

Datang Power

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Mr. YangFu,
Chief Engineer,
Datang Power

The Challenge of Growth

by Invensys Operations Management

Goals

- To help China’s plan of reducing energy consumption by 20%;
- Expand plant capacity by constructing two new power generating units.

Challenges

- Increase energy production while implementing energy-saving measures;
- Lower costs of production while adjusting to fluctuating market conditions.

Solutions and Products

- InFusion Enterprise Control System (ECS).

Results

- The solution helps provide 600 MW of additional power to Shanxi province;
- Significant cost savings realized via resource and performance optimization;
- Faster load-following capability through adaptive, non-linear, multivariable coordinated control;
- Improved asset reliability and reduced maintenance costs;
- Maximize asset return of investment of asset by balancing the availability and utilization of equipment, energy, fuel optimization and improvement;
- Improved plant availability and greater production efficiencies.

Datang City, China – The dawning of the 21st century promises new opportunities for Datang International Power Generation Company Limited (Datang). The Chinese government's open policies and a flourishing macro-economy require continuous growth to keep up with demand. Along with these unprecedented opportunities come unique and corresponding challenges. Datang Power is advancing under the principles of unity, pragmatism and pursuit of excellence.

As one of the largest independent power producers in China, Datang is engaged in the development and operation of power plants, the sale of electricity and thermal power and the repair and maintenance of power equipment and power-related technical services. Datang currently owns 4 operating power plants and manages 17 power companies. By the end of 2007, total installed capacity amounted to 20,135 Megawatts (MW).

Datang's challenge is to maintain substantial growth while being certain not to oversupply the nationwide installed capacity. With China's concerns about energy conservation and consumption reduction as well as sustainable development, thoughtful development needed to be instituted to meet these important goals. As part of this goal to provide additional power, the Yungang power plant, located in Datang City, Shanxi province is involved in an expansion project consisting of two new 300 MW generating units.

In recent years, power companies have faced many new challenges. Besides providing high reliability and quality of service, regulatory requirements also demand stricter constraints. Intense competition has driven prices downward, whereas volatility in fuel supply drives costs up.

With global macroeconomic events resulting in skyrocketing oil and energy prices, streamlining costs and saving energy are topics that are paramount for power generating businesses.

Datang's power plant expansion project needed a reliable partner that could create and deliver value-added propositions that would enable them to optimize their asset performance.

To achieve these goals, Datang successfully partnered with Invensys Operations Management to provide source optimization and greater production efficiencies.

As a high-service, advanced technology, knowledge-based business focused on the real-time convergence of plant operations and enterprise performance, Invensys brings a collaborative approach to Datang. With vast experience developing strategies for industrial sustainability through energy conservation and efficiency improvement, Invensys was the obvious choice.

Invensys provided the Datang Yungang power plant with a complete hardware and software solution including value-added integrated consultative service. To support the wide scope of the expansion project, Invensys provided a fully engineered solution by working in concert with Datang's in-house engineering staff.

The solution suite consisted of an InFusion Enterprise Control System that includes an Advanced Control System, Asset Performance Solution, and Energy Management Consulting Service. Invensys helped the customer to maximize their return of investment of their assets through balancing the availability and utilization of equipment, energy, fuel optimization and improvement.

On-going Optimization

Under China's targeted regulatory requirement, energy consumption per Gross Domestic Product (GDP) is to be reduced by 20%. By increasing production, companies have been trying to leverage the economies of scale to reduce energy consumption and reach the target of 20% energy reduction. Energy intensive companies, such as those in power, steel, cement, oil and gas industries are the most affected by such market trends.



Control room.

The most important concern for a power generator is fuel price and availability. Meeting growth requirements at the lowest possible cost is one of the highest priorities for industry executives. The events of the early 21st Century, such as escalating fuel prices and unprecedented financial crisis situations have reconfirmed the importance of flexibility and effective asset utilization.

Competition in the global power and financial markets has changed the playing field dramatically. Optimization at any level, from individual coal mills to geographically distributed assets connected to multiple systems is absolutely essential.

Tapping into Data

A wealth of data is generated by an operation such as Datang. Because most of these systems operate independent of each other, gathering the appropriate information on which to base decisions is often a time consuming and unreliable process.

The InFusion integrated asset performance optimization solution provides a unified, comprehensive system regardless of vendor or generation. InFusion provides a system that offers useful and reliable information to those who need it when they need it, allowing Datang to run their business in real time.

“The InFusion optimization tools and Invensys’ expertise in controls has helped us improve our commissioning efficiency, making us more competitive. Through the integrated solution, the Invensys systematic methodology and step-by-step roadmap, Datang is able to reap greater energy efficiencies,” said Mr. YangFu, Chief Engineer, Datang Power.

InFusion is the world’s first Enterprise Control System (ECS). Since its launch in 2006, the InFusion ECS has been widely accepted as the platform of choice for unifying business and automation systems.



InFusion enables users to develop an environment for easily replicating and deploying best practices across the enterprise.

InFusion provides the means for integrating interdependent control units across multiple sites and different automation solutions to operate as one integrated system.

InFusion enables users to develop an environment for easily replicating and deploying best practices across their enterprise. It is a platform for solutions that maximize the value of new and existing production assets.

Poised for Greater Achievements

Datang’s rapid development of its power generation business and ongoing growth is powered by Invensys’ integrated solution, helping to reap cost efficiencies and achieve asset optimization to drive fleet performance and individual unit efficiency.

Now Datang can leverage the Invensys asset performance management techniques in the InFusion collaborative environment to meet their goals of reduced maintenance costs, improved reliability and availability while moving forward to meet the challenges of the future.

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