

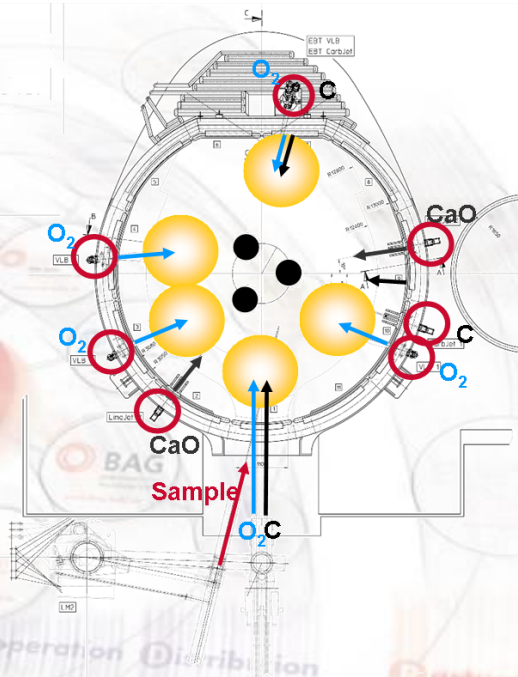
Huge reduction of power-on time and electric consumption

Successful Installation of BSE Chemical Energy Technology at Huta Częstochowa (Poland)

In 2005 ISD Częstochowa Steelworks Ltd / Poland and Badische Stahl-Engineering GmbH (BSE) signed a contract for the supply of a BSE Chemical Energy System. At the meltshop in the province Śląskie Voivodship Huta Częstochowa runs an EAF (100 tons, AC), which was equipped with two movable water-cooled lances from the sidewall and six burners.

BSE CONCEPT:

- 4 Gas-VLB; 3 VLB mounted in side wall, 1 mounted in EBT area
- 2 CarbJet in side wall and EBT area
- 2 LimeJet in side wall
- Lance Manipulator LM.2 (with temperature and sample taking unit)
- Valve racks for VLB's (Gas & Oxygen)
- Automation & Control System
- Lime / Carbon Dispensing Device (by BSE partner Stein)
- Electrode Regulation System (by BSE partner Spie)



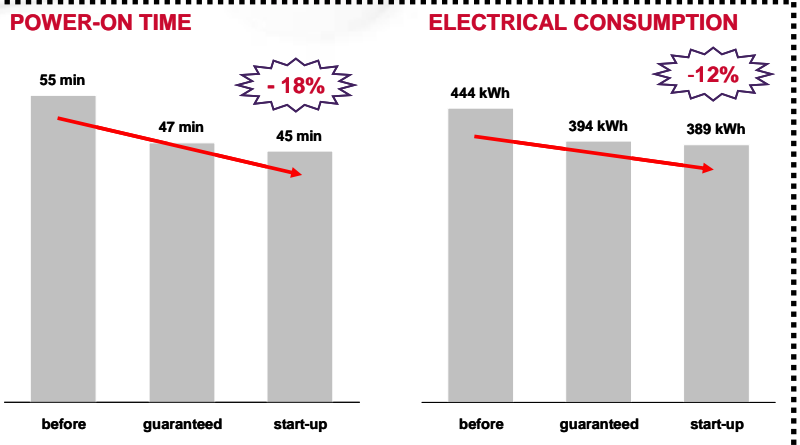
RESULTS/BENEFITS

The new system was successfully set into operation in December 2006 – followed by process optimizations in January and February 2007 – and effectuated a reduction of electrical consumption by 12% and a reduction of power-on time by 18%



Different flame modes of the Virtual Lance Burner – due to advanced flow regulation from the valve rack – give best functionality during the entire process:

- **Burner** - in the first phase of the scrap melting provides heating of the electrical cold spots for a more homogenous meltdown in the EAF.
- **Burner + Lancing** - initiates the refining phase but simultaneously melts the scrap in the lower parts of the furnace.
- **Lancing** - in the refining phase decreases the electrical energy consumption by increasing the chemical energy input as well as providing decarburisation
- **Small Flame** - prevents clogging during charging, tapping and other idle phases.



Contact:
 e-mail peter.vandervelden@bse-kehl.de
 Phone ++49-7851-877-140