

Press Release

Utilizing waste heat, improving climate balance, reducing cost

Making climate protection tangible, increasing energy efficiency in production, reducing the use of resources, improving the CO2 emissions balance and significantly reducing cost; therefore, glass manufacturers can rely on the waste heat recovery system (WHR) from Grenzebach and CNUD EFCO GFT, one of the few mature and highly efficient technologies in this field already available today.

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Producing glass has always been associated with high energy requirements. The main reason being is the comparatively inefficient glass melting process with a relatively low energy efficiency. A large part of the lost energy is found in the waste gas from the glass melting tanks. This is where WHR plants come into play: They utilize the waste heat to generate electrical energy as well as heating and cooling energy for process and air conditioning purposes. "Our patented heat recovery concept stands out from other technologies, particularly through improved efficiency without neglecting the plant reliability of a flat glass or container glass line," says Dennis Schattauer, Managing Director of GFT GmbH. The WHR solution from Grenzebach and CNUD EFCO GFT contributes in particular to achieving climate targets, resource conservation and cost efficiency, three of the fundamental challenges in the glass industry.

CO2 pricing will increase

With the use of the WHR system the energy efficiency in production increases and the climate balance is improved. The avoidance of CO2 emissions and the reduced purchase of electricity and fossil fuels has a significant effect on cost reduction. "Especially in view of the European Green Deal, companies should act now to sustainably improve their climate balance", emphasizes Dennis Schattauer. The European Union's (EU) Green Deal sets the goal of climate neutrality for all 27 member states by 2050 – in achieving this goal, a significantly higher CO2 price can be expected. The requirements for the energy efficiency of production facilities will continue to increase. Companies in the glass industry will have to make efforts beyond the voluntary commitment to save more [than 20 percent of CO2 emissions by 2030](#).

High energy efficiency and power generation

Based on controlled and proven technology, waste heat recovery plants enable improvements in energy efficiency and the reduction of resource consumption. The solution from Grenzebach and CNUD EFCO GFT stands out from other systems on the market due to its particularly high efficiency for power generation, which can be 35 percent or more. The WHR system uses the available thermal energy in the melting tank exhaust gas to produce steam at pressures up to 90 bar by integrating heat exchanger boiler systems into the exhaust gas flow. The steam is fed to the highly efficient turbine/generator unit to generate electrical energy. "The WHR technology is solid solution we can contribute to the glass industry with combined competencies of Grenzebach and CNUD EFCO GFT. Customers benefit from the fact that we now work with integrated know-how from the hot and cold areas of flat glass lines. A particular focus is on energy efficiency," says Egbert Wenninger, Senior Vice President Business Unit Glass at Grenzebach.

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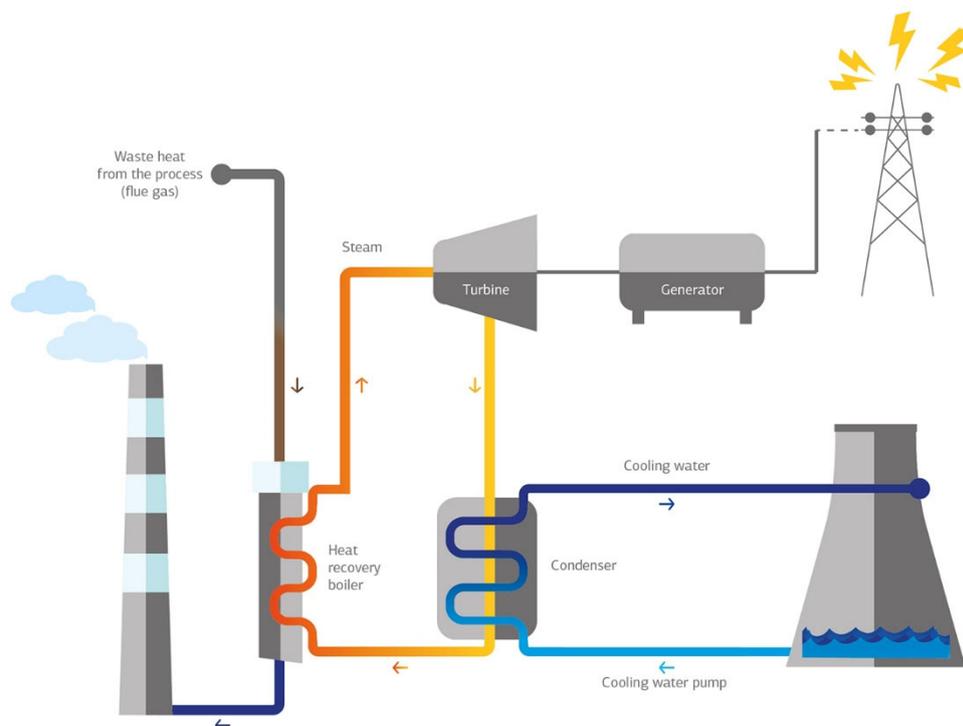
Proven technology from power plant construction

The Grenzebach and CNUD EFCO GFT waste heat recovery systems are exclusively equipped with proven technology from power plant construction. The design is based on many years of experience and proven computer-aided simulation programs. The WHR solutions show a unique performance with guaranteed efficiency, net energy generation and plant availability. Many years of comprehensive knowledge from the construction and operation of glass production plants are also incorporated into many detailed solutions for the optimal integration of the WHR plants. This smart integration of the WHR plants enables an additional reduction of operating costs and a lowering of investment costs for peripheral equipment.

Promoted by governments in many countries

In terms of return on investment (ROI), it must be taken into account that in many countries the installation of WHR plants is government promoted; in the long term, higher electricity and gas prices are to be expected as is an increased use of CO2 certificates. Dennis Schattauer: "In a favorable environment, a corresponding plant pays for itself within three to four years".

The benefits of the system will remain fully intact even if natural gas is substituted by hydrogen as the primary energy input. "Those who operate their production line with hydrogen in the future will maintain the yield of a WHR plant", Schattauer concludes.



Turning waste heat into electricity: The WHR system from Grenzebach and CNUD EFCO GFT operates at the highest level of efficiency.

Source: CNUD EFCO GFT

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Focus on sustainability: The specialists from Grenzebach and CNUD EFCO GFT are working with joined forces on improved waste heat recovery systems for flat glass plants.

Source: CNUD EFCO GFT

Grenzebach is a leading automatization solution provider for the global glass, building material and intralogistics market. In addition, the company develops new application areas, such as friction stir welding, the automatization of industrial additive manufacturing and digital networking. The digitalization platform SERICY allows customers to develop their own future-proof digital know-how. Grenzebach ranks among the international technology leaders in its markets. The global manufacturing footprint with production sites in Germany, Romania, the US and China, as well as additional worldwide locations ensure customer support on-site. More than 3,000 systems installed in more than 55 countries stand for quality and reliability. Since the company opened its doors 60 years ago, it has been owned by the founding family. With an export ratio of more than 90 percent, Grenzebach is a global player.