CIREC
MONTHLY NEWS
Chemical Industry News for Central Europe, South East Europe and Eurasia
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Czech Republic | Slovakia | Hungary | Poland | Bulgaria | Romania | Croatia | Slovenia | Yugoslavia | Baltic States | Russia | Belarus | Ukraine | Transcaucasus | Central Asia | Kazakhstan
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Features from this issue

- PKN Orlen has selected UOP to supply technology, basic engineering services and equipment for a new aromatics project to be installed at Plock. The new project is planned to start up in 2008 and the design work will be conducted by UOP in Des Plaines, Illinois in conjunction with UOP in the UK...
- Spolana will retain Kc 95.2 million of last year's net profit of Kc 183 million. The company's annual general meeting also decided to spend Kc 78.7 million to cover past losses. Spolana's profit for 2005 was the best figure in ten years. Its sales grew to Kc 5.7 billion from Kc 5.1 billion in 2004.
- PKN Orlen reached agreement at the end of May with SK Eurochem at Wloclawek for PTA supplies. The agreement was signed for the period 1 July 2010 to 31 December 2014 for the deliveries to SK Eurochem. The first year will consist of 25,000-50,000 tpa of PTA, to be followed by 100,000-120,000 tpa of PTA in the following years of the contractual period.
- Mazeikiu Nafta plans to invest $1.3 billion into modernisation of the refinery in the next four years, and will also invest in the construction of a new polypropylene plant worth around $100 million. There is no polypropylene production in the Baltic States, and whilst the region may not be able to consume all production from the proposed plant, export opportunities could exist in the Russian market.
- SIBUR-Holding has proposed the construction of a new ethylene pipeline, connecting the ethylene plant at Kstovo (belonging to SIBUR-Neftekhim) with the ethylene plant at Kazanorgsintez. Tatneftekhiminvest-Holding is very interested in the proposal.
- Two more licence agreements for the new Tatneft petrochemical project were signed by Nizhnekamsk NPZ in June. Firstly, a licence agreement was reached with STRATCO-DuPont for the construction of a sulphuric alkylation unit.
- Gas company Itera and Uralkhimplast at Nizhniy Tagil have signed an agreement for the construction of a gas-chemical complex on the Uralkhimplast site, which will include a methanol project.
- SIBUR-Holding is considering six possible sites in the Nizhniy Novgorod region for the construction of a PVC plant, four of which are based in the Kstovo region and two in the Dzerzhinsk region. SIBUR-Neftekhim is keen to see Dzerzhinsk used as it already has the necessary infrastructure and there is an area of 40 hectares for the development of a new complex.
- On 1 June, Sayanskkhimplast halted the mercury electrolysis plant, which has been running for 27 years, in readiness for the introduction of the new unit. In total, the plant produced 2.633 million tons of caustic soda and 2.3 million tons of chlorine. The conversion process is being carried in June and July, with start-up of the new membrane unit expected on 1 August.
- In the Ustyurt region of western Uzbekistan Uzbekneftegaz intends to build a new gas-chemical complex in co-operation with the South Korean corporation Kogas. This will be the second complex, in the republic after the Shurtan project was introduced in 2001.

CENTRAL EUROPE

Czech Republic

Unipetrol
The sale of Unipetrol's chemical assets is subject to pressure from the minority shareholders to explain the selection process for companies advancing to a second round of tenders to buy Spolana and Kaucuk. For example, the highest bidders for Kaucuk did not make it to the second round in the tender. However, it could be argued that the sale to one of the Polish companies would make more sense. Some big names fell out of the running for Kaucuk, including Czech-Slovak equity group Penta Investments, and Agrofert Holding.

Unipetrol is expected to move Spolana and Kaucuk to Poland. Unipetrol has only received two bidders for Spolana, Anwil and BorsodChem of which the latter is the less interested. The new owner of Spolana should be picked in the very near future, possibly by the end of June, but the winner of the tender for Kaucuk is not expected for another three months.

At the end of May, Unipetrol shortlisted three companies, two of them from Poland, out of ten bidders to the last round of the tender for Kaucuk. For a 100% stake in Kaucuk, Polish chemical groups Dwory and Ciech, along with Czech-Slovak financial group J&T, were left standing.

Spolana
Spolana announced a chemical alert at the VCM plant at Neratovice on 14 June due to a leak of hazardous toxic gas. Firefighters intervened immediately and prevented the further leak of the substance. Production was reported not to have been affected.

Work on the removal of dioxins and other dangerous substances from the worst contaminated part of the Spolana started in May. The process will end in December 2007 and the final arrangement of the Spolana complex will be completed by June 2008. The costs of the liquidation, to be covered by the state, have been estimated at Kc 2.71 billion. The project includes the handling of about 35,000 tons of contaminated soil. The dioxins and other poisonous substances appeared in Spolana as a by-product within the production of pesticides and herbicides in Spolana in the 1960s. Spolana is also planning the clean up of a building contaminated with mercury and cleansing of contaminated ground water.

Spolana will retain Kc 95.2 million of last year's net profit of Kc 183 million. The company's annual general meeting also decided to spend Kc 78.7 million to cover past losses. Spolana's profit for 2005 was the best figure in ten years. Its sales grew to Kc 5.7 billion from Kc 5.1 billion in 2004.

Hungary

BorsodChem Q1 2006
BorsodChem Group's quarterly sales revenue for the first quarter of 2006 totalled Ft 55.6 billion, up 32.6% on 2005. The increase was due to both higher prices and increased capacity levels. The operational cash flow (EBITDA) at Ft 9.5 billion shows a 14.7% increase over 2005. Despite the good price spread between the PVC and ethylene, the market was offset by lower PVC prices.

The price of ethylene was €785/ton in Q1 2006 on average, which increased by €45/ton compared to Q1 2005. Benzene was down €52/ton to €643/ton compared to Q1 2005. The sales price of aniline from BorsodChem-MCHZ followed the price changes of benzene. Sales' revenues from PVC resin increased by 18.9%, helped by higher production, but MDI saw a sharp increase of 61.1% due to prices and higher volumes. Sales' revenues of TDI climbed by 23.9%, attributable to the increase in prices.

Sales' revenues of aniline at Ostrava increased by 34.7% over the same period in 2005, whilst ethylbenzene from Petrochemia Blachownia helped to increase the Group's sales' revenues by Ft 2.1 billion in the first quarter. Exports accounted for 85.8% of the BorsodChem Group's total sales.

