



RheinBrücke Power Plant Analytics

Here's how RheinBrücke helped a thermal power plant to scale up their operational efficiencies leveraging predictive analytics

A RIC CASE STUDY

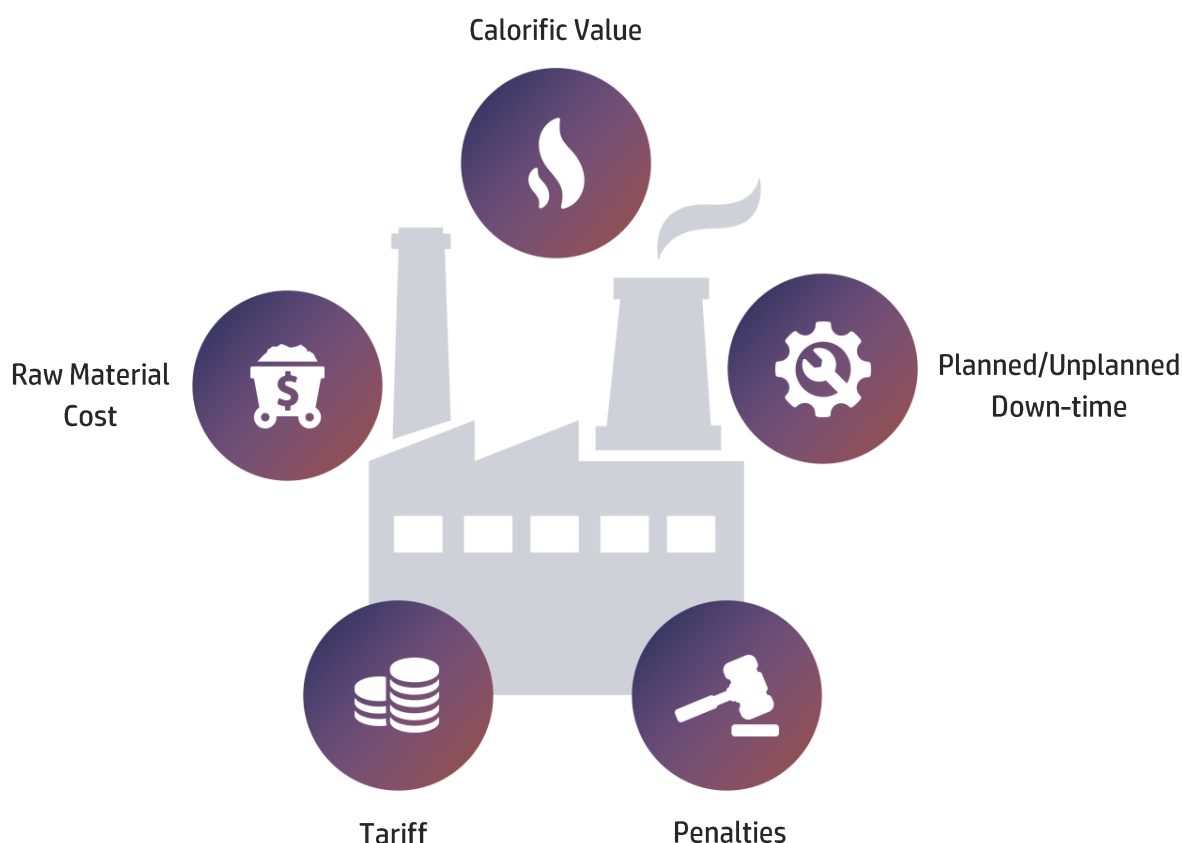


Client

TPCIL & Sembcorp Gayatri Power Projects Ltd are subsidiaries of Sembcorp Industries. As a leading energy, water and marine group operating across six continents worldwide, the company has an established energy portfolio. The company is out of Hyderabad, India, majority owned by Singapore's Sembcorp and has two 1320 MW coal fired thermal power plants with direct linkage to the port for coal import.

Business Challenges

There is a significant impact of multiple factors such as raw material cost and calorific value, operational factors like planned and unplanned down-time, commercial factors such as tariffs and penalties on the long term success of a power plant. Managing all these variables and predicting the outcomes without Business Intelligence and Decision Support systems in place was becoming a major challenge.



Any unexpected change in any one (or more) of the above factors creates substantial disruption and economic loss not only to the company but also to the stakeholders who depend on the continuous source of power.

