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Oil & Gas Automation Market Forecasts to 2032 – Global Analysis By Component (Hardware, Software, and Services), Process, Technology, Application and By Geography

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Abstracts

According to Stratistics MRC, the Global Oil & Gas Automation Market is accounted for $26.62 billion in 2025 and is expected to reach $41.37 billion by 2032 growing at a CAGR of 6.5% during the forecast period. Oil & Gas Automation involves employing modern technologies, digital systems, and software to control, supervise, and optimize operations across the oil and gas sector. Covering exploration, drilling, production, refining, and transportation, automation improves operational efficiency, safety, and accuracy while minimizing manual mistakes. It uses sensors, SCADA platforms, and predictive tools to deliver real-time insights, simplify processes, and support proactive maintenance. By automating critical workflows, the industry can achieve higher productivity, ensure safer operations, and reduce costs in its complex and high-risk environment.

Market Dynamics:

Driver:

Digital transformation & industry 4.0 adoption

Companies are increasingly deploying IoT sensors, AI-driven analytics, and cloud-based platforms to optimize production efficiency. Automation is enabling predictive maintenance, reducing downtime, and improving asset utilization across upstream, midstream, and downstream activities. Advanced robotics and machine learning are enhancing drilling precision and reservoir management. Integration of digital twins is

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allowing operators to simulate and monitor complex processes in real time. The push toward smart infrastructure is also aligning with sustainability goals by minimizing energy waste. Collectively, these innovations are reshaping oilfield operations and accelerating the adoption of fully automated workflows.

Restraint:

Skill gaps & workforce challenges

Many employees lack the specialized digital skills required to manage AI, robotics, and advanced control systems. Training programs are often costly and time-consuming, slowing the pace of transformation. Smaller operators struggle to attract and retain talent with expertise in automation and cybersecurity. Resistance to change among traditional workers further complicates integration of new technologies. The mismatch between evolving technical demands and available workforce capabilities creates operational inefficiencies. As a result, skill shortages continue to restrain the full-scale deployment of automation solutions across the sector.

Opportunity:

Smart oilfields & remote operations

Remote monitoring systems are enabling operators to oversee production sites from centralized control centers. Advanced sensors and real-time analytics are improving decision-making and reducing safety risks in hazardous environments. Automation technologies are facilitating unmanned drilling rigs and autonomous pipeline inspections. Cloud-based platforms are enhancing collaboration across geographically dispersed teams. The ability to manage assets remotely is lowering operational costs and increasing efficiency.

Threat:

Cyber attacks & espionage risks

As oil and gas companies digitize operations, cybersecurity threats are becoming increasingly severe. Critical infrastructure is vulnerable to hacking, espionage, and ransomware attacks targeting automation systems. Breaches can disrupt production, compromise safety, and cause significant financial losses. State-sponsored cyber espionage adds another layer of risk, particularly in geopolitically sensitive regions. The

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integration of IoT devices and cloud platforms expands the attack surface for malicious actors. Many firms struggle to implement robust cybersecurity frameworks due to cost and complexity.

Covid-19 Impact:

The pandemic accelerated the adoption of automation in oil and gas by highlighting the need for remote operations. Lockdowns and travel restrictions forced companies to rely on digital platforms for monitoring and control. Workforce shortages during the crisis increased dependence on robotics and AI-driven systems. Supply chain disruptions underscored the importance of predictive analytics and resilient automation frameworks. The crisis also reshaped safety protocols, with automation reducing human exposure in high-risk environments. Post-pandemic strategies now emphasize resilience, digital integration, and decentralized operations across the value chain.

The software segment is expected to be the largest during the forecast period

The software segment is expected to account for the largest market share during the forecast period, due to advanced platforms for data analytics, process control, and predictive maintenance. Software solutions enable seamless integration of IoT devices, robotics, and cloud systems. Operators are increasingly investing in automation software to enhance efficiency and reduce downtime. Real-time monitoring and digital twin applications are strengthening asset management. The scalability of software platforms makes them essential for both large enterprises and smaller operators.