Increased sales' revenues were primarily driven by higher MDI, aniline and PVC product volumes, whilst also helped by the consolidation of Petrochemia Blachownia. The 32.6% increment in sales' revenues was

achieved together with a 40.2% direct cost increase. The growth of purchase prices (particularly those of energy, ethylene, toluene and carbon monoxide) played an important part in the increase of direct costs. In the first quarter, the Group attained a Ft 15,152 million gross margin, which was 15.9% higher than in 2005. The BorsodChem Group achieved a Ft 6,018 million operating profit in Q1, 3.2% higher.

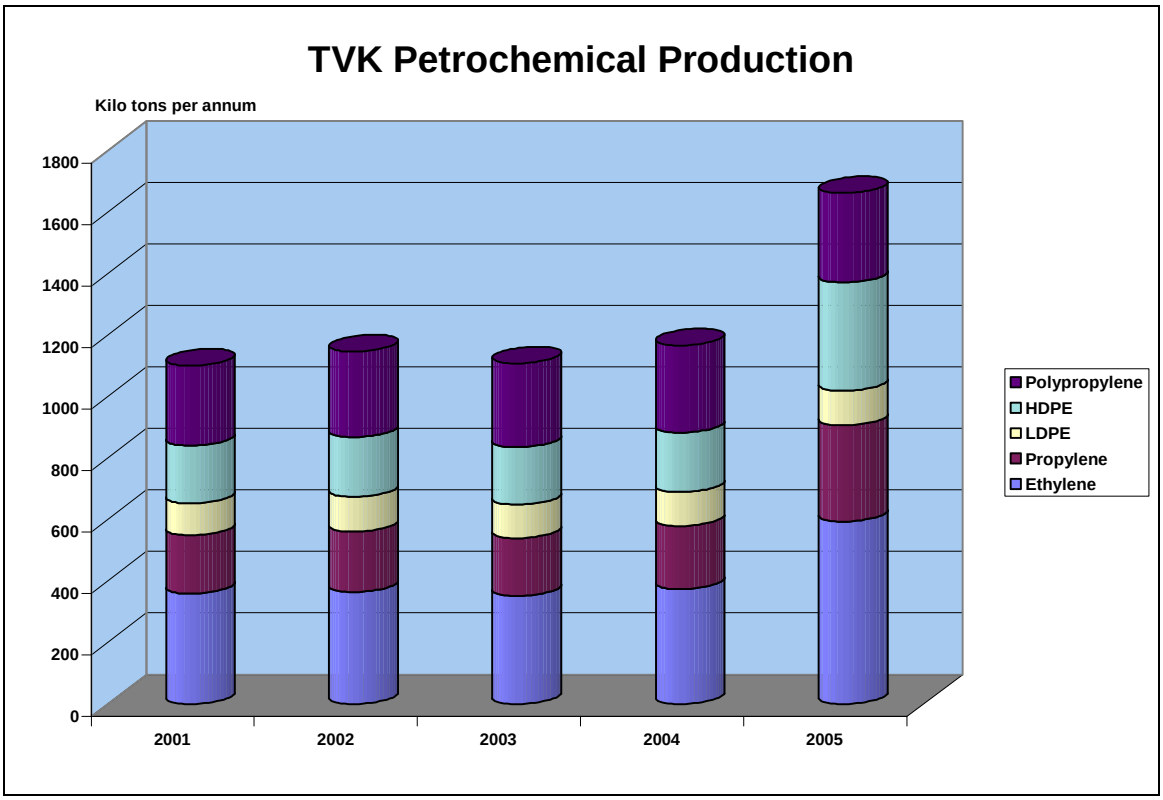
Capital expenditures

BorsodChem Rt.'s development strategy an essential role is attributed to the capacity expansion of isocyanate production. Regarding the MDI Business Unit in 2005, this meant the installation of a new plant with a 100,000 tpa production capacity. In accordance with the agreement with the original licensor Mitsui, BorsodChem Rt. constructed its new plant on the basis of in-house developed, patented technology, assisted by its own technical design team within the MDI Business Unit.

The expansion of PVC resin production capacity from 300,000 tpa to 400,000 tpa was achieved in three phases. In Phases I and II in 2004 and 2005, the capacity stepped up to 330,000 tpa and 365,000 tpa, respectively. Phase IV of the VCM expansion was completed, involving the construction of a new 100,000 tpa EDC cracker and a 140,000 tpa VCM distillation block. As a result, in addition to a production capacity of 350,000 tpa, the VCM Plant is now able to process the hydrochloric acid generated after the expansion of the isocyanate plants.

Resulting from capacity expansions, the increased output volume of both isocyanate production facilities (MDI, TDI) and the VCM plant created additional demand for chlorine. The company decided to cover this requirement by constructing a modern, environmental friendly membrane cell chlorine plant. Implementation is underway as scheduled, with a trial run expected to start soon.

On 30 May 2005, a new hydrogen reforming plant and the aniline capacity expanding hydrogenation unit were commissioned at BorsodChem-MCHZ. Following the capacity expansion and de-bottlenecking, the hydrogenation line is able to produce 150,000 tpa aniline in distillation instead of the former capacity of 110,000 tpa.



TVK Q1 2006

TVK's petrochemical output increased 42% in 2005 over 2004 following the introduction of new ethylene and HDPE facilities. In Q1 2006, the volume of polymer products produced in house and sold was 43,000 tons

higher than in Q1 2005, including 25,000 tons from the new HDPE-2 Plant. Meanwhile, the volume of olefin production increased by 5,000 tons.

In the first quarter of 2006, TVK's EBITDA totalled Ft 6.1 billion, 27% lower compared to Q1 2005. Despite the 43% increase in net sales, poor margins, unfavourable exchange rates and the rise in energy price all damaged profits. Moreover, the prices of naphtha grew by 6% in Q1 2006 compared to Q4 2005. In the first quarter of 2006, naphtha was quoted at a price of $505/ton and gas oil at a price of $564/ton, 26% higher than the average in Q1 2005. In the first quarter of 2006, TVK Rt achieved 50% of its sales' revenue' from export sales, representing a 2% higher share than in 2005. Germany (18%), Italy (16%), Poland (12%), the UK (5%), France (5%) and Austria (3%) accounted the majority of the company's exports.

