanorgsintez increased polycarbonate production by 12% over the same period last year to 34,000 tons. Currently, the share of domestic consumption in production amounts to around 60%. Declining exports coupled with higher imports indicate the rise in consumption levels for polycarbonate.

## Belarus

### Belarussian polymer trade

Belarussian consumers have requested the government to cancel the import duty on polypropylene which currently stands at 10%. The Belarusian side notes that the need to purchase polypropylene outside the Customs Union (including Russia and Kazakhstan) is due to the insufficient supply in the Belarusian market.

Belarus does not produce polypropylene whilst at the same time Russian polypropylene does meet all the requirements for nonwoven materials. Polypropylene shipments from Russia accounted for around 60% of total imports of 26,100 tons in the first half of 2011. Other sources of imports include Saudi Arabia, Slovakia, and Germany. In the polyethylene sector Belarus exported 39,200 tons of LDPE in the first half of 2011, which is 4% more than in the same period of 2010. In the PVC sector, Belarus imported 19,600 tons of PVC in the first half of 2011 which is seven times more than the same period of 2010.




Some consideration has been given in Belarus to construct a PVC plant in conjunction with a new unit for caustic soda in order to reduce the dependency on imports of these products. Neither product has previously been produced in Belarus, which has no legacy in chlorine chemistry.

### Belarussian feedstock costs

From 1 July 2011 Belarus imposed a 31.4% increase in selling prices of naphtha for pyrolysis and aromatic hydrocarbons. These increases are the result of serious economic difficulties in the country and will affect benzene, orthoxylene and paraxylene supplies. Mogilevkhimvolokno and Polymir expect to see costs rise for

polyester and ethylene production respectively. Polymir consumes around 360,000 tpa of naphtha and 120,000 tpa of light hydrocarbons, most of which are sourced from Russia.

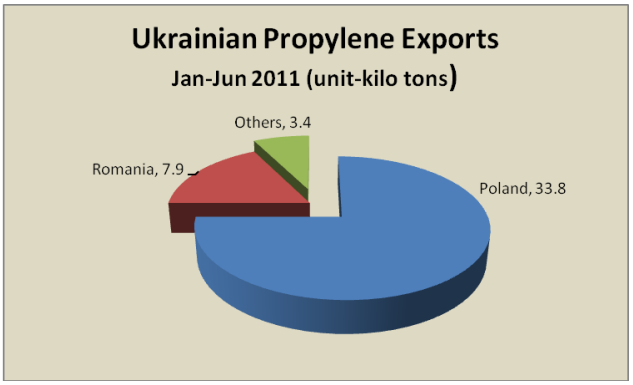
**Belarussian Chemical Output (unit-kilo tons)**

| ***Fertilisers*** | ***Jan-Jun 11*** | ***Jan-Jun 10*** |
|---|---|---|
| Potassium Fertilisers | 2776.0 | 2741.2 |
| Nitrogen Fertilisers | 404.3 | 399.9 |
| Phosphate Fertilisers | 98.0 | 97.4 |
| Ammonia | 527.5 | 541.4 |
| Sulphuric Acid | 413.3 | 458.5 |
| ***Petrochemicals*** | ***Jan-Jun 11*** | ***Jan-Jun 10*** |
| Ethylene | 71.5 | 69.8 |
| Benzene | 52.4 | 47.0 |
| Caprolactam | 65.2 | 60.0 |
| Phthalic Anhydride | 6.7 | 11.7 |
| Polyethylene | 68.6 | 67.7 |
| PET | 98.6 | 110.2 |

### Belaruskali-Sberbank

Sberbank and Deutsche Bank are considering allocating Belaruskali $2 billion for investment, with the further prospect that Russian companies may wish to acquire one of the largest producers of potash fertilisers in the world. Sberbank will receive 35% of equity in Belaruskali in exchange for the loan, whilst India is also seeking a 20-25% stake in the company. India needs to ensure long-term supplies of fertiliser to cope with increasing demand, but could face competition from rivals based in Russia and China. Belaruskali is estimated to be worth at least $16 billion, and thus the loan seems based on strong grounds. However, the sale of equity has been almost forced on Belarus by the economic difficulties it faces. Equally by giving 35% it may save Belaruskali from full privatisation at least for the time being.

