Solutions for Oil & Gas

Driving safety, performance, and efficiency.

schneider-electric.com/oilgas
A global leader and trusted partner

30+ years of proven experience and the integration of best-in-class brands to address your key challenges and deliver value.

Key industry trends are challenging your OpEx and CapEx decisions:

- Keeping employees, assets, and the environment safe in a high-risk industry
- Addressing industry trends such as the aging workforce and price volatility
- Adopting new technologies and prioritizing investments
- Meeting sustainability compliance and other regulations

Our market-leading positions are a result of our partnership with our customers. We understand your challenges, listen to your unique requirements, and find the right solutions to mitigate risks and drive results – all while ensuring best-in-class global delivery and project management throughout the entire O&G value chain.

Third-party industry studies confirm that we are the O&G leader in secure power, safety systems, fuel supply chain, and pipeline management systems, and we rank second in operations management software.
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Connected technologies that transform decision-making

Closing the gap between operations and enterprise with EcoStruxure™.

In the next few years, leaders in the oil and gas industry will make the biggest gains by embracing big data, the Internet of Things, and advanced analytics. Schneider Electric is uniquely positioned to partner with you in this rapidly changing world with end-to-end solutions including hardware, software, and infrastructure. Our comprehensive enterprise-level Oil and Gas portfolio addresses your greatest challenges by helping you improve asset performance and optimize production rates.

With EcoStruxure, our IoT integrated system architecture, you can now take advantage of what digitization has to offer. Bringing together energy, automation and software, EcoStruxure enhances safety, reliability, efficiency, sustainability and connectivity.

- **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.

- **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.

- **Applications, Analytics & Services** – Interoperability is imperative to supporting the diverse hardware and systems in oil and gas markets. EcoStruxure enables a breadth of oil & gas applications, analytics & services for seamless enterprise integration.

Digital transformation in the Oil and Gas industry could unlock approximately $1.6 trillion of value for the industry, its customers and wider society.

Source: Accenture.com
Innovation at Every Level

Harnessing the potential of digital transformation.

Schneider Electric gives O&G companies the ability to harness the true potential of these digital transformations with Innovation at Every Level of their IT and OT systems:

**Connectable devices & systems** – Connect energy, automation, software, and analytics to fuel revolutionary innovations in efficiency, sustainability, reliability, and safety.

**Power & process management systems** – Ensure plant availability by handling unforeseen disturbances in real time with a unified operational automation platform.

**Smart operations** – Gain predictable efficiency via simulation and modelling, asset management, and business intelligence software.

**Digital services** – Access and control data anywhere to maximize productivity, safety, efficiency, and sustainability in a connected ecosystem.

**Physical and cyber security** – Protect and secure with an end-to-end approach to people and data safety.

By taking this integrated approach, we are able to deliver tested and validated future-proof Reference Architectures that enable the design of end-to-end, open, interoperable and connected systems for our Oil and Gas customers.

Schneider Electric is uniquely positioned to prepare you for this rapidly changing world with end-to-end owned solutions including hardware, software, and infrastructure; from energy management to automation to digital services:

**Simplify decision-making** - visibility on strategic and operational KPIs with connectivity and mobility innovations.

**Enhance operational intelligence** - increased safety and asset integrity with shared workflows and predictive analytics.

**Improve asset performance** - increased operational reliability and collaborative insights using a cloud solution, through asset management lifecycle and predictive fixed asset maintenance.

**CapEx reduction** - associated to cloud-based solutions and infrastructure.

**OpEx reduction** - associated with streamlined and more efficient real-time operations, information sharing and creation of collaborative environments that facilitate decision making.

**Increase optimized production** - through efficient remote process performance monitoring.
Offshore solutions

We reduce offshore project CapEx by up to 5% and OpEx by up to 6%.

**Software**: Gain predictable efficiency with our integrated software suite – simulation and modelling asset management, and business intelligence.

**Process automation**: Accelerate deployment speed safely, reliably, and cost effectively with our proven process automation expertise.

