

# CIREC

## MONTHLY NEWS

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

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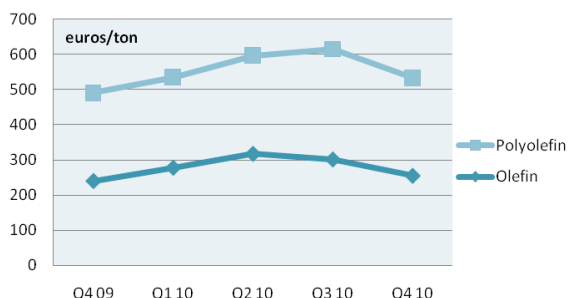
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## CENTRAL & SOUTH EAST EUROPE

### Petrochemicals

**Unipetrol's Petrochemical Margins**



#### Unipetrol petrochemical sales Q4 2010

The main elements influencing Unipetrol's petrochemical division in Q4 2010 included slightly higher total sales' volumes on the back of better benzene and agrochemical products. This helped to compensate for lower demand for polyolefins, and a lower olefin margin by 16% for propylene and ethylene. Polyolefin margins fell by 11% in the quarter attributed mainly to a weaker polypropylene spread resulting from exchange rate factors, etc.

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

Product	Jan-Dec 10	Jan-Dec 09
Ethylene	164.0	143.0
Propylene	51.0	36.0
Benzene	211.0	182.0
Urea	195.0	169.0
Ammonia	148.0	232.0
O Alcohols	0.0	18.0
HDPE	288.0	286.0
PP	242.0	213.0
C4	120.0	143.0

Unipetrol estimates that the reported EBIT of the Group in the fourth quarter 2010 will be positive, but down on the third quarter. The steam-cracker shutdown at the end of September, which lasted until the beginning of October, is estimated to have reduced the EBIT by around Kc 80 million. Furthermore, a temporary reduction of processing capacity at the Litvinov refinery for two weeks in December is estimated to have reduced the EBIT by approximately Kc 70 million. The cut-off was compensated by supplies from the refinery at Kralupy nad Vltavou. Unipetrol operates its own rail freight transport and delivers oil products between its two refineries. Other factors affecting the EBIT include the decision to close down components of the T200 heat and power plant. This was estimated at reducing the EBIT by Kc 50 million.

Sales for most petrochemical products showed an increase for the whole of 2010 against 2009, with only ammonia and C4 products down against 2009. The oxo alcohol plant was closed permanently in 2009. For ethylene, propylene and benzene, sales increased in 2010 with part of the volumes being delivered to East Germany.

**TVK's Financial Indicators (Ft billion)**

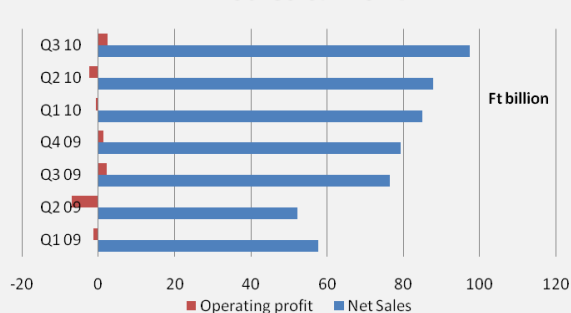
	Q4 09	Q1 10	Q2 10	Q3 10
Net Sales	79.278	84.836	87.772	97.477
Operating profit	1.363	-0.655	-2.464	2.407

#### TVK expects improved results in 2011

TVK expects a solid year in 2011 after undergoing steady improvements during the course of 2010. In the first nine months of last year, revenues rose 45.1% to Ft 270.04 billion, although the company recorded only a marginal operating profit of Ft 4.357

billion. Whilst this was much better than in comparison to 2009, when the operating loss totalled Ft 6.223 billion for the same period, the result is still down on previous years' results. The second quarter in 2010 was particularly weak for TVK's margins and despite an improvement in the third quarter margins once again deteriorated in the latter part of the year. The company expects the spread between feedstock and product prices to narrow in 2011 and profits to be subsequently to be driven upwards.

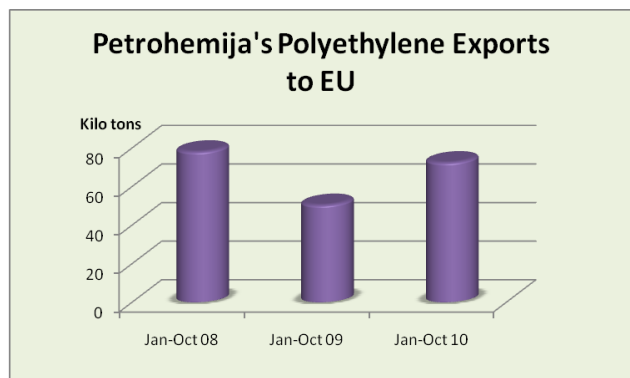
**TVK Sales & Profit**



TVK continues to focus on Central and East European markets. No investments are planned for this year, aside examining ways of improving energy efficiency and reducing carbon dioxide emissions. TVK is preparing for the post-2013 European carbon quota system, when a large part of the quota has to be purchased. After the raw materials required for chemical production, energy provides the largest expense for the company. TVK emits greenhouse gases through its olefin unit and the current generation power plant.

### HIP Petrohemija recovers in 2010

HIP Petrohemija reports much better performance in 2010 after the serious financial problems encountered in 2009, which required government intervention in order to avoid a halt in operations. The company reduced losses from about €7 million a month in 2009 to around €1 million in 2010, due mostly to stringent cost-cutting across the board. A key part of the stabilisation programme for Petrohemija involved a long term contract with NIS for feedstock supplies. Petrohemija has succeeded in the past year to reduce losses by 60% and increase production by 50%.



Around 90% of the production from the petrochemical complex at Pancevo is exported. An investment programme worth €80 million is being introduced to revamp and expand the ethylene and polyethylene facilities. The company is now in a position whereby it can improve the LDPE and HDPE plants having selected SNC Lavalin as the main contractor. SNC Lavalin is scheduled to submit its Master plan in February regarding the investment outline and details. One of the central parts of the investment strategy is to upgrade the cracker, which was originally constructed by Stone & Webster, and is aimed at reducing costs by around €1 million a

month. This is precisely the amount of losses the company is accruing in the current climate.

The upgrade of the cracker will focus mostly on energy efficiency in the first phase. Plant reconstruction is not expected to start until 2012, and production is targeted for uninterrupted operation in 2011. The Serbian Ministry of Economy has agreed to provide loans for investment in Petrohemija, which ultimately should allow the company to increase production and exports. The goal essentially is to export the company out of the loss position, and this deemed possible only through investment. Despite the domination of exports in Petrohemija's marketing strategy, there are still efforts to try and develop local markets. The city of Pancevo has offered investors three greenfield sites next to the Danube. At one of the three sites at the southern industrial zone, between Petrohemija and NIS, free land of 160 acres has been identified for a technology park. Small companies will also be positioned in this area, making use of the products from the petrochemical complex and refinery.

### Rompetrol-LUKoil oil supplies

Rompetrol is in talks with LUKoil for handling 2.5 million tons of crude oil through its terminal on the Black Sea. The annual oil supply of LUKoil to Romania is around 2.5 million tons. Previously, the company included over its oil from tankers at the port of Constanta. Launched by Rompetrol in operation in early 2009, the oil terminal in the Black Sea port Navodari (40 km north of Constanta), in close proximity to the refinery Petromidia, able to take heavy tankers with capacity ranging from 85 to 160 million toes for 300 days a year. The oil terminal at Navodari transits oil designed for the Petromidia refinery, but with the arrival of LUKoil transhipments the volume could increase from 4 million tons to 7.5 million tpa.

The Rompetrol Group is 100% owned KazMunaiGaz and consists of three plants (Petromidia refinery, Vega and Rompetrol Petrochemicals. Last year, Rompetrol completed the reconstruction of the FCC unit at the Petromidia refinery. The FCC project is part of a programme aimed to increase the refinery's productivity by a total of 28% (from 3.5 to 5 million tpa), by replacing worn equipment. The reconstruction effort will increase the production of propane and propylene fractions, to be refined further at the group's petrochemical installations.

The Romanian refining market is divided between three players, comprising OMV, KazMunaiGaz, and LUKoil. The sector generates losses of around \$400 million. This is due to higher processing costs per ton, mainly due high to energy consumption, a lower degree of capacity utilisation, and the cost of environmental investments imposed by the EU. Thus, the three companies on the Romanian market have achieved a loss of nearly \$2.4 billion since owning domestic refineries.

### Arpechim refinery & cracker, and Romanian refineries

Oltchim faces yet more challenges in its resolve to restart the Pitesti cracker should OMV press ahead with plans to close the adjacent refinery. The Arpechim cracker has not worked since its acquisition by Oltchim in December 2009. A lack of working capital has prevented the restart, but a more long term problem relates to naphtha supply and OMV's proposed plans to close the Arpechim refinery. OMV Petrom could possibly

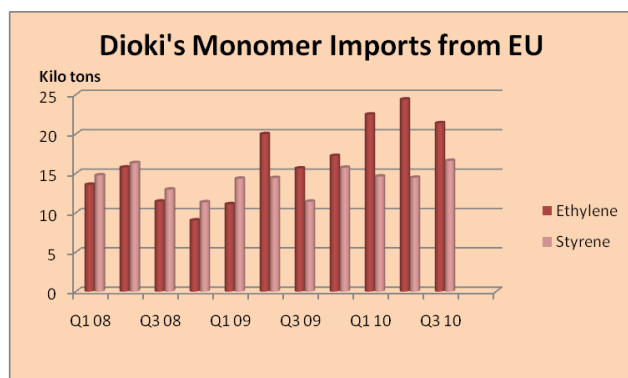
sell or close the Arpechim refinery at Pitesti by 2012 due to overcapacity in the oil refining market in Romania. Accordingly, current refining capacity stands at 18-20 million tpa, while demand amounts to around 9 million tpa. OMV Petrom produced 4.4 million tons crude oil in 2009 (down from 4.54 million tons in 2008), and processed 5.2 million tons of crude oil. OMV states that it is too difficult to achieve good profit levels due to the company's high own energy consumption, unfavourable product yields and high fixed costs.

