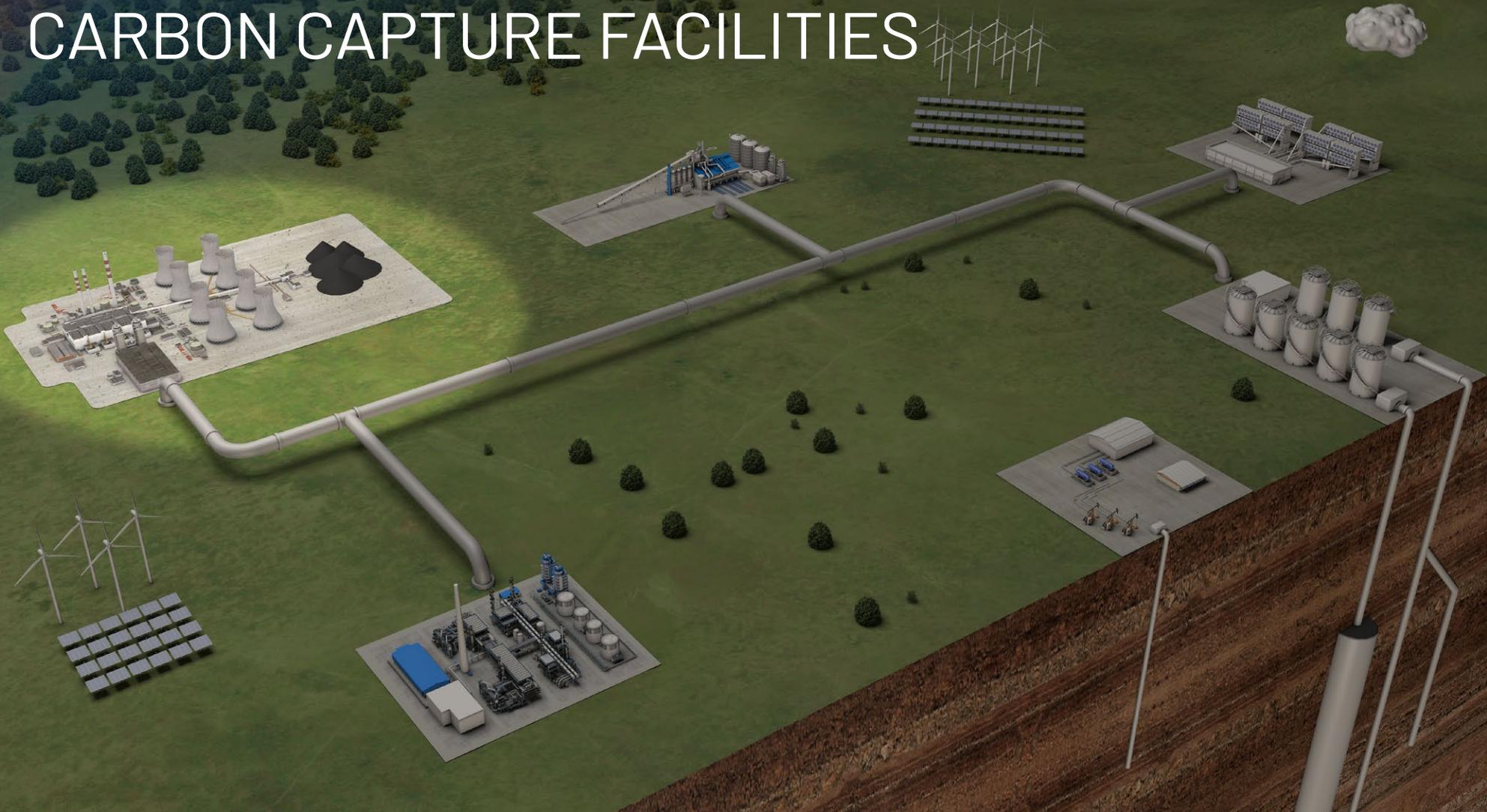




**Rockwell
Automation**

INTEGRATED ARCHITECTURE FOR POST-COMBUSTION CARBON CAPTURE FACILITIES



Process challenges



Integration with existing infrastructure

Post-combustion capture plants must integrate with existing power plant or industrial plant infrastructure



Process optimization

- Fluctuating Flue Gas Composition
- Energy Consumption
- Solvent Management



Regulatory compliance and reporting

Process Control Systems must track CO₂ capture rates, emissions reductions, and other performance metrics to achieve compliance with environmental regulations



People and process safety

- Fire and explosion hazards
- Compressor surge
- Leaks
- Equipment Failures



Cost control and performance optimization

Capital and Operational Costs: Process Control Systems must be carefully designed to control both capital investment and ongoing operational costs

Long-Term Performance: Delivering efficient operations across the plant lifecycle