Poland

PKN Orlen-PTA
PKN Orlen has selected UOP to supply technology, basic engineering services and equipment for a new aromatics project to be installed at Plock. The new project is planned to start up in 2008 and the design work will be conducted by UOP in Des Plaines, Illinois, in conjunction with UOP in the UK.

The new plant will produce 400,000 tpa of paraxylene. UOP will design a Parex(TM) process unit to extract pure paraxylene, an Isomar(TM) process unit to convert other xylenes to paraxylene, and a Tatoray(TM) process unit to convert toluene and heavy aromatics to xylenes.

The Parex process unit will be replacing an existing paraxylene crystallizer at Plock. The Tatoray process unit will be replacing a Detol unit in order to maximize the production of xylenes from the available feedstock.

SK Eurochem
PKN Orlen reached agreement at the end of May with SK Eurochem at Wloclawek for PTA supplies. The agreement was signed for the period 1 July 2010 to 31 December 2014 for the deliveries to SK Eurochem. The first year will consist of 25,000-50,000 tpa of PTA, to be followed by 100,000-120,000 tpa of PTA in the following years of the contractual period. The estimated total value of the agreement in the whole contractual period amounts to approximately zl 2,100 million.

PTA deliveries/acceptance will start on 1 July 2010 and PKN Orlen is granted with a right to change the date once and no more than for 9 months. After five years from the first delivery date, the terms of the Agreement can extend the contractual period. The terms are similar to the contract with Mitsubishi Chemical Corporation, which was concluded on 27 April. It effectively means that PKN Orlen has agreed contracts in total worth 250,000 tpa of PTA even before the plant construction has started.

PKN Orlen-Olefins
Ethylene output at Plock was down in May following a shutdown. Even so, ethylene production in Poland reached 234,000 tons for the first five months of 2006 which is almost twice the volume produced in 2005. The restart of the Orlen after maintenance was slower than expected which in turn delayed the restart of the Basell Orlen Polyolefins polypropylene line.

PolyOne
PolyOne Corp has announced that it will build a manufacturing facility in Kutno, Poland due to growing customer demand in Central Europe. Products made at this site initially will include colour masterbatches for extrusion and moulding processors. PolyOne expects construction to be completed by the first-quarter of 2007, with production and sales beginning immediately thereafter. The new plant will be PolyOne's second manufacturing facility in Central Europe. The company opened its first facility at Gyor, Hungary in 1998.

Romania

Oltchim
The Romanian Ministry of Economy and Trade (MEC) has stated that it will give up a capital increase at Oltchim in order for the privatisation process of the company to be set in motion by the end of 2006. In 2003, the government decided to convert into shares a debt of $95.3 million which resulted from a foreign loan

guaranteed by the state. This was eventually repaid by the Ministry of Finance. Consequently, a capital increase was undertaken through which the state, represented by the Ministry of Economy and Trade.

Oltchim is expected to be sold for more than $140 million dollars, with several regional players likely to be interested buyers.

Lithuania

PKN-Orlen-Mazeikiu Nafta
PKN Orlen has agreed with the Lithuanian government to purchase 30.66% of Mazeikiu Nafta, after earlier reaching an agreement with YUKOS. PKN Orlen is thought to want to buy Mazeikiu Nafta mainly as the Lithuanian refinery could hurt its position in Poland if such rivals as KazMunaiGaz or Rosneft had acquired it.

Mazeikiu Nafta plans to invest $1.3 billion into modernisation of the refinery in the next four years, and will also invest in the construction of a new polypropylene plant worth around $100 million. There is no polypropylene production in the Baltic States, and whilst the region may not be able to consume all production from the proposed plant, export opportunities could exist in the Russian market.

EURASIA, COMMONWEALTH OF INDEPENDENT STATES

Russia

Tatneft Petrochemical Project
Two more licence agreements for the new Tatneft petrochemical project were signed by Nizhnekamsk NPZ in June. Firstly, a licence agreement was reached with STRATCO-DuPont for the construction of a sulphuric alkylation unit. This was followed by a contract with Chevron Lummus Global for the introduction of a hydrocracking vacuum gas oil unit. The first contract in the new Nizhnekamsk NPZ project was signed on 26 April with Haldor Topsoe (Denmark). This was for a hydrogen producing installation.

Tatneft is managing the project Nizhnekamsk NPZ in conjunction with Foster Wheeler and the Russian contracting company VNIIPneft. The Russian Ministry of Industry and Power Engineering (Minpromenergo) is also considering the possibility of supporting the project. Tatneft is relying on finance to support the creation of the necessary units of infrastructure, including railway lines, oil pipelines and all-product line, and also hydro-cleaning construction. The estimated cost of the project totals $3.2 billion.

Nizhnekamskneftekhim Q1 2006
In the first quarter of 2006 Nizhnekamskneftekhim's profits were affected by the weaker state of the global petrochemical industry and the inability to pass on higher costs to consumers. Whilst in the first quarter of 2005 there was a shortage of benzene and styrene, the situation had reversed by Q1 2006 with supply of both products exceeding demand. Moreover, the prospect of increasing petrochemical prices later in 2006 and in 2007 seem offset by the introduction of new capacity in Asia for such products as MEG.