One option for the Arpechim refinery is that the Romanian State buys it from OMV Petrom with the aim of processing Caspian crude. Oil could be brought on the Black Sea, landed at Oil Terminal Constanta plants and transported through pipelines to the Conpet Arpechim Pitesti refinery, currently owned by Petrom. However, this seems an unlikely prospect and there are fears that this closure would cut off the flow of naphtha to the steam cracker.

Thus, Oltchim faces an uncertain 2011 even if profitability from smaller tonnage chemicals has improved significantly in the past year. Business divisions not depending on ethylene improved their performance in profitability, allowing Oltchim a reduction in losses by over 50 times in the first three quarters against the same period in 2009. Whilst reopening the Pitesti petrochemical plant is considered vital by Oltchim's current management, minority shareholder PCC has questioned the need to produce ethylene and propylene based on old and inefficient technology. PCC favours a more niche-based approach, which ultimately Oltchim may be forced to adopt unless the feedstock situation both short and long term can be settled.

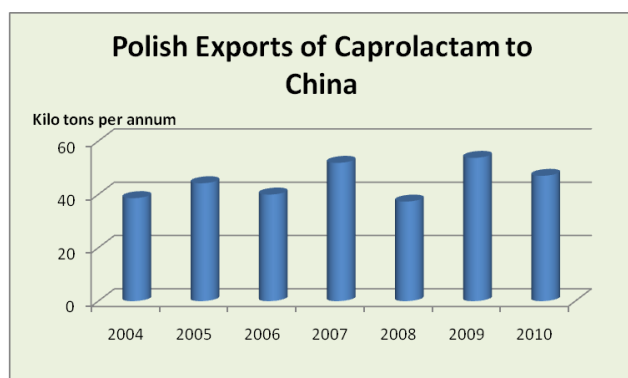
### Central European PVC news

The question of Anwil will be discussed at a forthcoming Treasury meeting of the parliamentary commission, with union concerns over the future of the complex. The majority owner PKN Orlen, which previously tried to sell its stake, has alluded to several scenarios of how it might manage its assets in Anwil but as far as known is yet to reach a decision. One option considered recently by Orlen was that Anwil could be divided into the separate divisions for PVC and fertilisers and sold as separate entities. This concept remains in the planning stage, and it is not clear if it will proceed further.



Having failed to acquire Vinyls Italia, Croatian producer Dioki is examining market possibilities for the sale of VCM. The company completed plant modernisation in 2010, and recently a contract was agreed to deliver 3,500 tons of VCM to a French buyer. Whilst Dioki is able to export VCM, it depends to a large extent on imports of feedstocks from the EU including ethylene and styrene as shown in the graphic opposite.

possibility of expanding the storage capacity for VCM as current limits on storage capacity is restricting the volume of PVC production. In the period January-October 2010, Oltchim imported around 17,000 tons of VCM from Germany. Oltchim might buy some VCM from Karpatneftekhim in the first part of the year, although Karpatneftekhim will soon require all of its own VCM for the new PVC plant which is intended to start in March.



### ZA Pulawy-caprolactam & urea contracts

ZA Pulawy signed a new contract at the start of the year for the export of caprolactam to the Asian market in 2011, with a contract value estimated at zł 365 million. This will represent about half of the annual production caprolactam capacity of ZAP. The signing of the agreements is the result of the commercial strategy in the Asian market with ZAP extending sales beyond China into countries such as Korea, Indonesia, Malaysia, Thailand, and India. The company has maintained a 100% utilisation rate at its caprolactam facilities in the past half year which are currently stand at 65,000 tpa. After

modernisation, capacity will be increased to 70,000 tpa.

Regarding urea, ZAP has become Europe's second largest producer following modernisation and expansion at the end of last year, having now attained a 10% share of the EU market. In January, ZAP integrated this urea system with two installations for melamine, which after the autumn shutdowns in 2010 are already working at 100% utilisation. Due to the urea modernisation programme and melamine shutdowns ZAP recorded weak financial results in the second half of 2010, but expects to recover quickly in 2011. Aside modernisation, the contract with Ciech in mid-December for the acquisition of around a 90% stake in Fosfory at Gdansk provides the basis for a strong group. The acquisition is part of ZAP's development strategy in the Polish market as an integrator of the fertiliser-chemical industry.

<b>Polish Chemical Production (unit-kilo tons)</b>		
<b>Product</b>	<b>Jan-Dec 10</b>	<b>Jan-Dec 09</b>
Caustic Soda Liquid	230.2	305.0
Caustic Soda Solid	53.3	68.5
Soda Ash	1009.5	816.6
Ethylene	501.7	470.9
Propylene	336.9	326.3
Butadiene	62.5	49.3
Toluene	97.6	89.0
Phenol	34.9	30.3
Caprolactam	159.3	131.6
Polyethylene	360.7	306.4
Polystyrene	139.6	116.3
PVC	196.1	231.7
Polypropylene	242.5	235.0
Synthetic Rubber	164.1	121.9
Pesticides	20.9	18.8

#### **Air Liquide-Poland**

Air Liquide has announced the commissioning of two air separation units in Poland in January, both located at ZA Pulawy. The new air separation units are the largest liquid and gas source in Central and East Poland, with an aggregate production capacity of around 1,700 tons per day. This investment is included in the €100 million programme in Poland announced in June 2010. The new facilities will strive to meet the growing needs of existing customers and potential clients. Air Liquide's air separation units, located in Dąbrowa Górnicza, Krakow and Pulawy, represent the largest production capacity in industrial gases in Poland. With these new assets, Air Liquide intends to support the development of its customers and consolidate its position in Poland.

#### **Science & Technology Park, Pulawy**

ZA Pulawy has received permission to expand its business in the Special Economic Zone Starachowice.

According to the document, the company has to invest at least zł 50 million before the end March 2013, to hire an additional 40 employees to 31 December 2013 and maintain the 50 posts over the next five years. The deadline for completion of the investment covered by the permit was set at the end of June 2013.

The construction of Science and Technology Park at Pulawy has been started, which aims to help in the development of innovative business. The contractor responsible for the project is Polimex, with 85% of the investment financed through EU funds. The Park is to be created over an area of over 12,000 square feet and will closely align with ZA Pulawy, where intermediates and raw materials will be provided for further processing.

#### **ZCh Police-ZA Pulawy, cancelled privatisation**

Following the tender process in January for the acquisition of stakes in ZA Pulawy and ZCh Police, the Treasury stated that it was not satisfied with offers placed for either company. After analysis of the binding bids, the Treasury has decided to terminate the process. One important reason for the reserved attitude towards selling the stakes is that the situation has improved in the chemical sector in the past year, and the financial performance of the respective companies is helping to increase shareholder value. Therefore, the offers are considered not to reflect the current market value of companies according to the Treasury.

The aim is to restart the process at a later date. Should outside buyers not be found various scenarios have been proposed including the acquisition of ZCh Police by ZA Pulawy, or even by ZA Tarnow (ZAT). ZAT is considering further expansion of its recently enlarged group and may find value in ZCh Police, but notwithstanding this outcome would be largely determined by the decisions and analysis of the Treasury.

#### **ZCh Police-new supply agreements**

ZCh Police has signed a number of raw material supply agreements on the back of more successful financial results in 2010. One of the most important agreements involve the supply of ilmenite for the production of titanium white, which has been agreed with TITANIA AS. Hauge and Dalen in Norway. The contract has been signed for the next five years, and its value is estimated at \$150 million. ZCh Police is the sole producer of titanium dioxide in Poland with a capacity of 40,000 tpa of titanium white. The company uses about 75,000 tpa of ilmenite and 23-25,000 tpa of titanium.



Other agreements involve gas supply and phosphates. ZCh Police and PGNiG signed an agreement to purchase over 250 million cubic metres of gas in 2011, which equates to the company's annual consumption. The signing of a \$317 million one year contract has been made possible due to the effects of the company's restructuring programme. ZCh Police produces 400,000 tpa of ammonia. Regarding phosphates, ZCh Police has concluded a contract worth zł 77.6 million with a French company Technical Sourcing for deliveries from Syria.

**ZAK-nitric acid in full operation**

After several months of construction and testing, nitric acid production was finally launched at Kedzierzyn at the end of December. This new plant not only meets EU requirements, but it is also strengthening its position of ZAK and the Capital Group of ZA Tarnow. The new installation includes the production of nitric acid with a capacity of 900 tons per day, in addition to ammonium nitrate in quantities of 1 800 tons per day. Two storage tanks have been constructed for nitric acid, each with a capacity of 200 cubic metres. ZAK is able to reduce the energy consumption from the new nitric acid plant, aiming to save around zł 25 million per annum in costs. The installation meets the requirements of best available techniques (BAT), is part of the company's environmental policy, and reduces NOx, CO2 and particulate emissions to the atmosphere.

**ZAK, 2-EH sales & phenol purchases**

ZAK has signed a contract with Polynt SpA of Italy, for the sale of 2-ethylhexanol, with an estimated value of zł 64.7 million. This contract covers supplies in the period from 1 January 2011 to 31 December 2011. ZAK is now part of a group ZA Tarnow, which has in total concluded contracts with Polynt for 2011 worth zł 116.5 million.

ZAT signed agreements with Brenntag International Chemicals for the purchase of phenol in 2011. The estimated contract value is zł 146.9 million. This agreement is effective from 1 January 2011 to 31 December 2011 and provides for the purchase by ZAT of phenol according to a fixed timetable. ZAT reported that the total value of turnover between the Group and the Group Azoty Tarnow Brenntag in the last 12 months, with an estimated value that results from the signed contract, is approximately 232.6 million zł.

**Major investment plans Ciech**

Construction of a new electrolysis plant at Zachem. Capacity expansion from 71,500 tpa to 90,000 tpa. Expected cost zł 209 million.

Modernisation of Janikowo Power Station. Aim to increase energy efficiency by 25%. Expected cost zł 231 million.

Construction of plant substances for the production of pesticides at Organika-Sarzyna. Effects include increased production of plant protection products from 4,000 tpa to 6,000 tpa. Expected cost zł 103 million.

Construction of installation for production of epichlorohydrin from glycerol at Zachem. Effects include integration of the TDI line. Expected cost zł 58 million.

TDI production process optimisation at Zachem. Effects include increasing capacity from 75,000 tpa to 90,000 tpa. Expected cost zł 32 million.

Expansion of sodium bicarbonate plant at Soda Polska by 20,000 tpa. Cost zł 12 million.

