

SH Electric Power Improves Data Analysis and Reporting with Integrated Data Warehouse



Shanghai Municipal Electric
Power Company
Shanghai, China
www.smepc.com.cn

Industry:
Utilities

Employees:
16,053

Oracle Products & Services:

Oracle Database
Oracle Partitioning
Oracle OLAP
Oracle Data Mining
Oracle Application Server
Oracle Internet Developer Suite

Key Benefits:

- Provided benchmarks for business analysis, helping formulate national power grid policies
- Gave frontline staff, sales analysis, and management personnel a flexible, real-time query and analysis capability
- Reduced load on production system database
- Achieved more accurate and timely management reporting
- Enhanced data mining capability

“Management and sales staff now have a flexible real-time query and online analysis tool for examining data used in the development of national power grid policies.” – Spokesperson, Shanghai Municipal Electric Power Company

The Shanghai Municipal Electric Power Company (SH Electric Power) handles the transmission, distribution, and sale of electrical power in Shanghai. The company’s network covers the entire Shanghai administrative region and supplies power to almost 7 million customers. It has been ranked number one among Shanghai City’s top ten public service industry companies for three straight years.

SH Electric Power began studying the potential of data warehousing in 2004 as it struggled with a continued increase in the volume of data inside its business management system.

This growth was placing a massive strain on the system, which handles basic sales operations such as billing, customer service, metering, and usage audits.

“This system processes one million transactions every day,” said a spokesperson at Shanghai Municipal Electric Power. “There were few resources left for reports and queries, let alone data analysis.”

In mid-2005, SH Electric Power initiated a business information (BI) warehouse project and engaged Oracle to deliver a data warehouse solution. This would enable the company to analyze and mine 1.6 terabyte of data to make better business decisions.

The project was also a key initiative under the organisation’s plan to actively upgrade its production, operations, and management to world-class standards.

Real-time Analysis and Mining with Unified Platform

A major challenge under the BI project was to move the company’s routine reporting function away from its production system database, which would reduce the load on the system, and allow for new reporting features to be added.

The company selected the Oracle OLAP and Oracle Data Mining modules running on Oracle Database 10g. These were then used to set up function-specific synchronized data mirrors and a central data warehouse.

Staff members use the Oracle OLAP tool to perform high-level analysis on power usage projections, and anomaly analysis and maintenance statistics.

“Management and sales staff have a flexible real-time query and online analysis tool for manipulating key data used in the development of national power grid policies,” said the spokesperson.

Oracle Data Mining is used to combat power theft. By drilling down inside the data warehouse, users can track conditions such as historical usage to identify suspect accounts for a more in-depth investigation.

The company can also mine data to determine how adjusting power rates will affect its revenues. “This has greatly enhanced our ability to forecast how any changes to pricing will affect the company’s ongoing profitability. It’s a fantastic benefit,” said the spokesperson.

Better Business Intelligence Design

SH Electric Power’s original business intelligence system design did not include data warehouse requirements, which created many technical challenges for the project.

The Oracle solution, however, enabled the company to introduce advanced technologies such as partitioning, materialized views, and bitmap indexing. “For example, we can now perform a group-based query of large data sets, which provides us with better quality data from analysis,” said the spokesperson.

SH Electric Power also replaced an older business intelligence presentation tool with the Oracle JDeveloper and Oracle ADF framework.

“This allowed developers to quickly develop the required feature even though they had no previous Java experience,” the spokesperson said.

Why Oracle?

SH Electric Power's former business intelligence system was running on an Oracle9i Database in an Oracle Real Application Clusters (RAC) environment. Oracle was short listed as one of the potential candidates before eventually winning out over the competing brands.

"Oracle enjoys an excellent brand reputation and our technicians are extremely familiar with a range of Oracle solution, which keeps down the cost of system development," said the spokesperson. "Our own long-term experience has shown the Oracle system to be very stable and offers lower overall maintenance costs."

Implementation Process

SH Electric Power setup a team in 2004 to investigate a range of data warehousing solutions on the market. This project was the first of its kind in the domestic power industry in China.

The BI warehouse project began in July 2005. The company assigned responsibility for the project to staff working within its business management department, given their familiarity with power industry operations and expertise in database technologies.

Shine Energy was commissioned to set up a project team. The entire project was divided into two parts. Phase one involved core billing data processing while phase two expanded the system to include sales data such as customer service and metering. The project went live on September 15, 2006.

"SH Electric Power embraced Oracle's solution for its data warehouse and it has delivered staggering results in terms of our ability to make decisions that will benefit our business now and in the future," said the spokesperson.

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