ENGINEERING



OPERATOR STATIONS



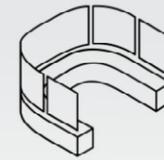
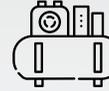
PROCESS OPTIMIZATION



PROCESS INFORMATION



ASSET MANAGEMENT



ENERGY AND EMISSIONS MANAGEMENT

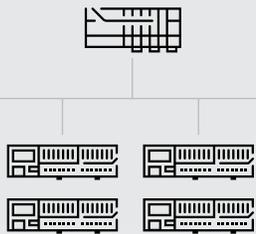


THINMANAGER
A ROCKWELL AUTOMATION TECHNOLOGY

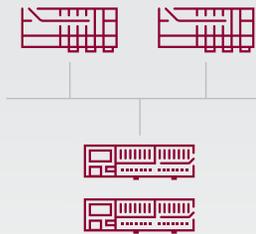
INTEGRATED VISUALIZATION

EtherNet/IP

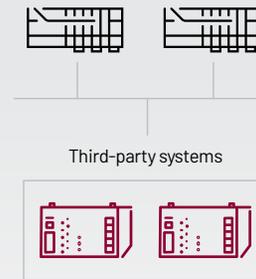
PLANT CONTROL SYSTEM



ESD



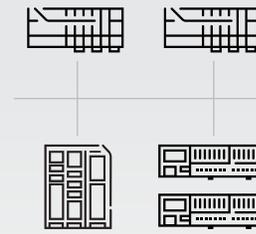
FGS



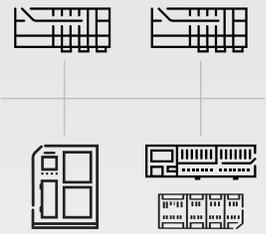
PROCESS CONTROLLERS



OTHER PROCESS SYSTEMS



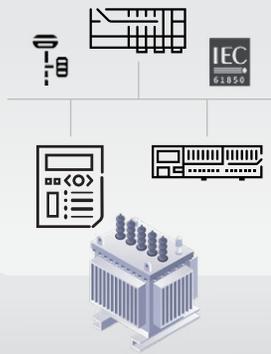
COMPRESSOR CONTROL



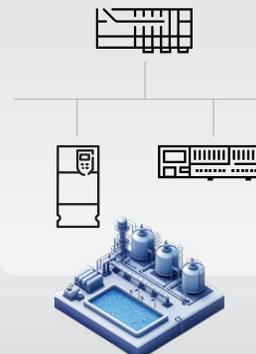
ELECTRICAL DISTRIBUTION



SOURCE



WASTEWATER



DIRECT CONTACT COOLER

BOOSTER FAN

ABSORBER

STRIPPER

COMPRESSION

PlantPAx® Distributed Control System

Uses a common automation platform for seamless integration between critical areas of your plant. This modern DCS connects process, discrete, power, information, and safety control into one plant wide infrastructure

FactoryTalk® Analytics™ Pavilion8®

Dynamic optimization of processes (absorber, stripper, and solvent regeneration stages) addressing system's non-linear behavior and interactions between variables

Production and asset management powered by FactoryTalk® DataMosaix™

Aggregate, clean and contextualize disparate real-time and historical data sets, directly or indirectly related to physical assets, in one unified location

FactoryTalk® Energy Manager

Energy monitoring application that provides energy and production information based on an energy plant model of the underlying process at a plant, process area, and equipment level

Rockwell and Cisco Ethernet/IP Validated architectures

IT/OT integration, performance and security in every level MCC, I/O, field instruments and third-party devices integration over EtherNet/IP reduce engineering and maintenance costs

Logix SIS-integrated safety solution

Offering both SIL 2 and SIL 3 certifications for enhanced process and hybrid safety. Logix SIS provides all components of a safety instrumented system including the process logic-solver and I/O

FLEXHA 5000™ I/O module

Features a universal card option that allows for flexibility in I/O choice. This I/O choice is configurable per channel

Unified electrical distribution and control architecture

Enables consolidation information between power and process: Better operations visibility and awareness and less maintenance costs