Modernisation of Soda Polska plant. Effects include maximum utilisation of capacity. Expected cost zł 258 million.

**Ciech-share issue considered to finance projects**

Ciech is aiming to attract zł 300-400 million through issuing new shares partly to cover debt relief and partly due to the needs of project investment. A large bulk of the money aimed to be raised from the market is intended to be devoted towards investments. This should include the modernisation and capacity expansion at Soda in Poland, in addition to building new plants in Zachem and Organic-Sarzyna. The total amount that Ciech intends to invest in the next five years comprises zł 1.375 billion. In January 2011, Ciech concluded a key stage in debt refinancing with the banks. The sale of the Gdansk Fosfory plant to ZA Pulawy is yet to be approved but is considered an important part of the restructuring programme. The EBRD has expressed interest in participating in the refinancing of the group, and is considering providing a senior secured loan in euro equivalent to zł 300 million.

**Oltchim plans to sell profile manufacturer**

Oltchim plans to sell PVC window profile manufacturer Ramplast and several other core assets at an open auction. The group hopes to realise €8 million from the sale, with the proceeds to be invested in operations in Arpechim. A bidding tender for Ramplast is to start at €7.4million.

Ramplast has the capacity to produce 20,000 tpa of PVC profiles and the company's window division is capable of installing 10,000 units annually. Products are distributed mainly in the Romanian market. At the end of 2009, Oltchim management said it planned to add 15 extrusion units to its

machinery park within the next three years, but is believed to have lacked funding for the investment

#### Du Pont-Butacite

DuPont has launched a \$14 million plant in the Czech Republic producing its Butacite G PVB (polyvinyl butyral) interlayer film sheet for laminated glass. Butacite G is manufactured from 100% recycled PVB and is used in safety glass for the automotive and construction industries. The new plant at Holesov, which is set to become DuPont's hub in Central Europe, opened late last year and has so far created 70 jobs. The group sees the Czech Republic as a promising growth market for its new local production.

#### Fabionn

Czech project contractor Fabionn has submitted environmental permit documents for the planned construction of a new 10,668 square metre production hall in the north-west Bohemian town of Verneřov. The project, located in the Verne industrial park, is planned to comprise a pressing plant, producing plastic parts for automotive dashboards. Planned annual capacity is 368,000 plastic components, involving processing of 3,000 tpa of plastics (including polypropylene, polyurethane, and TPO). Construction will start in the second quarter of 2011, with Fabionn anticipating the plant to start up in the second quarter of 2012.

#### Novostrat

Polish plastics processor Novostrat has opened a new plant at Olszyna in the Lower Silesian province, which will produce polyethylene foam for heat and sound insulation, packaging and flooring. The plant's entire output will be exported to West Europe, mostly to Germany and France. Novostrat wants to develop the Olszyna plant, which is located on the site of a former furniture factory, into the largest production site for polyethylene foam in Europe. During the first test operation, the plant hired 40 people, which will eventually rise to a total of 300.

of 200,000 tpa. It will be launched at the same time as the current 90,000 tpa plant undergoes an extended shutdown.

At the end of 2010, BorsodChem signed an agreement with Sinergy Energy and UniCredit Bank for funding for the supply of hydrogen. The use of hydrogen as a fuel reduction of about 12 million cubic metres of natural gas consumption in the boiler, which equates to reductions of almost 23,000 tons of carbon dioxide emissions.

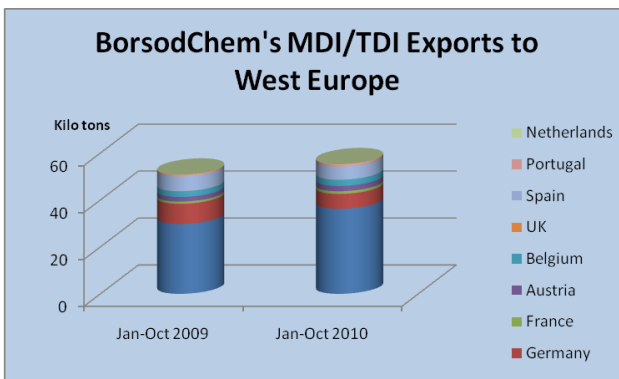
#### NCHZ-need for investment

Novacke chemické závody (NCHZ) continues to produce despite the fact that the factory is in bankruptcy and making losses. The sole bid during the tender process from M-Energo and worth around €2 million was rejected by the Slovak authorities, but there remains hope of a new buyer will be found. It is commonly accepted that NCHZ requires substantial financial investment, principally to update and maintain the current production facilities, and this would have to be taken into account when considering bids. The largest part of the problems the factory is associated with high production costs. The company is divided into three divisions, including chemicals, plastics and carbide, all of which are dependent on one another. As a result, it would disrupt the operation of the remaining plants should one of the divisions be closed and this could further increase costs.

Continuing to produce under the current regime is simply increasing the indebtedness of the company, and thus one ambitious proposal concentrates on radical changes in the production chain to develop more niche-based products. However, this would require a fundamental change in thinking towards the company and its current production activities which are based on traditional chemical industry processes and extremely old and outdated equipment. The main line of business for NCHZ is producing products based on chlorine production and processing, the production of calcium carbide, industrial gases, the production of PVC and its processing products. The company exports a large share of its production, and currently the company employs approximately 1,800 employees.

#### Altana takes over Kometra

The specialty chemicals group Altana AG, Wesel, has signed an agreement to acquire the plastic modifiers and additive producer Kometra at Schkopau. The company produces special surface-active copolymers which are used in many applications as an adhesive and impact modifiers. The company has been incorporated in the Altana BYK Additives & Instruments.



#### BorsodChem-Wanhua

The acquisition of BorsodChem by Yantai Wanhua Chemical Company looks set to go ahead this year, having been approved by shareholders and the group board in China. The main interest of Yantai Wanhua in BorsodChem is focused on MDI and TDI, with exports to West Europe forming a key part of the strategy. As the graphic opposite shows, BorsodChem exports a significant amount of isocyanates to West European countries which is expected to increase following the addition of new capacity. BorsodChem's new TDI plant planned for start-up this year will consist of a capacity

## RUSSIA

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

Product	Jan-Nov 10	Jan-Nov 09
Acetic Acid	145.0	170.9
Ammonia	11,700.0	12,956.6
Benzene	977.4	1,048.3
Butanols	246.4	257.7
C Black	605.7	532.9
Caustic Soda	986.9	1,112.7
Ethylene	2,164.0	2,243.4
Methanol	2,649.5	2,343.9
PET	274.8	223.1
Phenol	218.8	177.3
Ph Anhydride	94.2	95.8
Polyethylene	1,421.4	1,410.9
Polypropylene	591.8	594.5
Polystyrene	285.4	259.8
Propylene	1,085.0	881.9
PVC	542.5	526.9
PVC plasticizers	84.2	213.5
Soda Ash	2,390.0	2,320.7
Styrene	438.6	493.0
Syn Rubber	1,126.5	971.1

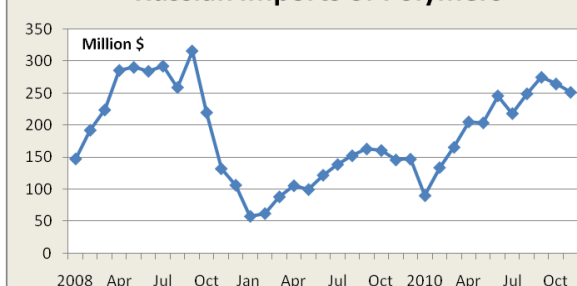
### Russian chemical production trends 2010-2011

Russia's industrial output increased by 8.2% in 2010, following a fall of 9.3% in 2009 due to the recession. Russia's Ministry of Economy expects industrial output to grow 4.1% in 2011. Last year, manufacturing rose 11.8% whilst mineral extraction increased by 3.6%. In terms of chemical product sectors, the production of rubber products rose by 24.2% in 2010, plastics increased by 19.2%, and varnishes and paint by 16.7%. The production of fibres and chemical fibres increased by 16.2% and amounted to 101,600 tons. It is apparent the increased output volumes were attributable more to a recovery than genuine growth. Some products recorded rises in volumes due to the introduction of new capacity, but generally the main reason for higher production in 2010 over 2009 was a more stable economy. In one of the main commodity sectors mineral fertilisers, production rose in the period January-November by 23.5% up to 14.8 million tons.

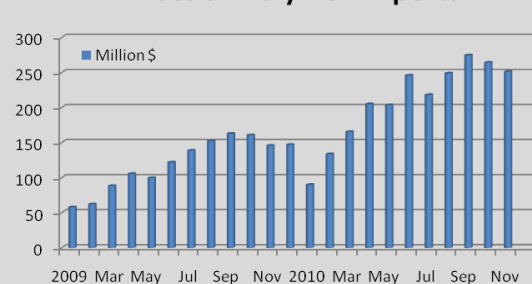
In the bulk polymer sector, increases were relatively modest with polystyrene showing the largest rise of 14.4% to 278,700 tons in January-November 2011. Production of PVC increased by 7% to 542,500 tons, which is close to full capacity. Of the PVC producers, Sayanskkhimplast increased production by 5.6% over 2010, SIBUR-Neftekhim increased by 7.5%, and Kaustik at Sterlitamak by 7.7%.

The production of polypropylene in Russia fell by 2,700 tons to 591,800 tons in the period January-November 2010, due largely to the extended overhaul at the Moscow plant in May-June. Imports of polypropylene hit record levels as the economy recovered from the problems in 2009. The production of polyethylene increased by 10,500 tons to 1.421 million tons, with Kazanorgsintez showing a 4.5% over 2009. Salavatnefteorgsintez showed the largest rise of around 40% due to the start-up of the new HDPE plant, which took place in the second quarter. Other polyethylene producers such as Angarsk Polymer Plant increased production by 22.2%, Stavrolen by 20.5%, and Ufaorgsintez by 15.5%, all of which was due to uninterrupted operations.

**Russian Imports of Polymers**



**Russian Polymer Imports**



In terms of trade, Ammonia exports in the period January-November 2010 totalled 2.328 million tons for a value of \$652 million, methanol 1.094 million tons (an increase of 61%) to \$251 million and nitrogen fertilisers 9.5 million tons for \$1.8 billion.

