



Glimpse of a growing market:

Flat glass

manufacture in Russia

Ahead of the 12th edition of the Mir Stekla exhibition, Seema Gahlaut* explores the current flat glass market in Russia, outlining the sector's major players and their recent investments spurred by growth in demand.

Until a decade and a half ago, owing to harsh climatic conditions, the use of glass, and particularly large exposed glass areas were not too popular in Russia. Harsh winters have made the application and consumption of glass less widespread than in many other markets. However, in the last few years, with the availability of coated glass and increased modernisation of infrastructure, there has been a dramatic reversal trend in Russian glass usage.

After nearly dissolving in economic collapse in 1998, the Russian economy has more than recovered — it has erupted as one of the world's most important economies. During the last few years Russia's economy has showed a strongly positive performance.

Large revenues derived from high prices for natural resources helped the country to achieve macro-economical stability. Tremendous growth in residential housing construction, commercial property projects, and rapid development of the Russian automotive industry, all have had a positive impact on the outlook of the entire glass industry and have resulted in a high level of demand for modern float glass.

A shortage of high-quality float glass (in 2006-2007), coupled with the growth of demand in the construction and automotive industries is one of the key upside drivers for the float glass market. The market is highly consolidated and six companies dominate more than 90% of the total float glass produced in the country.

Three ultra-modern float glass plants have come into operation in the last

four-year period, represented by Asahi, Pilkington and Guardian in the form of joint ventures, while a few more plants are in the advanced stages.

Growth potential

Float glass producers, both domestic and international, are highly interested in the potential offered by the emerging Russian market. Russia, where demand for float glass has expanded as high as 17% annually is seen as one of the most promising markets in the world. Rapid growth in demand for float glass seems assured in Russia due to the country's construction boom and expansion of the automotive industry, particularly through the arrival of foreign car makers.

Russian companies produced only 80 million m² of flat glass in 2000. By the end of 2006, total production stood at 160 million m², and in the next two years the figures jumped to 190 and 210 million m², respectively.

Officials estimate that the current market size of Russian float glass is 200 million m² (2009). However, industry insiders say that a large part of

the market turnover is in the shade and therefore its real volume is higher.

Some market participants believe that gradually foreign manufacturers will occupy the largest part of the Russian market and render the lower end of the market for domestic producers.

Russian flat glass industry

In recent years, the production of flat glass in Russia has developed dynamically: New float lines have emerged, internal consumption has increased, product ranges have improved, and there has been a considerable transformation of the institutional and competitive environment.

Across Russia, glass companies are spending millions of dollars to upgrade facilities and expand capacity; all in an effort to keep pace with surging consumer demand. The activity is the latest stage in an economic turnaround that has delivered seven years of robust growth.

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Manufacturer	2005	2006	2007	2008	2009
Sarvatovstroysteklo	372	372	372	372	372
Glaverbel Bor	372	372	372	372	372
Glaverbel Klin	180	180	180	180	180
Salvasteklo	220	310	401	401	401
Pilkington	240	240	240	240	240
Saratov Glass	35	35	35	35	35
Guardian Steklo	0	0	0	0	270

▲ Table 1. Installed capacity of float glass in Russia (in thousand tons/year).

Rise of flat glass

Following the collapse of the Soviet Union, the Russian flat glass market developed in the early 1990s, when imported glass started to outsell rather expensive, low-quality domestic-made flat (predominantly sheet) glass.

The amount of imported glass grew and by the mid-1990s domestic manufacturers started to attract investments for the modernisation of production, in order to keep pace with growing demand.

Asahi took the initiative of being the first MNC float producer to enter the Russian float market, around the turn of the century. By the beginning of the new millennium, all the international glass manufacturers became attracted to this vast market and initiated the process of launching float operations in the country.

At the end of 2009, flat glass was produced by 12 glass manufacturers in Russia; float glass in seven factories (Bor Glassworks, Salavatsteklo, Saratovstroysteklo, Saratov Glass Institute, Glaverbel Klin, Pilkington and Guardian); and Fourcault glass in five factories (OAO Kvarcit, ZAO Simvol, OAO Vostek, OAO Irbis Glassworks and TOO MAST). The total installed capacity is more than two million tonnes, of which approximately 250,000 tonnes is for sheet glass.

Firm growing demand for high-quality flat glass and its production is expected to remain, at least for a few more years. According to estimates, total consumption of flat glass will be more than 330 million m² by the end of 2012.

