



Digital for Power & Utility Bottom Line Success

Solutions for Traders,
Fuel and Portfolio Managers

THE POWER INDUSTRY

A Sector in Transition

The Rise of Renewables

Shifting priorities in dispatch strategies



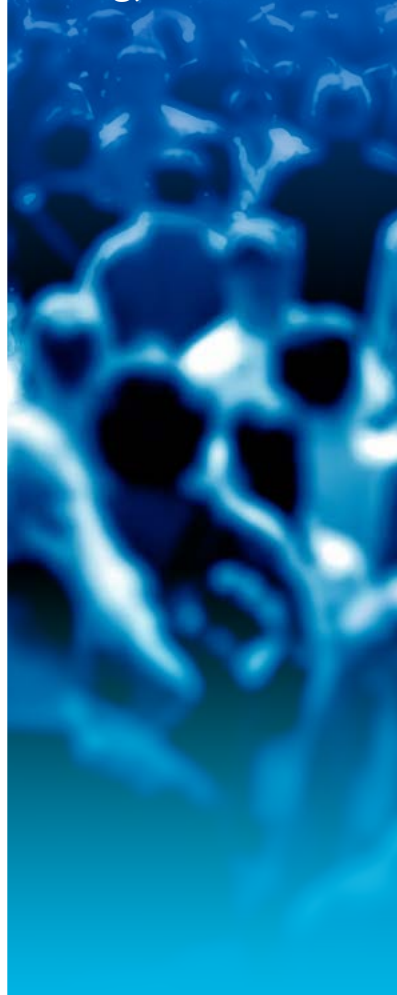
Decreasing Energy Prices

Puts more pressure on managing to lower costs



Changing Consumer Behavior

Alters their preferences for energy sources and energy demand



Clean Air Act Requirements

More pressure to deliver electricity from greener sources



Proliferation of Data

Empowering new approaches, new technology, and new challenges



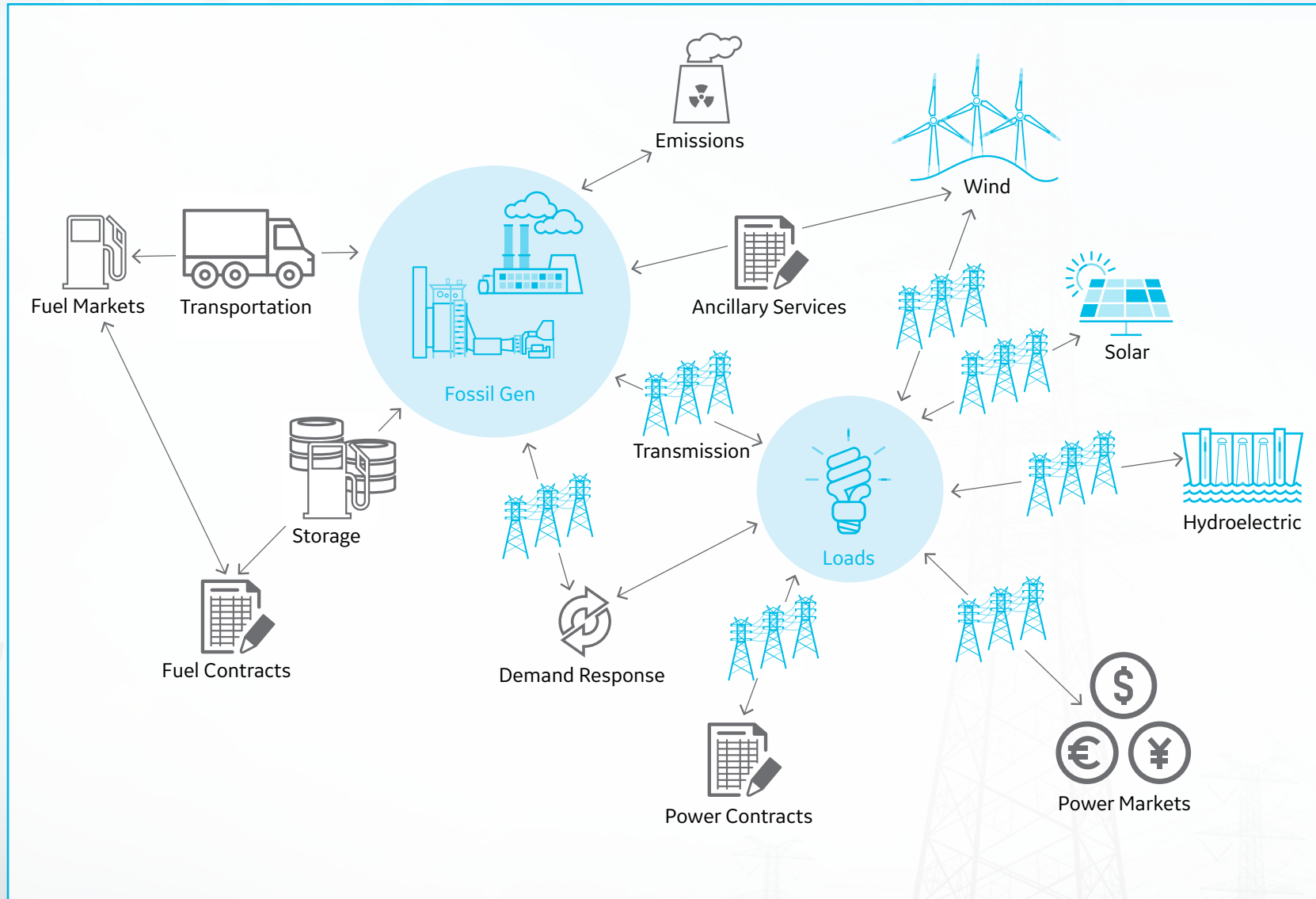
Deregulating New Markets

Increasing competitive pressures while expanding revenue opportunities



THE NEED FOR INSIGHTS

