Natural gas extracted from shale rock formations has become the fastest-growing source of gas in the United States and other countries throughout the world are now evaluating how they can harness this emerging energy source.

-Chevron website

The complexity of shale assets presents significant challenges throughout all stages of field development—well planning and construction, facilities deployment, and operations. The rapid development and deployment of well pad facilities, accelerated production decline, and an evolving regulatory environment leave little margin for error. To achieve and sustain economically-viable production requires effectively leveraging technology to accelerate the shale learning curve.

What if you could...

Improve Health, Safety and Environment performance in evolving environmental and regulatory landscapes
- Reduce reactive operational intervention and maintenance
- Maximize operational performance while operating under tight permit constraints and minimizing regulatory management and compliance issues
- Improve operations insight and abnormal situation detection

Reach first production sooner and optimize your facility development cost within challenging economic constraints
- Minimize automation complexity and project execution risk
- Simplify field integration through to the back office
- Augment your limited resources with effective vendor support and on-site services

Improve operational efficiency, identify and diagnose problems, and manage cost
- Maximize effectiveness of operating resources
- Reduce unnecessary maintenance and operations time in the field
- Increase responsiveness to production changes

Maximize lifetime production and yield of each well while improving reservoir modeling and forecasting
- Easily access accurate, reliable and timely production site data
- Improve decision making and control response time
- Reduce disruptions to production

Our analysis suggests that global shale oil production has the potential to reach up to 14 million barrels of oil per day by 2035; this amounts to 12% of the world’s total oil supply.

PriceWaterhouseCoopers
Solutions for Every Step
Emerson offers an end-to-end integrated portfolio of solutions to minimize installation time, avoid maintenance issues, and easily accommodate your existing infrastructure including devices and systems

- Native integration and utilization of Emerson technologies enable an overall enhanced operation
- Platform configurability and standard applications reduce engineering and support effort while improving operational reliability
- Simplified integration and installation practices reduce project risk and complexity
- Standard field operation applications allow optimized production with minimal cost
- Turnkey communications and SCADA systems enable field-to-back office visibility for monitoring and control
- Lifecycle services maximize entire investment from installation to commissioning to servicing

SHALE PRODUCTION

Reservoir Management
- Reservoir modeling (from seismic acquisition to simulation, exploration to production) that provides the greatest accuracy, most comprehensive uncertainty assessment, and best-quantified risk in the geologic model
- High-quality reservoir modeling and detailed reservoir understanding increase oil and gas recovery, with accelerated production from well-managed fields

Well Construction
- Improved drilling and completion for faster, safer, lower cost, and more productive wells

Artificial Lift
- Lift application packages maximize production and minimize cost
- Adaptable automation solutions for evolving well and reservoir conditions reduce total cost of ownership and extends asset performance

Wellhead
- Sand, erosion, corrosion monitoring and chemical injection dosing optimization minimize flow assurance problems and well remediation
- Measurement and monitoring insight ensure well integrity and responsive and safe emergency shutdown
- Responsive wellhead pressure and flow control lead to safe, cost-effective and optimized production

Production Separation & Heater Treater
- Reliable measurement and control enables well production optimization, improved planning, and improved availability to maximize production and yield
- Separator and heater treater control with abnormal situation detection results in reduced production measurement uncertainty, accurate allocation accounting, and reduced VOC emissions
- Pressure control ensures safety, environmental assurance, and separation efficiency

Heater Treater / Line Heaters / Flare
- Reliable fuel gas and pilot control allows dependable operation with improved uptime, reduced fuel costs, and lower emissions
- Simple integration of burner management system reduces engineering costs and delivers a worry-free emergency shutdown integration
- Accurate flare gas measurement improves environmental emissions monitoring and reporting

Gas Gathering & Compression
- Fully integrated meter run and turnkey fiscal measurement solutions improve compliance and reduce fiscal risk
- Optimal control of natural gas to compressor engines with varying fuel composition reduces fuel consumption and emissions

