



# CENTRAL & EASTERN EUROPE PLASTICS MARKET

Central Europe, particularly Poland, has coped with the economic crisis quite well. A chief asset of the countries located in this region includes the lowest labour costs in the European Union, which makes the foreign investors continue to place their industrial investment in the region.

**A**CCORDING TO THE POLISH INFORMATION and Foreign Investment Agency (PAIIZ) in 2010 the inflow of direct foreign investments to Poland may amount to approximately EUR 9.0 billion against EUR 8.6 billion in 2009. Owing to the foreign investments, Poland has become the biggest TV-set factory in Europe; 20 million TV-sets were produced in 2009. Analytical companies estimate that in 2010 up to 80% of LCD TVs sold in Europe will be manufactured in Poland. Poland may soon turn into the largest home appliances producer. Large concerns producing white goods move their factories to Poland where the production is cheaper even by 20% to 30% if compared to the Western Europe. Currently Polish LG, Samsung, Bosh and Siemens factories put on the market approximately 15 million washing machines, refrigerators and stoves.

Another asset of the region is a highly developed automotive industry and auto component production. In Poland there are two Fiat factories, and one GM plant. Volkswagen (Skoda) and Korean Hyundai chose to locate for their production base in the Czech Republic. Additionally, the Koreans have recently built a Kia plant in Slovakia. Romania has become yet another immense production base for the Western automakers. The transfer of production by the largest concerns entails the development of plastic processing in the region. The AMI report on the injection moulding industry in the Central Europe shows that there are 1,400 com-

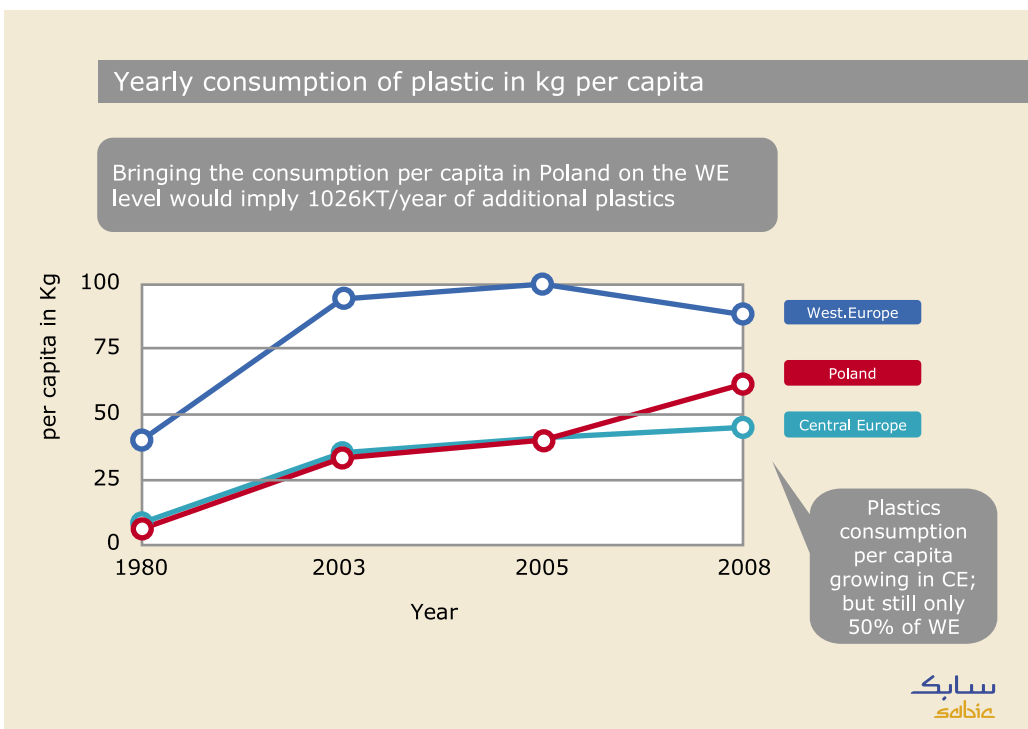
panies using the injection moulding technology in our part of the continent. We believe that this estimate is understated. It is worth noticing that out of 1,400 injection plants operating in Poland, Hungary, the Czech Republic and Slovakia, close on 300 "showed up" in the AMI base after 2005. Additionally, the Region, and Poland particularly, offers a large internal market (38 million inhabitants) and favourable geographical location; Poland borders on Germany being a very large market and on Ukraine (50 million inhabitants), which may become attractive in terms of business in the future.