**Safety systems**: Prevent incidents with our complete abnormal situation management.

**Field automation and measurement**: Improve field operations with data automation and aggregation.

**Energy and outage management**: Improve reliability and operations uptime by managing multiple energy sources and ensuring power availability and quality.

**Life cycle services**: Our people make the difference, delivering a suite of services including energy, sustainability, consulting, and modernization.

**Critical offshore challenges**

- Specific risks of offshore operations
- High cost of downtime
- High cost of offshore staffing

**The Schneider Electric difference**

We partner with our customers to maximize return on assets by leveraging our leadership position in operation management software, process safety, and secure power.
Onshore solutions

We increase production efficiency by up to 5% while also maximizing recovery.

Software: Gain predictable efficiency with our integrated software suite simulation and modeling, asset management, and business intelligence.

Process automation: Accelerate deployment speed safely, reliably, and cost effectively with our proven process automation expertise.

Safety systems: Prevent incidents with our complete abnormal situation management.

Artificial lift, field automation, and measurement: Improve field operations and increase recovery with data automation and optimization of artificial lift functionality.

Energy and outage management: Improve reliability and operations uptime by managing multiple energy sources and ensuring power availability and quality.

Life cycle services: Our people make the difference, delivering a suite of services including energy, sustainability, consulting, and modernization.

Critical onshore challenges

- Maximize production without increasing costs
- Manage daily operations safely and reliably
- Motivate the workforce to embrace new technologies

The Schneider Electric difference

Only our portfolio and expertise can address the automation, process, and electrical complexities that are required to deliver comprehensive onshore projects with speed and efficiency.
Pipeline operations solutions

Only Schneider Electric provides an integrated software platform within our architecture that enables safe, reliable, and efficient operations from the field to the enterprise.

**Supervisory control and enterprise applications:** Optimize critical operations, protect from cyber threats, and enable regulatory compliance with a robust suite of software applications.

**Modeling and simulation:** Ensure safe operations with best-in-class leak detection and operator training, combined with modeling for increased pipeline efficiency through power optimization.

**Safety systems:** Prevent incidents with complete abnormal situation management.

**Process automation:** Employ reliable, safe, and cost-effective process automation.

**Energy and outage management:** Improve reliability and operations uptime by managing multiple energy sources and ensuring power availability and quality.

**Life cycle services:** Our people make the difference, delivering a suite of services including energy, sustainability, consulting, and modernization.

**Critical enterprise pipeline management system challenges**

- Implement industry best practices and regulatory requirements around control room management
- Address new cybersecurity threats to pipeline operations management
- Integrate information and communication technology from the field to the enterprise

We are the only company that provides an integrated software platform within our architecture to enable safe, reliable, and efficient operations from the field to the enterprise.
LNG and gas processing solutions

We remove risk and complexity – ensuring on-time and on-budget execution.

**Software**: Gain predictable efficiency with our integrated software suite – simulation and modeling, asset management, and business intelligence. Maximize process throughput and yield with blending software.

**Energy and outage management**: Accelerate commissioning with customized power distribution, including control systems in customized E-Houses.

**Safety systems**: Prevent incidents with complete abnormal situation management.

**Process automation**: Accelerate deployment speed safely, reliably, and cost effectively with our proven process automation expertise.

**Instrumentation**: Experience a full range of reliable instrumentation for greenfield/brownfield projects.

**Life cycle services**: Our people make the difference, delivering a suite of services including energy, sustainability, consulting, and modernization.

**Critical LNG and gas processing challenges**

- Stabilize plant early for commercial production
- Address an aging workforce
- Stabilize the increase in plant capacity

**The Schneider Electric difference**

We partner with our customers to maximize return on assets by leveraging our leadership position in LNG, process control, and electrical distribution.
Refining and petrochemical solutions

Our integrated simulation and control solutions reduce operating cost and increase availability by up to 5%.

**Software:** Assist stable early production with process simulation and modeling, and increase the overall process with blending software for input.

**Energy management:** Employ bespoke power distribution solution, including Energy Management Control System (EMCS) in customized E-Houses, for quick coordinated commissioning.

**Safety systems:** Prevent incidents with complete abnormal situation management from a global leader in process safety.