The proportion of float glass within

Ranking	Company	% Share
1	Borsk Glass Plant	23.7
2	Salvasteklo	20.2
3	Saratovstroysteklo	17.3
4	Pilkington	12.9
5	Guardian	12.1
6	AGC Flat Glass Klin	11.9
7	Saratov Glass Institute	1.9

▲ Table 2. Respective companies' share in the total Russian float glass production volume in 2008 (1855 thousand tons).

the total volume of flat glass production (now at more than 85%) has been steadily progressing and will increase further in the future. Glass processing is the brightest spot in the country's flat glass industry and the use of processed glass and its growth has surpassed the average growth of float glass by many notches.

Meeting demand

The opening of three new plants in Russia (Glaverbel Klin in 2006, Pilkington Glass in 2006 and Guardian in 2009) has helped to resolve the problem of acute flat glass shortage. The total volume of the Russian flat glass market was approximately 280 million m², including approximately 70 million of imported glass.

The construction industry is the major consumer of flat glass in Russia, occupying more than 70% of output. Insulated glass manufacturing volumes exceeded 29 million m² in 2009.

A steady increase in production volume has taken place in most sub-sectors of the Russian flat glass industry.

This trend can be explained by internal demand and an increasing volume of glass products being consumed by the construction sector and replacement market.

Most of the float glass manufacturers are characterised by their high activity in investing and development, which is demonstrated by plant-by-plant changes or reconstruction and by installing new technologies and equipment to control the quality of raw materials and end products.

The flat glass market in Russia continues to build up steadily. The Russian market has considerable potential considering its low per capita consumption of glass, as compared to its neighbours.

Demographic data

Russia's population is predominantly urban, with 73% of its population of 142 million citizens residing in urban areas, which is one of the most positive signs for glass industry. Russia has experienced a population loss of approximately five million since it peaked shortly after the fall of the Soviet Union. Currently, population growth is nearly stagnant, with an overall growth rate of -0.02% since the start of 2009.

Glass production is concentrated to the Western and Central parts of the country as its population is most dense in the European part (Western part), centering around Moscow and St Petersburg.

The number of Russians living in poverty has halved since the economic crisis following the disintegration of the Soviet Union, and the improving economy had a positive impact on the country's low birth rate, as it rose from its lowest point at 8.27 births per 1000 people in 1999 to a rate of 12.1 per 1000



▲ Guardian Industries' Ryazan plant, which produces float glass for residential and commercial construction.

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Country	Population (millions)	Passenger cars	Car density (per 1000)
Germany	82.5	46.81	565
UK	61.0	31.34	521
USA	302.8	136.01	450
Czech Republic	10.2	4.31	424
Poland	38.1	14.21	369
South Korea	48.9	9.65	246
Russia	142.3	26.79	188
Brazil	189.4	19.80	107
Turkey	75.1	6.24	85
China	1322.1	21.43	16
India	1135.6	12.06	9

▲ Table 3. A comparison of Russian and other leading automotive countries.

in 2008 - another healthy sign for the glass industry.

The demand for both high-quality float glass and value-added glass products, such as energy-saving low-E glass, has shown great potential. In response to this growth, several new 'Western quality' float glass plants were commissioned in recent years.

Construction: A driving force

The construction industry in Russia is growing at a much higher rate than the Russian economy as a whole. The growth rate for 2007 was approximately 27%, exceeding even the double digit growth rates of previous years. The construction industry comprises three main segments: Residential house building; commercial and industrial real estate construction (shopping centres, hotels, warehouses, office buildings, factories, etc); and infrastructure.

The affordable housing programme has the largest weight among the three segments. In 2007, approximately 62 million m² of new living accommodation was built. Official plans envisage a rise to approximately 90 million m² per year by 2012. This would compensate for the enormous housing construction deficits of recent years.

Of the existing 3000 million m² of living accommodation for Russia's population of 142 million, a high proportion is not up to international standards and the average size of 21.3m² per citizen is far behind that of many of the country's European neighbours, such as Norway with 74m², France with 43m² or even the Czech Republic with 28m² and Ukraine with 26m².

The current growth of the

construction industry is likely to continue in the medium term, after the financial meltdown hiccups, as it is based on growing economical and political stability, strong national growth, the affordable housing programme (which is backed by the Government), and the restructuring of the entire Russian economy after a decade-long recession.