Modular plant and skid integration

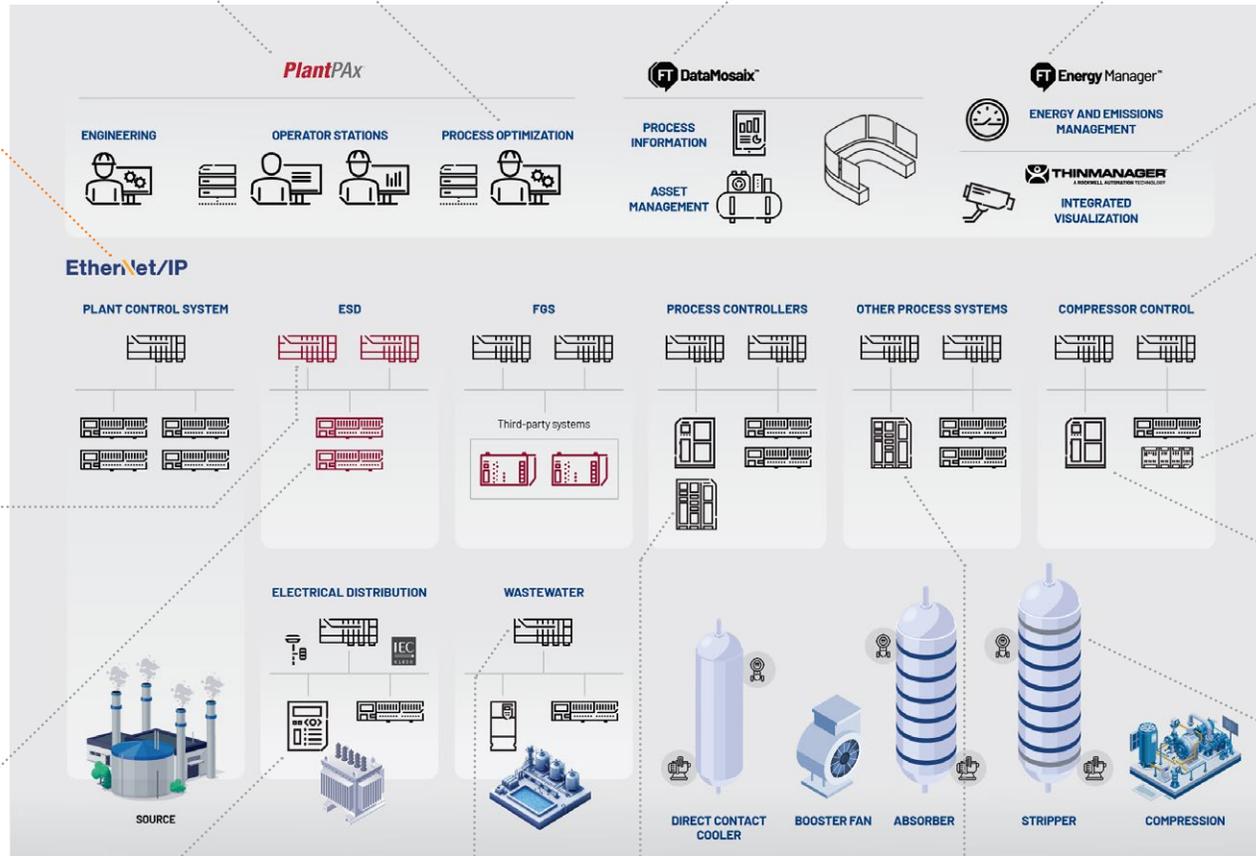
Integrates modular process skids into a plant's production system (same HMI, alarm structure)

CENTERLINE® (Medium Voltage MCC)

Medium Voltage Motor Control Centers integrated intelligence and the cost-effective solution for motor starters

IntelliCENTER® with EtherNet/IP

Enhances integration and reduces MCC setup time. The network connectivity allows easy monitoring, troubleshooting, and diagnosis of the MCC



ThinManager®

Centralized management of applications and visual sources, all from one user interface

Surge control algorithm

Sets a dynamic value based on the compressor's operating point and surge control line. It processes flow and pressure ratios to detect and help prevent surge conditions, avoiding the need to open the blow-off valve

Dynamix™ Condition Monitoring

Dynamically measures sensor information (vibration, speed...) helping to identify potential issues in equipment before they occur

PowerFlex® 6000 medium voltage drives

Ideal for compressors and motor control applications from 100 kW to 11,000 kW (190 Hp to 14,600 Hp) and for motors rated from 2.3 kV to 11 kV

Rockwell Automation and Endress+Hauser field instruments integration:

- Reduced programming
- Eliminates configuration errors
- Reduces risk and increases productivity



CYBERSECURE

Aligns with IEC 62443-3-3, featuring user authentication, network segmentation, secure remote access, data encryption, intrusion detection, audit trails, and patch management for robust industrial cybersecurity



SITUATIONAL AWARENESS

Graphics focused on situational awareness: Provide operators with a clear and comprehensive understanding of the current system status, enabling faster and more informed decision-making



ALARM MANAGEMENT

Effective alarm management: The system helps to ensure that critical events are promptly identified and addressed, minimizing downtime and potential risks

Plant-wide control



POWERFUL PROJECT DESIGN CAPABILITIES

Reduce costs and projects risks thanks to:

