

Elsta Customer Success Story

Under New Limits, Elsta Rises to the Challenge. Power producer meets European and Dutch emissions directives with the Rockwell Software REM solution, from Rockwell Automation.

The Rockwell Software REM solution

"With the Rockwell Software REM solution, we are seeing significant benefits through time savings and overall efficiency in our environmental program. The software has increased the accuracy of our emissions data and instilled greater confidence in our ability to comply."

Joop Calje, Team Leader
Elsta

Key Benefits:

- 50% less manhours per year collecting, reporting, verifying and auditing emissions information
- Full compliance with the EU ETS
- Reduced CO₂ emissions by up to 25,000 tons annually
- 100% accuracy in calculations of emission records

Accuracy and efficiency

"The old manual system clearly hindered our ability to react to new standards. There was no question that we needed an automated solution to address these issues and to generate accurate information in a timely manner."

Peter Kuijs, Plant Manager
Elsta

The Challenge

Elsta, a leading power producer in the Netherlands (partly owned by U.S.-based AES Corporation), has always been regarded as socially responsible. Locally, the company built a wall around its entire facility to minimize sight and noise impact on its neighbors. Globally, it has taken measures to reduce its carbon footprint and to minimize nitrogen oxide (NO_x) emissions on its three gas turbines.

Historically, it was difficult for Elsta to document the impact of these forwardthinking efforts due to less-than-sophisticated, data-tracking systems. Elsta's engineers had to manually monitor gas turbine emissions using a collection of spreadsheets that were both time-consuming and prone to human error. The emergence of new emissions monitoring and reporting regulations around the world exposed the need for a better method.



You Can't Teach Old Spreadsheets New Standards

In recent years, global, regional, national and local agencies have begun to enforce new environmental directives, mandating that companies accurately record and report emissions performance. In January 2005, the European Union Emission Trading Scheme (EU ETS) became the region's largest carbon dioxide (CO₂) emission-compliance and credit-trading program. The Netherlands also established stringent directives for its NO_x trading program aimed at reducing NO_x emissions throughout the country.

Elsta operates a 475-megawatt (MW), gas-fired, combined-cycle cogeneration facility with three gas turbines that have a combined capacity of 375 MW. Its steam turbine produces 100 MW. The company's

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environmental managers knew they needed to improve their monitoring systems to better manage compliance with the new mandates. Company executives also wanted the ability to make more proactive decisions regarding CO₂ and NO_x credit purchasing and trading.

But Elsta's manual system made looking at current performance and into the future time-consuming and nearly impossible. Engineers had to manually collect readings of pollutants coming out of the plant – a process so arduous that employees updated only monthly or quarterly to save time. Assembling and calculating the data through spreadsheets for oversight agencies was time-intensive, taking a full five days to complete.

The spreadsheet system is a manual and periodic reporting system that does not provide personnel emissions information of exceedances as they occur or in a timely manner. The accessibility to these spreadsheets was limited to a few plant staff further limiting expediency to the correct personnel. Additionally, employees working in other departments throughout Elsta could not easily leverage the information to help manage environmental compliance.

Two Tough Emissions Standards; One Smart Software Solution

Elsta thoroughly researched the automation industry for a suitable emissions management solution. After testing and evaluating options from Rockwell Automation, Elsta implemented the Rockwell Software Pavilion8® Real-time Environmental Management (REM). This software application is an automated and

on-demand reporting program with several features that would address Elsta's challenges.

The Rockwell Software solution automatically collects data from all over the plant, delivering immediate information over an easy-to-use, browser-based interface. The software includes sophisticated data validation and qualification as well as a secure meta-data repository. This provides a verifiable audit trail of changes and helps assure accuracy, integrity and security to meet stringent regulations. This solution helps assure that contextual information is available to employees at all levels of the company.

Elsta's managers also use the REM application to instantly generate emissions reports for a specified time range, making environmental performance information more timely and accessible than with the old manual method. Engineers, operators, managers and other employees do not have to wait until the end of the day, week, month, quarter or year to review emission performance reports. The realtime visualization and on-demand reports have improved communication between operations and management relative to emissions performance and credit-trading opportunities.

Elsta also saw the new regulations and reporting mandates as an opportunity to make performance improvements. With the ability to view data in real-time, plant operators can identify operational issues and make adjustments to positively impact emissions. The REM application includes event detection and notification based on configurational rules and thresholds established by regulatory agencies or company policies; Elsta operators

are alerted when the facility exceeds self-imposed thresholds or emission limits, allowing corrective actions to improve performance.

If Time is Money, Save Both

Through the REM application, Elsta gained the technology needed to maintain its outstanding environmental compliance record, easily meeting new monitoring obligations. The company quickly achieved full compliance with the EU ETS and the new Dutch NO_x trading directives. With the new CO₂ calculation methods, Elsta estimates that it has already reduced its CO₂ emissions by up to 2% or 25,000 tons per year. The application also has helped Elsta decrease the NO_x emissions of its gas turbines up to 15%.

Elsta employees now spend 50% less manhours per year in collecting, reporting, verifying and auditing emissions information. Additionally, auditors completed verification in less than two days, compared to the typical four to five days consumed by the old manual reporting method.

Beyond efficiency, Elsta also benefits from 100% accuracy in the calculations of its emissions records, and is able to use the information to make better business decisions. Because predictive emissions information is readily available to more people within the company, environmental managers can instantaneously identify emissions exceedance events in real time, and quickly take measures to remediate the issue. Additionally, the finance department can make better informed decisions when trading credits for Elsta, thus reducing the financial risks associated with fines and penalties and inaccurate emission trading practices.

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