FUJI ELECTRIC CO., JAPAN

ENERGY MANAGEMENT CENTRE PROJECT

SAIL ISP BURNPUR

Objective: To Cut Energy Costs and CO_2 Emissions at Indian Steel Plants with Japan's Advanced Energy Center Technology

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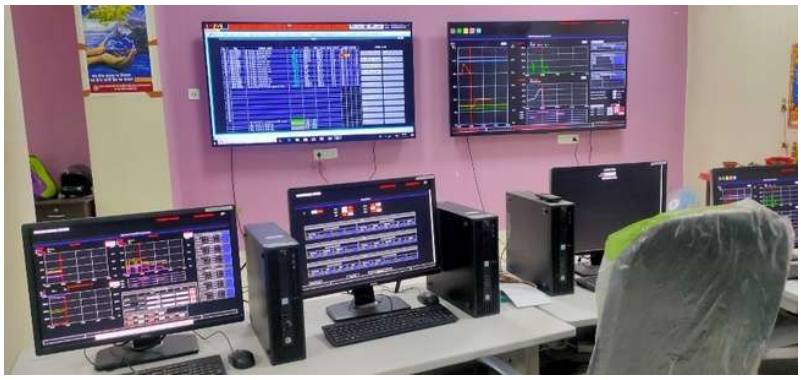
1. Our Achievement in India

SAIL ISP Burnpur Integrated Steel Plant Project

We participated in an Energy Management Center implementation project at ISP Burnpur, a newly built integrated steel plant of SAIL, India's third-largest steel producer (approx. 13 million tons of crude steel in 2021).

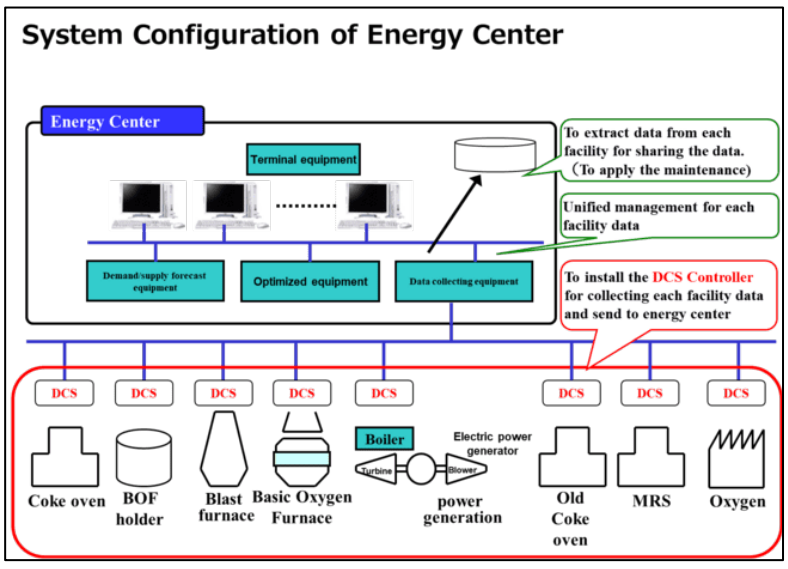
In this project, we applied state-of-the-art Energy Management Center technology developed in the Japanese steel industry to an Indian steel plant. We visualized plant-wide energy use and demonstrated optimal control of energy supply and demand across the entire works.