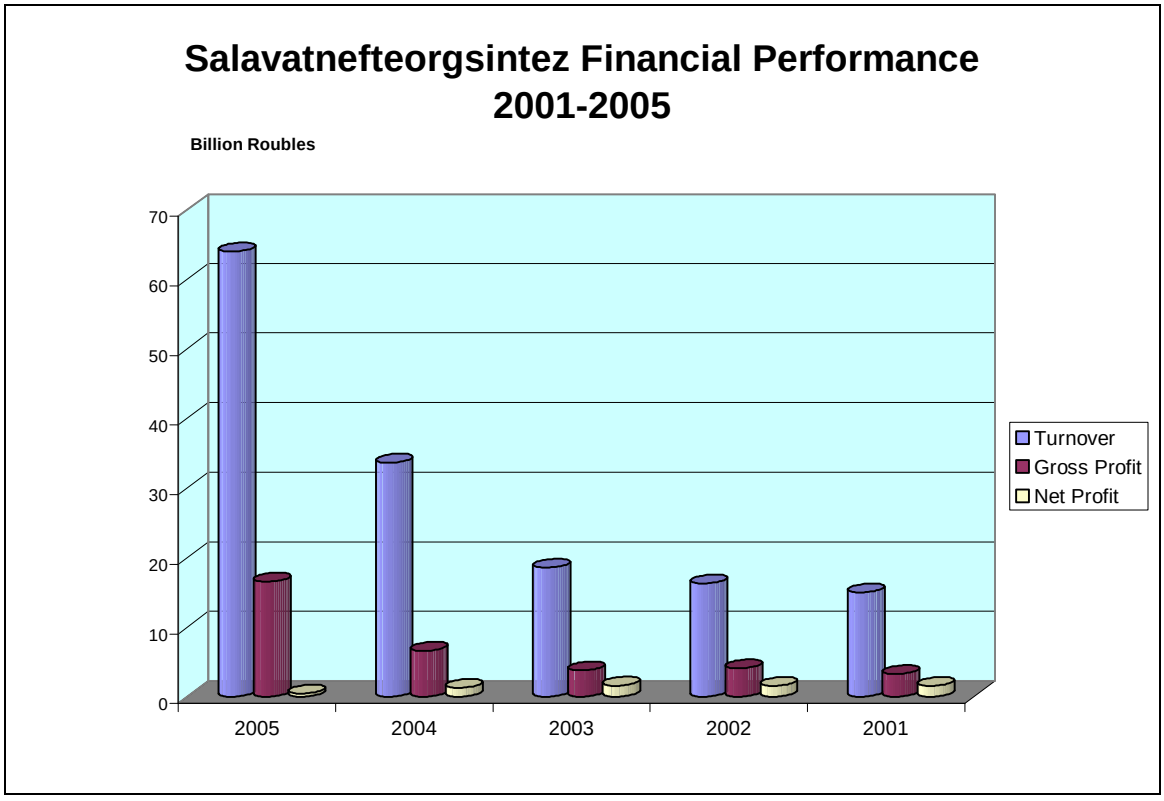
The synthetic rubber market is seen by Nizhnekamskneftekhim to be balanced with a light fall in prices expected in 2006. Prices for certain products such as isoprene rubber and halobutyl rubber are expected to remain unchanged.

Nizhnekamskneftekhim's long term sales strategy is focused on reducing dependency on exports and to reorient the deliveries for the domestic market. Great significance is attached to the development of the Nizhnekamsk industrial zone, which will provide an outlet for production sales, and also close co-operation with small and mid-sized businesses of Tatarstan.

Salavatnefteorgsintez
Salavatnefteorgsintez plans to start a new trade system for the purchase of material and technical resources. Hitherto, the bulk of purchases have been based on quotations, which have not always reflected the best price on the market. The procedure of selection has been questionable on occasions, with favour being shown towards one or another supplier.

The new system being developed by Salavatnefteorgsintez is based on experiences studied at such companies at Gazprom, SIBUR, and Sibneft, etc. The new system, which will become effective from 1 August, will depend on four independent sides, including the customer, suppliers, a trailer committee and a competitive commission. In the event that the committee does not agree with the decision of the sub-division then it has the power to overrule. It is expected, that the savings on the competitive purchases on the average will comprise 15%, but on occasions it might be possible to save up to 30% through this procedure. At present, the company's main purchases include hydrocarbons, benzene, metals and pipes, chemical reagents and technological equipment.

The following graphic illustrates that despite the company's dramatic increase in turnover and gross profit in the past five years, net profit has actually declined. It is doubtful if this trend is down solely to bad purchasing practices, as possibly quite a large proportion of gross profits is being absorbed by local budgetary demands.



Olefins

Ethylene pipeline proposal

SIBUR-Holding has proposed the construction of a new ethylene pipeline, connecting the ethylene plant at Kstovo (belonging to SIBUR-Neftekhim) with the ethylene plant at Kazanorgsintez. Tatneftekhiminvest-Holding is very interested in the proposal, as the presence of the ethylene pipeline would link the Nizhniy Novgorod region with the Tatarian-Bashkirian pipeline of Salavat-Sterlitamak-Ufa-Nizhnekamsk-Kazan.

The pipeline would take 2-3 years to construct and would represent an important investment in the Russian petrochemical industry. In the Soviet era, a pipeline project between the two regions was planned but never implemented. Thus, the idea is nothing new but has been prevented by financial constraints from being considered. Linking the Privolzhskiy region with the petrochemical plants of the Nizhniy Novgorod region would be an extremely important development and could create a wide range of possible investment scenarios.

In December 2006, Kazanorgsintez plans to finish the reconstruction of the ethylene unit with an increase in the capacity to 640,000 tpa. The company is also considering the construction of a new cracker with a capacity of 600,000 tpa. Regional supply in the Volga-Urals region for ethylene is tight already so an extra large-scale cracker at Kazan would help meet some of the demand and fuel new derivative projects.

Connecting the ethylene pipeline with Kstovo would allow ethylene to be sold in either direction, and create a linkage between the petrochemical sector in the Volga-Urals region with the Moscow region.