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## Plastic Production in Hands of Strong, Consolidated Players

Petrochemical industry in Central Europe is dominated by Polish PKN ORLEN and Hungarian MOL. Both concerns belong to the top 10 largest polyolefin players in Europe. The Hungarians have developed a specialized Petrochemical Group, consisting of TVK and Slovnaft Petrochemicals, which has been dedi-

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cated to produce both olefins and polyolefins (production in Hungary and Slovakia). PKN ORLEN, having taken the control over Czech Unipetrol, has at its disposal systems in the Czech Republic and Poland (joint venture Basell Orlen Polyolefins). Additionally, Anwill, a PVC manufacturer, which controls Spolana, a Czech PVC company, belongs to the PKN ORLEN Group. In terms of polystyrene production and synthetic rubber Syntos (formerly Dwory) assumed a strong position in the region; having acquired Czech Kauczuk, it manufactures its goods in Poland and in the Czech Republic.

Other petrochemical manufacturers from Southern part of the region were doing slightly worse. In the second half of 2008 Serbian HIP-Petrochemija withheld the production and declared bankruptcy. It was only the Russian support (loan and ethylene deliveries) that resumed the company's operation. Hungarian

Borsodchem experienced financial liquidity problems and production standstills. It also declared the intention to sell its PVC production complex. Heavily indebted company has been taken over by Chinese businesses.

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with the production capacity of 1 million tonnes per year will be the first of its kind in the region.

### **Petrochemical Investments Heading East**

It seems that the PX/PTA complex will be the last big petrochemical investment connected with plastics production that was put into operation in one of region's EU member states. SK Eurochem, which had announced to double the production capacity of its PET system in Poland (currently 120,000 tonnes per year) is likely to resign from its plans. Azoty Tarnów, in spite of having issued shares and gained the capital necessary to develop a new POM system, thinks about relocating the investment outside Europe. Only Romanian Rompetrol Petrochemicals announced its plans to expand and modernize HDPE plant in Constanta. Owing to this investment, the

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**Plastics & Rubber capacities in Central and Eastern Europe (including Russia)**