To prevent this, the company has to make the most of the data available that gives them the chance to prevent such abnormalities. Also, managing a torrent of data coming from multiple control systems and remote sources manually became an impossible task. Real time access to mission critical data would make a huge difference in the speed at which critical decisions can be made.

The company relies on valuable and accurate data in the form of reports and dashboards in order to take right decisions that enhances their operational efficiencies, optimizes costs and add new capacities.

Salient features And functionalities

RheinBrücke's Power analytics solution aggregates multiple data sources such as ERP, ABT meter data and commercial inputs and provides key business users and statutory bodies with a holistic business view that helps them with day-to-day decision making and enables them to ascertain Profit or loss for a particular time frame be it a day, week, month and a year. Our solution covers a wide range of reports and analysis like performance dashboard, daily report, monthly report, capacity master, daily inputs, power consumption data, stock data, financial cost summary, PPA master, PPA tariffs, revenue configuration, corridor booking, PPA scheduling and etc.



The solution integrates SAP, Historian and various meters in the power plant



The solution provides business users with a real time look of the data



The solution leverages IoT enabled real-time analytics and predictive analytics that provides useful metrics for decision making based on 'what-if' analysis and create alerts to stakeholders for the same



Business users can easily track and analyze key performance metrics at deeper levels of granularity than before as all critical plant metrics are on one dashboard



Self-service – Business users query and analyze the data themselves instead of having to ask the IT for reports through our change management practices



Information is delivered to users based on their preferences either through dashboards, Portals, E-mail and mobile



Historical trend analysis is made available to the business users.



RheinBrücke's total solution included UI / UX, App re-design, enhancements & app maintenance



Technologies used for the solution are SharePoint online, ASP.NET, HTML5, MS SQL and bootstrap framework

Solution Advantage

RheinBrücke's Power analytics BI solution transformed the data inhabited in multiple sources like excel sheets, Historian, data from SAP etc. into actionable insights and analytics.

The company is able to dig out hidden opportunities that can help them to optimize their business by getting a 360-degree view of their plant's performance.



The solution aggregates vast amounts of data



The solution provides analytical capabilities based on historic data



Information is organized in business centric views for the end users



Provides tracking, reporting and analysis of the key performance indicators at all the levels of the company that increased fact-based decision-making



Reduces operational cost using analytics by identifying critical parameters that could impact operations or commercials

