

# Energy savings at steel mill



## ABB identifies €10 Million annual energy savings at steel mill through an Industrial Energy Efficiency programme.

ArcelorMittal's integrated steel mill in the south of France has the capacity to produce up to 5 Million tonnes of steel per year, with over 4000 employees based at site.

The Fos-sur-Mer site is part of ArcelorMittal's flat carbon Europe organisation, producing black coil, pickled and oiled coil sheet, cut to length sheet and slit coils.

The vast site is a fully integrated steel mill, with quay facilities, sintering plant, coke oven plant, two blast furnaces, two basic oxygen converters, two continuous casters, in ladle vacuum degassing, hot strip mill and multiple finishing lines.

ArcelorMittal had already made significant investment in energy efficient core process technologies and on-site waste gas integration.

To compliment the successfully energy efficiency initiatives, ArcelorMittal challenged ABB to identify and develop energy efficiency opportunities within the site equipment with motors and drives.

### Benefits

- 53 Individual energy saving opportunities identified
- Estimated electrical savings €2.5M to €4.3M/year
- Additional gas savings of up to €6M per year
- 3 zero capital investment opportunities agreed for immediate implementation with energy savings of €120K/year, payback <1year
- 4 Project specifications developed to implementation with energy savings of €1.9M/year, average payback 1 year



“We are very pleased with the results as ABB have defined very clearly where energy can be saved and how to achieve it. The work is really appreciated. It is better than just an audit”

- Jeroen van Lishout, Energy Manager, Europe

“I was impressed by ABB's work at Fos-sur-Mer and will be happy to have further discussions regarding a broader scope”

- Ian Shaw, Energy Manager, North America

## Solution

ABB delivered an Industrial Energy Efficiency (IEE) programme tailored to ArcelorMittal's requirements, identifying, confirming, and developing a portfolio of energy saving projects for implementation.

The IEE programme consisted of ABB well-established primary and secondary phases:

- Opportunity Identification study
- Master Plan development:
- Implementation of quick win projects
- Prioritisation of the project portfolio
- Development of top tier project specifications

The IEE programme focused on electrical energy savings within key site areas:

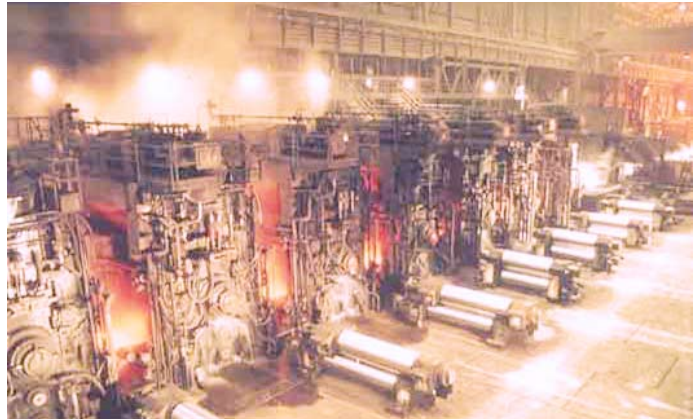
- BOF steelmaking plant
- Blast furnaces
- Cowper stoves
- Power plant
- Sintering plant
- Hot rolling mill
- De-dusting systems
- Compressed air systems

A total of 53 energy saving opportunities were identified across an range of site operations, with a range of solution requirements ranging from low investment quick wins to larger capital investment type projects.

The IEE project portfolio included:

- MV variable speed drive opportunities
- LV variable speed drive opportunities
- Process control changes to optimise energy consumption
- Cooling tower optimal operation - for pressure and temperature
- Power plant boiler air-to-fuel ratio optimisation
- Equipment selection for reduced energy consumption
- Evaluation of existing process parameters to optimise energy consumption

For further information on IEE, please contact your local ABB representative.



“For once – we have completed a successful energy assessment on electricity opportunities in ArcelorMittal”

- Jeroen van Lishout, Energy Manager, Europe