Approximately 70% of construction projects in Russia were frozen (mid-2009) due to the economic crisis. The recession has severely affected the domestic construction industry, causing a slump in demand for housing, an increase in interest rates on loans for developers, and a virtual halt in the disbursement of mortgage loans to households.

The volume of construction and assembly work declined by 20% in January-June 2009, year-on-year, to 1.5 trillion rubles (\$48 billion), which

severely affected the float glass industry. However, things are changing for the better and towards the end of 2009, construction activities slowly started to crawl, although not at the brisk pace of pre-2008 years.

Automotive market

The automotive industry in Russia is currently booming. It has grown at a swift pace in recent years and, barring the one-year period of late 2008 and early 2009, it has outpaced most of the European markets in growth in automotive sales. There is a high growth in car sales and internal production. Manufacturers are looking for low-cost resources for production and are opening plants.

Passenger car production in Russia is dominated by domestic producers such as AvtoVaz and, in particular, its leading brand, Lada. The share of foreign manufacturers in overall production is, however, increasing rapidly.

Fiat, Ford, General Motors, Toyota and Volkswagen among others have already set up production in Russia. Eight greenfield sites for foreign-branded car production are under construction. Five of these will be located near St Petersburg, while three foreign car makers (Volkswagen, PSA and Mitsubishi) have selected Kaluga, 180km south west of Moscow, for their Russian plants.

The strong growth of foreign brands manufactured in Russia is estimated to continue as Russian consumers are increasingly opt for the more expensive and comfortable cars.

Russian authorities have voiced plans for domestic production to reach up to



▲ YugRosProdukt, a specialised container glass producer in Russia, constructed a float line in the south of Russia, which began production at the end of 2009.



80% of the total cars sold in Russia. However, for the glass industry, it is immaterial which brands are sold.

In the coming years, a strong demand is expected in original equipment manufacturers (OEMs) and replacement segments of automotive glass from the car manufacturers in the country.

Bor Glassworks

Bor Glassworks, located in the town of Bor (approximately 500km east of Moscow, close to Nizhny Novgorod) is the leading Russian producer of float glass for the construction and automotive industries.

The company is owned by Glaverbel, the European subsidiary of Japanese Asahi Glass. Bor operates on a rapidly expanding market and has enormous growth potential. It has actively developed a strong dealer network, launching new offices in different regions. It is also successfully operating in the Russian and foreign automotive replacement glass market.

Bor Glassworks was established in 1934 and was one of the biggest glassworks in the erstwhile USSR. Glaverbel initially acquired a 44% stake in Bor for \$15 million. The purchase made Glaverbel the first Western group to invest in the predominantly underdeveloped Russian glass market, and as such the company was able to establish a clear leadership position as that market took off in the 2000s.

Company facilities were fully modernised by Glaverbel in 2003, when the Belgian company invested approximately €3.5 million to launch float glass production lines at the plant.

Bor Glassworks became the first Russian producer of large-dimension float glass and coloured float glass. Its ability to produce glass in large dimensions makes Bor an attractive supplier to the construction industry, since the glass can be cut to size on-site, significantly reducing wastage.

The company now operates two float lines and produces more than 40 types of glass for the construction and automobile industries. Its output fully complies with international standards.

Glaverbel

Glaverbel (Asahi Glass) built its stake in Bor Glassworks in gradual steps, beginning from 1997, and its acquisition of a controlling stake in the last couple of years made it the first international player with its own facility in Russia.



▲ Lajos Sapi, Guardian Group Vice President for Central and Eastern Europe.

At the beginning of 2005, the company increased its stake in Bor Glass to 83%. By then, the Russian company had received some \$100 million in investment since its takeover by Glaverbel. In October 2005, the Russian unit was boosted again with the opening of a new glass plant in Klin, near Moscow. That unit, operated by Glaverbel Czech, represented an investment of more than €160 million. The new plant confirmed Glaverbel's position, not least as leader in the fast-growing Russian glass sector.

Glaverbel Klin announced, a couple of years ago, the instalment of its second float line (capacity of 1000 tons per day) with an estimated outlay of €135 million.

According to Jean-François Heris, President of AGC Flat Glass Europe – Glaverbel, "At Klin we have existing facilities into which the new production line can be easily slotted, together with the necessary trained personnel to operate it."

Other international majors have followed Glaverbel to Russia. In the first quarter of 2006 Pilkington-NSG launched a new glassworks in the Moscow region. Pilkington Glass, with an installed capacity of approximately 240,000 tonnes, was followed by the recently inaugurated Guardian plant.