| Company                                    | Country               | HDPE           | LDPE           | PP             | PVC            | PS           | EPS          | PA           | PET            | POM         | PC          | Rubber         | ALL             |
|--|-----------------------|----------------|----------------|----------------|----------------|--------------|--------------|--------------|----------------|-------------|-------------|----------------|-----------------|
| Nizhnekamskneftekhim                       | Russia                | 230            | 230            | 0              | 200            | 170          | 0            | 0            | 0              | 0           | 0           | 490            | 1 090,0         |
| Basell Orlen Polyolefins (PKN Orlen Group) | Poland                | 350            | 110            | 438            | 0              | 0            | 0            | 0            | 0              | 0           | 0           | 0              | 898,0           |
| Kazanorgsintez                             | Russia                | 510            | 193,5          | 0              | 0              | 0            | 0            | 0            | 0              | 0           | 65          | 0              | 768,5           |
| TVK (MOL Group)                            | Hungary               | 420            | 65             | 280            | 0              | 0            | 0            | 0            | 0              | 0           | 0           | 0              | 765,0           |
| Unipetrol RPA (PKN Orlen Group)            | Czech Republic        | 352            | 0              | 298            | 0              | 0            | 0            | 0            | 0              | 0           | 0           | 0              | 650,0           |
| SIBUR *3                                   | Russia                | 0              | 0              | 0              | 0              | 0            | 0            | 0            | 0              | 0           | 0           | 600            | 600,0           |
| Synthos SA                                 | Poland/Czech Republic | 0              | 0              | 0              | 0              | 130          | 190          | 0            | 0              | 0           | 0           | 217            | 537,0           |
| Slovnaft Petrochemicals (MOL Group)        | Slovakia              | 0              | 180            | 255            | 0              | 0            | 0            | 0            | 0              | 0           | 0           | 0              | 435,0           |
| Stavrolen (LUKOIL CHEMICAL)                | Russia                | 300            | 0              | 120            | 0              | 0            | 0            | 0            | 0              | 0           | 0           | 0              | 420,0           |
| Borsodchem                                 | Hungary               | 0              | 0              | 0              | 400            | 0            | 0            | 0            | 0              | 0           | 0           | 0              | 400,0           |
| NEO Group (Retal)                          | Lithuania             | 0              | 0              | 0              | 0              | 0            | 0            | 0            | 308            | 0           | 0           | 0              | 308,0           |
| Anwil (PKN Orlen Group)                    | Poland                | 0              | 0              | 0              | 300            | 0            | 0            | 0            | 0              | 0           | 0           | 0              | 300,0           |
| Oltchim                                    | Romania               | 0              | 0              | 0              | 300            | 0            | 0            | 0            | 0              | 0           | 0           | 0              | 300,0           |
| Tomskneftekhim LLC (SIBUR)                 | Russia                | 0              | 200            | 100            | 0              | 0            | 0            | 0            | 0              | 0           | 0           | 0              | 300,0           |
| Sayanskchimplast                           | Russia                | 0              | 0              | 0              | 250            | 0            | 0            | 0            | 0              | 0           | 0           | 0              | 250,0           |
| Alko-Nafta                                 | Russia                | 0              | 0              | 0              | 0              | 0            | 0            | 0            | 220            | 0           | 0           | 0              | 220,0           |
| DIOKI                                      | Croatia               | 0              | 140            | 0              | 0              | 50           | 15           | 0            | 0              | 0           | 0           | 0              | 205,0           |
| Rompelrol Petrochemicals                   | Romania               | 60             | 60             | 80             | 0              | 0            | 0            | 0            | 0              | 0           | 0           | 0              | 200,0           |
| Orion Global (Indorama)                    | Lithuania             | 0              | 0              | 0              | 0              | 0            | 0            | 0            | 196            | 0           | 0           | 0              | 196,0           |
| HIP-Petrochemija                           | Serbia                | 76             | 57             | 0              | 0              | 0            | 0            | 0            | 0              | 0           | 0           | 40             | 173,0           |
| Spolana (PKN Orlen Group)                  | Czech Republic        | 0              | 0              | 0              | 132            | 0            | 0            | 0            | 0              | 0           | 0           | 0              | 132,0           |
| SK Eurochem                                | Poland                | 0              | 0              | 0              | 0              | 0            | 0            | 0            | 120            | 0           | 0           | 0              | 120,0           |
| Polief                                     | Russia                | 0              | 0              | 0              | 0              | 0            | 0            | 0            | 120            | 0           | 0           | 0              | 120,0           |
| Kaustik (Strielmak)                        | Russia                | 0              | 0              | 0              | 120            | 0            | 0            | 0            | 0              | 0           | 0           | 0              | 120,0           |
| Polymir (Naftan OJSC)                      | Belarus               | 0              | 120            | 0              | 0              | 0            | 0            | 0            | 0              | 0           | 0           | 0              | 120,0           |
| Petrochemical Arges (Arpechim)             | Romania               | 30             | 80             | 0              | 0              | 0            | 0            | 0            | 0              | 0           | 0           | 0              | 110,0           |
| New Polymers Plant "Senegal"               | Russia                | 0              | 0              | 0              | 0              | 0            | 0            | 0            | 105            | 0           | 0           | 0              | 105,0           |
| LUKOR-Karpatneftekhim (LUKOIL CHEMICAL)    | Ukraine               | 100            | 0              | 0              | 300            | 0            | 0            | 0            | 0              | 0           | 0           | 0              | 100,0           |
| CJSC "LINIK" (BP-TNK)                      | Ukraine               | 0              | 0              | 100            | 0              | 0            | 0            | 0            | 0              | 0           | 0           | 0              | 100,0           |
| Plastkard                                  | Russia                | 0              | 0              | 0              | 93             | 0            | 0            | 0            | 0              | 0           | 0           | 0              | 93,0            |
| Azoty Tarnów (with ATT Polymers GmbH)      | Poland/Germany        | 0              | 0              | 0              | 0              | 0            | 0            | 92           | 0              | 14          | 0           | 0              | 92,0            |
| Mogilevkhimvolokno                         | Belarus               | 0              | 0              | 0              | 0              | 0            | 0            | 0            | 80             | 0           | 0           | 0              | 80,0            |
| Novacke Chemicke Zavody (bankructwo)       | Slovakia              | 0              | 0              | 0              | 75             | 0            | 0            | 0            | 0              | 0           | 0           | 0              | 75,0            |
| Sibur-PET (SIBUR)                          | Russia                | 0              | 0              | 0              | 0              | 0            | 0            | 0            | 70             | 0           | 0           | 0              | 70,0            |
| Angarsk Polymer Plant (Rosneft)            | Russia                | 0              | 58             | 0              | 0              | 0            | 0            | 0            | 0              | 0           | 0           | 0              | 58,0            |
| Grodno Khimvolokno                         | Belarus               | 0              | 0              | 0              | 0              | 0            | 0            | 50           | 0              | 0           | 0           | 0              | 50,0            |
| Concern Stirol                             | Ukraine               | 0              | 0              | 0              | 0              | 50           | 0            | 0            | 0              | 0           | 0           | 0              | 50,0            |
| Sibur-Neftekhim JSC                        | Russia                | 0              | 0              | 0              | 42             | 0            | 0            | 0            | 0              | 0           | 0           | 0              | 42,0            |
| Rhodia Polyamide Poland                    | Poland                | 0              | 0              | 0              | 0              | 0            | 0            | 35           | 0              | 0           | 0           | 0              | 35,0            |
| Hipol Odzaci                               | Serbia                | 0              | 0              | 30             | 0              | 0            | 0            | 0            | 0              | 0           | 0           | 0              | 30,0            |
| <b>ALL</b>                                 |                       | <b>2 428,0</b> | <b>1 493,5</b> | <b>1 701,0</b> | <b>2 212,0</b> | <b>400,0</b> | <b>205,0</b> | <b>177,0</b> | <b>1 219,0</b> | <b>14,0</b> | <b>65,0</b> | <b>1 347,0</b> | <b>10 717,5</b> |