## Ukraine




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

| ***Product*** | ***Jan-Jun 11*** | ***Jan-Jun 10*** |
|---|---|---|
| Acetic Acid | 67.6 | 31.2 |
| Adipic Acid | 0.0 | 0.0 |
| Ammonia | 2624.0 | 2083.5 |
| Benzene (-95%) | 89.4 | 107.1 |
| Benzene (+95%) | 78.0 | 54.3 |
| Caustic Soda | 75.6 | 26.0 |
| Ethylene | 101.0 | 0.0 |
| Formaldehyde | 16.3 | 26.0 |
| Methanol | 56.0 | 31.4 |
| Polyethylene | 54.6 | 0.0 |
| Polypropylene | 50.7 | 42.8 |
| Polystyrene | 9.0 | 9.1 |
| Polyvinyl Acetate | 2.5 | 3.1 |
| Propylene | 46.5 | 0.0 |
| Soda Ash | 386.5 | 331.1 |
| Titanium Dioxide | 77.2 | 60.9 |
| Toluene | 3.1 | 2.7 |

### Ukrainian propylene market

Karpatneftehim produced 45,000 tons of propylene at Kalush in the first half of 2011, whereas the plant was idle last year until September. Of the 45,000 tons of output, the company exported 43,900 tons of which Poland took 75% and Romania 17.5%. In the 1990's plans were considered for a polypropylene plant at Kalush, but were rejected partly by the EBRD on the basis of financial credibility. However, the HDPE project received approval and is now operating after an impasse of two years in the 2008-2010 period.

Although the polypropylene project was abandoned at Kalush, a plant was started in 1995 in eastern Ukraine at the Lisichansk refinery which is owned by TNK-BP. The integrated plant does not require additional propylene supply, and meets the demands of the 100,000 tpa plant. Ukrainian consumption of polypropylene recovered in 2010 from the declines in 2009 and demand is rising. In the first half of 2011 consumption rose 18% over last year and totalled 51,900 tons.

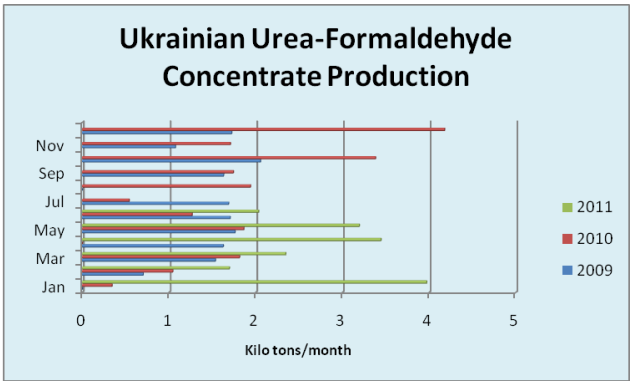
### Karpatneftekhim-PVC emulsion plans

Karpatneftekhim plans to begin construction of a unit for the production of PVC emulsion grade in 2012. Licence technology is being discussed with Vinnolit and Tarkett, with a proposed capacity of 30,000 tpa. This follows the star-up of the suspension grade PVC plant this year which is gradually increasing its utilisation rate. In July the Kalush 300,000 tpa plant produced 12,500 tons of PVC followed by a forecast of 18,000 tons in August. By September the company expects to be running at full capacity of 25,000 tons per month.

The start-up of the PVC plant is an important step for the Ukrainian construction industry which has previously been forced to rely on imported PVC. Already import volumes have started to decline as domestic product has become available.

## Ukrainian market for urea-formaldehyde resins

This year the market for urea-formaldehyde resins in Ukraine has benefited from preparations for Euro 2012 (European football championships), which has led to dramatic rises in demand for construction materials. Strong demand for building materials has led to a growth in the woodworking industry; for example a large MDF plant was launched at Korosten in Ukraine in direct response to the market improvements. Moreover, volumes of production of plywood in Ukraine in the first half of this year rose by about 9%. The increase in the production of wood stoves has provided one stimulus to consumption. Overall consumption of urea-formaldehyde resins has risen by 33% in the first half of 2011 against last year with production having risen accordingly.




The main feature distinguishing the Ukrainian market against the Russian market for urea-formaldehyde resins is the dependency on raw material imports, in particular urea-formaldehyde concentrate methanol and natural gas. For the actual production of resins, domestic producers meet most of the demand but that has only been possible due to the increase in production at KarpatSmol at Kalush. In the first half of 2011 KarpatSmol increased production 3.6 times and accounted for 21% of total Ukrainian production.

