GREEN EAF (Sustainable EAF steel production)

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Coordinator:	Ferriere Nord S.p.A.
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The main objective of GREEN EAF was the partial or total replacement of hard coal and natural gases in the electric furnace cycle by charcoal and biogas obtained from pyrolysis of biomasses (forest and agricultural waste).

The study on biomasses to use for combustion in the EAF had already started with the BIOSTEEL project (2007-2008).

For all possible uses of charcoal (powder or suitable charcoal pellets), the following aspects were investigated: triggering of pyrolysis, mechanics, possible briquetting, transport to the EAF, etc.

Biogas is used in furnace burners. The multiple advantages expected from this replacement can be attributed to the new source of energy (reduction of CO_2 emissions and, consequently, lower charges for emission trading allowances) and promotion of the concept of renewable energy (reuse of agricultural waste that otherwise would not be valorised; design of a manufacturing process and use of charcoal in the steel industry that could also be applied to other sectors or fields with similar characteristics).

It is also worthy to be mentioned that this project promoted the concept of local sources for the production of biomass-based fuels, which could entail benefits in terms of employment.

Currently, a new European research project, GREEN EAF 2, is studying the use of biomasses for combustion in electric furnaces and is extensively analysing some practical issues emerged from previous research activities.

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