Kazanorgsintez Raw Material Suppliers Q1 2006

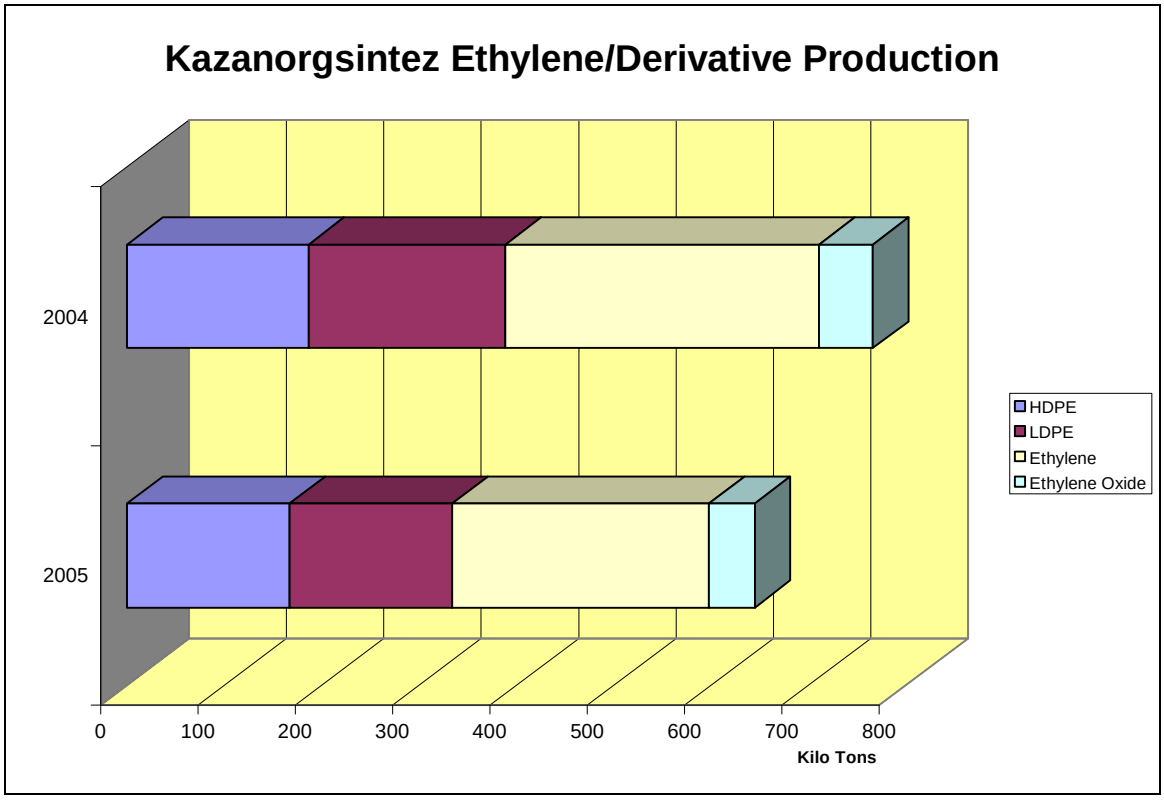
Raw Material	*Supplier*	*% share of purchases*
Ethane	Gazprom	70
	Tatneft	30
Ethylene	Nizhnekamskneftekhim	70
	Orensal-Orenburg	20
	Imexneftekhim	10
Propane	SIBUR-Holding	100
Butane	Imexneftekhim	40
	SIBUR-Holding	60
Benzene	Taifgasservice	10
	Belis	30
	SIBUR-Holding	30
	Megapride	15
	Severstal	15

Kazanorgsintez-Raw Material Supply

The subject of a pipeline connection between Kazan and Kstovo is strongly supported by Kazanorgsintez. The company's first quarter report states that a pipeline connection to Kstovo would be a very good development as far as the company is concerned. At present, Kazanorgsintez is dependent on Nizhnekamskneftekhim for a large amount of the company's ethylene purchases. Production was badly affected in 2005 by the shortfall in ethane due to the damage to the Orenburg Helium Plant in August 2004. The graphic below illustrates the drop in production in 2005.

By the time that such an ethylene pipeline, as proposed, could be constructed the market position Kazanorgsintez could even be running an ethylene surplus, should all the investment plans be completed. It is more likely that additional ethylene capacity will be absorbed by additional derivative capacity so it is unlikely that Kazanorgsintez would become a net ethylene seller. However, the pipeline construction could change the strategic goals of the company. The table below shows the sources of raw material purchases.

In June, Kazanorgsintez started a tender for the supply of 4,533 tons of benzene. Benzene supply is expected to become more of an important issue following the start-up of the bisphenol A plant in 2007.



Nizhnekamskneftekhim

Towards the end of 2006 Nizhnekamskneftekhim will start the new polypropylene plant. At present, laboratory tests are being carried out in conjunction Basell, which is the licenser of the project.

Aromatics & derivatives

PTA
On 29 May, the Russian government decided to reduce the import duty for PTA from 5% to 0%. The ddecision comes into force on 1 July 2006, one month from the day of its official publication. Between 2002 and 2005, the consumption of PET in Russia increased almost by 60% and in 2005 totalled 432,000 tons. The reduction of duty has been aimed at helping PET producers, particularly as a number of projects are coming onstream in 2006 and 2007.

Polief
At present, most of Polief's PTA production is exported, although SIBUR-PET at Tver and Evroplast in the Moscow region has now started to take deliveries from Blagoveshchensk. The main markets for PTA sales in the first quarter were divided between Russia (5,700 tons), China (13,500 tons), Europe and Turkey (1,400 tons). Bashneftekhim is supplying paraxylene from Ufa for the PTA plant. The quality of PTA produced at Blagoveshchensk corresponds to brand A, used for the production of PET for food applications.

Whilst opportunities for exporting to China are strong in 2006, they are expected to decline in subsequent years due to the introduction of capacity inside the country. More importantly, demand for PTA in Russia is set to increase in line with the introduction of new PET capacity.

The Polief complex at 230,000 tpa is capable of meeting full demand for Russian PET production at present. Due to projects coming on stream in Russia this will add pressure for more PTA. For instance, in the fourth quarter of 2006, the completion of Polief's 120,000 tpa PET project is planned. This project will allow Polief to create a full cycle for processing of hydrocarbon raw materials into polyesters. The plant will probably not start until 2007.

In addition to the Polief project, Retal also plans to introduce a plant for 154,000 tpa in 2007, Senezh will increase its capacity to 180,000 tpa, and another project at Kaliningrad 150,000 tpa.

Maleic Anhydride
Demand for the maleic anhydride in Russia is estimated to be growing at rates of 4-4.5% per annum, which is relatively low compared to many other products. The only production unit at Novomoskovsk seems to produce very little, which means that consumption is met largely through imports. In 2005, maleic projects Russia were examined by several companies, although none of which have progressed further. The main problem facing end-users now is that global demand has outstripped global supply and it is very difficult to find sufficient product, or at least at a reasonable price. The main traditional outlet for maleic anhydride is unsaturated polyester resins, but since the 1990s butanediol has become a very important outlet.

The production of butanediol via maleic could be a potential option in Russia, in view of the huge reserves of butane raw materials. Probably the main restrictions to such a project would be low domestic consumption of both merchant maleic and butanediol and derivatives. However, prices and margins for butanediol derivatives such as THF and NMP could be sufficient to offset high logistic costs.

Salavatnefteorgsintez
Salavatnefteorgsintez together with the institute Neftekhimik at St Petersburg have developed a new technology for the production of orthoxylene. The plant will be started later this year and with a capacity of 15,000 tpa will facilitate enough feedstock for the production of phthalic anhydride.

Polyurethanes
Polyurethane production in Russia increased 26% in 2005 over 2004 to reach 247,600 tons. Consumption of polyurethanes in Russia, however, remains low at 1.5-1.7 kg per capita against a global average of 2.7-3 kg per capita.