### Russian polymer imports, Jan-Nov 2010

Polymer imports into Russia in January-November 2010 amounted to 695,300 tons, 1.5 times higher than the same period in 2009. In value terms, imports increased by 1.7 times up to \$1.13 billion, although that was still lower than the sum recorded in 2008. Whilst the economy has recovered allowing greater demand, the rise in imports has been moderated to some extent due to the introduction of a number of new plants in Russia for polyolefins and PET.





Imports of LLDPE for the period January-November 2010 increased by 26% to 91,900 tons and by value rose 1.5 fold to \$158 million. Supplies of LDPE increased by 27% to 52,000 tons and in value by 42% to \$103.8 million. Imports of HDPE increased in 1.6 times and reached 229,500 tons, whilst polypropylene imports rose 43% to 108,800 tons and in value by 1.8 times to \$168 million.

#### Russian commodity exports, Jan-Nov 2010

Russia increased exports of synthetic rubber in January-November 2010 by 19% to 671,000 tons. In value terms, rubber exports amounted to \$1.794 billion

against \$990 million in 2009 and \$1.767 billion in 2008. Polymer exports to China declined as more production was directed to the domestic market; volume shipments to Russia's main export destination were down for both polyethylene and polypropylene. These trends are expected to continue for 2011.

### Feedstocks & petrochemicals

#### SIBUR to be reorganised as closed stock company,

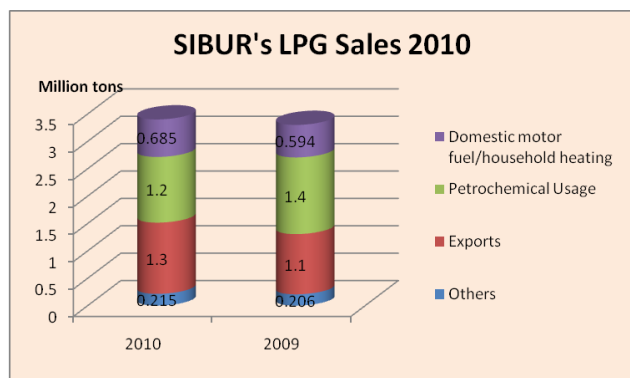
SIBUR Holding, currently an open joint stock company, will be reorganised as a closed joint stock company which will free it of the requirement to publish financial accounts and other material concerning operations. Shareholders approved the necessary amendments to the company charter and other key documents on 11 January. Gazprombank reduced its stake in SIBUR-Holding to 0.02% following the sale of 25% to Novatek owner Leonid Mickelson in December, who is in talks to buy another 25%. Mickelson ultimately plans to raise his stake in SIBUR to 100%.

SIBUR's value is estimated at around 225 billion roubles (\$7.4 billion), excluding debt. Gazprombank, in which Gazprom holds less than 50%, is selling non- financial assets to improve its business structure. No changes are expected in SIBUR's strategy on petrochemicals as a result of this transaction and it is not expected that Leonid Mickelson will strive to resell the asset. It is possible though that the arrival of a new shareholder, will have some impact in terms of mergers and divestment strategy. Non-core assets such as SIBUR-Mineral fertiliser could be offloaded, with Akron or FosAgro already mentioned as a potential buyers.

#### Second phase of expansion of Yuzhniy-Balyk GIC approved

The Russian Ministry of Economy has approved a second phase expansion of the Yuzhniy-Balyk Gas Processing Plant (GIC) in the Khanty-Mansiisk region, in accordance with the Kyoto Protocol. The overall reduction in greenhouse gas emissions under the second phase is planned to total around 7.1 million tons of CO2 equivalent. In 2010, the Ministry of Economy approved a draft of the first phase of the expansion of Yuzhniy-Balyk GIC with a reduction of 0.7 million tons of CO2 equivalent.

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. Aside helping towards increasing the extraction of associated gas to the important 95% threshold, the new complex consists of booster compressor stations, dehydration units and a low-temperature condensation, propane refrigeration unit. Increasing the capacity of the Yuzhniy-Balyk plant is based on taking additional amounts of associated gas, mainly the Priobskoe oil field which is being developed by Rosneft.



#### SIBUR-LPG sales 2010

SIBUR produced 3.4 million tons of LPGs in 2010 against 3.3 million in 2009. LPG deliveries to the domestic motor fuel and household heating markets

rose to 685,000 tons compared to 594,000 tons in 2009. Total LPG exports rose to 1.3 million tons vs. 1.1 million tons in 2009, whilst LPG deliveries to SIBUR's own petrochemical companies declined from 1.4 million tons in 2009 to 1.2 million tons in 2010.

SIBUR's strategic guideline involves the processing of liquefied petroleum gas in Russia through to final bulk polymers. Until new large-scale petrochemical projects are constructed, surplus LPG production in the medium term necessitates increasing export volumes. Given the limited domestic market and lack of technical capabilities for the long-term storage of LPG, exports play a key role in plans to increase the volume of associated gas recovery.

Despite the decline in sales to its petrochemical plants in 2010, SIBUR aims to partially substitute LPGs with naphtha over the next few years. It remains a priority for SIBUR, as a petrochemical company, to ensure the provision of LPG to petrochemical refineries to support production at SIBUR's synthetic rubber and plastics plants.

In terms of regulating the balance between the internal and external LPG markets, this may occur through leading manufacturers' support of the Russian Federation Ministry of Energy's initiative to introduce export duties on LPG in 2010. These duties had been annulled during the financial crisis as the result of much lower domestic demand. The new formula takes price fluctuations in international markets into account and allows raising tariff rates to maintain a reasonable balance between domestic demand and exports. In December 2010, the tariff rate for LPG stood at \$118.1 per ton, but was increased to \$149.3 per ton in January 2011.

### **Tobolsk-Neftekhim, 2010**

Tobolsk-Neftekhim processed 3.5 million tons of gas liquids in 2010, and expects an increase of around another 250,000 tons in 2011. The largest product increase for Tobolsk-Neftekhim in 2010 was recorded for butadiene which rose 47% against 2009 and reached 189,000 tons. Design projects are underway to increase the capacity of the MTBE installation. At the start of 2011, Tobolsk-Neftekhim has launched a site for cleansing methanol from propane fractions which will help to improve quality. Methanol is contained in the natural gas liquids supplied to Tobolsk for fractionation. The content of methanol in gas liquids ranges from 800 to 3500 ppm, whilst the content of methanol in propane fractions varies from 2000 to 8000 ppm. For foreign customers, propane fraction requirements regulate that the methanol content should be not more than 2000 ppm of methanol.

### **Russian refinery projects**

The first stage of the West Siberian oil refinery, to be constructed in the Tomsk region, is expected to comprise a capacity of 3 million tpa with plans to increase to 4 million tpa at a later stage. Construction of the plant is scheduled to begin in 2011. The first products from the refinery are expected to be delivered to nearby Tomskneftekhim for petrochemical production. By 2015, the refinery aims to start processing of oil into Euro 4 and Euro 5 gasoline. The main investor of the project is the parent company of ZapSibNPZ-Moscow Inkomb-Invest.

A project to construct a refinery and petrochemical plant in the Sverdlovsk region may be revived after being scrapped nearly a decade ago. The establishment of an oil refinery in the region is aimed at helping to reduce the dependency on other refineries. Several years ago, Czech companies Alta and Moravian Naftove expressed interest in the creation of a refinery. This has now progressed to the end of October 2010 when an agreement was signed between TransCreditBank and Verkhoturksky Refinery for the creation of a 3.5 million tpa processing plant. The agreement includes exploration, production, refining of oil and natural gas, as well as the arrangement of by-products. The start of construction is yet to be decided.

### **Salavatnefteorgsintez-Lummus contract**

Lummus Technology has been awarded a contract by Salavatnefteorgsintez (for the engineering, procurement, and supply of materials for a third SRT® VI cracking heater at its ethylene plant in Salavat. This award is part of the plant's long-term modernisation and upgrading project, and follows Lummus Technology's successful completion of two previous heaters at the complex.

### **Salavatnefteorgsintez-name change to Gazprom Neftekhim Salavat**

From the end of January Salavatnefteorgsintez will be renamed Gazprom Neftekhim Salavat, reflecting the 65% share that Gazprom holds in the plant. Gazprom intends to increase feedstock deliveries from Surgut to Salavat in the next few years, both in stable condensate and gas liquids. This strategy is helping to support the expansion plans of Salavatnefteorgsintez beyond the current cracker expansion programme. The company has stated that aims to establish a technology park in its vicinity where it can construct a new cracker with a capacity of up to one million tpa. This would be combined with a new unit for the production of polyolefins. Salavatnefteorgsintez plans a project to construct an industrial park in three phases. The first stage is designed

up to 2015, to bring production up to the requirements of technical regulations and to prepare a base for hydrocarbons. The second stage will be undertaken simultaneously with Gazprom, with additional sources of feedstock input, allowing the construction of a one million tpa cracker connected with polyolefin units. In addition, raw materials will be supplied for the rubber industry, in particular to the Sterlitamak plants.

The idea of creating a technology park to feed off Salavatnefteorgsintez was discussed in November 2010 by Gazprom and the Bashkortostan government. In order to proceed with these plans Salavatnefteorgsintez would require around 70 billion roubles for the first phase and probably a lot more for the second phase. The introduction of such a serious investment strategy is implausible without the help of the State. As the federal government is keen on developing special economic zones and technology parks, it may view investments into Salavatnefteorgsintez and the adjacent areas favourably. At present, Salavatnefteorgsintez is focused on completing its expansion of the existing facilities to 380,000 tpa and hopes to start examining these future stages of development in more serious detail in 2012.