**Process automation:** Ensure ease of operation – reliable, safe, and cost-effective process automation – with our best-in-class system for control and operation of processes.

**Instrumentation:** Experience a full range of reliable instrumentation for greenfield/brownfield projects.

**Life cycle services:** Our people make the difference, delivering a suite of services including energy, sustainability, consulting, and modernization.

Critical refining and petrochemical challenges

- Meet changing market demand for product mix
- Manage wide swings in input material cost (crude and feedstock)
- Address an aging workforce

The Schneider Electric difference

As a solution provider to the world’s largest refining and petrochemical facilities, we are the only partner to provide a unique blend of process simulation and mastery in operations, electrical distribution, and energy management.
## Offer highlights

### Applications, Analytics and Software Suites

| Process Modeling and Optimization | • Minimize design, engineering, and commissioning time  
|                                  | • Increase profit potential with advanced planning and scheduling applications  
|                                  | • Minimize unplanned outages  
|                                  | • Optimize operations  

| Operations and Data Management | • Increase process agility  
|                               | • Optimize resource utilization  
|                               | • Facilitate innovation  
|                               | • Maximize productivity  
|                               | • Reduce operational costs  
|                               | • Enable knowledge management  

| Asset Performance Management | • Intelligent real-time condition management solution  
|                            | • Scorecard, key performance indicator dashboard, and reporting tool  
|                            | • Enterprise asset management solutions  
|                            | • Predictive asset analytics software  

| Enterprise Pipeline Management Software | • Open, scalable, and secure  
|                                          | • Easy integration with existing systems and processes  
|                                          | • Consistent access to information across enterprise  
|                                          | • Real-time and historical data monitoring/analysis  
|                                          | • Operations optimization  
|                                          | • Streamlined reporting and billing, enhanced customer service, and improved regulatory compliance  

| Planning and Scheduling | • Use one application, one user interface, and one source of data with version and data management control  
|                        | • Get secure Web-based access to crude oil data and decision support with trader tools  
|                        | • Share, manage, and model crude oil information with our industry-leading, enterprise toolset  

| Well Management | • Improve field asset performance with cloud solutions  
|                | • Simplify decision-making with connectivity and mobility innovations  
|                | • Enhance operational intelligence with predictive analytics  
|                | • Reduce CapEx with a cloud/hosted infrastructure  

| EcoStruxure Profit Advisor | • Enable plant personnel to identify true performance-improving initiatives  
|                           | • Know current performance and inform workforce operators when their operating decisions are making the business more profitable  
|                           | • Predict the profitability of the changes your operations workforce is proposing which will substantially minimize project risk and help to eliminate waste  

| Integrated Power and Process Management (IPPM) | • Avoid duplicate functions  
|                                              | • Improve operational efficiency  
|                                              | • Lower operational costs  
|                                              | • Improve decision making through enhanced HMI situational awareness  
|                                              | • Reduce operator errors though the presentation of timely and relevant information  
|                                              | • Reduced plant downtime through integrated power management  

### Process automation

- Simple architecture and reduced footprint
- Unified system platform provides functionality from field-level to C-level
- Normalized and time-synchronized data for reliable process knowledge
- Scalable platform with more operational flexibility

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EcoStruxure Foxboro DCS technology controls and protects some of the world’s largest, most complex process facilities. Ensure the operational integrity of your plant, enhance operational insight of your people, and adapt easily and affordably to change.

- Reduce CapEx and optimize project schedule with universal IOs
- Consistent engineering with field proven tools
- Lower risk with global expertise
- Tailored support programs for extended lifecycle

EcoStruxure Hybrid DCS brings together the best of PLC/SCADA and DCS. It is designed for smaller projects and is efficient from design engineering through operation. Now you can meet the demands of today’s production facilities and growing energy management requirements.

- Ethernet-based, energy-aware architectures for simplicity and performance
- Powerful and scalable controller platform to suit the requirements of your application
- Single environment for engineering, operation, and maintenance
- Open and extensible objects and object libraries

Modicon Quantum PLC meets the needs of even the most critical solutions, from a single rack system to a plantwide architecture.

