Co-innovating tomorrow™

In a business environment that has changed dramatically, Yokogawa continues to create new value with our partners and strive for growth along with our customers. We shall also continue as good citizens with the courage to innovate.
# Your Single-Source Partner for Operational Excellence

## Optimize

- **Production Management**
  - Plant performance calculation and monitoring
  - Exaquantum/PPC
  - RPO: Real-time Production Organizer
  - Visual MESA
  - SCADA
- **Asset Management and Operational Efficiency**
  - Operation guidance
  - Exapilot
  - PRM: Plant Resource Manager
  - Operation training simulator

## Control

- **Production and Safety Control**
  - Integrated Production Control
    - CENTUM VP
  - Integrated Safety Control
    - ProSafe-PS
  - Hybrid PLC/RTU
    - STARDOM
  - PLC/PAC
    - FA-M3
- **Data Acquisition and Logic Control**
  - Paper and Paperless Recorder
  - Data Acquisition Equipment
  - Controller and Conditioner

## Measure

- **Sensing and Actuation**
  - Flow
  - Multivariable
  - Pressure
  - Level
  - Temperature
  - Wireless
  - Distributed Temperature Sensor
- **Analysis and Quality Control**
  - Analyzer

## Test and Measurement

- **Oscilloscopes**
- **Digital Power Analyzers**
- **Generators, Sources, Manometers etc.**
- **Optical Measuring Instruments**
- **Portable and Handheld Instruments**
Wide application experience in the power industry

Fossil fuel fired power plants
- Coal/oil/gas fired
- Combined cycle
- Simple cycle
- Co-generation
- Industrial boilers
- Independent water and power producers (IWPPs)

Environment protection
- Flue gas desulphurization (FGD)
- Circulating fluidized bed (CFB) boilers

Renewable power plants
- Geothermal
- Biomass
- Waste to energy
- Solar
- Wind
- Hydro

Coal fired power plant
Combined cycle power plant
Industrial boiler plant/co-generation plant
FGD plant
Geothermal power plant
Biomass power plant
Solar thermal power plant
Wind power plant
Hydro power plant
Total power plant control system

**Human interface station/ engineering station**

The human interface station (HIS) provides a unified and intuitive operating environment. Screens are ergonomically designed and arranged to reduce operator fatigue and discomfort. The engineering station provides powerful configuration tools and a virtual test function.

**Field Control Station (FCS)**

The FCS provides powerful control functions with a highly reliable dual redundant configuration that incorporates Yokogawa’s own pair-and-spare technology.

- Speed/load control
- Overspeed protection control
- Surge detection
- LVDT calibration
- Turbine run-up

**Plant information management**

All types of plant information including process data, alarms, events and sequence of events (SOE) are handled by plant information management, enabling the analysis of plant operational performance.

**Plant resource management**

Plant resource management integrates and manages maintenance information from field instruments and monitors online conditions.

**Safety Control Station (SCS)**

The ProSafe-RS SCS is a TÜV SIL3 certified safety system that incorporates Yokogawa’s own pair-and-spare technology.

**Electrical Control**

Integrated electrical control and monitoring system via IEC61850, IEC60870 and DNP3.0
SCADA & Plant Information Systems

The FAST/TOOLS SCADA is a complete platform-independent software solution with high performance, high capacity and a truly open architecture. As an enterprise automation solution (EAS), it unifies multiple plants/locations as one entity and enables centralized operation and monitoring. The FAST/TOOLS web-based SCADA system enables remote engineering, maintenance, and monitoring of all the distributed sites from a single remote monitoring center.

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The HXS10 is a solar tracking controller with a built-in solar position calculation algorithm. It precisely controls the actuators that align the solar mirrors with the sun. This optimizes the collection of thermal energy produced by concentrated solar power (CSP) facilities.

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Optimum energy operation with IIoT technologies for smart communities

- SCADA & Plant Information Systems
- FEMS (Factory energy management system)
- CEMS (Community energy management system)
- BEMS (Building energy management system)
- EV Station
- Solar
- Wind Turbine
- HXS10
- FAST/TOOLS SCADA
- FA-M3
Services for a lifetime of plant efficiency

Design & Engineering
Early involvement and collaborative project execution lowers the overall risk of the project. Yokogawa strives to understand the goals of each project upfront and to secure a firm ground for ongoing teamwork. Throughout execution, Yokogawa secures strict quality gates based on proven procedures.

