



Khouzestan Steel Company at Ahwas / Iran

Production and Environmental Master Plan of the Steel Making Plant

Customer: KHOUZESTAN STEEL COMPANY (KSC) / AHWAS, IRAN

**Plant Data and
Equipment relevant for
the Investigations:**

Plant production capacity 3.7 Mt/y (2017)

- Scrap Yard
- Material Handling System for DRI, Alloys and Additives
- 6 x EAF 171t tap weight with 120 MVA transformer charged by CDRI (92%) and scrap (8%)
- 4 x LF 171t with 26/28 MVA transformer
- 1 x VOD system 150t
- 5 x Fume Treatment Plants
- 2 x Billet Caster
- 1 x Bloom Caster
- 2 x Slab Caster
- Air Compressor Station for the Meltshop
- EOT Cranes & Logistic
- Semi-finished product storage yard
- Auxiliary systems of the Steel Making Plant (networks of oxygen, nitrogen, natural gas and material translation systems, injection systems, water treatment system)

Objective / Challenge: HWC performed a study for KSC with the title “Production and Environmental Master Plan of the Steel Making Plant” for the efficiency improvement and production increase from 3.7 to 5 miot/y semi-finished products with the goal to ensure long term sustainable market leadership by highest competitiveness. The investigation was related to the steelmaking area including auxiliary facilities

The study was divided into 3 Steps:

1. Efficiency Improvement
Improvement of the operational efficiency of the existing plants
2. Modernization and Upgrade
Optimization of the existing plant by revamps and modifications with short pay back period
3. Production Expansion
Upgrade of the total capacity with major upgrades and new plants to the maximum capacity

Project Description: Tasks of the assessments and services:

- Providing questionnaires for the relevant specific areas
- On-Site survey by HWC’s senior specialists of the individual technology equipment’s, to observe the operational conditions and to clarify relevant items of the questionnaires

Development of a detailed report consisting of:

- Introduction
 - Objectives of Study
 - Future Productivity and Product Mix from Client
 - Tasks
- Information and Data received from Client
- Analysis & Assessment of the existing Plant by HWC
 - Layout
 - Process Flow
 - Raw Materials
 - Product Mix
 - Production Time Analysis
 - Plant Performance and Operation
 - Utilities

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- Electric & Automation
- Environmental Aspects and Emissions
- Interfaces to Up- & Down Stream Plants
- Safety
- Bottleneck's
- Benchmark with "Best Practice" Plants by HWC
 - Productivity
 - Consumption Figures
- Recommendation of Measures by HWC
 - Layout
 - Process Equipment
 - Basic Design Data
 - Productivity
 - Consumption Figures
 - Utilities
 - Electric & Automation
 - Environmental Impact of Recommendation
 - Operation
- Investment and Budget Estimation by HWC
- Project Implementation Schedule of Measures by HWC
 - Overall Time Schedule
 - Production Ramp-Up (estimated)
- Management summary report

Customer Benefit: The comprehensive study revealed that only a major restructuring of the steelmaking area has the potential

- to achieve the production target of min. 5.0 miot/y
- and to achieve sustainable cost and quality leadership
- to secure the long term success of the company

Only by efficiency improvements, modernizations and upgrade measures, which have been investigated in detail, the targets of the Customer can not be fulfilled.

Two remaining alternatives have been presented as a basis for a proper top management decision for the future development of the plant.