- Meet critical solution needs with scalable, modular architecture
- Achieve optimum cycle times with continuous operation and rapid responsiveness
- Get integrated communication connectivity, extensive diagnostics functionality, and exceptional memory and data storage capacity

Safety systems

SimSci EYESIM Immersive Training System connects all operators and plant personnel with a high-fidelity, three-dimensional process simulation and virtual walkthrough plant environment.

- Practice procedures and train with realistic environments
- Improve skills for rarely performed, but safety-critical, tasks such as emergency shutdowns
- Optimize the transfer of skills from offline training environments to the work environment
- Evaluate operational procedures and individual operator performance reliably and accurately
- Maximize team training and communications in the control room and field, by shift and operations management

EcoStruxure Triconex safety and critical control platforms have been the market leader in functional safety for more than 30 years. Based on triple-modular redundant architecture, they offer advanced applications and life cycle management.

- Minimize downtime to maximize productivity
- Prevent incidents that expose company assets to unnecessary risk
- Provide employees with information to make the right decisions
- Cultivate a proactive safe environment to prevent accidents

Field automation and measurement

Foxboro Measurement and Control centralize and automate production control and flow measurement, interface real-time field data collection and asset management, and implement a backup system and highly secured control and monitoring technology.

- Monitor continuous multiphase flow stream without separator equipment
- Maintain measurement accuracy during intermittent and moderate liquid and gas slugging conditions
- Extend the life of existing equipment as new wells are drilled and tied in
- Gain remote access via Web interface connections

Telemetry and EcoStruxure Industrial Automation Management offer integrated, rugged, and reliable products to manage critical infrastructure systems in their entirety. Use products together in systems solutions or in combination with third-party products and systems.

- Implement a secure and reliable SCADA system across a wide area network
- Gain operational efficiency from field to enterprise
- Minimize risk by improving safety and regulatory compliance
- Deploy cost-effective, scalable solutions for small to enterprise-wide systems

LV Drive Systems-Allivar Process are the first variable speed drives with embedded intelligence. Maximize process performance and profitability and cut energy costs while ensuring quality and services and detecting failures before they occur.

- Control production from a central location
- Minimize downtime for pumping operations, even during power outages
- Withstand extreme weather conditions with specially designed drive enclosures
- Gain direct access to trouble-shooting information
- Log data for analytics in real time (data analysis, asset management, performance)

Power and energy management

Electrical Power Distribution: The switchgear complying to IEC/NEMA standards covers the full range from low voltage up to 50kV rated AIS and GIS solutions. Full range solution with SF6 and vacuum switchgear is available to meet the discerning requirements. Power and distribution transformers including special transformers with ATEX certification are included in the range. The equipment is certified for marine applications as well.

- Internal arc proof designs for LV switchgear
- Compact designs save precious floor space
- Choice of SF6 and vacuum switchgear
- Distribution transformers range- dry/oil/ester
- Power transformers
- Comprehensive range of relays
**E-House:** Fully tested and validated pre-fabricated solution that integrates power and control equipment into customized electrical buildings that are easy to install and maintain. It includes blast proof and hazardous areas ratings for onshore and offshore deployment. With our 3D engineering and modelling tools quality and reliability is ensured while optimizing cost, execution and delivery of electrical subsystems. Get reliable HVAC, lighting, security, and motor control.

- Optimal footprint and deadweight design for offshore
- Compliant to international and local standards including building code, electrical code etc.
- Factory acceptance tested leads to flawless integration
- Blast proof designs comply to relevant standards
- Customizable, prefabricated, pretested
- Robust construction withstands harsh environmental conditions
- Fast to deploy
- Reliable

**EcoStruxure Substation Operation: Energy Management & Control System:** monitors, controls, and optimizes the electrical energy for O&G infrastructures, even under challenging operating conditions, maximizing energy availability. Fully compliant to IEC 61850 it is suitable for all power system configurations – local generation or combined with the grid.

