

Sustainable production



Sustainability up close

The average amount of recycling glass in new glass packaging is approximately 60 percent.

Plant-wide automation is also highly advantageous in day-to-day production. Although the initial investment is slightly higher, the plant's operating costs are significantly lower over a lifecycle of often up to 25 years. This means greater profitability – especially if the growth potential in the glass market is tapped. Currently, there is a strong demand for special glass that offers specific additional functions through individual manufacturing and processing techniques. An example is variable tint glass, which can change from transparent to opaque as required. This glass can be used as a flexible divide for optimum privacy in office spaces, for example.

In addition to cost efficiency linked with growth, the glass industry is also concerned with energy efficiency. Manufacturers and suppliers are striving for the efficient use of energy to ensure productivity and reduce costs, particularly in the

batch house and hot end. Global competition, rising prices of raw materials and energy, and environmental regulations all make resource-saving approaches unavoidable. This can now be seen in the industry across the globe. At the same time, glass products must continue to be of the highest quality.

Operators can counter rising energy costs with optimized production processes and energy-saving technologies. Similarly, quality is also assured by improved production processes, combined with high-quality raw materials. The process control system Simatic PCS 7 provides the glass industry with an answer for both of these central demands. PCS 7 prevents instabilities in the melting process, for example, and therefore also eliminates the energy losses this causes. Further potential for sustainable operations can be found in preheating the melting charge or using waste heat. The waste heat produced in

the glass production process can be used to generate energy to cover the plant's requirements. A compact steam turbine transforms the waste heat from the melting furnace into electricity. Exchanging outdated and inefficient units can also save energy; speed-controlled motors offer an ideal solution. Sinamics frequency converters, for example, can be used in the glass industry to recover energy and feed it back into the grid as braking energy.

As one of the world's leading suppliers of drive systems, Siemens has an extensive portfolio for increasing energy efficiency. Siemens also provides solutions for all areas of energy distribution: power distribution boards, trunking systems, intelligent solutions for power management, and protection, switching and measuring devices – all from a single source. This area is rounded off by switching technology for low, medium and high voltages. Siemens also offers weighing technol-

ogy, and process instrumentation and analytics for precise measurements of stages in the glass manufacturing process, as well as emissions measurements and integrated communication with the system control.

To ensure operators have a clear overview at all times, Siemens has developed a valuable software tool: Simatic powerrate. It records all energy-related consumption data in a plant, assigns it to the consumer, and also visualizes and saves the data. This is a highly effective way of detecting energy-saving potential. The software standardizes, visualizes and archives mean values for energy quantities and power loads, and reduces energy costs by capping power peaks.

In order to optimize production, system operators must have a thorough understanding and overview of the processes involved. Central data storage from Siemens offers glass manufacturers the transparency they need. For example, they can see how much energy and raw materials the plant consumes, and where exactly these are consumed. From this, they can discover ways to improve efficiency in the plant's operations. Thanks to central data storage, the manufacturer is kept well informed of the precise status of their plant. This is important for ensuring availability – and for uninterrupted operation in the melting furnace, even when it has been operating for well over 15 years. Repairs and preventative maintenance can also be scheduled in plenty of time, and adapted to suit the actual requirements. The Siemens concept also includes a consistent operating and monitoring philosophy, as well as uniform user interfaces throughout the entire plant. This reduces the workload for engineering, commissioning and training.



Siemens not only supports its customers with technological solutions, but also offers specialist expertise. The experience and competence of specialists has become an important factor for success in global competition. After all, it takes a specialist to exploit a plant's full potential for optimization: a specialist knows which modernizations are worthwhile, what to be aware of when it comes to innovations, and where the greatest amount of energy can be saved.

In response to its customers' wide range of needs and requests, Siemens offers an extensive service portfolio throughout the entire lifecycle of a plant: from planning and engineering all the way to the operating phase and modernizations. This includes energy audits, telephone support from Siemens specialists for urgent problems, and assistance for financing new machines and plants. The Siemens spe-



cialists are ready to assist with any requests their customers may have. They provide support for one-off projects, or as part of a service contract, all at projectable costs.

This comprehensive approach to sustainability is rounded off by Siemens' commitment to its role as a partner and specialist for the glass industry. Siemens is dedicated to long-term and trusting cooperation with its partners and customers across the globe: whether for regional modernization plans, or for major international projects involving renowned machine and plant manufacturers from around the world. Siemens has consistently demonstrated this dedication in its role in day-to-day operations in the glass industry for over 150 years. Now in its seventh edition, GlassFocus presents a selection of Siemens' current reference projects and pioneering developments that attest to this dedication.

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Through plant-wide automation, operating costs can be cut by up to 25 percent.