

# SUSTAINABLE

R.K.M. Powergen

R.K.M. Powergen Chennai, Tamil Nadu, India



Schneider Electric Solution Helps Provide Clean, Reliable Electricity in India

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- Terry Minns, Director Systems, Schneider Electric

**Chennai, Tamil Nadu, India** – When R.K.M. Powergen won the contract to build a new power plant in an area of India where the residents previously had very little electricity, choosing the right technology was critical. But even more importantly, the company committed to sustainability goals and to improving the social and economic well being in the region.

## Goals

- Support a biomass power plant that would generate clean power in an area that previously had limited and unreliable electricity
- Automate plant operations to maximize efficiency and productivity while reducing downtime
- Facilitate accurate control and monitoring of plant equipment to ensure consistent output as well as safety and security
- Provide a solution that can be easily expanded as energy demands increase

## Challenges

- The plant had to meet strict requirements for sustainability, environmental monitoring and safety while conserving operating costs
- The solution had to integrate various processes into one control solution that would encompass the entire plant
- Operators needed real-time data to accurately control power generation, steam production and chilled water distribution

## Solutions

- Foxboro Control System

## Results

- The plant provides electricity to area residents and has improved local agricultural and industrial opportunities
- Sustainability goals such as decreased air pollution, water conservation and optimized fuel consumption are being met through the solution's monitoring and control capabilities
- Operators can now view plant-wide processes in real-time, so they can react immediately and make changes to maintain power output and plan for maintenance
- The Foxboro System simplifies the rapid addition of new devices through pre-configured and tested applications and plug-in modules

## Unique Sustainability Opportunities

Several features of the project were central to meeting R.K.M. Powergen's multiple goals.

The first was that biomass fuel is considered a zero-emissions power source, so the plant would not generate greenhouse gases.

Next, it created new sources of work and income for local residents. Local wasteland trees like the mesquite tree and shrubs as well as husks such as tamarind, sunflower stalks and other trimmings would be burned to generate steam. These abundant solid waste resources were unused before the power plant was built. But now, collecting and selling them has become a reliable business and has enhanced local agricultural and industrial activities.

Additionally, the plant uses air-cooled condensers rather than relying on water cooling. Water-cooled condensers are more typical for facilities of this type because they are initially less expensive. However, it was more important for this project to reduce environmental impact. The air-cooled condensers use 93% less water, conserving it for the use of the residents as well as for irrigation.

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## World-Class Process Control

In all energy-generation activities, ensuring control, safety and compliance is paramount. That's why R.K.M. Powergen partnered with Schneider Electric to configure and install the powerful, yet flexible, Foxboro control system.

With the Foxboro System, the power plant benefits from a distributed control system that enables accurate monitoring and control. Without it, the plant would not be able to provide reliable power. Data from the boiler, tank farm and other control points is transmitted from plant subsystems to the Foxboro system. Accurate control of these processes results in consistent, quality steam output, which optimizes fuel consumption.

Another fundamental requirement is redundancy to ensure both high availability and safety. Operators can perform live replacement of processor modules within the Foxboro System so that there is little or no interruption of plant operation.

Additionally, the system compiles data and provides management with both real-time and historical information. With these reports, plant supervisors can make equipment and personnel adjustments to increase efficiency and productivity while reducing downtime.





### Operator Ease

Engineers appreciate the Foxboro System's superb visualization components (HMI) with high resolution graphics that enables the engineers to control the plant better. With it, they get a complete picture of the power plant. On-screen views show boiler, turbine, steam, fuel and air systems with standardized graphics that are easy to learn and intuitive to understand. Operators can make changes quickly and no training is needed when they move from one system to another.

"The Foxboro System not only gives a redundant and efficient control system, but the historian and visualization components also provide capabilities that allow the plant operators to perform better. This makes the plant more productive," said Minns.

Maintenance of the plant is another important consideration. The live data and historical reports that come from the Foxboro System enables operators to schedule maintenance as well as to recognize possible problem situations and correct them before they impact productivity or the output of electricity.