A Complex Set of Personas and Dynamics



Operating Personas	Needed for Optimal Results
Portfolio Manager	Optimal unit commitment and dispatch given the demand and constraints on fuel and emissions, to participate in the market profitably.
Power Trader/Scheduler	Offer the generation into the market with optimized schedules and costs.
Fuel Manager	Insights into fuel needed to meet MW commitment. Market insights to trade fuel intelligently for bottom-line contribution
Generation/Transmission Planner	Real-time insights into grid requirements, DERs, and generation capacity.
Operations Manager	Real-time insights into plant/fleet capacity, reliability status and outage scheduling.

OPTIMIZATION

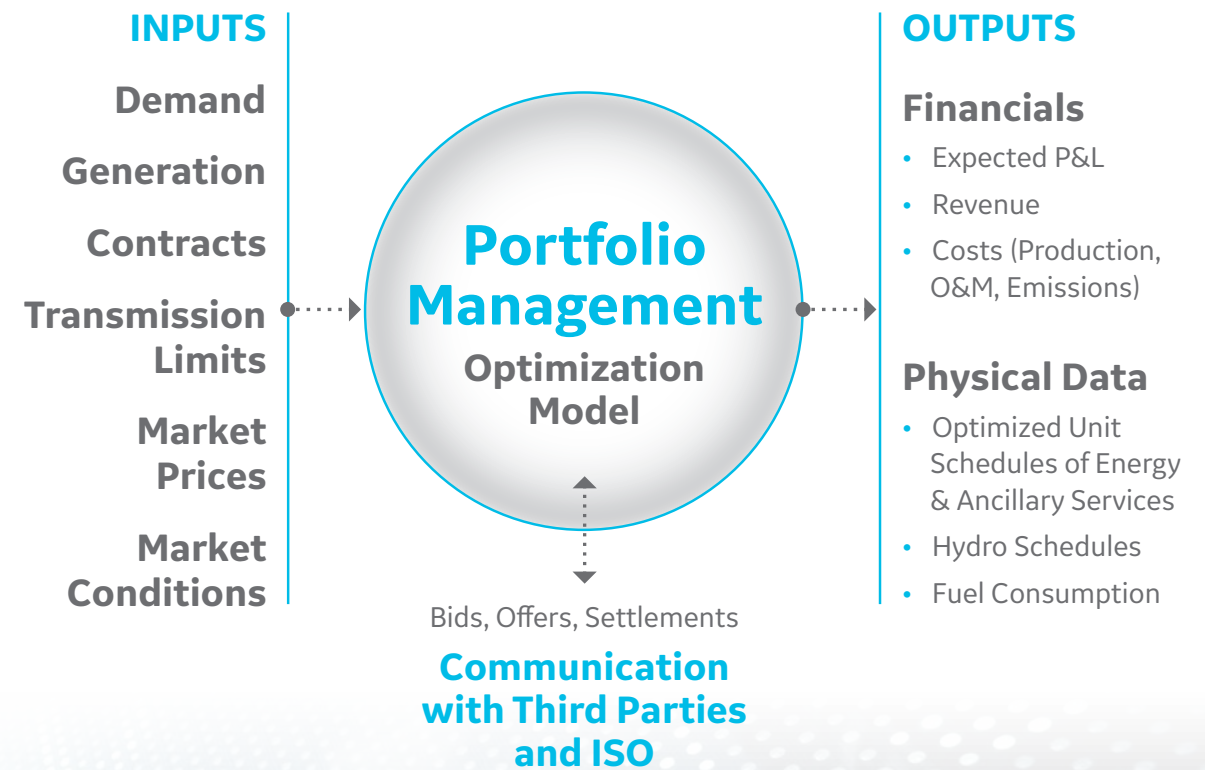
The Game Changer for Traders & Portfolio Managers