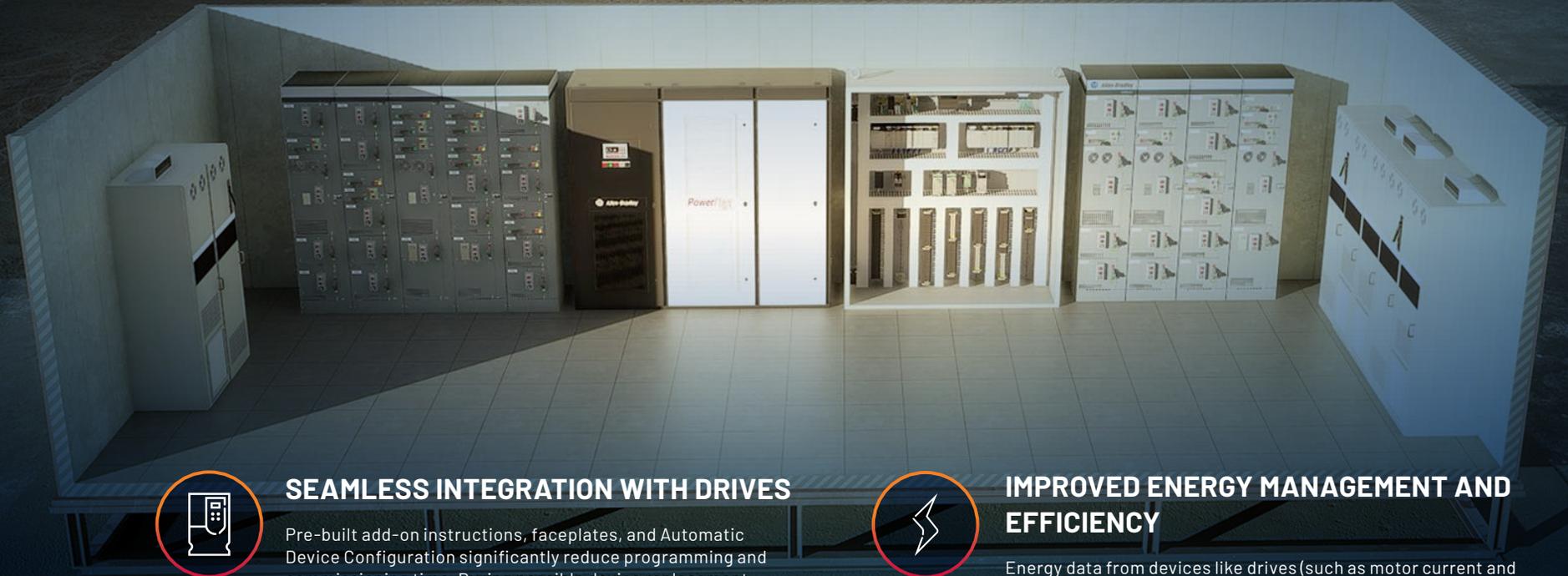
- Unified environment: For PLC, HMI, and alarms
- Object-oriented programming: Modular, reusable code
- Pre-built objects/templates: Reduces engineering effort and delivers design consistency
- Integrated simulation/testing: Validates designs before deployment



EMBEDDED ANALYTICS

Gain actionable insights and optimize operations with KPI-aligned FactoryTalk® Alarms and Events dashboards, comprehensive device information dashboards, and seamless integration of multiple data sources into a unified enterprise view for both cloud and on-premise deployments

Power integration and management



SEAMLESS INTEGRATION WITH DRIVES

Pre-built add-on instructions, faceplates, and Automatic Device Configuration significantly reduce programming and commissioning time. During possible device replacement, the Logix controller automatically detects the new drive and downloads the correct configuration parameters. This minimizes manual programming and reduces commissioning time



IMPROVED ENERGY MANAGEMENT AND EFFICIENCY

Energy data from devices like drives (such as motor current and power consumption) is easily accessible. This granular data allows for more precise energy monitoring and optimization strategies within the integrated system



ENHANCED OPERATIONAL VISIBILITY AND CONTROL

Rich diagnostic data from intelligent devices is readily available within the control system. This means operators have detailed insights into the health and performance of power equipment directly within their process control interface, leading to better decision-making before deployment



ENHANCED POWER SYSTEM VISIBILITY

Unified integration with IEDs (Intelligent Electronic Devices) using IEC 61850, enabling seamless data exchange, simplified integration, and improvements in visibility, reliability, maintenance, and safety for critical power systems



REDUCED ENGINEERING AND INTEGRATION COSTS

Premier Integration simplifies device configuration and commissioning. Pre-built add-on instructions and faceplates within the Logix environment streamline programming and reduce engineering time. This is a major cost saver when integrating power components into the overall system

Connect with us.    

rockwellautomation.com — expanding **human possibility**[®]

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