

and the distribution was rigid. Import duties had prevented imports (only 7 % was imported). Flat glass exports accounted for 13% of production. The export prices were 30-40% lower than domestic prices.

The history of MGU industry

In the early 1950s large Belgium and German window glass manufacturers successfully marketed MGUs in Europe. Belgium exported MGUs also to Sweden, Denmark and Norway. To replace imports almost all Scandinavian window glass manufacturers licensed MGU technology. In 1957 Korsör licensed technology from a German window glass manufacturer and found a manufacturing company. Drammen became immediately a partner with a 10 % share. At the beginning Drammen imported MGUs from the joint venture. In 1959 Drammen started MGU-production in Norway. Emmaboda joined this group and started MGU production in 1960. Next year also Gränges produced MGUs with a license acquired from a US company. Lahti sub-licensed MGU technology from Gränges in the mid 1960s. Thus, five out of seven Scandinavian window glass producers entered to the MGU business and controlled the market. In 1960 in Norway the Belgium MGUs had 85 % market share and leaving only 15 % for Drammen. However, in 1967 Drammen, market share passed 50 %. In Finland Riihimäki, another Finnish window glass manufacturer, and Lahti shared (within a rationalizing agreement) the market of the local construction industry. The former delivered tempered safety glass and the latter MGUs.

Changes in the Scandinavia MGU Market in the 1970s

Changes in the Scandinavian window glass market in the early 1970:

In the 1960s the European flat glass market was restructured. In 1960 there were 35 independent flat glass producers, but in the early 1970s three large companies, Pilkington (from the UK), St. Gobain (from France) and another French company, BSN, dominated the European flat glass market. Pilkington and St. Gobain became interested also in Scandinavia. Pilkington (established in 1826) developed float glass, a new type of flat glass, in the 1950s. Float glass was introduced in 1959. That time it was too thick (6.5 mm; window glass had 2-4 thicknesses) and too expensive to replace window glass. In the 1950s and the 1960s Pilkington established manufacturing units in the Commonwealth Countries. In 1972 Pilkington's turnover was £226.5 million (\$400 million). St. Gobain's main business area is the flat glass business (60% of its sales in 1960). St. Gobain licensed float glass production in the Central Europe (France, Belgium, Italy, Spain and West Germany). In 1974 St. Gobain's turnover was 21 billion FrF (\$ 3 billion) and it employed 146.000.

The automobile and construction industries are the main users of flat glass. To replace window glass, a full range of commercial thicknesses of float glass should be available. In 1970 Pilkington could produce float glass of 2 mm thickness.

In January 1973-74 Pilkington tried to establish a joint float glass production unit with Scandinavian window glass producers (Scanglass, Emmaboda, Drammen and Lahti). The project was abandon in 1974 after Emmaboda was sold to St. Gobain. Spring 1974 meant hard times for Scandinavian window glass manufacturers. The price of the flat glass industry's key fuel, oil had risen 300%. The oil crisis affected also the building and the automobile industries, which were the most important for the flat glass industry. The demand for MGUs increased as can be seen on Table 1. The power of large wholesalers increased and they planned to import float glass. In 1974 Pilkington informed to build a production unit (started in Summer 1976) with a capacity of 220 000 tons a year in Sweden. The flat glass supply in Scandinavia would be twice as large as the demand. Somewhat