

Rockwell Software Solution

Economic Energy Optimization

Balance energy usage and costs in an environmentally responsible manner while maximizing profitability

Benefits:

- Economically optimize asset configuration to meet predicted energy demand
- Improve confidence in decision to make or buy energy while meeting production objectives
- Better understand the variable sources of profitability throughout operations

Rockwell Software Solutions

Our solutions leverage Rockwell Automation's 100+ years of innovation, experience and global support. Industry best practices are incorporated into every application, which is built upon a composite application framework that leverages a Service Oriented Architecture (SOA). This scalable solution, when combined with library-based content, offers personalization options that promote faster user adoption and time-to-value.



The Challenges

The high cost of energy has become a major concern to manufacturers across the globe with no signs of abatement. Understanding the impact of energy usage at a production facility must go beyond anecdotal analysis of past performance. Unfortunately, real-time consumption monitoring only allows for reactive decisions aimed at curtailing the cost of energy.

Manufacturers often rush to be able to meet the energy demands of its production process by sourcing energy without having a complete understanding of the economic impact on profitability. The environmental effects caused by a surge in energy production are also typically realized after the fact, risking emissions violations and potentially tarnishing corporate image.

Rockwell Software recognizes these various challenges and offers an application focused on delivering valuable energy data for proactive decision making, cost reductions and economic value.



LISTEN.
THINK.
SOLVE.™



Continuously meet the plant's predicted energy demand
at the lowest cost of supply

Economic Energy Optimization

Rockwell Software's Economic Energy Optimization Application balances production, profitability and the environment with a comprehensive optimization structure. This structure consists of multiple sub-models of production, utilities and emissions – integrated with the financial system – for an economic optimum that meets a facility's predicted energy needs.

The following three steps summarize the overall functionality of this application:

1. Predict the energy requirements to meet production objectives.
2. Optimize the energy supply using economic and environmental constraints.
3. Match the predicted energy demand to the cost-optimized supply of energy within environmental limits

Energy Demand Model

Leveraging Rockwell Software's powerful predictive engine, sub-models of production units are combined to determine, at a user-defined time horizon, the predicted energy demand based on current and future plant operating objectives. This becomes the facility's energy demand model.

Energy Supply Model

Incorporating the variable input costs from the business system, economic sub-models are built for each facility's energy generating assets to determine its financial profile, taking into consideration generating capacity, efficiency curves and operating costs. Asset sub-models are combined to create a plant's holistic energy supply model.

Energy Optimization Model

The demand and supply models integrate into the energy optimization model using Rockwell Software's Hybrid Modeling Framework. This optimizer achieves the economic supply optimum and reveals the most cost-effective energy-generating asset available to meet predicted demand.

Emissions Model

For companies operating under a green initiative or corporate sustainability program, this application can integrate a model of each asset's emissions. This helps the economic optimum to incorporate the environmental impact associated with meeting the facility's energy demands.

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