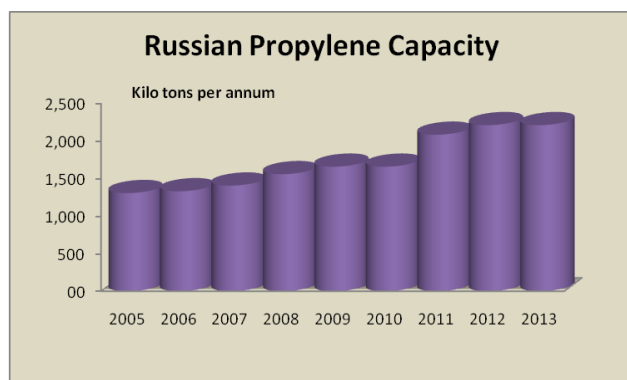
#### **Nizhnekamskneftekhim records higher profits for 2010**

According to preliminary estimates, Nizhnekamskneftekhim's net profit increased 16 times in 2010 against 2009, totalling around seven billion roubles. This compares against 2009 with 424 million roubles of net income. The company's revenue in 2010 was 94 billion roubles, a 57% increase from last year and the highest on record. Nizhnekamskneftekhim increased commodity output by 13.8% in 2010 to 65.2 billion roubles, compared with the previous year. Butyl rubber, including halobutyl rubber, totalled 138,850 tons in 2010 which was 2.2% higher than 2009. Polystyrene production totalled 184,400 tons which was 18.4% up, whilst both polyethylene and polypropylene showed marginal increases.

#### **Russian propylene supply 2010**

Russian propylene production increased by an estimated 18% in 2010 against 2009, mainly due to less outages from the crackers. Stavrolen at Budyennovsk was affected in 2009 by an accident in the first half of the year, but production ran well in 2010. Propylene merchant sales on the Russian domestic market totalled 232,300 tons in 2010, 1% less than 2009. Reductions in merchant purchases resulted from lower production of acrylonitrile at Saratov, and also the termination of deliveries to Kaustik at Sterlitamak for the production of epichlorohydrin. The main suppliers of propylene on the Russian market include SIBUR-Kstovo and Angarsk Polymer Plant, accounting for 47% and 27% of sales respectively.

On the supply side, SIBUR-Khimprom has boosted its own production of propylene from propane-propylene fractions. The increase in production of polypropylene at Stavrolen in 2010 led to an increase of captive consumption of propylene and as a consequence less availability for sale on the open market. The major event in 2010 affecting the supply of propylene resulted from the completed modernisation of the Kstovo refinery owned by LUKoil-Nizhnegorodnefteorgsintez. From the construction of a catalytic cracking complex, the Kstovo refinery is capable of producing around 150,000 tpa of propylene. The propylene is intended to be sent mainly to Saratovorgsintez for processing into acrylonitrile.



The addition of 150,000 tpa for the merchant market in Russia will provide a major boost to the supply/demand balance, which has been very tight in recent years. Shortages of propylene in the Russian market have helped instigate research into different routes of propylene production; the project at Kstovo is the result of examination by Koch Glitsch. Propylene capacity in Russia is shown in the graphic opposite; rising from 1.317 million tpa in 2009 to 2.213 million tpa by 2013 should all projects be completed on schedule. The main development in the next two years will take place at Tobolsk, with the introduction of 510,000 tpa planned at the end of 2012. Titan at Omsk is also

introducing propylene capacity to meet the demand from its new polypropylene plant, which is now close to completion. In both cases, these two plants will utilise propane-propylene fractions.

#### **LUKoil-Nizhnegorodnefteorgsintez, propylene supply**

LUKoil-Nizhnegorodnefteorgsintez has started production of gasoline Euro-4 standard, which became possible thanks to the commissioning in December 2010 of the new catalytic cracking unit. The new complex will

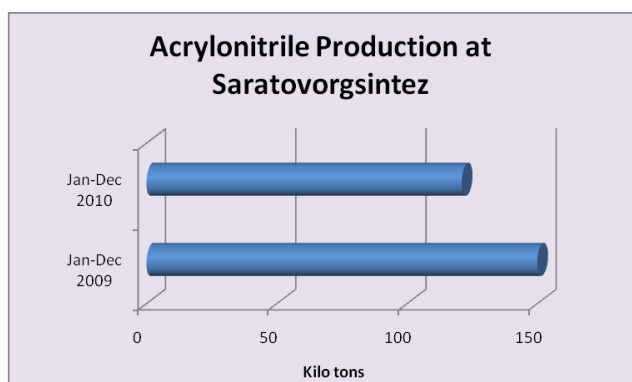
increase the total gasoline production at the Nizhny Novgorod refinery from 1.8 million tpa to 3.2 million tpa. The complex can also produce 150,000 tpa of propylene.

### **Russian propylene consumption 2010**

The total volume of propylene sales to the domestic market in 2010 amounted to 232,300 tons, which is 1% less than in 2009. Despite little change in the volume sales, the structure of the market underwent adjustments in terms of both supply and consumption. Due to an increase in production of polypropylene at Stavrolen, monomer consumption increased at Budyennovsk thus reducing the supply of merchant availability. As a result, Stavrolen reduced shipments of propylene in the Russian market from 35,200 tons in 2009 to 20,900 tons in 2010.

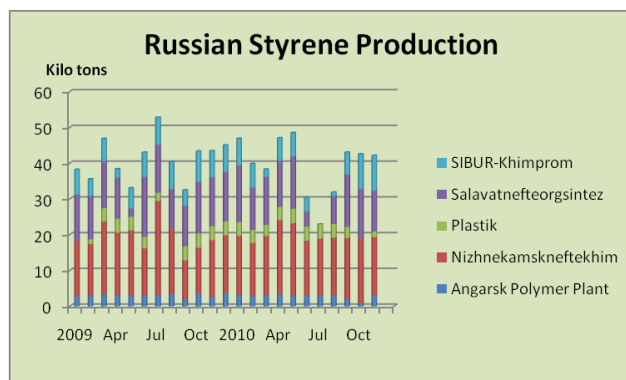
Whilst Stavrolen reduced shipments to the domestic market, SIBUR-Neftekhim increased sales from 94,600 tons in 2009 to 110,700 tons in 2010 due to higher production. The delivery of propylene from Omsk Kaucuk and Angarsk Polymer Plant to the domestic market was unchanged in 2010, whilst SIBUR-Khimprom reduced sales of merchant propylene from 20,200 tons to 9,600 tons.

Demand was inevitably better in 2010 than 2009 in most propylene derivatives, and Salavatnefteorgsintez needed to buy additional propylene to meet the production of butyl alcohols and 2-ethylhexanol. This resulted in the company purchasing 36,900 tons of propylene in 2010 against 4,200 tons in 2009. Akrlat at Dzerzhinsk increased its purchases of propylene from 11,500 tons in 2009 to 16,100 tons in 2010. On the minus side, the shipment of propylene to Kaustik at Sterlitamak and Usolyekhimprom declined last year due to the cessation of epichlorohydrin production. The future for production at Usolyekhimprom looks very uncertain.



Acrylonitrile production in Russia was affected in 2010 by the shortages of propylene, with volumes reduced 151,700 tons to 120,000 tons. As Saratovorgsintez depends on merchant purchases of propylene it is directly impacted when supply tightens as occurred in 2010. Although Russian production of propylene was higher in 2010, the rise in captive consumption meant that there was no additional monomer on the market. In the latter part of the year, Saratovorgsintez benefited from propylene purchases from Karpatneftekhim in Ukraine and Azerkimya in Azerbaijan, both of which had undergone restarted production.

Another merchant consumer of propylene is Akrlat at Dzerzhinsk which started the construction of its own warehouse for propylene storage in 2006 and is now expected to be completed in the next few months. Having its own warehouse, will not only avoid disruptions in supply for Akrlat, but also reduce allow a diversification of suppliers. In addition to the warehouse project, Akrlat is investigating the possibility of producing its own propylene through the separation of propane-propylene fractions. This is a far more significant project in that it could result in the production of 37,500 tpa of propylene, which would cover the full needs of Akrlat even if it decided to increase its acrylic acid capacity.



### **Russian acrylonitrile market 2010**

Around 20% of acrylonitrile production in Russia is consumed in the domestic market, mostly in the production of butadiene-nitrile rubber followed by ABS applications. Domestic consumption was higher for acrylonitrile in 2010 by 46% over 2009, but still only amounting to a total of 17,600 tons in the period January-November 2010. Saratovorgsintez exported 89,600 tons in this period, which is 22% less than in 2009.

### **Russian styrene market**

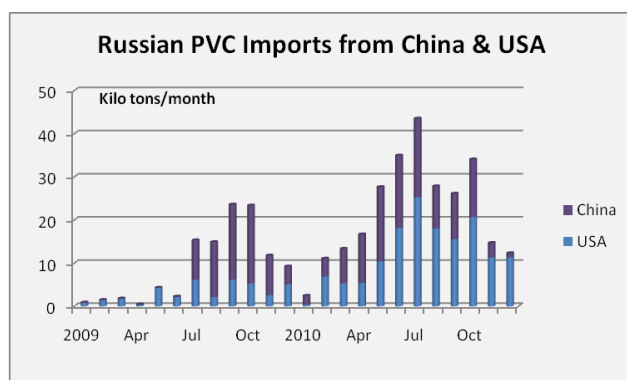
Russian consumption of styrene increased by around 26% in the 2010 against 2009, after recovery followed the declines of the previous year. Styrene consumption in Russia has been assisted in the past year by high demand for polystyrene, in addition to



rubber applications, but at the same time production has not risen in the past two years. As a consequence, exports of styrene monomer from Russia have dropped as the main exporter Nizhnekamskneftekhim has concentrated on captive and domestic sales.

In the domestic market, sales of styrene monomer for synthetic rubber applications rose by around 28% in 2010 to 41,200 tons, whilst merchant sales for polystyrene production declined 9% to 40,500 tons. This was due to the stoppage at Omsk-Polymer in the middle of the year leaving Styrovit at Kirishi as the main polystyrene producer depending on styrene purchases. In terms of suppliers to the domestic market, SIBUR-Khimprom reduced its market share in 2010 from 46% to 35% due to modernisation and expansion, whilst Salavatnefteorgsintez increased its share from 32% to 45%. Other suppliers to the domestic market included Plastik with 10%, Angarsk Polymer Plant with 7% and Nizhnekamskneftekhim with 2%.

## Bulk Polymers



### Russian polymer imports

Russian polypropylene imports increased 50% in 2010 over 2009, the largest increase occurred in raffia grade polypropylene by 1.5 fold due to demand from injection moulders. In the final quarter of 2010, Russian companies increased purchases of polypropylene from Turkmenistan. PVC imports into Russia reached record levels in 2010 with China and the USA providing the bulk of shipments. Imports increased during the middle part of the year due to the temporary shutdown at Kaustik caused by the lack of ethylene from Salavat.

