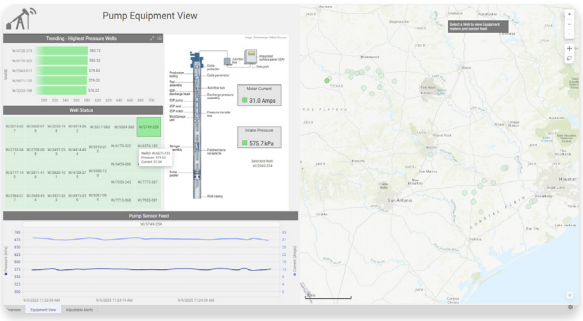
Spotfire® for Energy

Predictive analytics to reduce operational risks & expenditures

Industry pain points

Energy companies, particularly in oil and gas, operate in one of the most complex and high-stakes environments. Equipment runs continuously under extreme conditions, infrastructure ages quickly, and downtime can cost millions of dollars per day. The stakes are even higher when failures impact worker safety or cause environmental incidents. At the same time, organizations are pressured to contain operational costs, maximize production efficiency, and maintain compliance with ever-tightening regulations.

Despite the vast amount of data collected from wells, pipelines, and processing facilities, much of it remains underutilized. Siloed systems and outdated approaches to maintenance mean operators often find themselves reacting to failures instead of preventing them. This reactive posture drives up maintenance costs, shortens asset lifecycles, and undermines operational resilience.



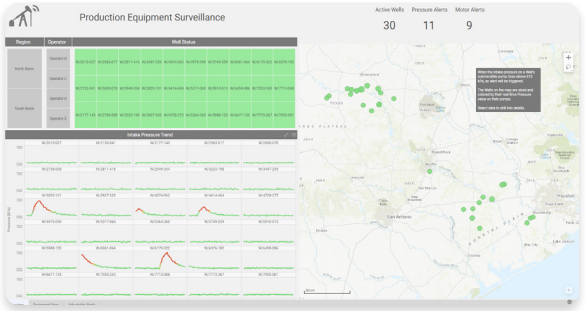
Monitor pumps, track trends, and prevent downtime with ease.

Business challenges

The challenge for energy companies is twofold: preventing unplanned outages while also optimizing expenditures across the operational lifecycle. Traditional approaches to maintenance, whether reactive or scheduled at fixed intervals, rarely align with the actual performance or condition of assets.

The result is inefficiency: critical equipment may fail before it is serviced, while other assets are maintained too frequently, wasting valuable resources.

To remain competitive, energy organizations must move beyond break-fix maintenance models and toward predictive strategies that harness both historical and real-time operational data. This shift requires advanced analytics that can reveal patterns hidden in complex datasets and forecast potential failures before they occur.



Optimize production with real-time equipment insights with Spotfire.

Spotfire® Industry Pro: Predictive analytics in action

Spotfire Industry Pro empowers organizations in the energy sector to turn their data into foresight. By applying predictive analytics to asset performance data, such as pump vibrations, pressure readings, and flow rates, engineers can anticipate issues well before they disrupt operations. Identify anomalous behavior, forecast equipment degradation, and recommend optimized maintenance schedules through Spotfire Industry Pro.

Organizations are enabled to transform maintenance from a reactive cost center into a proactive driver of reliability and efficiency thanks to the power of visual data science. Instead of waiting for a compressor to fail or servicing a pump on a fixed calendar, engineers can service equipment exactly when needed, extending asset lifespans while avoiding costly breakdowns. Beyond cost savings, this predictive approach enhances safety by reducing the risk of catastrophic failures and helps ensure compliance with environmental and regulatory standards.

Use case: Reducing operational risks and expenditures

Consider an upstream oil and gas operator managing hundreds of wells across a production field. Spotfire continuously ingests sensor readings from pumps, valves, and pipelines. Predictive models flag early signs of wear in a critical compressor, weeks before the issue would be visible through traditional monitoring. With this insight, engineers can schedule targeted maintenance during planned downtime, thereby avoiding costly unscheduled outages and preventing potential safety hazards.

In midstream operations, the same predictive approach can detect pressure anomalies that signal pipeline integrity issues. Downstream, it can forecast equipment performance in processing facilities, optimizing preventative maintenance for critical assets. Across the value chain, predictive analytics powered by Spotfire reduces risk, lowers costs, and builds resilience.

Key capabilities for engineers in the energy sector

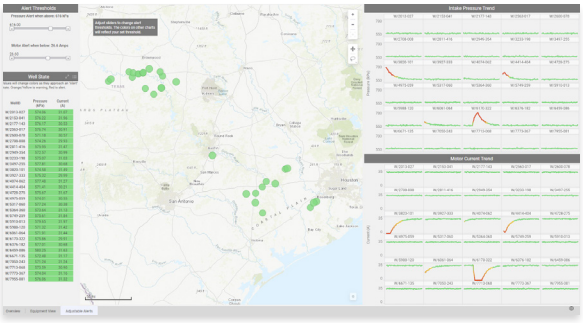
Spotfire delivers a unique combination of advanced analytics and industry-focused functionality. Real-time data integration enables organizations to analyze live conditions across assets, while time-series forecasting reveals how performance is expected to evolve. Out-of-the-box and ready-to-use algorithms enable engineers to create analyses for equipment maintenance, striking a balance between efficiency and risk mitigation. Delivered through interactive visualizations designed for collaboration, data-driven insights are easily discoverable and understood to be acted upon by both engineers and executives.

Business value delivered

For energy organizations, the impact of predictive analytics with Spotfire is clear:

- Operational risks are reduced through earlier detection of anomalies and potential failures.
- Maintenance expenditures are optimized by aligning service schedules with actual asset performance, eliminating both over-servicing and catastrophic breakdowns.
- Asset reliability improves across wells, pipelines, and facilities, while safety and compliance risks are minimized.

Ultimately, companies gain a measurable boost in profitability and resilience, transforming data into a powerful driver of operational excellence.



From pressure data to predictive insight, stay ahead of failures with intake pressure forecasts with Spotfire®.

Take the next step toward predictive analytics in energy.

Learn more at https://www.spotfire.com/solutions/oil-and-gas

Ready to explore the power of Spotfire Industry Pro? **Start your free trial now**. The Spotfire Industry Pro trial gives you the freedom to explore your data and gain faster insights for complex problem-solving. Unlock smarter insights, simplify deployments, and maximize your data's impact with the power of Spotfire Industry Pro.

Unlock smarter energy operations with Spotfire

With Spotfire Industry Pro, oil and gas organizations can move beyond firefighting and embrace predictive foresight. By combining real-time monitoring, advanced analytics, and intuitive visualizations, Spotfire equips organizations with the needed capabilities to maintain continuous operations, protect their workforce, and optimize every dollar spent on infrastructure.

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Spotfire® is a visual data science platform that makes smart people smarter by combining interactive visualizations and advanced analytics to solve complex, industry-specific business problems.

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