

Bosch Rexroth AG Gains IT and OT Observability and Reduces Energy Costs by 20-30%

Key Challenges

With skyrocketing energy costs and increased regulation, Bosch Rexroth AG lacked visibility across its IT and OT environments. Its teams needed unified, real-time data insights on energy use and its carbon footprint for reporting and optimization.

Key Results

Using Splunk's energy management solution based on Splunk Enterprise, Bosch Rexroth AG gained unified, granular and real-time visibility in its Ulm model factory. This reduced energy costs by 20-30% and cut greenhouse gas emissions by 25-30%.



Industry: Manufacturing

Products: [Splunk Enterprise](#), [Splunk Sustainability Toolkit](#)

Topics: Observability, Infrastructure Monitoring

Building a sustainable future with data-powered insights

From robotics parts to gear technology, hydraulics to 3D printing, German engineering firm Bosch Rexroth AG does it all. As a leader in industrial automation, the firm is not only committed to innovation and digital transformation, but also prioritizes sustainability across its production plants.

Prior to implementing Splunk, Bosch Rexroth AG relied on fragmented systems and insufficient processes to track energy consumption across its model factory in Ulm, Germany. It needed a platform that could provide unified, granular, real-time, and vendor-agnostic data to optimize manufacturing processes and reduce its energy costs and carbon footprint.

The decision to use Splunk, with the help of implementation partner **Consist Software Solutions**, was straightforward, as its parent company, Bosch, was already a longtime Splunk customer. By leveraging the **Splunk Sustainability Toolkit** in collaboration with **Electricity Maps** and integrating it with its Factory Orchestration Platform (FOP), Bosch Rexroth AG gained IT and OT observability, which helped it increase energy efficiency, improve its carbon footprint, and enhance operational performance. Deep integrations with the FOP allowed for ongoing optimizations with the goal of continuous improvement based on the flywheel effect.

Reduced energy consumption, a databyte at a time

By using Splunk Enterprise, Bosch Rexroth AG now monitors and optimizes energy cost, energy usage, and carbon footprint in its Ulm model factory through collecting energy data every five seconds. The dedicated energy management solution uses the Splunk Sustainability Toolkit and Electricity Maps to provide real-time and forecasted power mix, carbon intensity, and energy pricing data, helping Bosch Rexroth AG detect inefficiencies.

Outcomes

20-30%
reduction in energy costs (EUR)

10-15%
reduction in energy use (kWh)

25-30%
reduction in greenhouse gas emissions (CO2e kg)

This was achieved by applying three optimization levers and using AI and ML on the factory floor.

- **Lever 1 Availability: Optimized standby mode**

Tackling the lever availability and gathering energy consumption trends revealed that certain machines were unnecessarily idle at various times of the day. Instead of keeping them on, the Bosch Rexroth AG team now shifts them into standby mode when they're not in use, saving energy. "Splunk's integration with data sources from both IT and OT environments gives us visibility into operations," said Harald Lukosz, referent product area stage at Bosch Rexroth AG.

- **Lever 2 Pricing: Optimized peak management**

Tackling the lever pricing and having infrastructure monitoring across both IT and OT environments also means that the factory can avoid surcharges for exceeding peak energy consumption levels. With Splunk, the team at Bosch Rexroth AG set up an alert — based on an AI/ML energy consumption forecasting model — to warn operators when the factory reaches the 90% mark for energy consumption. This prevents the factory from exceeding the maximum and paying energy price surcharges.

- **Lever 3 Timing: Optimized scheduling of energy-intensive operations that are not time-sensitive**

By incorporating AI and ML capabilities as well as the data from Electricity Maps, Splunk enables Bosch Rexroth AG to identify energy consumption patterns, forecast energy needs, and optimize scheduling of energy-intensive operations that are not time-sensitive. For example, the teams ingested Electricity Maps' forecasts on energy prices and carbon intensity as data sources. Equipped with this data, they could then schedule their processes and machines to run during times when energy prices and carbon intensity are lowest, and when the power grid has a larger supply of renewable energy available.

Infrastructure monitoring across IT and OT environments has also made it easier for Bosch Rexroth AG to comply with industry standards and regulations that require energy management and carbon footprint reporting, such as the **Corporate Sustainability Reporting Directive** (CSRD) and the EU's **Energy Efficiency Directive**.



With Splunk, we're not only able to cut energy costs but also align our operations with sustainability goals. This is the future of manufacturing.

Harald Lukosz, Referent Product Area Stage



With Splunk's real-time dashboards, we can make decisions faster and ensure production runs as smoothly as possible.

Harald Lukosz, Referent Product Area Stage

Architecting the factory of the future

Bosch Rexroth AG's successful use of Splunk in energy management earned it recognition by winning the Industry Innovator Award at Cisco Live EMEA 2025. But there are more energy management initiatives underway.

In collaboration with Splunk, Bosch Rexroth AG is building the NextGen Factory, including Bosch Rexroth AG's "**Intelligent Factory Floor**," which can reconfigure machinery and use LED visualizations to flexibly adjust walkways, safety zones, and logistics areas. With energy costs continuing to rise and sustainability becoming an even greater focus for companies worldwide, Bosch Rexroth AG plans to automate more of its energy management systems using AI and ML, as well as bring Splunk's observability capabilities to more plants — and unlock more opportunities for energy savings and optimization.

Download Splunk for free or get started with the free cloud trial. Whether cloud, on-premises, or for large or small teams, Splunk has a deployment model that will fit your needs.



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