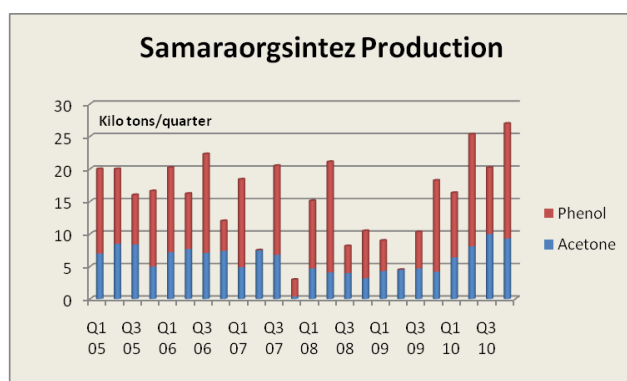
### Salavatnefteorgsintez-HDPE

Salavatnefteorgsintez produced 31,300 tons of HDPE in 2010 from its new plant, which started up in the first half of the year. Production in December reached 6,100 tons which was the highest monthly figure over the year. In 2010, Salavatnefteorgsintez mastered 11 brands of HDPE and aims to develop 32 brands in total. The different grades can be divided into pipe, cast, film, extrusion blow moulding, cable and brands to produce monofilaments. Annual production capacity of 120,000 tpa was launched in March 2010 based on Hostalen technology supplied by LyondellBasell. This is the first Russian production of polyethylene in suspension technology. At Kazanorgsintez and Stavrolen HDPE is produced by gas-phase polymerisation, whilst and Nizhnekamskneftekhim uses Unipol technology.

### Kaustik Sterlitamak, ethylene supply

Kaustik plans to increase ethylene purchases from Salavatnefteorgsintez in February from 4,500 tons per month to 8,000 tons per month. Prices between the two companies have continued to present a problem. Whilst the additional 3,500 tons were agreed at 26,000 roubles per ton the regular 4,500 tons is priced at the old price of 21,000 roubles per ton. The FAS has instructed Salavatnefteorgsintez to reach a five year agreement for ethylene supplies based on volumes of 82-84,000 tpa. However, Salavatnefteorgsintez has questioned this instruction and is challenging the FAS in court at present.

## Aromatics & derivatives

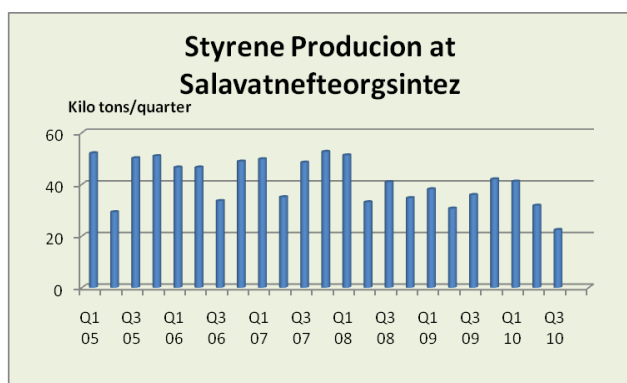


### Samaraorgsintez-phenol expansion

Samaraorgsintez plans to invest more than 400 million roubles in 2011 for the modernisation of facilities, including work on bottlenecks that will allow an increase in phenol capacity to 90,000 tpa from 60,000 tpa at present. Currently, the average daily production of phenol is around 230 tons, and the company plans to produce at least 75 thousand tons of phenol in 2011. In 2010, Samaraorgsintez produced 55,000 tons of phenol and 33,833 tons of acetone. The share of domestic sales for Samaraorgsintez is 24% in 2010 and total production rose by 16% compared to 2009.

Preliminary financial results of Samaraorgsintez for 2010 showed a strong recovery after 2009. The company managed to reverse the negative trends in the market from the previous two years. The anti-crisis measures undertaken by shareholders and the management allowed not only to restore the financial strength of the business, but also to significantly improve its operational and economic performance. As a result, net proceeds in 2010 were about 3.6 billion roubles, which is 1% higher than in 2008 and 79% higher than in 2009. With the support and financial assistance of Sberbank, Samaraorgsintez has repaid bad debts to the VTB bank and has completed the settlement with creditors of the plant.

2010 was a turning point for Russian producers of phenol. After several years of sharp decline in production caused by the global economic slowdown and reduced consumption in Russia, supply started to tighten with capacity operating at close to 100%. Partly due to the start-up of bisphenol A at Kazanorgsintez and partly due to the rising demand for phenol-formaldehyde resins, phenol supply has been transformed from surplus to deficit which has all but eliminated export activity. The deficit has justified investment into new phenol capacity and is expected to continue in spite of the expansion by Samaraorgsintez.



#### **Salavatnefteorgsintez-ethylbenzene improvements**

Salavatnefteorgsintez is modernising its ethylbenzene unit this year by replacing the transalkylation reactor. As a result of modernisation, the company will increase capacity for the production of ethylbenzene by 11,500 tpa and styrene by 11,000 tpa. In 2009, the plant produced 157,000 tons of ethylbenzene and 147,000 tons of styrene and this fell in 2010. Production of styrene has declined year on year since 2007 and investment is recognised as necessary to reverse the trend. The transition from vapour to liquid-phase transalkylation will help Salavatnefteorgsintez to reduce operating expenditure, including energy consumption, by raising catalyst life. Savings on energy

consumption have been estimated at around 10% against current levels.

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### **Methanol & Ammonia**

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#### **Shchekinoazot-methanol plant not expected to start until mid-2011**

Although construction and engineering is virtually completed Shchekinoazot does not plan to launch its new methanol plant until the middle of the year. Start-up was planned previously for the fourth quarter in 2010, but dates have been postponed due to the need for changes in the project.

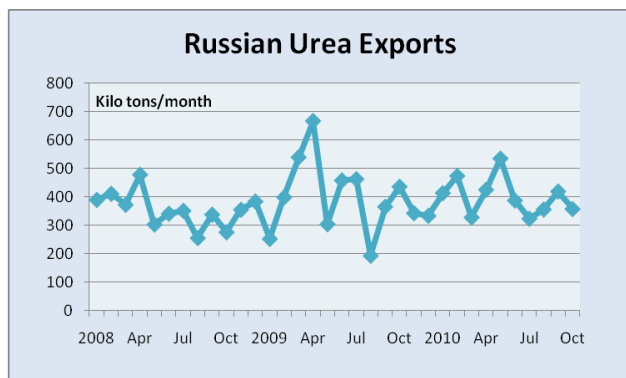
#### **Akron-good results for 2010**

The Akron group produced 5,754,000 tons in total in 2010, up 8% from the previous year. The production of ammonia and fertilizers were 7.5% higher than 2009 and amounted to 4.618 million tons. The main increase was due to increased production of marketable products by Akron at Novgorod (8% up to 3.257 million tons) and its Chinese subsidiary Hongri Akron (58% up to 876,000 tons). Akron is considered a key contender for the acquisition of SIBUR-Mineral Fertilisers if it is sold. These assets would include Azot at Kemerovo (the main asset of SIBUR-Mineral Fertilisers) which could benefit from a change of ownership due to improved marketing strategy and logistics.

The Italian export credit agency SACE has recently provided Akron coverage for purchase of urea equipment from Diemme. The Akron group is implementing a large-scale investment programme in which imported equipment will be purchased from the EU, Japan and the US for about \$300 million in order to upgrade existing and building new facilities. SACE has had previous the experience of cooperation with Russian chemical companies, particularly involving SIBUR's project for the construction of a polypropylene plant at Tobolsk.

#### **Russian urea news**

Salavatnefteorgsintez has completed the modernisation of granulation towers aimed at improving the quality of prilled urea. FosAgro plans to start construction in May this year for its new urea plant at Cherepovets with a capacity of 500,000 tpa. Total investment in the project is estimated at more than \$250 million, with start-up of the urea plant planned for 2012. The introduction of a gas turbine unit will cover almost the complete needs in electricity, as well as improve the company's energy efficiency.



Russian urea production is targeted essentially on exports, accounting for around 90% of all shipments. The largest end-users in the domestic market include the producers of urea-formaldehyde resins and urea-formaldehyde concentrate, and fertiliser producers.

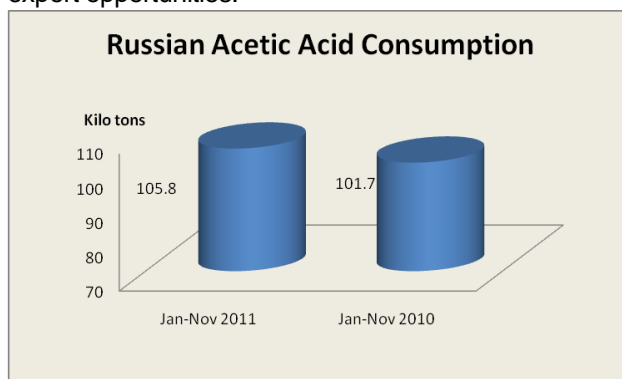
#### Azot Kemerovo-achieves a million tons of ammonia production in 2010

Azot at Kemerovo produced 1 million tons of ammonia in 2010 against 994,649 tons in 2009. Achieving one millions was made possible due to plant the modernisation of two ammonia plants, ensuring their

stable operation. In 2010, investment in upgrading these units amounted to 300 million roubles. The next phase of investment planned for 2011 includes the modernisation of the Ammonia-1 plant to further reduce energy consumption and increase production. Azot exports around 70% of ammonia production from its two plants.

#### Russian acetic acid market 2010

Russian acetic acid exports dropped in 2010 against 2009 due to reduced global demand in the second quarter. Conversely the domestic market saw improved demand from acetate solvents and PTA. The main producer Azot at Nevinomyssk uses acetic acid for the production of vinyl acetate and butyl acetate, and consumed around 21% of its production in 2010. From the remainder, 35% was exported and 44% sold on the domestic market. The major Russian consumers of acetic acid include Polief, Stavrolen, Amzinsky Resin Plant, etc. The rapid growth of Russian acetic acid exports began in 2007, but markets have changed in the past year with improved domestic demand and simultaneously reduced export opportunities.