The water & wastewater treatment segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the water & wastewater treatment segment is predicted to witness the highest growth rate. Rising environmental regulations are compelling companies to adopt automated treatment systems. Smart sensors and AI-driven monitoring are improving water recycling and waste management. Automation reduces chemical usage and enhances compliance with sustainability standards. Remote control systems are enabling efficient operation of treatment facilities. Growing investments in eco-friendly technologies are boosting demand for automated solutions.

Region with largest share:

During the forecast period, the North America region is expected to hold the largest

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market share. The region benefits from advanced technological infrastructure and strong R&D investments. U.S. operators are leading in the adoption of digital oilfield solutions and smart drilling systems. Government initiatives supporting energy efficiency are further driving automation uptake. Strategic collaborations between technology providers and oil majors are accelerating innovation. The presence of established automation vendors strengthens market penetration.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR, owing to rapid industrialization and expanding energy demand. Countries like China, India, and Australia are modernizing oilfield infrastructure with smart systems. Government policies promoting sustainability and efficiency are encouraging automation adoption. Regional players are partnering with global firms to access advanced technologies. Rising focus on renewable integration is also boosting demand for automated solutions.

Key players in the market

Some of the key players in Oil & Gas Automation Market include ABB Ltd, AVEVA Group plc, Siemens AG, National Instruments Corporation (NI), Schneider Electric SE, TechnipFMC plc, Emerson Electric Co., Aspen Technology, Inc., Honeywell International Inc., Omron Corporation, Rockwell Automation Inc., Endress+Hauser Group, Yokogawa Electric Corporation, General Electric, and Mitsubishi Electric Corporation.

Key Developments:

In December 2025, ABB announced it has entered into an agreement to acquire IPEC, a UK-based technology company with more than 30 years of expertise in electrical diagnostics. IPEC's advanced monitoring systems track critical electrical infrastructure around the clock, using AI and advanced analytics to predict failures that could result in multi-million-dollar losses, safety risks or extended outages for industries such as data centers, healthcare, utilities and manufacturing. The transaction is expected to close in the first quarter of 2026.

In July 2025, Siemens AG announced that it has completed the acquisition of Dotmatics, a leading provider of Life Sciences R&D software headquartered in Boston and Portfolio Company of global software investor Insight Partners, for an enterprise

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value of $5.1 billion. With the transaction now completed, Dotmatics will form part of Siemens' Digital Industries Software business, marking a significant expansion of Siemens' industry-leading Product Lifecycle Management (PLM) portfolio into the rapidly growing and complementary Life Sciences market.

Components Covered:

- Hardware
- Software
- Services

Processes Covered:

- Upstream
- Midstream
- Downstream

Technologies Covered:

- Distributed Control System (DCS)
- Product Lifecycle Management (PLM)
- Programmable Logic Controller (PLC)
- Enterprise Resource Planning (ERP)
- Supervisory Control and Data Acquisition (SCADA)
- Human Machine Interface (HMI)
- Safety Instrumented System (SIS)

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Manufacturing Execution System (MES)

Other Technologies

Applications Covered:

Oil & Gas

Chemical & Petrochemical

Water & Wastewater Treatment

Pharmaceutical

Energy & Utilities

Other Applications

Regions Covered:

North America

US

Canada

Mexico

Europe

Germany

UK

Italy

France

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- Spain
- Rest of Europe

Asia Pacific

- Japan
- China
- India
- Australia
- New Zealand
- South Korea
- Rest of Asia Pacific

South America

- Argentina
- Brazil
- Chile
- Rest of South America

Middle East & Africa

- Saudi Arabia
- UAE
- Qatar

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South Africa

Rest of Middle East & Africa

What our report offers:
- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2024, 2025, 2026, 2028, and 2032
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

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