## Ukrainian urea-formaldehyde concentrate

Urea-formaldehyde production in Ukraine rose this year in the first six months to 16,684 tons against 6,325 tons in the same period last year. The main producers of urea-formaldehyde concentrate in Ukraine include Stirol and KarpatSmol both of which use large volumes for captive consumption. KarpatSmol is rapidly expanding production volumes, to some extent based on Russian methanol imports. Azot at Severodonetsk processes most of its own methanol production, but even when merchant product is available it is often more expensive than Russian imports.

**Ukrainian Urea-Formaldehyde Concentrate Market (unit-kilo tons)**

| | *Jan-Jun 11* | *Jan-Jun 10* |
|---|---|---|
| Production | 16.6 | 6.6 |
| Imports | 27.9 | 25.1 |
| Consumption | 44.5 | 31.7 |

In the first half of 2011 Ukrainian production of urea-formaldehyde concentrate rose 2.5 times over the same period last year, partly due to the restart of KarpatSmol. Stirol at Gorlovka remains the largest producer accounting for 71% of production in the first six months. Despite the increase in domestic output imports still accounted for 60% of consumption in 2011 although this is down from 70% last year. The main consumers of Russian urea-formaldehyde concentrate CPK in Ukraine are the timber industry enterprises which account for around 85% of purchases. The main Russian supplier to the Ukrainian market this year has been Metafrax, compared to Shchekinoazot in 2010. Despite Russian concentrate being cheaper than Ukrainian product prices have been rising in 2011 with numbers up 35% against the first half last year.

# Central Asia-Kazakhstan

## Uzbek chemical news

Navoiazot in Uzbekistan has announced a tender for the modernisation of caustic soda facilities. The capacity of the current plant is 26,000 tpa. In the sulphuric acid sector Outotek (Germany) has signed a contract with Almalyk MMC in Uzbekistan to build a new plant at an estimated cost of $80.3 million. Outotek has agreed to deliver and setup the equipment, whilst all civil works will be performed by AMMC. The capacity of the new plant will be 500,000 tpa of sulphuric acid, and is planned to start operations in 2013. This project is being financed through a loan from the Fund for Reconstruction and Development of the Republic of Uzbekistan ($30 million), whilst another $21.3 million will be provided by AMMC and loans of $29 million will be issued by Uzbek banks.

Uzbek chemical holding Uzkimesanoat is planning to undertake a capacity expansion at Kungrad Soda Plant by 1.5 times to a total of 150,000 tpa. The company has started to develop a preliminary feasibility study for expansion of the plant, the cost of which is estimated at $50 million. Expanding the capacity of the soda ash plant is being facilitated due to an increase in limestone deposits at Dzhamansaysk and the technical salt field at Barsakelmes in Karakalpakstan. In August 2008, the Chinese company CITIC commissioned Kungrad Soda Plant in north-west Uzbekistan at a cost of $250 million and a design capacity of 100,000 tpa.

Fertiliser producer Maxam-Chirchik (formerly Elektrohimprom, Chirchik ECP) achieved a net profit of Maxam Chirchik of 7.571 billion soums in 2010 against 3.1 billion soums in 2009. Net revenues from product sales grew in 2010 at the plant in 1.2 times, to 257.1 billion soums, and the cost of sales increased by 1.3 times to 197.6 billion soums. Maxam-Chirchik produces about 35 chemical products, including liquid technical ammonia, nitric acid, ammonium nitrate and urea, ensuring the needs of the domestic market and exporting products. The Spanish MAXAM Corp acquired a 49% stake in Elektrohimprom in 2007 worth $22 million and investment commitments of $55 million, which must be invested in the development of the enterprise within five years.

### SOCAR-investments

SOCAR / Turcas, a jv between SOCAR and Turkey's Turcas, plans in 2011 to invest $100 million in capacity expansion at the Petkim Petrokimya complex in Turkey. This will include the construction of a refinery with a capacity of 10 million tpa, which is intended to be completed by the end of 2015 at a cost of around $5 billion. Petkim is in also talks with Dutch Terminal Operating Company on the expansion and operation of the port of Aliaga. In late 2006, SOCAR and Turcas created a jv SOCAR / Turcas for investment projects in oil refining, petrochemical and natural gas trading in Turkey. At present, the Azerbaijani side owns 74.98%, and Turcas 25% in the jv.

SOCAR announced an open tender for selection of a contractor for construction at Sumgait for a new urea plant. The plant production capacity is expected to comprise 2,000 tons of urea per day. The tender is open to companies with international experience in performing engineering, procurement and construction.