### Synthetic Rubber

#### Russian synthetic market outlook

The Russian synthetic rubber market has been projected to grow by around 5% over the next decade, according to estimates from the Ministry of Economy aligned to predictions of car production. This includes most types of commodity rubber, comprising isoprene rubber, polybutadiene, butyl rubber, and styrene-butadiene. Domestic consumption in 2010 was estimated at 520,000 tons, which is expected to rise 2.4 fold by 2020. The growth rate for special grades of rubber, including butadiene-acrylonitrile, EPDM, etc could exceed rates of 7%. Demand for thermoplastic elastomers (TPE) is expected particularly to see strong growth in the range of 8% per annum, mainly due to new applications in road construction.



Nizhnekamskneftekhim has stated that it intends to invest in the expansion of synthetic rubber capacity to meet the growing demand in the internal market. At present more than half of total rubber production in Russia is exported, but volumes are expected to decline in the next decade as the domestic market expands. Unlike olefins where new grassroots plants are planned

to be constructed in the next decade, capacity increases for synthetic rubber production are only intended to take place at existing plants. In relation to export activity, Russian producers expect tough price competition in all the traditional rubber sectors in coming years and expect to be forced to concentrate more on high-performance special rubbers.

#### **Nizhnekamskneftekhim-rubber capacity expansion & isoprene process**

Nizhnekamskneftekhim has stated that it intends to invest around 3.5 billion roubles over the next few years in the modernisation of the company's synthetic rubber facilities. Project targets include an expansion of isoprene rubber from 150,000 tpa to 280,000 tpa and polybutadiene capacity from 90,000 tpa to 150,000 tpa. The company is also aiming for an increase in butyl rubber capacity to 140,000 tpa. By the end of 2015, production capacity for synthetic rubber has been forecast by Nizhnekamskneftekhim to reach a total of 734,000 tpa which would make it the largest producer in Russia.

Nizhnekamskneftekhim has commissioned its sixth reactor at the plant for the production of isoprene monomer. The new reactor has a number of design features which will not only increase the production of isoprene, but also give greater reliability and flexibility of process technology. By introducing the single stage process for the production of isoprene monomer, Nizhnekamskneftekhim has complied with the requirements of the Kyoto protocol in reducing CO<sub>2</sub> emissions. The result of the project is to reduce the specific consumption of steam and fuel gas per ton of isoprene, which will lead to a reduction in greenhouse gases caused by burning fossil fuels. The single stage technology developed by Nizhnekamskneftekhim replaces the traditional two-step synthesis from isobutylene and formaldehyde by dehydrogenation of isopentane.

#### **Sterlitamak Petrochemical Plant-new emulsion styrene-butadiene grades**

Sterlitamak Petrochemical Plant has received experimental batches of new products of emulsion styrene butadiene rubber SKS-1739. This grade is similar to SBR-1739, which is used in foreign markets. Samples of rubber have been transferred to the tyre companies in Russia, Ukraine, and Belarus for examination and assessment.

#### **Nizhnekamskshina 2010**

Nizhnekamskshina in 2010 produced 10.957 million tyres, which was 16% up against 2009. The company produced 3.569 million truck tyres (up 16%), 7.12 million car tyres (up 15%) and 240,000 agricultural tyres (up 29%). The original plan for last year's anticipated production was only 9.8 million units of tyres, but strong demand has justified higher production. Demand was particularly higher Avtovaz where the company shipped 135-150,000 tyres per month over the year. It also received orders from the KAMAZ, in addition to supplying tyres to equip cars produced by Volkswagen in Russia. The plan for 2011 includes raising production at Nizhnekamsk to 11.888 million tyres and increasing capacity at the same time to 12.150 million tyres per annum.

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### **Plastics**

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#### **Kaliningrad PET plant expected to start soon**

Alko-Naphtha has stated that it hopes to start its PET plant at Kaliningrad in the first quarter of 2011, after initially aiming for the third quarter last year. The volume of investments into the new plant has totalled about 3.5



billion roubles and is expected to employ over 220 employees. The new plant is located in the industrial park BaltTehProm at Kaliningrad, which has the advantage of being close to a railway line and a major marine terminal. This will allow the plant to import PTA and export PET without major logistical difficulties.

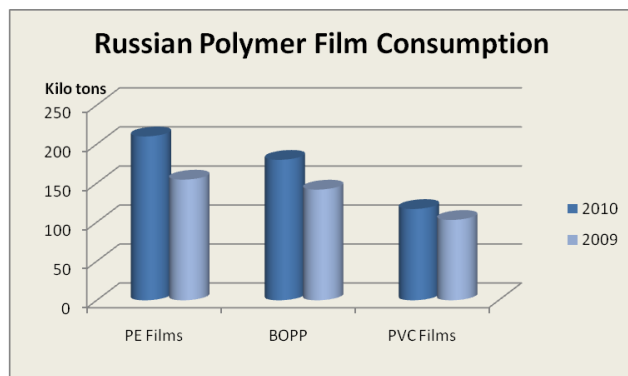
#### **Stavropol PET project planned for 2014**

A project for 486,000 tpa of PET that has been under consideration in the Stavropol region for a number of years has been propelled forward by the completion of a preliminary engineering design study. The plant is

being considered for Kabardino-Balkaria area in the Stavropol region. The plant will be located in an area densely populated with Russian-speaking population of the republic, although there is concern over security in a region close to the Caucasus which provides the source for most of the terrorist attacks in Russia. The most recent news regarding this project is that construction is planned to start in July 2011 with the plant targeted for



completion and start-up in 2014. Funds for the construction of the plant are to be provided from Swiss banks under the guarantee Rosselkhozbank. Technology is being supplied by Buhler AG involving total project costs of around 12 billion roubles, with a payback period required of around 40 months.



#### Russian polymer films

Russian production of BOPP totalled 146,640 tons in the first eleven months of 2010 which is 20.6% higher than same period in 2009 and by 30.9% more than in 2008. The Biaksplen group accounted for 57.2% of production followed by Isratek C with 13.1%. Polyethylene film production rose 4.8% in January-November 2010 to 252,200 tons, but this was still 8.5% lower than in 2008. Market consumption for polyethylene films rose an estimated 15-17% in 2010 over 2009.

#### Kuibyshevazot-DSM strategic cooperation

DSM and Kuibyshevazot have announced a strategic partnership in Russia, involving the creation of two jvs. As part of the cooperation, Kuibyshevazot will be granted a license for cyclohexanone technology supplied by DSM Fibre Intermediates. The first JV will concentrate on the production of polyamide-6 in Russia and CIS countries. DSM Engineering Plastics is to hold 51% stake in the JV.

The second JV will produce engineering plastics compounds at Kuibyshevazot's site at Togliatti. DSM Engineering Plastics intends to acquire 80% stake in the JV. Strategic cooperation also includes the provision of proprietary and patented technology in the production of cyclohexanone. Kuibyshevazot intends to build a new energy-efficient installation on its own production site which will allow the company to increase production capacity of caprolactam, with a significant reduction of energy consumption and raw materials. The JVs and related agreements are subject to approval by regulatory authorities.

### Ukraine

#### Ukrainian chemical industry 2010

Chemical production in Ukraine increased by 23% in 2010 against 2009, with the majority of products showing an increase. Gas prices continued to trouble the fertiliser sector, but producers were still able to record much better performance than the previous year. An important event last year for the Ukrainian chemical industry involved the restart of the Karpatneftekhim cracker and polyethylene plant, and in 2011 the new PVC plant at Kalush will be started.

Ukrainian Chemical Production (unit-kilo tons)		
Product	Jan-Dec 10	Jan-Dec 09
Acetic Acid	89.0	82.6
Ammonia	4,239.5	3,109.4
Benzene (-95%)	190.5	187.5
Benzene (+95%)	125.6	75.8
Caustic Soda	74.9	46.2
Ethylene	76.2	0.0
Formaldehyde	25.8	22.4
Methanol	89.5	84.9
Polyethylene	33.5	0.0
Polypropylene	82.8	99.1
Polystyrene	15.6	20.6
Polyvinyl Acetate	6.9	5.2
Propylene	34.7	0.0
Soda Ash	706.5	680.0
Titanium Dioxide	134.2	105.6
Toluene	5.5	4.8

Some significant changes took place in the Ukrainian chemical industry in 2010, the most notable of which includes the purchase of 90.3% in Stirol at Gorlovka by the Austrian group OstChem Holding. Aside fertilisers, Stirol are the sole producer of polystyrene in Ukraine and one of four high-impact polystyrene producers in the CIS. OstChem Holding is also trying to secure control of Sumykhimprom produces phosphate fertilisers, titanium dioxide, etc.

The second largest deal last year involved the sale of a 40% stake in Azot at Severodonetsk to IBE Trade Corp. IBE already owned a 60% stake in Azot and took advantage of the priority rights under Ukrainian law to repurchase shares of another shareholder which was the State Property Fund. The third largest transaction was granted to Dneprozot and Azot

at Cherkassy, which are both being taken over by Ukrnafta. This will allow Ukrnafta to sell gas to domestic producers and to add value.

Export activity was stronger in 2010 overall, although some products recorded declines due to factors such as

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

Product	Jan-Dec 10	Jan-Dec 09
Ammonia	889.6	344.4
Benzene	9.3	0.0
Titanium Dioxide	123.6	24.2
Caprolactam	58.6	20.8
Urea	3249.7	2947.4
Acetic Acid	64.6	63.1
PVC films	4.1	2.8
PP films	4.4	3.5
PE films	20.4	15.8
Polypropylene	44.4	58.6
Polystyrene	5.5	4.4
Propylene	11.1	0.0
Soda Ash	526.1	362.3
Caustic Soda	16.9	8.9
Carbon Black	65.7	77.7
Chlorine	4.1	3.1
Ethyl Acetate	27.5	24.2

the final quarter of 2010, with the three month period accounting for 38% of the total year's output. The trends in 2011 are expected to be similar in 2010, although Azot hopes for a positive outcome from the anti-dumping investigation against the Russian methanol imports. By limiting Russian presence, Azot would be capable of increasing domestic sales and improving its own financial performance.

maintenance shutdowns. Ammonia exports saw more than a two fold increase as did caprolactam, whilst the

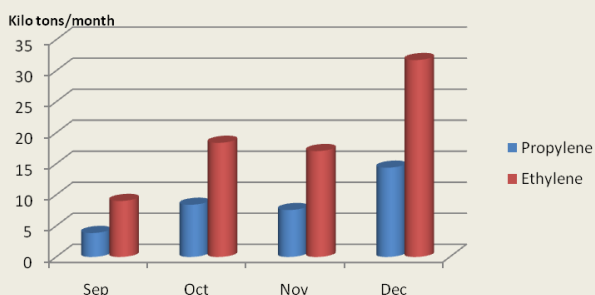
restart of the Kalush cracker facilitated benzene and propylene shipments abroad. In addition to the recovery in volume trade, the value of export revenues in 2010 also saw a rise to \$1.51 billion from \$1.2 billion in 2009. However, last year's revenue total from exports still remained much lower than the \$2.4 billion achieved in 2008.