Without Optimization – the Cost Is High

- Suboptimal dispatch within fleets
- Market penalties
- Suboptimal fuel purchasing
- Over-buying power when consumers are producing energy

With Optimization – the Benefits Are Significant

- Optimal unit schedules honoring all of the constraints with cost
- An understanding of real-time portfolio dynamics
- Ability to purchase the correct amount of fuel
- Penalty avoidance when emissions limits are violated
- Automated communication to ISOs/Energy Exchanges and Regulators
- Real time shadow settlements and financial KPIs



POWER AND UTILITY

Use Cases for Bottom Line Success

By applying optimization software to a wide range of incoming data from across the company's energy ecosystem, fuel buyers, powers traders and portfolio managers can make more refined decisions for greater profitability. The use cases below outline how optimization leads to informed business decisions and positive financial impacts.

Bid-to-Bill

Enables power companies to more effectively compete in today's volatile energy markets. Provides capability to meet daily needs for bidding into ISO markets, settlement and invoices and statement management.

Portfolio Optimization

Allows companies to more economically balance generation dispatch schedules and resource fuel in today's volatile markets while meeting contractual commitments, serving load, and reducing costs.

Straight-Through Scheduling

Enables power companies to capture more revenue from untapped opportunities in deal management in the face of market dynamics, rising costs, and risk.

Learn More



BUSINESS OPTIMIZATION USE CASE

BID-TO-BILL



Enables power generation companies to more effectively compete in today's volatile energy market environment by providing solutions to meet daily needs to bid into the ISO markets, settle up and manage invoices and statements.

CHALLENGE

Bid formulation and evaluation is labor intensive, error-prone, and often behind ISO deadlines.

- The vast amount of data being collected from operations is impossible for the Analyst to process and leverage to offer blocks and power pricing.
- Traders spend more time on templates and data filling rather than on Bidding strategies with the understanding of true costs.
- During settlement, manual calculations with thousands of Charge codes with the actual generation are cumbersome and error prone.

SOLUTION

Portfolio Optimization

Leverage real operational data to improve portfolio optimization and arbitrage your portfolio to reduce production costs for unit dispatch with better bidding strategies.

Offer/Bid Management

View recommendations for smarter bids and offers based on defined risk tolerance and actual production costs.

Financial Settlement

Enable a complete shadow settlement with ISOs and manage invoices and statements with ease.

Energy Accounting

Generate accurate accounts of energy produced and fuel burned to reconcile settlements with ISOs, exchanges and 3rd parties from meter readings.

RESULTS



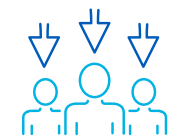
Increase productivity



Increase revenue



Decrease penalties



Decrease risk associated with human error

BUSINESS OPTIMIZATION USE CASE

PORTFOLIO OPTIMIZATION



Allows companies to more economically balance generation dispatch schedules and resource fuel in today's volatile energy market while meeting contractual commitments, serving load, and reducing costs.

CHALLENGE

When unit commitment and economic dispatch for a mixed generation portfolio with complex fuel contracts and emission constraints is done in silos, the bottom line is impacted and is sub-optimal.