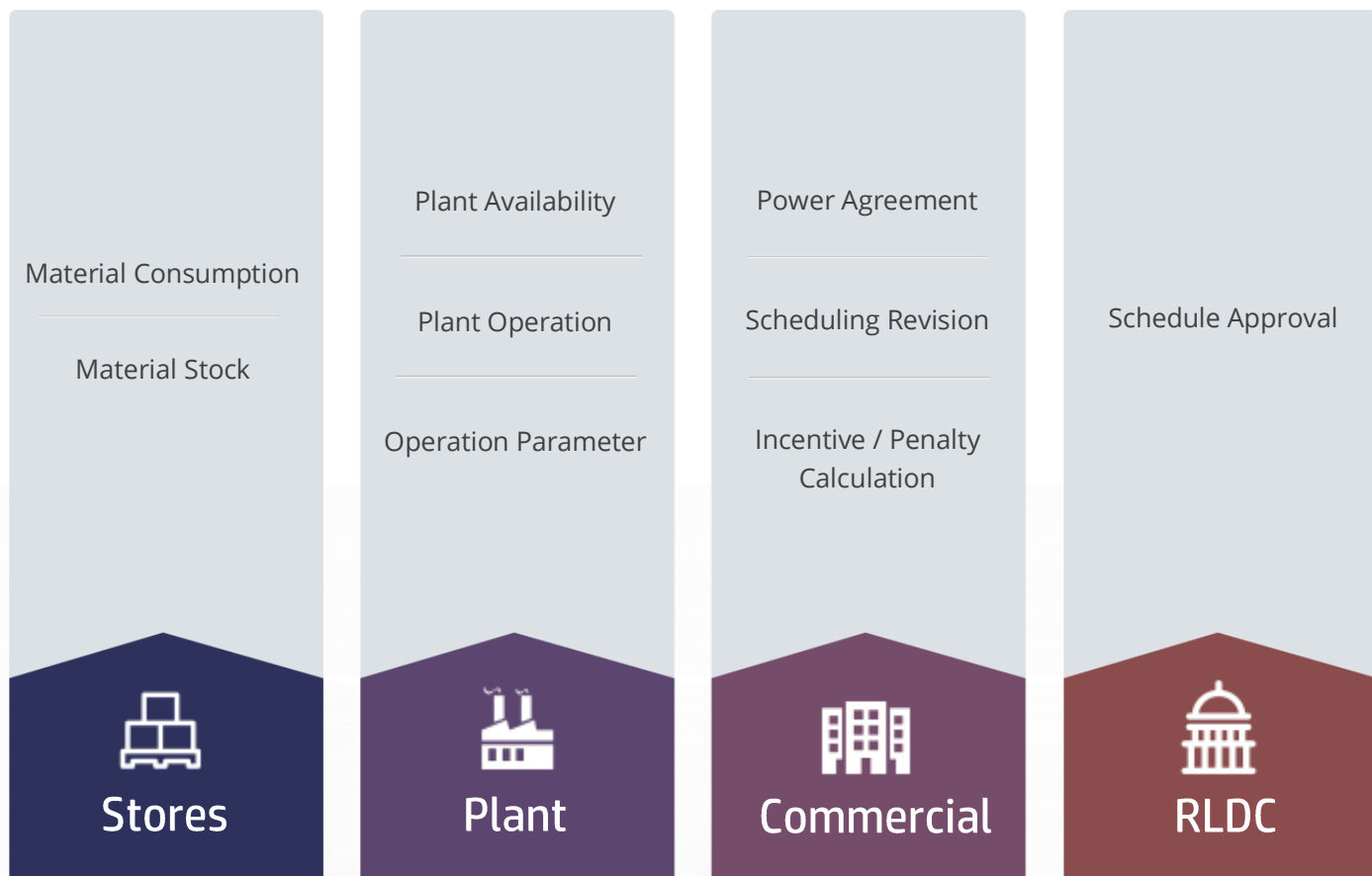


Provides useful metrics for decision making is based on 'what-if' analysis of good and bad scenarios and alerts the stakeholders are for the same



Improves operations by providing early warning detection of equipment issues or maintenance issues before they lead to failure through alerts

Stakeholder Overview



Potential Impact

How the solution helps key decision makers?



CCO/CFO

Power plant solution provides decision making inputs to the CCO (Chief Commercial Officer) and the CFO not only historical trends & reports but also gives them the capability to do What-If analysis and profits/loss based on power purchase agreement tariffs and penalties, plant operational metrics and coal usage & calorific values etc. Additionally, scenarios such as partial plant outage, coal shipment delays can be simulated to evaluate the impact on commercial and operational effectiveness.

Field Officers

Power plant BI solutions allow the field officers to act based on real time data using smartphones with a hybrid application which includes alerts and notifications about the power plant status. This provides timely input to the line of business applications and allows the field officers to perform day to day preventive maintenance within the power plant.



Power Users (Finance/Commercial/Procurement team)

Along with the standard BI reports and BI dashboards for the decision makers the system exposes the data warehouse to power users to create reports using Microsoft Power Pivot. This enables the power user to create the additional reports without dependency on IT developers.

The solution is implemented at a large power plant in India integrating SAP, Historian and various meters in the power plant. The solution is developed using the Microsoft stack. The UI is fully responsive design and caters to different resolutions for desktops, tablets and smart phones. We also have a Hybrid App for smartphones and tablets. For power users we provide Microsoft Power Pivot to build self-service reports.

[Click here to know more about how BI can help power plants](#)

Testimonial

"We have been working closely with RheinBrücke to roll out our Power-plant analytics solution. We were able to very quickly implement this solution that gives us holistic visibility of the plant performance. Inputs are aggregated from the plant as well as from our ERP to give us a high degree of visibility on overall plant performance. The solution is very intuitive, providing very high ease of use, in addition to being very cost effective. Our business users needed minimal training to use this solution. I am very happy with the proactive approach and work done by Team RheinBrücke and look forward to their ongoing support."

Rajesh Zoldeo,
Chief Commercial Officer,
TPCIL & Sembcorp Gayatri Power Projects Ltd.

About RheinBrücke IT consulting

RheinBrücke focuses on offering consulting technology and outsourcing solutions and services that enable clients to stay competitive and achieve quick growth and profitability. With operational headquarters in Cologne, Germany, the company has a strong focus on the SME Market, with a deep understanding of what it takes for SMEs to succeed. RheinBrücke helps clients adapt to a changing marketplace by ensuring their IT ecosystems are relevant, efficient and perfectly tuned.

Keep in touch with RheinBrücke IT Consulting: -

info@rheincs.com



www.rheincs.com