#### Azot Severodonetsk-methanol production 2010

Azot processed around 85% of its methanol production in 2010 into formaldehyde and acetic acid, whilst methanol production slightly exceeded 2009 levels. Merchant market sales on the domestic market were made difficult due to the high cost of domestic production of methanol resulting from the high cost of natural gas. As a result, Ukrainian consumers of methanol often elected to purchase Russian imports due to lower prices.

Production of methanol at Severodonetsk was strongest in

#### Karpatneftekhim, EP Production 2010



#### Karpatneftekhim to start PVC on 1 March

Following the restart of the petrochemical facilities at Kalush last year, Karpatneftekhim states that it is ready to begin commercial production of PVC suspension grade on 1 March. Karpatneftekhim plans to reach full capacity of 300,000 tpa of PVC later in the year. Karpatneftekhim plans to release six high grades of PVC, and aims to sell product mostly on the domestic market.

#### Ukrainian carbon black market 2010

In 2010, Ukrainian carbon black producers were helped by the increase in construction of cars which generated

higher demand for tyres. Production volumes in 2010 were also helped by export opportunities. The most significant increase was seen at Kremenchug Carbon Black Plant. Consumption in the domestic market is expected to increase this year with the restart of the idle tyre plant Dneproshina. In addition, in mid-February, tyre manufacturers traditionally increase utilisation and first quarter growth of 10-15% is predicted. Even so, despite the increase in domestic demand exports will continue to play a key role in the supply/demand balance in 2011.

#### Ukrainian PP Import Sources

Country	2010
Russia	18%
Poland	14%
Slovakia	14%
Germany	12%
Hungary	8%
Italy	5%
Belgium	5%
Romania	5%
Saudi A	5%
Bulgaria	3%
Czech R	3%

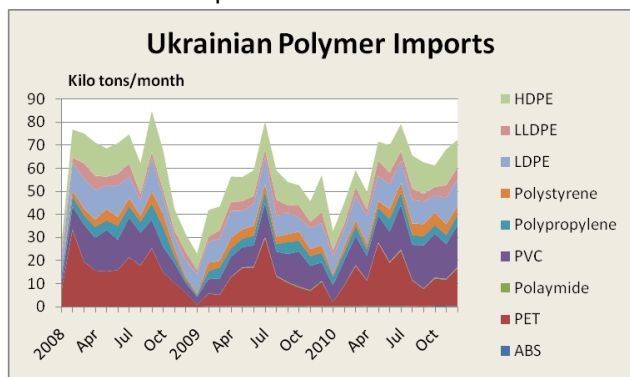
#### Ukrainian polypropylene market 2010

Linik at Lisichansk produced 82,800 tons of polypropylene in 2010, which is 14% less than in 2009 and 2% lower than in 2008. Production was lower due to extensive renovation at the Lisichansk plant and force majeure stops. Partly as a result, Ukraine imported 50,280 tons of polypropylene in 2010, which was 7% more than in 2009. The main sources of imports last year comprised Russia with 18%, Poland 14% and Slovakia 14%. Of the suppliers, LyondellBasell provided 18% of gross imports, followed by Slovaft Petrochemicals with 13%, Nizhnekamskneftekhim with 9%, LUKoil with 9%, and TVK with 7%. In value terms, polypropylene imports rose 44% last year against 2009.

#### Ukrainian polymer imports 2010

Total imports of LDPE into Ukraine in 2010 amounted to 118,150 tons, 7% more than in 2009. The sole LDPE plant in Ukraine is located at Severodonetsk and has not operated since

1994. Karpatneftehim produced 33,500 tons of HDPE in the period September to December 2010 after the restart. HDPE imports into Ukraine declined in 2010 by 1.2% to 127,498 tons. Demand failed to recover in the first half of 2010, whilst in the second half of year the restart of the Kalush plant helped to restrict imports.



2010 which was 1.6 times higher than in 2009 and 20% higher than in 2008. Around 80% of imports consist of suspension grade PVC, with 76% of total PVC imports being sourced directly by end-users rather than going through traders. Regionally, Kiev accounted for 32% of all PVC shipments in 2010, followed by Lvov with 20% and Dnepropetrovsk with 15%. Imports are expected to decline in 2011 due to the pending start-up of the new PVC plant at Kalush.

Polystyrene imports into Ukraine increased 8% in 2010 over 2009, totalling 44,950 tons. Imports rose partly due to lower production by Stirol at Gorlovka, and partly to improved demand after the declines recorded in the first half of 2009. Import sources came largely from Russia, Poland and China.

For PVC, Ukraine imported a total of 170,600 tons in

Ukrainian Polymer Film Imports (unit-kilo tons)		
Product	2010	2009
PE Films	20.925	12.722
PP Films	26.878	26.477
PVC Films	18.24	16.87

#### Ukrainian polymer film imports

Ukraine imported 20,925 tons of polyethylene films in 2010, 65% higher than in 2009. The cost of imports rose 45%, with Germany providing 18%, Turkey 17% and Poland 16%. Polypropylene film and PVC film imports increased slightly over 2010.

#### Ukrainian organic chemicals

Ukraine increased ethyl acetate production by 32% in 2010 against 2009 to total 23,400 tons. Production increased by 61% at Perechinsky Wood Chemical Company due to increased export activity. The other producer Kirovograd Raiagrosnab supplies mostly to the domestic market, and saw a fall in sales of 30% in 2010. The Perechinsky Wood Chemical Company accounted for 84% of production last year.

Exports of DOP from Ukraine increased 4.6 times in 2010 to 1.74 tons. During the year the deficit in the Russian market contributed to the resumption of production by the Ukrainian producer Lizinvest. The company produces DOP using only purchased raw materials, as the phthalic anhydride unit at Rubezhnoye remains idle. In 2010, Ukraine imported 8,500 tons of phthalic anhydride which was 2.8 times higher than in 2009. The main supplier of phthalic anhydride was Russia: with 57% of total imports, followed by Belarus with 41%.

### Central Asia & Kazakhstan

#### Air Liquide-Kazakhstan

Air Liquide is to invest \$66 million per annum in the period up to 2015 in Kazakhstan to build plants in order to produce chemical gases needed by steelmakers and oil refineries. The investment funds will be directed to the Pavlodar and Shymkent petroleum refineries. The production of industrial gases and liquid nitrogen in Kazakhstan will allow the country to significantly reduce costs and increase the productivity.

#### EBRD, Nalco-Kazakhstan

The EBRD has agreed to support the production of chemicals used by the oil industry in Kazakhstan, with an \$8 million loan to RauanNalco, a jv between RauanMunaiChim of Kazakhstan and Nalco. The EBRD's seven-year loan will be used to support the company's expansion and finance the construction of a new blending plant at Atyrau. The capacity will comprise 9,400 tpa of specialty chemicals. The rapidly growing oil and gas industry in Kazakhstan will require increasing quantities of oil field chemicals as production from Kashagan and other fields in the Caspian region increases. About 90 types of special chemicals are used throughout the oil and gas extraction and processing cycles.

On completion of its expansion plans, RauanNalco will be producing a wide range of the chemicals at its own blending plant. With continued development of the country's major Tengiz, Karachaganak, and Kashagan oil fields, it is expected that Kazakhstan will see a two-fold increase in its current oil production by

2020. During storage and transportation of the oil, chemicals are applied to minimize corrosion of metal surfaces, minimize wax and asphaltene build-up, etc. They are also used in gas production and transportation helping to prevent the formation of solid methane hydrates.

**Pavlodar special economic zone**

A special economic zone is planned to be established at Pavlodar based on the revamped chlorine and caustic soda facilities. This follows the creation of another special economic zone for the chemical industry at Atyrau entitled the National industrial petrochemical technology park, which is now in the initial stages of development. The advantages of chlorine based chemistry in Pavlodar stem from the huge local reserves of salt. Adjacent to the Kaustik plant, a large pharmaceutical company Romat provides a potential outlet and customer for chlorinated compounds. This forms only part of Kaustik's sales potential, which will provide the basis for the special economic zone intended to include environmental technology for the disposal of chemical waste, etc.

**Turkmenistan-ammonia and urea projects**

Turkmenkhimiya will conclude contracts with Turkish company Ronesans Turkmen for construction of ammonia and urea plants at Mary in Turkmenistan, with respective capacities of 400,000 tpa and 640,000 tpa. The cost of the contract includes the engineering of supplying external communication systems, electricity, gas and water supply and sanitation, and connecting them to the municipal system at the expense of the contractor. It is expected that the plants will be completed by June 2014.

**Uzbekneftegaz-Kogas**

Uzbekneftegaz and the Korean group KOGAS have agreed on developing schedules for a number of pre-planned projects, including the construction of the Ustyurt Gas Chemical Complex in Uzbekistan. The aim of the partners is to start the complex in 2014, and will comprise capacities of 400,000 tpa of polyethylene and 100,000 tpa of polypropylene. The total project cost exceeds \$3.5 billion. In February 2008, the Korean consortium led by KOGAS and Uzbekneftegaz signed constituent documents on creation of UzKorGasChemical on an equal footing to construct Ustyurt Gas-Chemical Complex. KOGAS includes a 17.5% share in the venture, Honam Petrochemical Corp 17.5%, LG International, SK Gaz and STX Energy (each 5% share).



*Relevant Currencies*

Czech crown. Kc. \$1 = 17.844. €1 = 24.2357; Hungarian Forint. Ft. \$1 = 201.490. €1 = 273.664; Polish zloty. zl. \$1 = 2.850. €1 = 3.870; Bulgarian leva: \$1 = 1.4370. €1 = 1.9523; Romanian Lei. \$1 = 3.4151. €1 = 4.187; Croatian Kuna HRK. \$1 = 5.426. €1 = 7.370; Ukrainian hryvnia. \$1 = 7.931. €1 = 9.7253; Rus rouble. \$1 = 29.877. €1 = 40.5785

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