

JV Glass Container Company JSC (GCC)



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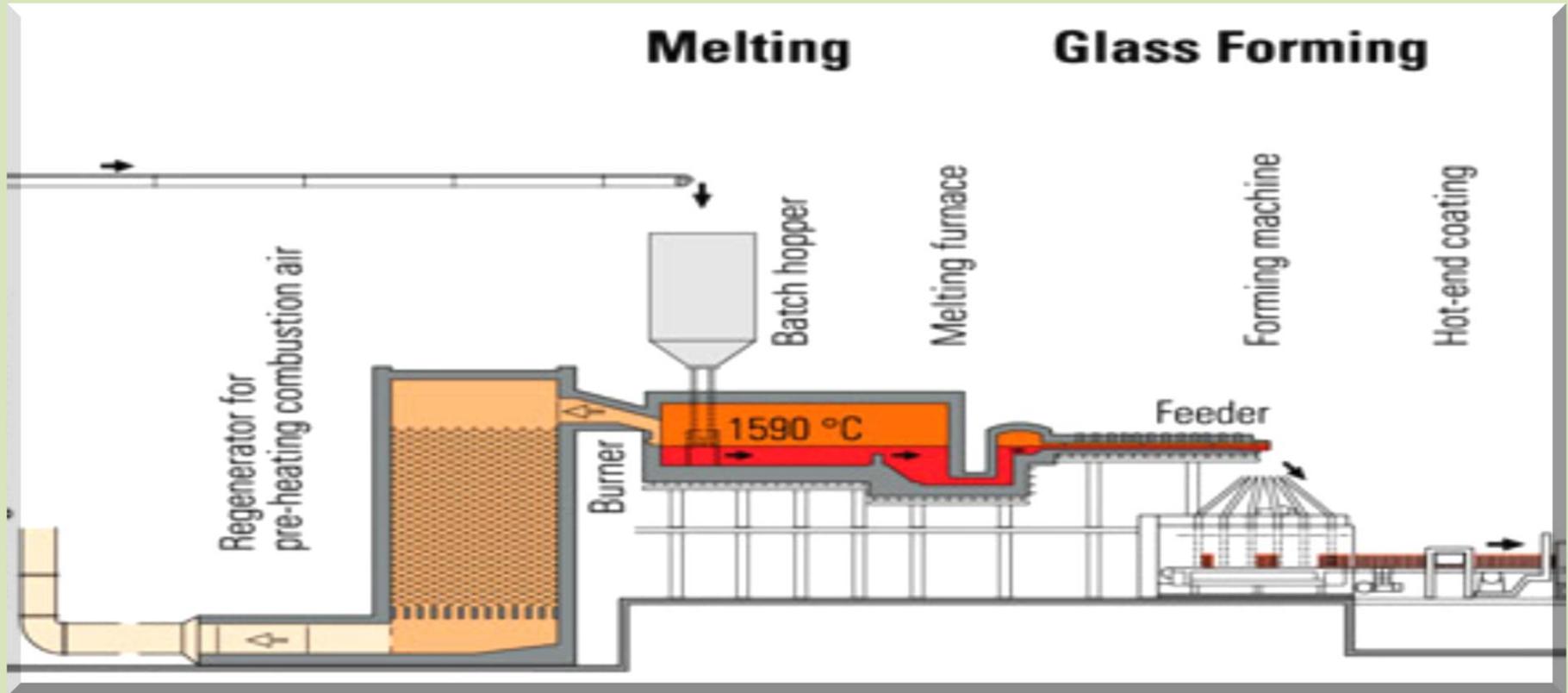


- GCC - **EBRD financed project** of a glass factory in the Republic of Moldova started its operations in **1997**.
- **Moldova is a wine production country.** A modern glass manufacturing facility was constructed to enable exports to the European markets
- The Company has one furnace and two 8 section Double Gob (DG) production lines with **a total capacity of 50 thousand tones** (or approx. 100 mln units) per annum.
- **The main source of energy** used for the production of glass is natural gas and the company is using approx. 12 mio cubic meters of natural gas per annum.



GCC Production Process

The glass melting and manufacturing equipment consists mainly of the Fire End Furnace and two 8 section 5 ½" DG I.S. Machines. GCC furnace had capital repairs in 2004 and in 2012.



Phase I - project of 13.9 mln EURO includes investment in new furnace and two modern IS glass manufacturing machines (10 section instead of 8 section, as now).

Phase II – planned investment into installation of an additional 3rd production line to the existing Furnace.

New technologies to implement



will expand the range of the products offered to our customers and will reduce consumption of energy resources per unit produced:

Electric boosting of the furnace

will increase by 15-20% the extraction of the furnace for production runs, without having to maintain a large furnace during normal operations and utilize Furnace possibilities on the max.