- Increase personnel and asset safety
- Streamline decision-making
- Boost availability and reliability through architectures featuring redundancy
- Reduce costs via minimized downtime and optimized energy consumption
- Scalable and seamless integration of entire electrical distribution and control system including captive power generation
- Ensure uptime of critical applications with generator management, steam management & intelligent fastload shedding

**Electrical Distribution System Optimization:** Our in-house consulting group provides high end services for end users and EPCs. This covers global architecture optimization and equipment dimensioning to optimize the system components including medium voltage, low voltage and EMCS. When entrusted with design support from FEED stage we can ensures savings in the hardware costs going up to two digits.

- “Fit for purpose” approach, that provides a customized solution specific to your needs
- Reduce CapEx and commissioning time via a pre-fabricated solution
- Load flow studies
- Equipment dimensioning and selection including HVAC
- E-House design, integration and optimization
- Cable dimensioning

**Uninterruptible Power Supply** provide custom solutions for mission-critical applications. Increase power availability, efficiency and uptime.

- Satisfies stringent industry requirements
- Withstands harsh environmental conditions
- Highly customizable
- Absolute reliability and highest quality

**Services**

**EcoStruxure Energy and Sustainability Services** integrate global environmental, economic, and social sustainability initiatives into one program. Leverage our global breadth and regional expertise, gain unbiased market and regulation recommendations.

- Integrate sustainability, buy energy more efficiently, and optimize resource consumption with high-impact strategic consulting and planning
- Track, manage, and forecast key energy and sustainability metrics, such as energy consumption, carbon, water, waste, and corporate social responsibility
- Develop an energy and sustainability strategy, and deploy projects that ensure you reach your business goals

**EcoStruxure Resource Advisor** drives your energy and sustainability programs with secure access to data, reports, and summaries. Personalize and configure your experience for maximum efficiency.

- Drive energy and sustainability programs with secure access to data, reports, and summaries
- Integrate data from utility data, software, equipment, and meters onto a single enterprise-wide platform
- Simplify reporting and communication between key internal and external stakeholders
- Establish and track carbon, water, and waste footprints, and easily communicate results of reduction efforts to key stakeholders

**Field Services** give you peace of mind while minimizing CapEx and OpEx. Schneider Electric Asset Management Life Cycle provides electrical and process pre-FEED/FEED studies and support, rigorous FAT, optimized on-site start-up and commissioning, service plans, training, maintenance and installation assessment.

- Improve and extend enterprise asset utilization while simplifying infrastructure management
- Reduce risk and improve solution performance, visibility, and reliability
- Ensure a smooth, risk-free transition to newer technologies with technical expertise, products, and support (both remote and on-site)
- Simplify budget planning with predictive analytics
- Help manage technical infrastructure from planning to end of life with globally available, easily standardized services
## What can Schneider Electric do for you?

- Maximize recovery and production
- Improve operations safety
- Help train your staff
- Ensure reliable, safe, and efficient pipelines
- Reduce CapEx/OpEx
- Increase asset availability
- Optimize supply chain for fuel buy/sell
- Optimize supply chain for engineering, procurement, and construction
- Reduce integration project risk
- Reduce offshore dead weight ton

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### ECOFIT Modernization Services

Offer environmentally friendly solutions to extend the lifetime of your switchgear and reduce downtime.

- Extend switchgear lifetime by up to 50%
- Enhance availability and operational reliability
- Optimize service costs by +30 to 70%
- Improve safety for personnel and equipment
- Reduce maintenance costs
- Save time and money

### EcoStruxure Asset Advisor

IoT-based advanced maintenance and predictive analytics of O&G electrical system to ensure more reliability, safety, and cost efficiency of your electrical distribution system.

- Operational performance. Reduce unscheduled downtime, increase asset life, and offer a consistent experience with an optimized maintenance plan
- Safety. Experience reduced personal risk while gaining early equipment failure warnings and expertise continuity.
- Financial efficiency. Reduce failure risk and cost of ownership and maintenance, and gain new asset insights

### End-to-end cybersecurity

- Defense in depth through a layered architecture within our control systems to make them inherently secure
- Tested, validated and documented architecture
- First industry ISA Secure Security Development Lifecycle Assurance conformance certificate
- 150+ products are cybersecurity standards certified for electrical and process installations

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