LACT

Dehydration / Acid Gas Removal

Line Heater

Flare

Heater Treater

Produced Fluid Treatment
- Optimal glycol circulation rate control on the dehydrator for effective water removal, reduced operating cost and reduced emissions
- Optimal amine circulation rate and density based amine concentration monitoring for optimal acid gas removal efficiency and reduced emissions
- Reliable fuel gas and pilot control allows dependable operation with improved uptime, reduced fuel costs, and lower emissions

Storage & Liquids Transfer
- Remote monitoring of tank volumes allow optimization of truck routing thereby reducing tanker requirements, avoiding well shut-in, and preventing environmental events
- Reliable fiscal transfer and turnkey fiscal measurement solutions enable accurate production accounting and real-time haul tickets that significantly accelerate reconciliation of product volumes
- Effective management of tank bottoms and water inventory
- Vapor recovery and tank blanketing systems meet HSE requirements while reducing losses

Wellhead Separator

Produced Fluid Treatment

Separator

Reservoir Management

Well Construction

Wellhead

Production Separation & Heater Treater

Heater Treater / Line Heaters / Flare

Gas Gathering & Compression

LACT
Flow Oil & Gas Solutions for Shale Production

Flow Solutions for Oil & Gas

Emerson offers standardized solutions, based on the most reliable and precise technologies, to maximize your Oil & Gas production. By applying best practices, expert application knowledge, and world-leading technology, Emerson can help optimize your overall operating performance.

Flow Technologies
Emerson provides the best fit-for-purpose flow technologies that utilize inherent device data to deliver early insight and enhance the performance of critical process units in the most cost effective manner.

Flow Systems
Utilizing proven system design processes, best-in-class measurement and control technologies, and field-proven best practices, Emerson’s flow systems enhance operational effectiveness and improve capital efficiency.

Flow Services
Emerson’s flow consulting, commissioning, installation, calibration, maintenance, and education services ensure long-term asset sustainability and performance to effectively help manage operations for the life of the field.

From precision measurement to asset management, Emerson solutions reduce risk, increase reliability, and improve operational performance with best-in-class technologies and services.

Flow Production Applications

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Shale Production Applications

- Well Construction
  - Cementing / Chemical Additives / Drilling Fluids / Hydraulic Fracturing / Mud Pumping
  - Water Management / Well Placement

- Wellhead
  - Artificial Lift Optimization / Chemical Injection / Sand Detection / Emergency Shutdown / Flow Assurance / Production Planning & Forecasting

- Separator

- Line Heater
  - Burner Management System Interface / Fuel Control / Pilot Control

- Dehydration / Acid Gas Removal
  - Amine Concentration / Amine Flow Control / Glycol Flow Control / Burner Management System Interface / Fuel Control / Pilot Control

- Heater Treater
  - Burner Management System Interface / Fuel Control / Pilot Control / Production Measurement / Backpack Pressure Control / Sand Accumulation Detection

- Flare
  - Burner Management System Interface / Fuel Control / Pilot Control

- Gas Gathering & Compression
  - Fiscal Measurement / Gas Gathering / Compressor Fuel Gas Composition

- Storage & Liquids Transfer
  - Tank Blanketing / Tank Bottoms / Tank Monitoring / Truck Loading / Vapor Recovery / LACT Units / Tank Venting / Flame Arrestors / Hatches

- Well Pad Miscellaneous
  - Utility Gas Flow Monitoring

- Utility Gas Flow Monitoring

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Oil and gas companies worldwide are choosing Emerson for proven automation solutions, instrumentation, and support. Whether you’re an independent or an integrated oil company, Emerson works with asset and production teams to apply the best technology and expertise to maximize your investment and return on shale production around the globe. Driving down operational costs, while optimizing production safely and quickly, is how we can help you succeed in this complex environment.

Daniel Measurement & Control
Micro Motion
Remote Automation Solutions
Regulator Technologies
Rosemount
Roxar
Flow Lifecycle Services

For more information, please contact your sales representative. For a complete list of contact information and websites, please visit: www.emersonprocess.com/home/contacts/global

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