Equipment for single & triple gob production

TG -expand the range of small capacity units, that will be produced at higher speeds, will increase Furnace extraction and will reduce unit production cost / SG - increase the range with 3-5 liter bottles and jars

E-MOC

mould cooling - achieve the proper temp profile for each process (NNPB, PB, BB) and more efficient concept of air delivery - 40% less air to cool moulds

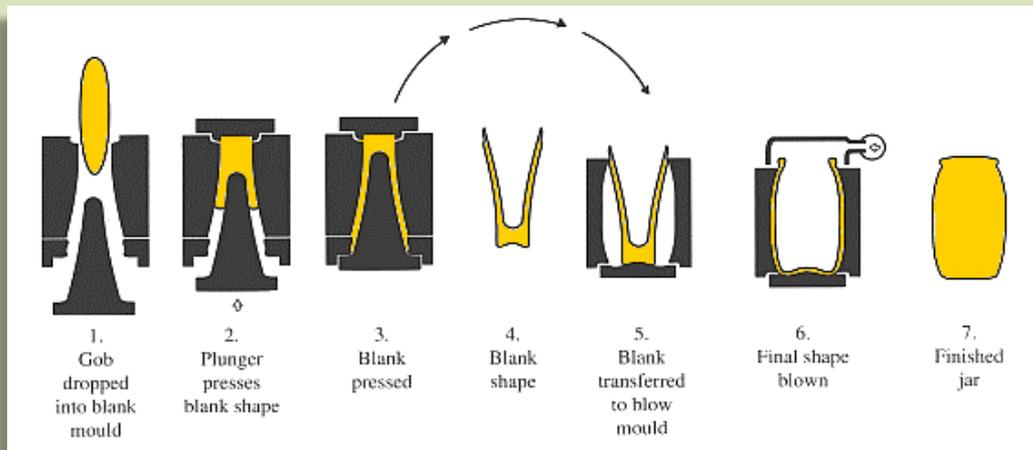
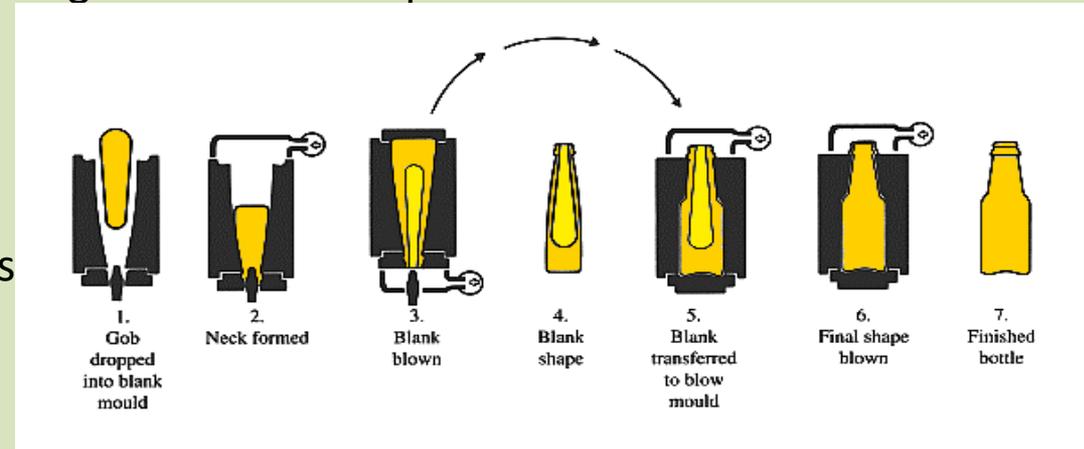
Servo Feeder with servo plunger mechanism

improved safety, allowing you to monitor in real time alighting of all moving parts and several articles with different weight can produce at the same time (small lots).

Glass container production technologies

In the past there were mostly two technologies used for the production of containers:

- **Blow and Blow (BB)** technology, used in the past mainly for production of narrow glass containers (bottles) – but for production of modern containers it is slow and the glass distribution is not even.



And **Press and Blow (PB)**, where a special plunger inserted in the centre partially distributed the glass before is in blown with air at the second stage. But this was used mainly for large neck articles (mainly jars).

LATER A NEW TECHNOLOGY, COMBINING BOTH ADVANTAGES OF THE ABOVE-MENTIONED STARTED TO BE USED – NARROW NECK PRESS AND BLOW (NNPB)

FINTECC sponsors NNPB technology

ADVANTECH identified several areas where the Company should improve energetic consumption and the first to implements was chosen **the Narrow Neck Press and Blow (or NNPB Technology)** - to be sponsored from the FINTECC resources is :

- This technology enables a much better and uniform distribution of glass for the entire surface of the bottle. The width of the walls of the bottle produced could be much thinner

=> the weight of each item produced on NNPB could be decreased by 20-30%: 50k tones or 12 mio cubic meters of gas p.a. can materialise in 115-130 mln units instead of current 100 mio finished goods p.a.

- There are additional advantages, including less weight of the finished goods to be transported (more units could be transported in one truck/container), etc.
- **GCC could save up to 9.0 - 9.5%** of the energetic resources (mainly natural gas) during the implementation of the Phase I, and a total up to 15% after the Phase II is implemented.



Increased competitiveness & coverage

By newly implemented technology GCC is becoming more competitive:



increase its presence on new markets (increasing sales range of approx 700-1000 km)



adopt new markets niches (milk bottles, water, beers, large bulk containers, juice, etc.) plus 30% to the actual client base



fortify its position on domestic market, fight direct and indirect competition (mostly plastic packaging) more efficiently



reduce the energy consumption and CO2 emissions for each produced unit



GCC project



Using the opportunity, I would like to say special thanks to:

- the entire EBRD team that is working on GCC project,
- to the ADVANTECH company which made a great research of energetic efficiency of the Company, identified the problematic areas and proposed real, implementable solutions,
- to FINTECC for their decision in participation and assisting the Company in implementing smart energy solutions that go in parallel with economic advantages,
- to all of you which are present today in this and do care about the environment and about the future our planet

THANK YOU



G L A S S
C O N T A I N E R
C O M P A N Y