\* (1) under construction (commissioning - end 2010)

\* (2) This installation can produce HDPE or LDPE

\* 3 total capacities in rubber segment: Voronezhskintezkauchuk JSC (SIBUR), Tolyattikauchuk LLC (SIBUR), arsk Synthetic Rubbers Plant JSC (SIBUR)

production capacity of the factory is to grow by 70% up to 100,000 tonnes of HDPE per year. The currently modernized system was closed in 1996 due to lack of ethylene. After a renovation in 2006, it resumed production in 2007 with the nominal capacity of 60,000 tonnes per year. Also Ukrainian "Karpatneftechim",

having completed a renovation that took two years, resumed the operation of polyethylene systems (HDPE – 100,000 tonnes per year) in September.

"Karpatneftechim" is controlled by Russian capital. LUKOIL Chemical B.V. is the largest shareholder and possesses

76% of shares, with the other partner, Łukor, holding 24% of the share capital. Yet the flagship investment of the company is the PVC system whose construction has almost been completed and whose production capacity will amount to 300,000 tonnes per year. The plant is scheduled to opera-

te as early as in 2010. The investment revival is also visible in Belarus. The companies belonging to state-owned Bielnieftekhim group have announced to hold an open tender procedure for the purchase and construction of complete production line for manufacturing bottle Polyethylene Terephthalate (PET). Concluding upon earliest investment declarations, it will be a system with the capacity of 120,000 tonnes PET yearly. Other Belarusian company, JSC Grodno Khimvolokno, the manufacturer of polymers and nylon fibres, intends to double the production of polyamide 6 in order to meet increased demand of its divisions producing fibres, string and yarns. In 2011 its production capacity will amount to 108,000 tonnes per year. Currently, Grodno Khimvolokno may produce approximately 50,000 tonnes of PA 6 per year and over 35,000 tonnes of fibres and yarns per year.