- The impact of operational variations on name plate capacity, heat rate, ramp up and turn down rates due to machine deterioration, maintenance, or ambient conditions can lead to over commitment or under estimation of real time availability for energy markets and ancillary services.
- Fuel traders can't assess fuel requirements to nominate and manage take or pay contracts.
- It is difficult to understand the actual hydro schedules in complex hydro systems.

SOLUTION

Optimal Scheduling

Create optimal unit commitment and economic dispatch schedules by co-optimizing energy and ancillary services across the generation portfolio. Arbitrage between plants to meet demand while minimizing the production costs and capturing more revenue from the market.

Market Intelligence & Forecasting

Increase the forecast accuracy for capacity, market pricing, and load.

Fuel Management

Track and manage fuel needs for trading and power generation.

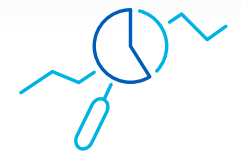
Fuel Transport

Tune fuel transportation schedules in line with optimal scheduling.

Bilateral Transaction Management

Manage bilateral transactions in real-time in support of back-office processes.

RESULTS



Increase portfolio revenue



Better dispatch by unit



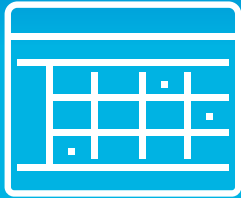
Reduce production costs



Improve storage and transportation costs in line with power production

BUSINESS OPTIMIZATION USE CASE

STRAIGHT-THROUGH SCHEDULING



Enables power generation companies to capture more revenue from untapped opportunities in deal management in the face of market dynamics, rising costs, and risk.

CHALLENGE

Back-office processes are manual and tedious causing traders to miss revenue opportunities.

- Too much time is spent balancing the power and gas book.
- Traders can't iterate fast enough to capitalize on excess capacity after day-ahead commitments.
- To comply with e-tagging and regulatory audit requirements on trades takes significant manual efforts populating the correct templates.

SOLUTION

Market Intelligence & Forecasting

Break down the barriers between operations and trading with improved forecasts of capacity based on ambient conditions; enable portfolio hedging with power price forecasts based on market conditions. Price the excess capacity to sell as strips and blocks.

Financial Settlement

Leverage shadow settlements to identify and reduce P&L leakage.

Portfolio Management

Leverage optimal scheduling to improve offer and bid management as well as bilateral transactions.

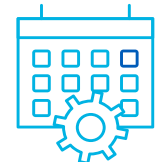
Business Communication

Improve communications with exchanges, ISO/TSO/RTO, plants, and gas pipelines. Enables e-tagging and other regulatory reporting.

RESULTS



**Better forecasts
reduce risk and costs**



**Monetize excess capacity
after day-ahead commits**



**Reduce communication
time with RTO/ ISOs,
regulators, and
operations**

DRIVING CORE BUSINESS OUTCOMES

GE Business Optimization Solution

Market Intelligence and Forecasting

On demand forecasting of plant capability and market behavior to maximize revenue.

- Capacity Forecast
- Power Price Forecasting
- Load Forecasting
- On-Demand/Strip Pricing

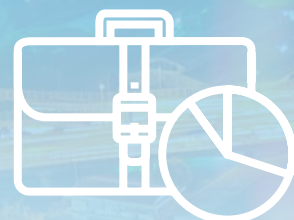


Transparency & visibility

Portfolio Management

Optimally schedule and plan the portfolio to maximize profit.

- Optimal Scheduling
- Offer/Bid Management
- Portfolio Structuring
- Bilateral Transaction Management
- Fuel Management
- Outage Planning



Increased revenue

Business Communication

Efficiently communicate and transfer data with ISOs, internal and external parties.

Contact gas nominations and fuel tracking.

- ISO Communication
- Exchange Communication
- Assets Operations
- Gas Nomination
- Fuel Transport
- ISO Outage Management
- E-Tagging



Streamlined external communications

Financials

Smarter financial forecasts, settlements, post analysis.

Energy accounting and KPIs.

- Financial Forecasts
- Financial Settlements
- Post-analysis/KPI
- Energy Accounting
- General Ledger



Increased visibility

Learn how GE's Business Optimization Solution can help your organization adjust to today's dynamic power sector.

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[VISIT BUSINESS OPTIMIZATION WEBSITE](#)



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