Front-End Engineering & Design (FEED)
Main Instrumentation Vendor (MIV) Services

“Seeing is believing”
Ts. Bayarbaatar, Ex-Executive Director of the 4th Thermal Power Plant, Mongolia

“Seeing is believing. Whatever beautiful things sales people say, I will not believe until I see them at work. When we experienced the plant trip, I learned what makes Yokogawa different from others. I admire their sincerity and devotion toward customers.”

The 4th Thermal Power Plant

Revamp and Expansion
Complex revamp/expansion projects test the alertness, care, and skill of both the user and the supplier of automation. Yokogawa delivers practical engineering solutions with professional care, modernizing and expanding your plant with minimum disturbance to your business.

Installation & Commissioning
Good coordination between multiple suppliers and engineering teams is the key success factor in commissioning. Yokogawa ensures both human collaboration and technical integration throughout the project life cycle.

- Site Engineering
- Turn-Key Services
- Integration Testing
- Commissioning Services

Operation & Optimization
Ongoing adaptation and optimization requires continued collaboration. Yokogawa keeps in close touch with your plant through 24/7 operation support and expert consultation services.

- Optimization Consulting
- Online Diagnosis Support
- 24/7 Operation Support
- Operator Training

Maintenance and Upgrade
Be it diagnosis, root cause analysis, or predictive maintenance, practical solutions are in short supply. Yokogawa brings you the tools and services that help you take concrete actions to improve the effectiveness of your plant assets.

- Asset Optimization
- Operation & Maintenance Services
- Life Cycle Solutions
- Standard Knowledge Base
Michael Mortiss, Project Manager of Eraring Energy

"For flexibility, experience and commitment, we selected Yokogawa"

"Our decision to carry out the revamping project was based on the need to maintain a competitive advantage in the Australian deregulated electricity market. Maximizing plant availability for at least another 20 years, timely returns to service of each unit, and efficiency gains were also significant project drivers."

"While there are several very capable control systems vendors, Yokogawa provided the most completely integrated solution of plant control system, training simulator, plant asset management system, and plant information and management systems. Yokogawa's flexible approach to design and implementation of large power plant revamp projects, team of experienced power plant engineers, and commitment to meeting all-important project outage schedules were further reasons for selecting Yokogawa."

"We had already purchased other Yokogawa equipment such as transmitters and paperless chart recorders for our plant, and had received excellent service and on-going support."

"The ability to operate flexibly gives us a competitive advantage"

Jeff Hogan, Instrument and Control Team Manager of Eraring Energy

"Yokogawa took advantage of the flexibility of its equipment to suit the existing installation. Where possible, the new equipment slotted into existing cabinets, reusing existing field cables, terminations, cabinets, and connectors. New equipment was wired and tested in the factory. This avoided disturbing most existing cabling and greatly sped up installation and commissioning times."

"The new control equipment makes fault finding a breeze, while the new graphic displays show us all the details we need."

"The asset management system allows us to directly monitor and manage all smart field devices from our workshop."

"The renovated units are now more flexible and responsive than before, giving the station additional advantages in a highly competitive electricity market. The refitted control room is state-of-the-art and provides a quiet and stress free operating environment for our staff."

"Expectations exceeded, our plant was back in operation ahead of schedule"

Michael Mortiss, Project Manager of Eraring Energy

"Yokogawa has exceeded our expectations, bringing each revamped unit back into reliable service ahead of schedule. Utilizing a full replica simulator, our engineering team and Yokogawa fully tested the new logic and control configurations before they were loaded on the actual plant. This significantly reduced the time needed for site commissioning, and avoided plant trips during commissioning. Being thoroughly trained on the new screen-based control system training simulator, our operators were well prepared for the new control scheme in time for plant commissioning. This assisted in ensuring an uneventful, smooth return to service."

"Supported by the high-level operational and maintenance diagnostics, together with strong local support from Yokogawa, we are sure that Eraring Power Station will secure high plant availability for a further 20 years."

Let's co-innovate your business!