### Russia – a huge construction site

Russian companies show the highest investment activity. Close to the European Union borders, in the Kaliningrad Oblast, "Alko-Nafta" is about to finish PET system with the production capacity of 240,000 tonnes per year. About 40% of Kaliningrad-based production is intended for the Russian market, and the remaining part will be exported. The Kaliningrad plant will be the forth polymer PET plant in Russia – the youngest and the largest one. Presently the following factories operate in the Russian Federation: "Sibur-PET" with the capacity of 70 thousand tonnes per year, plant of new polymers "Syenezh" with the production potential of 105 thousand tonnes per year, and "Polief" with the systems having the production capacity of 120 thousand tonnes per year. Owing to the new investment, the total PET production capacity in Russia will increase to 535 thousand tonnes per year, i.e. the amount equal to ante-crisis demand of the Russian processing industry for this polymer. Also, the long-postponed construction of a PVC factory with the production capacity of 330,000 tonnes per year of RusVinyl (joint venture SolVin and SIBUR Holding) has started. The conglomerate plant is scheduled to be put into operation in 2013.

In Russia, huge investments in polyolefin are carried out, which is in line with a global tendency to move this industry in the proximity of cheap raw materials. In this case Russia, which is rich in gas and petroleum, clearly has a competitive advantage. In February 2009, in spite of raging crisis, Nizhniekamskneftechim launched a new polyethylene installation and became the biggest manufacturer of polymers in Russia. The conglomerate plant located in Nizhniekamsk in the Republic of Tatarstan may currently supply 600,000 tonnes of various plastics every year (170,000 tonnes of PS per year; 200,000 tonnes of PP per year; and 230,000 tonnes of PE per year). In the second half of the previous year other Russian company, JSC Sawavatnefteorgsintyetz, commissioned for use an HDPE line with its production capacity of 120,000 tonnes per year. Also a long-withheld construction of an immense PP conglomerate plant with the production capacity of 500,000 tonnes per year in Tobolsk (executed by Tobolsk-Polimer, a company from the SIBUR group) was commenced. Once this investment is completed, Russia will finally transform from importer to exporter of polypropylene. More and more facts indicate that, despite the delays, in Western Syberian Omsk, a new polypropylene system, that had been already announced 5 years ago, with the production capacity of 180,000 tonnes per year will come into being. Local company Titan Group, a manufacturer of synthetic rubber, chemicals and fuel additives, communicated that at the end of this year it will start the first stage of construction. A PP investment is also announced by LUKOIL. The project includes the construction of a PP system with the production capacity of 600,000 tonnes per year, as well as a gas processing plant and a power plant. The investment completion is scheduled in 2014. LUKOIL intends to locate its new PP system in Budionnowsk, where its subsidiary Stavrolen possesses a PP plant with the production capacity of 120,000 tonnes per year. Also Gazprom communicated the development of a new polyethylene plant in the Astrakhan Oblast. It is very likely that the projects that has not entered the execution stage will not be commenced, as limited inter-

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nal demand resulting from relative weakness of the processing industry (even though it grows very fast) becomes to be a barrier. The Russians also doubt that they may compete in terms of export to European markets with polyolefin from the Middle East (Russian raw materials would have to be transported by very expensive land transportation). Consequently Nizhniekamskneftechim intends to reduce its flagship investment project consisting in the construction of the ethylene system with the production capacity of 1 million tonnes per year, by even a half. Export to China seems to be some kind of opportunity for the Russian polyolefin industry; however, it is an alternative only for Siberian companies, operating next to the Chinese border. One of them is "Rosneft" which announced the construction of HDPE and LLDPE plants with the total production capacity of 345,000 in Angarsk, next to the Chinese border. The facility is to be put into operation at the end of 2012 or at the beginning of 2013.

### Summary

EU member states from Central Europe still offer the lowest labour costs in the Community; additionally, Poland has a significant internal market, which lures and will continue to lure industrial investments focusing on supplying goods to the neighbouring German, Polish and potentially attractive Eastern markets. The factors referred to above as well as the expected increase of internal consumption mean that the states of the region will still be the fastest growing markets within the Community. Due to the necessity to catch up with the development level, we may observe even a faster pace of growth in Ukraine, where labour costs are lower by up to 50% if compared to Poland. However, due to the political risk and business relations significantly diverging from the European Union standards, it seems unlikely for the global industrial concerns to put huge investments in this country. This market will rather remain dominated by Russian companies. Yet in the nearest future, new petrochemical investments will be conducted solely in those countries of the region which are not EU member states: in Belarus, Ukraine and Russia. ■