The main outlet area for polyurethanes in Russia is the furniture industry with 32.5% of the total market. Other important sectors include the car industry with 25.4% in 2005, followed by the construction and refrigeration sectors with 13% and 10.8% respectively. Transportation pipes accounted for 9.7% of the market.

The main problem for the Russian polyurethane market is the shortage of raw materials, which for the most part are imported. In 2005, for example, 51.33% of polyether consumption was imported, whilst imported

isocyanates accounted for 100% of consumption. This was due to the fact that two main producers Novomoskovsk Azot and Korund at Dzerzhinsk did not produce anything.

The production of polyethers takes place at two plants in Russia, the Vladimir Chemical Plant and Nizhnekamskneftekhim. Although Nizhnekamskneftekhim has increased its capacity in the past year the growth of imports into Russia continues. The main suppliers of polyethers into Russia in 2005 were Germany (44.3%), Netherlands (31%) and Azerbaijan (11.3%).

Korund
The Volga-Vyatsky branch of Sberbank has granted Korund a loan of 140 million roubles for a period of five years for investment into polyether production at Dzerzhinsk. The company plans to increase capacity to 30,000 tpa, and this increase could be ready by the second half of 2006.

Korund has created a new subsidiary Korund-Color which will start the production of varnishes and paints in August-September 2006. The capacity of new enterprise will compose 30,000 tpa of paints with investment into the project amounting to $10 million. Two thirds of production will be targeted on producers of paints and enamels in Russia and the CIS, with the remainder being used captively.

PVC-Chlorine

SIBUR-Holding
SIBUR-Holding is considering six possible sites in the Nizhniy Novgorod region for the construction of a PVC plant, four of which are based in the Kstovo region and two in the Dzerzhinsk region. SIBUR-Neftekhim is keen to see Dzerzhinsk used as it already has the necessary infrastructure and there is an area of 40 hectares for the development of a new complex.

SIBUR-Holding plans to build a world scale PVC plant in the Nizhniy-Novgorod region together with Solvay. Investments into the project could amount to €450 million. It is expected, that the capacity of the plant will be 330,000 tpa, with ethylene being supplied from Kstovo.

Sayanskkhimplast
On 1 June, Sayanskkhimplast halted the mercury electrolysis plant, which has been running for 27 years, in readiness for the introduction of the new unit. In total, the plant produced 2.633 million tons of caustic soda and 2.3 million tons of chlorine. The conversion process is being carried in June and July, with start-up of the new membrane unit expected on 1 August. The capacity of the new plant will consist of 150,000 tpa of chlorine. Energy costs per ton of chlorine will be reduced from 3,500 kilowatts per hour to 2,600 kilowatts per hour. The company will be able to provide sufficient chlorine for the production of PVC at a level of 250,000 tpa. However, Sayanskkhimplast expects to increase the production of PVC to 400,000 tpa so this will create further demand for chlorine.

Sayanskkhimplast has introduced a fourth line for drying PVC, which is 1.7 times more powerful than the old unit. The introduction of a new flow chart will significantly reduce production costs for one ton of resin.

Kaustik-Sterlitamak
Kaustik is undertaking an ecological programme in 2006 in response to pressure from government penalties for harmful emissions. In 2006, the company is aiming to reduce PVC emissions by 800 tons, ethylene by 900 tons, and hydrogen sulphide by 1.3 tons and ammonia by 242 tons. Existing technology of biochemical purification of waste water, developed in the 1960's, does not make it possible at present to purify waste water to the required norms.

In terms of production volumes, Kaustik accounted for 20% of Russian caustic soda production in 2005 and 25% of PVC. The company accounts for half of epichlorohydrin production in Russia and is the sole producer of perchloroethylene. In 2005, Kaustik's PVC production totalled 161,800 tons against 159,600 tons in 2004. Turnover increased 9.9% in 2005 to total 7.4 billion roubles.

One of the most important directions for the company is an increase in PVC capacity due to the high demand in the market. The reconstruction of the PVC plant depends initially on the revamp of the VCM plant with the aim of achieving 400,000 tpa by 2010. The main problem is the lack of ethylene, although the company has given some thought to constructing its own source of monomer production. The most viable solution to the

feedstock problem is to invest in co-operation with one of the ethylene plants located on the Volga-Urals pipeline.

Salavatnefteorgsintez is the most obvious choice of potential partner, taking into account the traditional links between the two plants and the short distance involved. However, the complex has become heavily focused on captive consumption and has less monomer available for the merchant market. The expansion of the cracker at Salavat possibly cannot go beyond 320,000 tpa under the current technology, but ideally Kaustik would prefer capacity to rise to between 450,000-500,000 tpa in order to accommodate the demands for its VCM plant.

PVC films
Klockner Pentaplast has started operation of the second calender line for the production of rigid PVC-films at its plant in St Petersburg. The new line will have an initial capacity of 400 tons per month. This will rise to 900 tons per month by August and rising eventually to 1,200 tons per month.

Rybinskiy Cable Plant
Rybinskiy cable works has completed the first stage of the project for the production of power cables. The nomenclature of new production will include cables based on PVC and cross-linked polyethylene.

Caustic soda
The liquid caustic soda market in Russia is expected to tighten in the 2007-2008 timeframe: due to perceived increases in domestic demand. As a result, the product surplus will be reduced to 8-10,000 tons per month, which will reduce the amount of liquid caustic shipments to other CIS countries.

Khimprom
In 2006, Khimprom at Volgograd plans to introduce a number of projects, including .the activation of a new unit for the production of plant protection agents which was installed in 2005. Other projects include the production of calcium chloride.

At the end of April 2006, 34% of shares in Khimprom were acquired by the holding company Renova, whilst 51% belongs to the state. In 2005, Khimprom's losses totalled 202 million roubles, due largely to the repair stoppage at the carbide furnace in April-May last year. Another reason for the losses was the increase in the rates of land payments and higher raw material costs. Khimprom is disadvantaged by the distance from some its consumers which makes it difficult to run plants at full capacity.

Pipes/Plastics

Orenburg
The German company Battenfeld has started to introduce new polyethylene pipe equipment at Polymer, a daughter company of Orenburggazprom. The equipment was delivered in February-March 2006 and installation of the equipment is taking place at present. Based on three lines the total capacity will be 12,000 tpa, with a pipe diameter from 16 to 400 millimetres. Products will be sold to regions Orenburg, Saratov, Sverdlovsk, Chelyabinsk, and Kazakhstan.