2. Project Overview

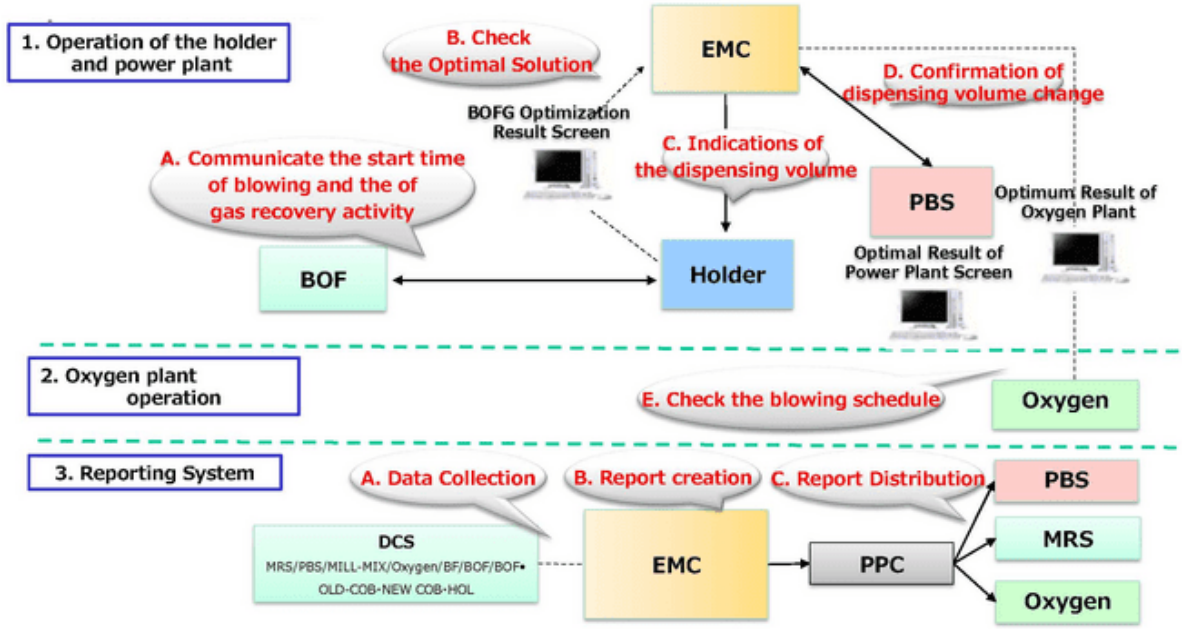
- Period: FY2016–FY2021
- Project Scheme: Ministry of Steel (India) / SAIL ISP Burnpur – NEDO – Fuji Electric Co., Ltd. / Pacific Consultants Co., Ltd. / Biz-Tech Consultants Pvt. Ltd.
- Site: SAIL ISP Burnpur integrated steel plant
  (from ironmaking to steelmaking, with blast furnaces, converters, gas holders and in-plant power generation)
- NEDO Project Title:
  "The demonstration Project for Optimal Control Technology of Energy Center for Steel Plants in India under the International Demonstration Project for Energy Consumption Efficiency Improvement Technology and Systems"

- Main Targets:
  - Power generation facilities
  - Oxygen production facilities
  - Gas holder facilities
  - Plant-wide optimization of crude steel production and energy use
  - Visualization of energy-saving potential linked with production planning



- Our Role:

  Support for Energy Center introduction and optimal operation technology,
  support for data collection and visualization platform,
  and proposals for operational improvements.



3. Proven Results

1) Energy Saving and CO_2 Reduction

- Primary energy reduction: 1,230 TJ/year
  (reduction rate: 13.2%, target: 10.6%)
- GHG emissions reduction: 89,306 t-CO_2/year
  (reduction rate: 13.2%, target: 10.6%)
- Cost reduction: approx. JPY 251 million per year
  (approx. USD 1.6 million per year)

2) ISO 14404-Based Performance Improvement

Based on ISO 14404, the international standard for calculating CO_2 intensity of steelworks developed mainly by Japan, the following improvements were achieved for the entire SAIL ISP Burnpur plant:

- Primary energy consumption per unit of crude steel:
  32.6 → 28.9 GJ/t-crude steel (approx. 11.1% reduction)
- GHG emissions per unit of crude steel:
  2.84 → 2.59 t-CO_2/t-crude steel (approx. 8.7% reduction)
- Total primary energy consumption:
  81,417,005 → 72,368,712 TJ/year
  (reduction of approx. 9,048,293 TJ/year)
- Total GHG emissions:
  7,102,808 → 6,484,681 t-CO_2/year
  (reduction of approx. 618,127 t-CO_2/year)

✧ *The above figures are based on NEDO's published demonstration results.*

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4. Why This Matters for Indian Steel Plants

- Actual operating data proved that even in Indian integrated steel plants, Japanese Energy Center technology can deliver double-digit reductions in energy use and CO_2 emissions.
- By collecting plant data such as power, gas and steam in real time and time series through data collection devices, the energy situation of the entire works can be visualized, enabling both shop-floor personnel and management to clearly understand and monitor improvement effects.

- Evaluation in accordance with ISO 14404 allows you to explain energy efficiency and CO_2 reduction effects in an internationally accepted format, which can be used for ESG assessments and communication with investors.
- These results show that similar or higher savings can be targeted at other integrated steel plants in India by deploying an Energy Center approach tailored to each site.

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5. Services / What We Offer

- Concept development support for Energy Center implementation at integrated steel plants, based on our experience at SAIL ISP Burnpur.
- Support for building optimal energy supply–demand operation models
- Support for data collection and visualization platforms from DCS and various plant units
- Analysis of energy-saving and CO_2 reduction potential and proposal of improvement scenarios
- Joint project planning for Indian steel plants and engineering companies

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6. Contact

For inquiries about applying similar Energy Center solutions to your steel plant in India, please contact us.

- Biz-Tech Consultants Pvt. Ltd.
  https://www.biztech.in/industries/steel

For Reference

- Fuji Electric Co., Ltd.（Japan）
  https://www.fujielectric.com/products/energy_management/steel_ems_solution/index.html