

## COKE OVEN GAS INJECTION INTO BLAST FURNACE

What keeps you from saving  
17 kg of Coke right now?



### Lower your OPEX while reducing your CO<sub>2</sub> footprint!

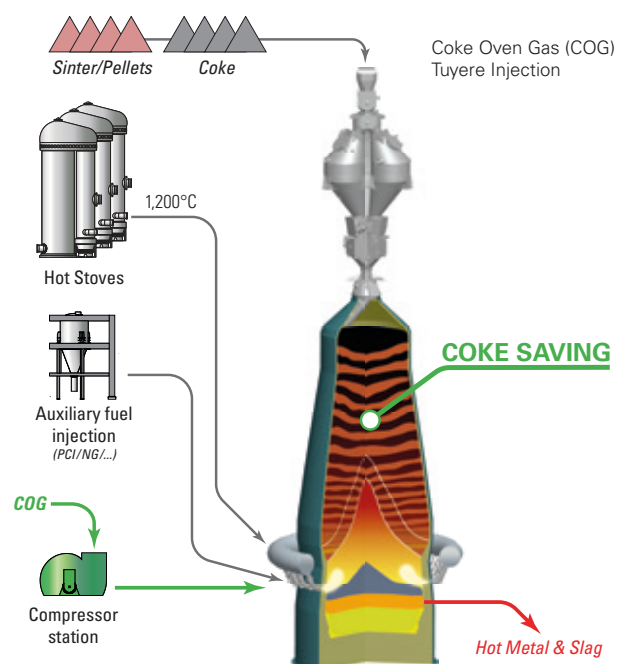
Up to now, you might use your Coke Oven Gas (COG) for the generation of heat and/or electricity, with the associated problem of NO<sub>x</sub> emissions through firing.

Composed of the reducing gases H<sub>2</sub>, CH<sub>4</sub> and CO and thanks to its high calorific value of 16÷18 MJ/m<sup>3</sup>, COG can substitute considerable amount of coke in your blast furnace operation.

Depending on injection rate, CO<sub>2</sub> emission reductions of up to 6% can be achieved in your integrated steel plant.

### Benefits of coke oven gas injection:

- Savings on operational costs due to:
  - Coke savings in BF
  - Reduced CO<sub>2</sub> emissions at BF and auxiliary plants
- Optimised combustion of the injected pulverised coal
- Reduced energy consumption of your integrated steel plant by maximising the metallurgical utilisation of off-gases
- Low CAPEX solution; easy to retrofit
- Financially supported (country-specific provisions)



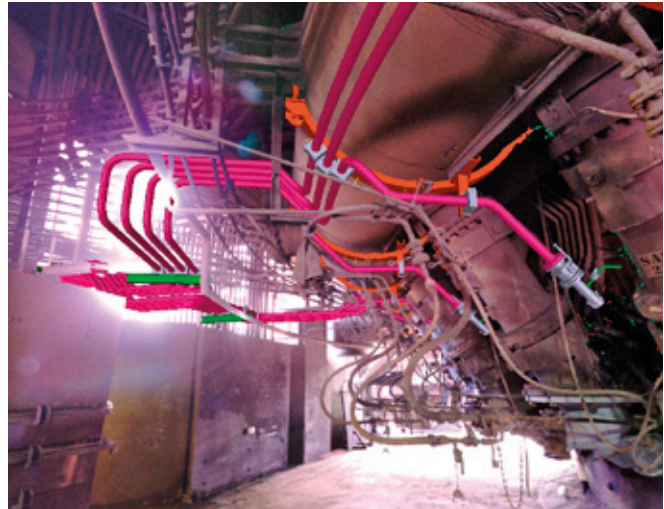
COG injection in the tuyeres of the blast furnace.



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### Our tailor-made services for your COG injection project...

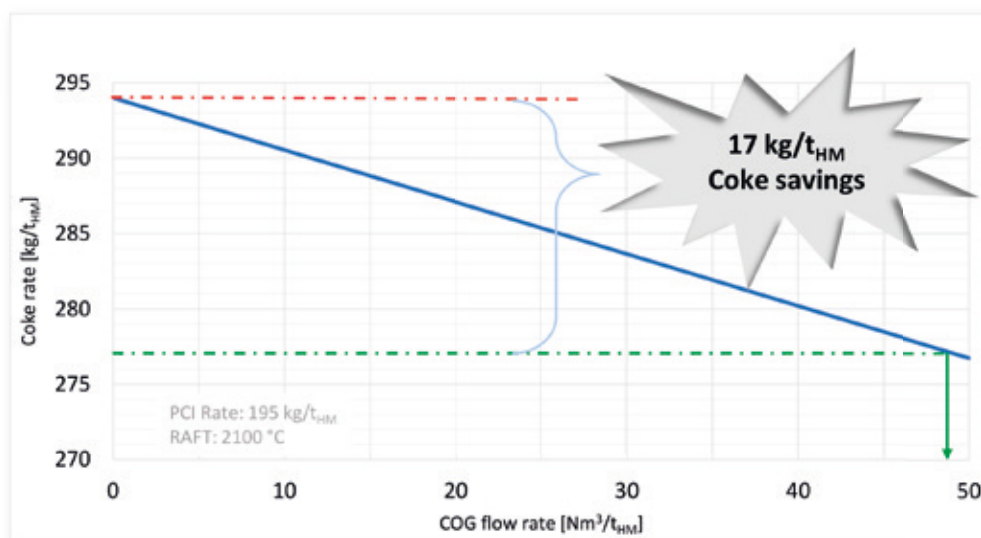
- Analysis on COG quality, cleanliness, composition and pressure
- Re-evaluation of your BF operation by considering the use of COG. Focus is put on coke rate reduction, permeability, additional oxygen demand and raceway conditions
- Conditioning and transport of COG for blast furnace usage
- Collision-free integration of COG injection systems near the blast furnace and at the tuyere platform with aid of 3D Laser scan technology
- Lance & blowpipe design. Example: CFD modelling for optimising the combustion
- Short installation times, while taking greatest care on health and safety
- Technological assistance during start-up and operation
- Training: technical, process, production



Visualization of pipe routings; based on 3D-Laser Scan technology

### ... and beyond

- Recommendations for potential CO<sub>2</sub> emission reductions by assessing the carbon energy balance of your installed technology
- Analysis on the metallurgical reutilisation of the off-gases in your BF operation



Example for coke savings at a medium size BF. Coke replacement ratio is about 0.69 kg/kg.