DOS
In April 2006 Dzerzhinsk Orgsteko increased the production capacity of extruded acrylic sheets to 10,000 tpa, following modernisation by the German company Reifenhauser. At present, Dzerzhinsk Orgsteko operates two extrusion lines of German companies Breyer and Reifenhauser. Investments in April this year amounted to around $5 million.

Methanol/Ammonia

Metafrax
Following a 35% increase in turnover in 2005 Metafrax has assumed 63rd position in the fastest developing 100 companies inside Russia. The increase last year was partly influenced by the 19.7% increase in methanol production. The company now plans to raise methanol capacity to 1 million tpa.

Other developments are also contributing to the company's expansion. In April 2006, an industrial resin plant was started with a capacity of 30,000 tpa under the jv Metadynea. Metafrax is now putting into operation a 270,000 tpa formaldehyde plant at Gubakha. Further developments are expected in the production of urea-formaldehyde resins. Prior to the end of 2006 an additional technological line will be installed for the production of pentaerythitol, which will increase the capacity to 18,000 tpa.

The large consumers of methanol in Russia include Nizhnekamskneftekhim, Togliattikauchuk, and Gazprom. Exports of methanol from Russia are disadvantaged by high tariffs on natural gas and the cost of transportation. Potential areas of development in methanol processing include vinyl acetate, melamine, etc. Due to external forecasts of declining global prices in the period 2007-2009, a number of Russian producers are focusing more on internal usage and captive consumption. New applications such as fuel cells, olefins from of methanol, are under close examination.

Formaldehyde is a key product for Metafrax, in addition to pentaerythritol, urotropin, urea-formaldehyde concentrate, etc. Formaldehyde is produced at 15 plants in Russia with a total capacity of 2 million tpa. MTBE's total capacity is 200,000 tpa, whilst acetic acid is also around 200,000 tpa. Around 90,000 tpa of methanol is consumed in the production of acetic acid.

Uralkhimplast-Itera
Gas company Itera and Uralkhimplast at Nizhniy Tagil have signed an agreement for the construction of a gas-chemical complex on the Uralkhimplast site, which will include a methanol project.

The complex will be constructed on a jv basis, with the methanol plant capacity planned at 400,000 tpa. The jv will be called UralMetanolGroup and the cost of the methanol project is estimated at €110-120 million. The start of production is scheduled for 2008. Financing will be achieved from Itera's resources combined with credit.

The UralMetanolGroup project follows several other methanol projects that underway in Russia. In the second half of 2006, Togliattiazot will start up its new capacity of 550,000 tpa, taking total capacity at the site to 1 million tpa, whilst plans are also in the making for the construction of a new 500,000 tpa plant in the Yamal peninsula of West Siberia.

Akron Novgorod
Akron plans to invest $1.5 billion into project development up to 2015, after investing $80 million in 2005. Investment will be directed towards modernisation and the introduction of new equipment. Currently, the company is concluding the construction of a new urea and formaldehyde resin plant and is laying foundations for the start the construction of plants for ammonia and urea, with capacities of 450,000 tpa and 400,000 tpa accordingly.

Hunjii-Akron in China is reported to have started production of methanol with a capacity of 100,000 tpa. Construction of the unit started in February 2005 and cost around $35 million. Product from the plant could be shipped to the Russian market.

Evrokhim
Azot at Nevinnomyssk increased its turnover in the first quarter of 2006 to a total of 2.975 billion roubles. Gross profits rose from 410,97 million roubles to 1,542 billion roubles, although net profit stayed in the same range at 784.7 million roubles against 779 million roubles in 2006.

Azot at Novomoskovsk increased its turnover of 10,045 billion roubles in the first quarter of 2005 to 13,323 billion roubles in the first quarter of 2006. Net profits increased more than by double, from 1.2 billion roubles to 2.5 billion roubles. There are rumours that Azot could close its Methanol-100 plant as from the start of July due to economic reasons.

Belarus

Gazprom has indicated that it plans to increase the price of gas to Belarus beyond the announced recent hikes to $200 per thousand cubic metres. Currently, the country purchases gas at $46.68 per thousand cubic metres. The Belarussian government has agreed to an 11% increase in 2007, but completely opposes Gazprom's plans which are intended to bring prices in line with world prices. During the negotiations between

the Belarussian government and Gazprom, it is intended to discuss joint investment projects in Belarus and Russia. In particular, Gazprom could become involved in the modernisation of Grodno Azot.

Belneftekhim
Belneftekhim plans to create a state holding to include 20 companies that will be form a vertically integrated system. At present, companies that comprise Belneftekhim operate on an individual basis with minimal links. Under the new holding it will be possible to transfer profits from a company to another to support reconstruction projects.

This new structure will facilitate an increase in production levels and allow a free flow of finance between the plants. It is also hoped that it will improve the arrangements for attracting credits. The group employs around 120,000 people and contributes around 19% to the industrial production of Belarus.

In the past few years investment has been targeted on upgrading the refineries and developing the production of aromatic hydrocarbons. Little investment, however, has been targeted on mainstream chemicals and partly as a result production volumes in certain product areas were lower in 2005 than in 2000. Products such as fibres and threads and varnishes have all been affected. Viscose threads production at Svetlogorsk has been affected by competition from south east Asia, due to a lack of modern technology. The declining competitiveness of Belarussian plants is influenced by the age of the equipment used by chemical plants. Buying raw materials from Russia has become more difficult in the past decade, moreover, especially for fibre intermediates such as paraxylene and MEG.

Belarussian Chemical Production (unit-kilo tons)

Product	*2000*	*2005*	*2010 Forecast*
Paraxylene	-	60	180
Benzene	51.7	70	141
Nitrogen Fertilisers	596.6	679	785.4
Phosphate Fertilisers	87.5	149.9	200
Potassium Fertilisers	3,371.9	4,774.6	4,890
Polyethylene	108.9	136.9	193.5
Glass fibre resins	20	35	52.6
Fibres & Threads	219.2	216.4	193.4
Cord Fabrics	0	50251	71544
Paints	40.5	30.3	36.1
Tyres, thousand pieces	2438.4	2975.3	4233.1
Polyesters for roofing materials	-	-	7.2

Benzene
Snezbyansk Chimmash from the Donetsk region in east Ukraine has supplied equipment to the Mozyr NPZ in Belarus for the production of benzene. The capacity of the new project is planned at 55,000 tpa.

