



BDF saving the environment
while maintaining market
competitiveness

Responding to market demands no longer means just supplying machinery to increase productivity and quality. Today's machinery and equipment manufacturers now need to bear in mind the ever more stringent rules and regulations imposed the world over to reduce emissions and carbon footprints of glassworks. BDF is doing this and in this article the company gives us an idea of how it can assist its customers in reaching their goals.



Glass manufacturing industries from all around the world have to face a series of challenges to maintain their financial gains. Now more than ever the laws are aimed at protecting the environment in terms of emissions, carbon footprint and recycling. The glass industry is already deeply involved in recycling waste for and from the world but has a lack of innovation to enhance its carbon footprint throughout energy saving and energy recovery.

It has also to be considered that not every country is promot-

ing changes in the glass industry with the aim of protecting the environment.

However, things are slowly changing and world's governments are becoming more responsive to this matter by introducing new environmental laws and lowering the emission values in the near future.

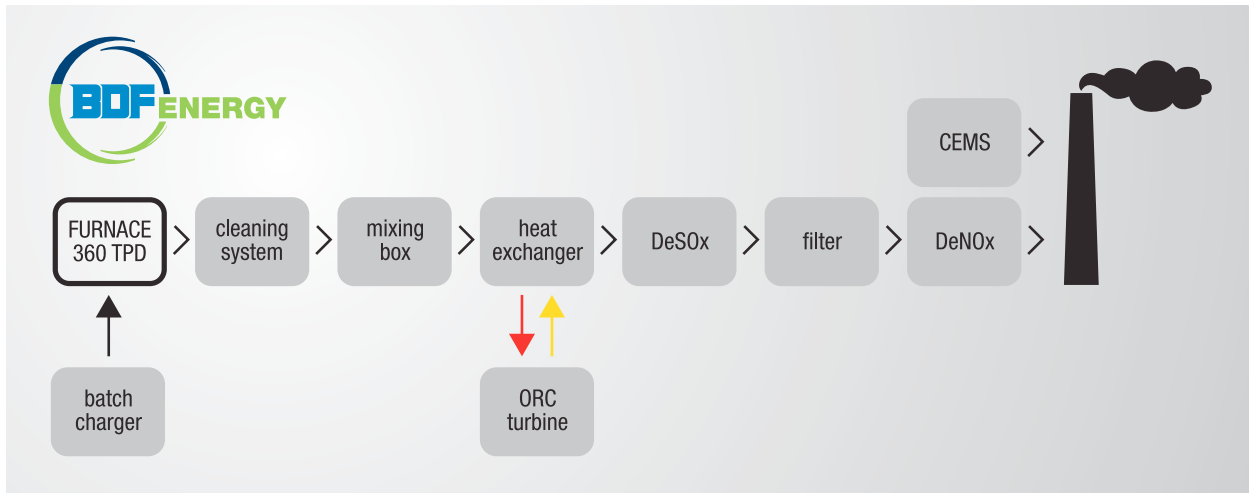
Analyzing these new challenges, BDF's Energy Division has focused its mission on helping glass manufacturing plants to maintain their competitiveness on the market while, at the same time, complying with environmental law-restrictions by means of environmental friendly technologies.

With the introduction of this type of equipment, important environmental targets can be achieved, not only by adding

costs to the plant, as happens, for instance, with simple filtration systems, but also introducing economical advantages.

GLASS MANUFACTURING PLANT EQUIPMENT

Nowadays, because of emission restrictions, especially in Europe and US, almost every plant is obliged to install DeSOx systems, dust filters, DeNOx systems and Emissions Monitoring System. BDF Energy portfolio includes all equipment needed such as hydrated lime injection, ceramic candles/fabric bag filter, Selective Catalytic and Non Catalytic Reduction, and CEMS. All systems can be easily integrated in the plant controls by BDF Automation Division for fast and easy management of all the equipments.



This could be a pure cost or, with BDF solutions, switched to an investment aimed at obtaining a payback and also future revenues. Melting furnace waste gases are full of enthalpy that is still spread into the atmosphere. For instance, the production of electricity is one of the fully tested solutions proposed by BDF. This kind of application enables to obtain financial gains thanks to electricity production while saving because there is no longer the need for heat abatement systems upstream to the filtration units.

A common belief is that energy recovery plants are not so applicable to glass manufacturing industries, because of the nature and the quantity of the dust contained in the waste gasses, which generate serious fouling to the heat exchangers and valves. BDF Energy has, in response, developed an innovative system to protect and keep efficient the sensible parts of the recovery plant with acceptable maintenance costs.

Simple, but useful and innovative systems are installed to remove dust deposits on moving parts such as valves, dampers, and promote the dust deposit in chosen spots. Such results are obtained with tested automatic compressed air cleaning systems that have shown very high cleaning efficiency, mini-

mizing maintenance operations. In addition, appropriate equipment is installed on the waste gases ductworks to increase the dust deposit in precise spots that are easy to clean and to empty. BDF has realized and started up the first complex plants in this sector.

Regarding the furnace itself, many parameters are involved regarding the efficiency of the melting process that can be set to obtain the best energy saving working conditions. It is already known that doghouse and connection with batch charger is one of the thermal weak point of the furnace; BDF batch charger has been studied, designed and produced to be able to save the maximum possible energy by means of the possibility to adjust and control a large set of operations.

BDF 360 TPD REGENERATIVE FURNACES

If we consider a 360 TPD furnace it is possible to quantify and estimate the economical advantages obtained from the insertion of the two above mentioned BDF Products.

Considering an electricity cost of 0.1 EUR/kWh and a CH₄ cost of 0.30 EUR/m³, the total savings will be about EUR 610,000.00 per year. Said amount does not take into consideration all the benefits that the Energy Recovery

plant generates, such as less false air, no need of a heat abatement system, etc.

Additionally, local incentives should be considered, i.e. for a furnace as mentioned above, the present Italian incentives may generate a EUR 100,000.00 per year of white certificates and carbon credits.

Obviously, design and manufacture of these systems are focused on very long lifetimes and electricity production is only one of the many possibility to convert waste gasses.

With considerable experience and deep knowledge on environmental laws, economical incentives, energy benefits, each and every glass plant could not only enhance its carbon footprint, but could also achieve some important economical benefits. ■

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