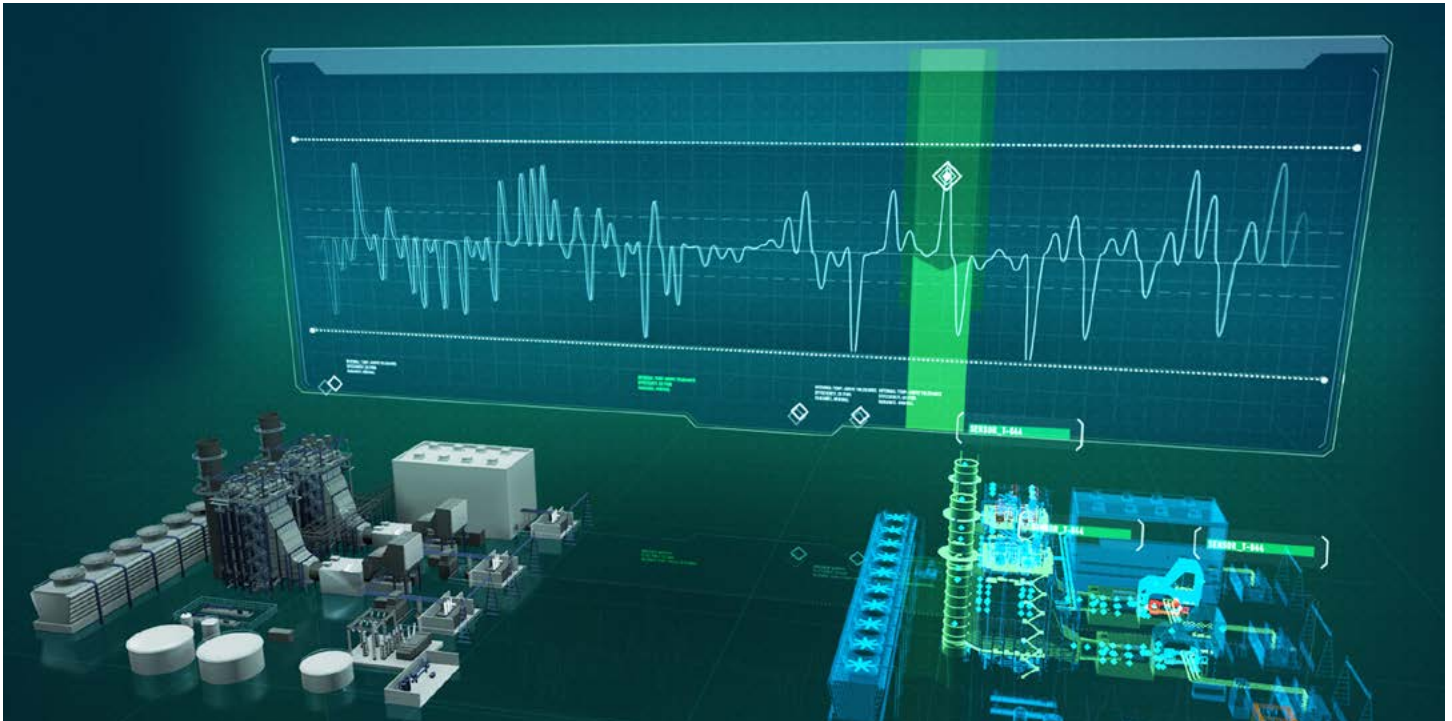




GE Power Digital

Business Optimization



Up to
\$1MM/Year

additional power available,
based on market
conditions (On Peak/
Off Peak/Super Peak)

Business Challenges

Operating silos between the generation and the trading organizations in power companies results in negative financial impacts. Additionally for commercial operations teams in organizations that trade power and fuel there is rarely real-time visibility into the productivity potential of the plant(s). Beyond these internal issues, renewables integration is leading to significant fluctuations in the reliability of the grid causing more cycling of fossil plants and changing of operating profiles.

With missed opportunities from inefficient capacity planning, suboptimal fuel purchases and ill-timed maintenance windows, the bottom line takes a hit and a power producer can become a price taker as smarter, more competitive organizations leverage data and analytics to solve these issues and become the price setters.

