

FEVE paper addressing the risk of energy shortages in the container glass industry .

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Introduction

The security of energy supply (and in particular natural gas) has recently deteriorated in the EU.

The causes are known: the current Ukrainian crisis, low stocks of natural gas in the EU at the beginning of the winter period, the reduction of domestic production in some EU member states (e.g. the Netherlands), the booming Asian demand after the COVID pandemic..

All these factors combined makes it nowadays not unimaginable to envisage supply shortages, with their deleterious effects on the EU economy.

In this paper, FEVE wants to inform decision-makers about the consequences of an energy cut (in particular disrupted natural gas supply) in the container glass industry and its value chain and. FEVE also calls for a constructive dialogue with decision-makers in the event of a possible disruption of natural gas supply to industrial sectors.

The container glass industry

The container glass industry operates about 300 furnace installations in the EU and provides packaging solutions to several industries. Packaging glass plays a key role in some critical sectors of the EU economy like food & beverage and medical and pharmaceutical supply chains (vaccine vials) and is therefore an essential and critical industry itself.

Glass is an inert and permanent material which effectively protects and does not release substances into the packed product. Once produced it can be recycled endlessly.

Glass is produced in a thermo process in large furnaces where natural gas is burned to reach 1,400°C, temperature at which raw materials (such as recycled glass, sand, and carbonates) melt and react to form a new substance, glass. The container glass furnace is continuously fed with raw materials to produce melted glass. If this thermo process is disrupted for more than few hours then the temperature drops, the melted glass freezes and the furnace installation takes irreversible damage.

The furnaces have typically a surface of 100m², and can contain up to 500 tonnes of melted glass. They are made of refractory materials and are operated without any interruption during 10 to 15 years.

Container glass furnaces cannot be stopped

As mentioned in the above section, a glass furnace needs to be operated **continuously** during 10 to 15 years. Stopping the fire on a glass furnace is a no-go and never occurs in practice as it would mean (i) complete collapse of the refractories materials due to a too rapid thermal contraction, (ii) severe risks for the operating staff due to hot (1,400°C) glass leakages in the factory with risks of fire and explosions (iii) subsequent solidification of the liquid glass inside the furnace (iv) impossibility to re-start the furnace (or, if the decision is taken to re-start a single furnace, it would take at least half a year and cost up to 25m€).

Such catastrophic damage to the furnace would in most cases not be covered by insurance, if it origins from conscious decision to disrupt the supply of natural gas. In consequence of such potential event, glass furnaces are at material risk of not being rebuilt. The cascade effect to the food, beverage, pharma and medical industry would directly result in incapability of filling in container glass.

Due to developments in environmental legislation, the European glass furnaces have over the past 30 years transformed in their use of energy carriers from heavy fuel oil to natural gas. Glass factories do generally not have alternative fuels stored as backup, nor would an instant process change be feasible. Hence, the container glass industry is dependant on continued supply with natural gas.

Call to decision-makers to work with the container glass industry in case of energy cuts

As glass furnaces cannot be stopped, a cut in their energy supply would be catastrophic. Glass makers can reduce production to some extent but they need to be supplied with a minimum amount of energy in order to remain hot (“hot hold”) and avoid a furnace collapse, which would be

detrimental to the glass industry but also its entire value chain (supply of food, drink, pharmaceutical and medical products would be severely disrupted, and the waste industry would no longer be able to supply their cullet to the glass manufacturers).

Depending upon the furnace size and technology, the refractory materials and other parameters, a hot hold still requires between 30% to 75% of the normal natural gas supply. A hot hold can be managed over a few weeks time, before a gradual cool down of the furnace , which would cause damage and require significant repairs.

The availability of refractories and capacity of furnace construction companies to repair furnace installations is very limited across Europe. Materials and labour allow only to restore about 10 furnaces at the same time and about 30 on an annual basis. Therefore, in case of substantial damage to the European container glass furnaces, a full recovery would take several years . This would amplify the abovementioned cascade effects in disrupted supply of the European food, drink, pharmaceutical and medical industry with container glass (bottles, jars, flacons and vials).

FEVE therefore calls on decision-makers to closely consult their container glass manufacturers in case of potential energy shortages which could lead to natural gas cuts to some industrial sectors.

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FEVE is the Federation of European manufacturers of glass containers. It is listed in the EU Transparency Register with number 1550133398-72.

Founded in 1977 and headquartered in Brussels, FEVE is an international not-for-profit association. Its members produce over 20 million tonnes of glass per year. The association has some 60 corporate members belonging to approximately 20 independent corporate groups. 160 manufacturing plants are located across 23 European States and include global blue chip and major companies working for the world's biggest consumer brands.

The European container glass industry provides a wide range of glass packaging products for food and beverages as well flacons for perfumery, cosmetics and pharmacy to their European and world customers. With its 160 manufacturing plants distributed all over Europe, it is an important contributor to Europe's real economy and provides employment to about 50,000 people, while creating a large number of job opportunities along the total supply chain.