### Nairit-investment

Around $300 million has been granted to Nairit from the Armenian Investment Fund for investment as part of its restructuring programme. Nairit was the sole monopoly producer of chloroprene rubber in the USSR and was closed for environmental reasons. Operation of the plant was partially restored in 1992-1993. In 2006, 90% of the shares in Nairit were sold to a British consortium Rhinoville Property Limited for $40 million, the remaining 10% owned by the government of Armenia. The largest volume of production was recorded in 2007-2008 when the price of gas at the border stood at $54. After that, gas prices began to rise, which adversely affected the economic management of the plant.

This has led to increased production costs, forcing the search for new markets. However, there was a major problem in that the restoration of the production of chloroprene rubber, which is more complicated due to higher petroleum product prices in the international market, and butadiene. In 2010, shareholders approved a new programme of development which requires an investment of $400-500 million to finally solve the problems facing Nairit.

### Kazakh chemical industry investments 2011

The chemical industry in Kazakhstan attracted more than 11.5 billion Tenge investment in the first half of 2011, following several years of main investments. In particular, in 2009, investments amounted to more than 31.5 billion Tenge and in 2010 21.5 billion Tenge, including 14% of foreign investment. A number of projects are under construction or under review, with Pavlodar acting as a main focus of investment. The 20,000 tpa MTBE plant is under construction at the Pavlodar refinery, in addition to the construction of units for 30,000 tpa of propylene and 35,000 tpa of polypropylene. Khimprom at Pavlodar has installed a new chlorine and caustic soda plant.

Evrokhim has announced plans for developing the phosphate deposits in the Karatau region that will allow Kazakhstan to eliminate the import of fertilisers. One project comprises plans to construct a new soda ash plant in the Atyrau oblast, in conjunction with the Turkish company Enkim. The planned capacity of the new plant is 400,000 tpa. Currently Kazakhstan does not produce soda ash and imported a total of 382,000 tons in 2010, of which 98% was supplied by Russia.

Kazatomprom, together with Solvay, intends to build a plant for production of hydrogen peroxide in Kazakhstan. It is assumed that the bulk of the hydrogen peroxide will be delivered to the uranium mining company Kazatomprom, and the surplus sold in export markets. Investment in construction will comprise be about €100 million.

### Pavlodar-Kaustik

Kazakhstan has put into operation a new chemical plant at Pavlodar including membrane technology for chlorine and caustic soda production. The technology for the plant was supplied by Uhdenora, including a

capacity of 30,000 tpa for caustic soda, 10,000 tpa of liquid chlorine, 45,000 tpa of hydrochloric acid and 6,600 tons of sodium hypochlorite. The main raw materials for the new plant is chlor-alkali salt from the Pavlodar salt lakes where proven reserves exceed 50 million tons. The main customers for Kaustik include metallurgical, chemical, oil industries, etc.

The concept of a special economic zone (SEZ) for chemicals at Pavlodar is being considered by ministries in Kazakhstan. The aim is to use an area of around 1200 acres of land which could accommodate up to 60-70 chemical business companies, most of which would be consumers of raw materials. The chemical park will be located in the former Pavlodar Chemical Plant, already including the new Kaustik chlorine plant and other new projects under Kazatomprom including the production of polycrystalline silicon. Ethylene production is also being considered, although the preliminary details are not known about these aims.

### Penoplex-Kazakhstan

Russian polystyrene producer has launched a second production line for production of thermal insulation at Kapshagay in Kazakhstan. The capacity of the second plant is 70,000 cubic metres per annum, which will double the capacity of the plant in Kazakhstan. The first plant to produce insulation was built in Kazakhstan in 2008 and became the fifth manufacturing facility for Penoplex. The other four units are located in Russia at Kirishi, Novosibirsk, Perm and Taganrog.

*Relevant Currencies*

*Czech crown. Kc. $1= 20.85. €1 = 25.5671: Hungarian Forint. Ft. $1 = 223.5. €1 = 274.065: Polish zloty. zl. $1=3.1135. €1 =4.065: Bulgarian leva: $1 = 1.5956. €1= 1.9596: Romanian Lei. $1 = 3.4151. €1= 4.187: Croatian Kuna HRK. $1 = 5.9239. €1= 7.2641: Ukrainian hryvnia. $1 = 7.931. €1 = 9.7253: Rus rouble. $1 = 31.022. €1= 38.0405*

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