What is needed is a more accurate way to predict output capacity and improve operating insights to intelligently make dispatch and trading decisions for the most financially positive outcomes possible. GE's Business Optimization solutions bring the ability to forecast both plant capability and market trends to lead to production with refined accuracy, resulting in incremental revenues and margin.

Solution Description

Business Optimization is a cloud-based suite designed to help power producers to take full advantage of predictive analytics to make improved decisions around power trading, fuel purchases and portfolio management. The solution is comprised of the following modules:

Market Intelligence & Forecasting | Forecast plant capability and market behavior to maximize revenue

- **Power Forecasting:** Assess future MW and duct burner capability, heat rates and potential fuel burn of power plants based on ambient conditions for day ahead and real time operations and trading.
- **Availability Calculator:** Create optimal balance between asset life and profitable offer strategies. Visibility and insight solution that allows GE customers to make short and long-term decisions to increase plant profitability. The GE Digital Twin dynamically reviews the operation of the GT's to adjust operating conditions and key set points that permit banking of MWhrs during turn down market conditions. The GE Digital Twin monitors the customer outage time line, ensuring that the future outage date will not change, while delivering the visibility to the maximum total available output between intervals.

The recommendations allow the trader to bid peak capacity. The plant can run above base load conditions when needed, with banked MWhrs used to take advantage of peak market prices and conditions.

- **Fuel Price Forecasting:** Project fuel prices (Gas, Coal) for use in power plants to optimal commitment and fuel/ power purchasing decisions.

Portfolio Optimization | Schedule the portfolio for optimum profitability

- **Optimal Scheduling:** Allow traders to dispatch units in the portfolio according to the economic factors to meet the demand set by load and market prices for bids and offers.
- **Optimal Outage Planning:** Based on predictive and conditioned based maintenance, market production needs and asset life considerations, schedule optimal timing of planned outages to improve revenue.
- **Portfolio Planning:** Create portfolio operations plan based on generation mix against factors such as market conditions, load/demand variations, weather forecasts, fuel forecasts, transmission constraints and power/fuel pricing considerations.
- **Contract Optimization, Storage Optimization:** Optimize long-term power & fuel contracts and storage against constraints of market forecasts, production expectations and projected fuel costs, and power demand, and transportation and transmission constraints.

Customer Benefits

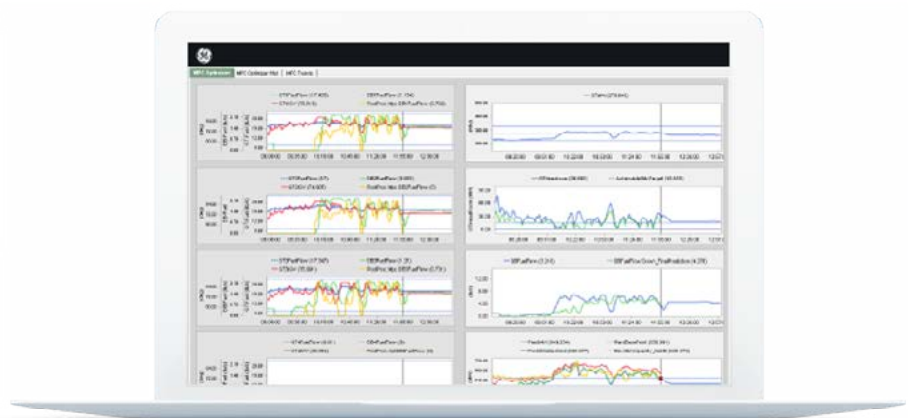
- Real-time transparency to power production levels by block for additional MW to sell, generating greater revenues
- Avoiding penalties by making offers with confidence that can meet delivery commitments
- Accurate and profitable fuel trading and purchase decisions, based on data-driven analytics
- Achieve balance between banked MWhrs and profitable offers based on availability
- Gain an understanding of real-time portfolio dynamics, leading to improved planning capabilities, with dynamic historic and operational data

Business Optimization Applicability



For information on GE Power Digital Solutions:
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