Polimir
Belneftekhim has been in negotiations with LUKoil and Rosneft regarding possible participation in the construction of a new petrochemical complex at the Polimir site at Novopolotsk to the value of $836 million.

Polymer intends to build an ethylene plant with a capacity of 250,000 tpa. Derivative plans will include three additional production units, consisting of 150,000 tpa of polyethylene and a plant for the production of 100,000 tpa of polypropylene.

At present, Belarus produces its own production of polyethylene of low pressure, but MEG and polypropylene are imported.

Mogilevkhimvolokno
Mogilevkhimvolokno is continuing to examine the possibility of replacing out-dated DMT technology with PTA. The PTA technology makes it possible to reduce the prime cost of production by 15-20%.

In July-August 2006, Mogilevkhimvolokno will start a new line for the production of the polyester bicomponent fibres with a capacity of 14,000 tpa. The supplier of equipment for the new unit is the Italian company FARE.

Ukraine

Lukor-Karpatneftekhim
Lukor is pressing forward with plans to build a PVC plant by 2009. An agreement was negotiated in June between LUKoil-Neftekhim and Uhde regarding deliveries of the necessary equipment. This project corresponds with the commitments of LUKoil-Neftekhim as layed out to the Ukrainian president in December

2005. At that time, the company agreed to implement the new chlorine plant at Kalush and to activate plans for a PVC plant.

The capacity of the PVC plant being considered is 300,000 tpa, will cost around $200 million. The chlorine PVC project will cost $115 million. The present chlorine plant at Kalush six times of more than electric power and three times of more than heat than contemporary installations. As a result, it is cheaper for Lukor to buy chlorine elsewhere and import it. The cost is one and a half times less than from Kalush.

Currently, the basic cost of chlorine amounts to $200 per ton, whereas in Rumania for example production is two-fold cheaper. The current capacity of chlorine at Kalush is 110,000 tpa which will be increased to 180,000 tpa following the start-up of the new plant. The start of the new chlorine plant is planned for December 2007, with the PVC plant starting up in 2009. The introduction of these projects will make it possible to reduce gas costs six-fold and electricity three fold.

For many years, VCM has been produced at Kalush, but in the absence of polymerisation capacity Ukraine is then required to import PVC from other countries. By starting up a new PVC unit, it would not only help to meet local demand but also help to meet the growing PVC deficit in Russia. Lukor is one of two producers in the CIS which produces its own ethylene and chlorine, the other being SIBUR-Neftekhim.

Lukor's legal subsidiary is Karpatneftekhim, which was created in 2004 in response to the Ukrainian political situation which threatened LUKoil-Neftekhim's status at Kalush. The names are sometimes interchanged, but effectively it is the same company aside the exclusion of one or two units. Karpatneftekhim is currently facing financial difficulties due to a dispute over VAT payments from the government. The sum owed to Karpatneftekhim is 73.96 million hryvnia, which prevented the company in May paying its debts electricity, thermal energy and gas. In April, due to the financial problems the company had to halt maintenance and the introduction of the ecological programme for the productions of chlorine, caustic soda, VCM, etc.

Polyolefin markets

In 2005, the polyethylene market in Ukraine grew by around 20%, and this expected to be followed by 16% in 2006. Consumption of LDPE grew by 13% in comparison to 2004. However, HDPE consumption grew faster than LDPE due to new applications in films. LLDPE's share in total consumption increased to 8.5% in 2005 compared to 1% in 2000.

PE films are growing in the range of 12-15%, with the LLDPE as the main product used. The main suppliers of polyethylene for film production included Karpatneftekhim, Polimir, Tomskneftekhim, Shurtan Gas Chemical Plant and Dow.

Polypropylene consumption grew in Ukraine by an estimated 18% in 2005, which was down on the expected 23%. This year, growth is expected to be around 15% over 2005. As Linos at Lisichansk does not run its polypropylene plant at full capacity means that imports are required for 57% of domestic consumption. Tomskneftekhim increased its sales of polypropylene substantially on the Ukrainian market in 2005, whilst the Turkmenbashi refinery also developed a new prescience selling 1,700 tons.

Azot Severodonetsk

Azot at Severodonetsk has received the second tranche of investments from Worldwide Chemical for reconstruction and modernisation. The first part of the programme is to replace obsolete equipment which is to be followed includes the introduction of energy-saving technologies. The third direction is the automation of the existing technological process and the fourth being ecology and environmental protection. In April, the company made considerable improvements to the acetic acid plant.

Central Asia

In the Ustyurt region of western Uzbekistan Uzbekneftegaz intends to build a new gas-chemical complex in co-operation with the South Korean corporation Kogas. This will be the second complex, in the republic after the Shurtan project was introduced in 2001.

The project cost for the whole complex is estimated in the range of $1.1 billion and has entered the preparatory stage. The aim is to build polyethylene and polypropylene plants with a capacity each of 150,000

tpa. The complex will be supplied from the Surgil gas condensate field and will be completed in the 2006-2009 time-frame. Direct investment from the South Korean side may total about $960 million.

The Shurtan plant produces 125,000 tpa of polyethylene, and also has capacity for 137,000 tpa of liquefied gas, 130,000 tpa of light condensate, 4.2 billion cubic metres of commercial gas and 4,000 tpa of sulphur.

Kazakhstan

Developments are progressing for a special economic zone for the Atyrau region, which will provide the basis for the planned petrochemical projects.

The investment programme in Kazakhstan includes the construction of an integrated gas-chemical complex based on Tengiz and Kashagan deposits. The configuration of the complex provides for the building of two gas-distributing installations, the building of the installations of the cracking of ethane, the installations of the dehydrogenation of propane, and the polymerization of propylene and ethylene.

The start to construction of the complex is planned in 2007. By 2010, it is expected to ensure the production of ethylene (in the range of 800,000 tpa), LLDPE and HDPE (400,000 tpa), LDPE (400,000 tpa) polypropylene of different brands (400,000 tpa).

Relevant currencies for this issue

Czech crown, Kc, Jun 20 $1= 22.732, €1 = 28.563

Hungarian Forint, Ft, Jan 25, $1 = 222.32, €1 = 279.41

Polish zloty, zl, Jun 20, $1 = 3.276, €1 =4.117

Rus rouble Feb 17, $1 = 27.050, €1= 34.005

Ukrainian hryvnia, Jun 20, $1 = 5.0050, €1 = 6.2915

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