Pilkington

In 2003, Pilkington established a joint-venture company called Pilkington Glass LLC, to construct and operate a world-scale, greenfield float glass plant at Chulkova near Moscow, at an estimated cost of €193 million.

The company has supplied the Russian market from its sales offices since 1996. Construction for its float factory began in summer 2004, and the plant was commissioned in winter 2005.

Total installed capacity of this state-of-the-art plant is 240,000 tonnes/year.

The Pilkington plant is near the city of Ramenskoye, approximately 35km south-east of Moscow. Ramenskoye is a centre for textiles and engineering, as well as a residential suburb of Moscow.

The 37 hectare site, outside the city, is strategically located near a quarry that supplies good glassmaking sand. The sand quarry, which is the leading local supplier for glass production and has a capacity of up to 1,000,000 tonnes per annum (tpa), has a transport cost advantage over other suppliers and supplies a significant part of the 180,000 tpa needed by Pilkington's plant.

The company has been also importing value-added glass in the country from European and North American manufacturing operations.

Guardian Ryazan

In September 2009, Guardian Industries inaugurated its new float glass facility in Ryazan. The Ryazan plant produces 750 metric tons of float glass per day at an approximate cost of \$180 million.

Production is targeted towards residential and commercial construction. The plant also features a technologically advanced coating machine, which enables it to manufacture a variety of high-performance coated glass products.

Guardian says its investment in Russia is a natural progression following investments in Central and Eastern Europe. It is also the first step in plans for continued growth in the country.

"Ryazan is Guardian's initial entry into the region," said Russ Ebeid, Chairman of the Board and President of Guardian Glass Group. "The decision to build in Ryazan fits with our global strategy and our marketing considerations. We are so confident in the opportunities in Russia that we are already in the very early days of planning a second float glass plant in Rostov in South East Russia," he added.

Lajos Sapi, Guardian Group Vice President for Central and Eastern Europe, said: "The number of residential units in Russia is lower than the European average, therefore a promising amount of new home construction has started.

"We expect it to grow in the coming years. In addition, we can count on the modernisation of existing homes in terms of comfort and energy savings.

"Our plant in Ryazan, with the latest float glass production technology and



our wide variety of coatings, can supply quality products on time over the long term. We are looking forward to a great future in Ryazan and Russia."

Saratovstroysteklo

Saratovstroysteklo is considered to be one of the leaders in the production of glass products in the Russian Federation, from laminated automobile glass, triplex safety glass, float glass to crystal ware, glass furniture and fixtures.

In the summer of 2009, Saratovstroysteklo announced a \$82 million investment in the construction of a new float glass production line.

When the new line, with a projected daily capacity of 700 million tons of glass, is put into commission, the plant's capacity is reportedly to increase by 63%.

Timeframes for the project are yet to be announced.

Gomel Glass

One of the oldest producers of glass in Russia, located in the Belarus region, Gomel is engaged with glass industry since pre-World War II days.

It has been a leading producer of sheet glass (installed capacity 800 tons/day) and is at the advanced stage of starting its float glass line with a daily output of 780 tons.

The float line project has cost the company upwards of €150 million.

YugRosProdukt

On 15th December 2009, the float glass line of YugRosProdukt successfully started production.

The new float line will primarily address the south Russian construction market, which registered among the highest growth rates of the country before the financial crisis and which is poised to benefit from the ongoing economic recovery in Russia.

YugRosProdukt is a specialised Russian jar and container producer, located in the Territory of Stavropol in the south of Russia.

In the pipeline

There are a few more float glass projects at various stages of completion in Russia. However, the economic slowdown has put brakes on some of these plans.

■ Baltic Glass Company, of which the promoter is the Russian Soda Company, plans to set up two float lines (each to produce 600 tons of glass per day) at an estimated cost of €220 million in the Leningradskaya province. This float glass plant will use recent oxy-fuel technologies from PPG Industries.

■ North-West Glass Company (SZSK) plans to construct a 400 tons/day float plant at Kirishy in the Leningradskaya province, at an estimated investment of \$95 million. China's Yaohua Glass Group Corporation is the main investor in this project.

■ Vostek Glass Plant – 500 tons of float glass per day is due to be produced in the Tverskaya province of the Firsovsky region. China State Construction Engineering Corporation (CSCEC), is general contractor for this plant.

■ ZAO Promtehninvest – This 700 tons/day float plant will come on-stream in the Terengulsky region of Russia's Ulianovskaya province. ■

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