### Planning for More Power

The solution also makes configuration and development for plant expansions rapid and easy. When applications are added, they are deployed across the network with simple-to-implement distribution features and standardized algorithms that eliminate the need to duplicate data. These additions are integrated into the solution so that it continues to provide one source for all plant data.

As development continues in southern India, the need for more electricity will grow. Industrial customers will require it, and it also will be essential for all residents to have access to power. Fortunately, the R.K.M. Powergen plant has been designed to meet these diverse needs, while continuing to generate reliable, clean and environmentally sensitive power.

# EcoStruxure™

## Innovation At Every Level

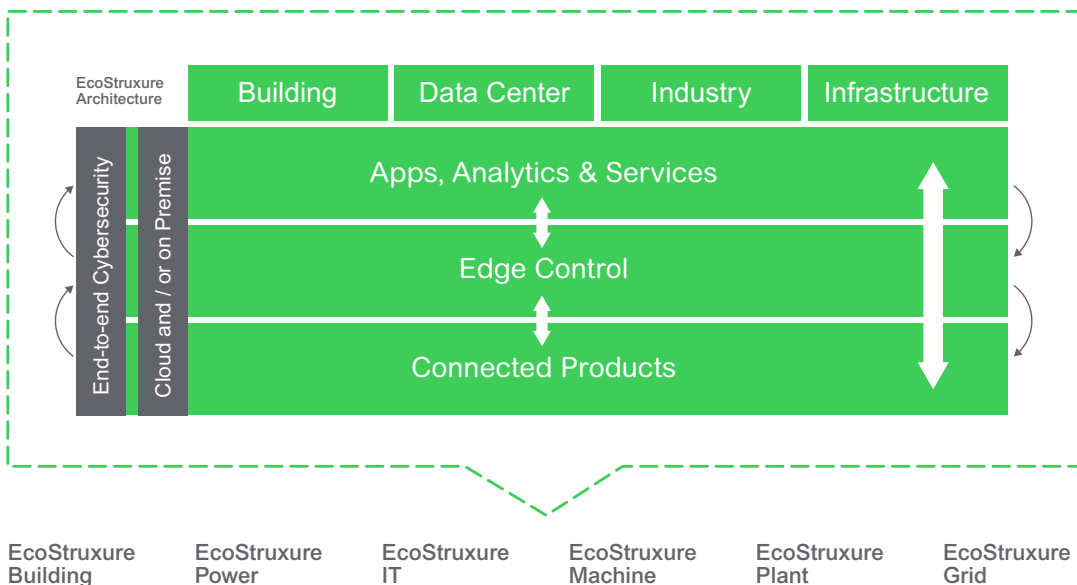
### IoT-enabled solutions that drive operational and energy efficiency

EcoStruxure is Schneider Electric's open, interoperable, IoT-enabled system architecture and platform.

EcoStruxure delivers enhanced value around safety, reliability, efficiency, sustainability, and connectivity for our customers.

EcoStruxure leverages advancements in IoT, mobility, sensing, cloud, analytics, and cybersecurity to deliver Innovation at Every Level including Connected Products, Edge Control, and Apps, Analytics & Services. EcoStruxure has been deployed in 450,000+ installations, with the support of 9,000 system integrators, connecting over 1 billion devices.

### One EcoStruxure architecture, serving 4 End Markets with 6 Domains of Expertise



### Connected Products

The Internet of Things starts with the best things. Our IoT-enabled best-in-class connected products include breakers, drives, UPSs, relays, sensors, and more. Devices with embedded intelligence drive better decision-making throughout operations.

### Edge Control

Mission-critical scenarios can be unpredictable, so control of devices at the edge of the IoT network is a must. This essential capability provides real-time solutions that enable local control at the edge, protecting safety and uptime.

### Apps, Analytics & Services

Interoperability is imperative to supporting the diverse hardware and systems in building, data center, industry, and grid environments. EcoStruxure enables a breadth of agnostic Applications, Analytics, & Services for seamless enterprise integration.

Find out more about EcoStruxure

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October 2016

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