

# EFFICIENCY

## Power plant optimizes energy usage

Ruiping Power, China

EcoStruxure™ for Utility enables Ruiping Power  
Plant in China to save more than \$2 million per year.

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China's Ruiping Power Plant partnered with Schneider Electric to meet demanding energy-saving and emission-reduction targets.

## Background

The Ruiping Power Plant is a China-based electricity supplier in Henan province producing 1.5 billion kW of steam-generated energy each year. As part of the China Pingmei Shenma Energy & Chemical Group Co., Ltd. — a Top 100 Enterprise in China — the Ruiping Power Plant is charged with meeting China's demanding national energy-saving and emission-reduction targets.

The Ruiping executive management team required the ability to see, measure, and manage energy use across the power plant. The simple and powerful idea offered by Schneider Electric of using resources more productively and efficiently in order to increase profits and lower the impact on the environment, appealed to the team. The team selected Schneider Electric as their partner of choice to take on the full responsibility of process and energy management.

## Financial savings exceed expectations

The process and energy management upgrade, which is supported by a Schneider Electric EcoStruxure architecture implementation, currently generates an annual savings of 27 million kW per year of direct electricity (€996,000 in electrical savings). It also saves around 7,735 tonnes of standard coal, valued at €659,000, and equals a carbon dioxide (CO<sub>2</sub>) emission reduction of over 20,265 tonnes. The overall benefit for the Ruiping Power Plant is €1,655,000 per year.

For Li Zhigang, General Manager of the Ruiping Power Plant, the partnership with Schneider Electric was a logical decision: "We chose Schneider Electric because of the advanced energy efficiency concepts and the reliable technical solutions that they offer. There are not many companies like Schneider Electric in the market that can implement specific, practical solutions."

## Goal

Electricity supplier to the Henan province wanted to meet national energy-saving and emission-reducing targets.

## Story

The management team at Ruiping Power wanted to have the ability of seeing, measuring, and managing energy usage across the entire power plant. They were looking for a reliable partner that could provide an end-to-end solution for managing the utility's energy usage and reduce costs.

## Solution

- EcoStruxure by Schneider Electric

## Results

- Overall savings of \$2.17m including:
  - 27 million kW per yer of direct electricity
  - 7,735 tonnes of standard coal equaling a CO<sub>2</sub> reduction of over 20,000 tonnes

## Electrical consumption, coal consumption reduced

Schneider Electric energy efficiency experts first performed an audit and an analysis of power consumption. Inefficiencies in energy management were then identified and targeted.

“We decided to focus on three major energy inefficiencies discovered in the audit,” explains Li Zhigang. “Our overall plant electricity consumption rate was too high, there was a significant air leakage rate from our turbine, and we needed to significantly lower the temperature of the air, captured with the fly ash, by our electrostatic precipitator (ESP).”

“The Schneider Electric EcoStruxure platform was applied at the Ruiping Power Plant for both the Phase I and Phase II transformation projects,” explained Sui Wei, Energy Efficiency Solution Manager at Schneider Electric, China. “The platform provides real-time information on the results of the transformation allowing Ruiping Power Plant to identify areas for improvement, not only at their own plant, but in the power industry as a whole.”

The Schneider Electric solution leveraged several energy-saving technologies to improve the plant's energy efficiency. The Energy Management System provided a simple tool for capturing and tracking KPIs, for monitoring carbon emissions, and for identifying new energy-saving potential. For Li Zhanzhou, Production and

Technology Manager at Ruiping Power Plant, the Schneider Electric solution provided the tools to manage the escalating cost of coal: “Schneider Electric helped us to integrate several energy saving technologies and synergize the effects. Our plant can now provide electricity with less coal consumption, and that’s a cost saving for us.”

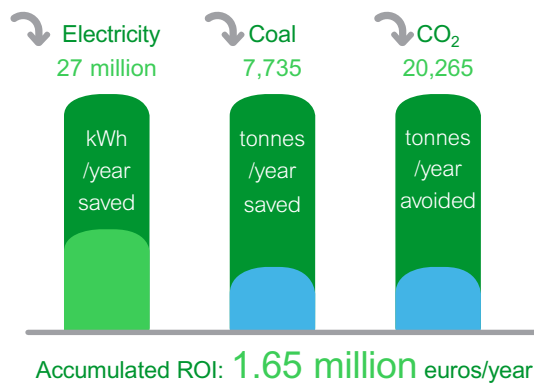
“With the Energy Management System, we not only track the energy saving effects, but also manage our entire energy consumption situation. This technology provides us with innovative ways to run our operation”, explains Li Zhigang.

“Schneider Electric provided a unique advantage because they offered a total solution for our entire operation. The Ruiping Power Plant solution is another success story for Schneider Electric,” concludes Li Zhigang.



“We chose Schneider Electric because of the advanced energy efficiency concepts and the reliable technical solutions that they offer.”

— Li Zhigang,  
General Manager,  
Ruiping Power Plant



Accumulated savings include electrical consumption, coal consumption, and avoided emissions.

## EcoStruxure Grid

Innovation At Every Level



# EcoStruxure™

## Innovation At Every Level

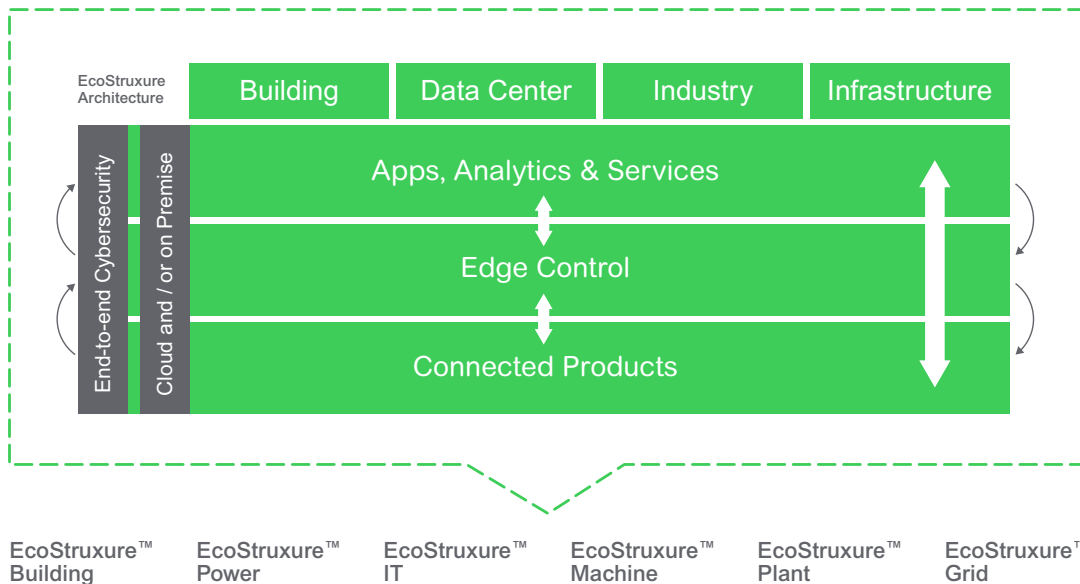
IoT-enabled solutions that drive operational and energy efficiency

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 480,000+ sites, with the support of 20,000+ system integrators and developers, connecting over 1.6 million assets under management through 40+ digital services.

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



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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.

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