Maximizing asset value for energy companies with IBM and Microsoft Azure

Knowledge is power

Nowhere is that statement more true than in the energy industry, where data-driven intelligence is largely responsible for keeping operations running efficiently and sustainably.

By accessing and analyzing data, companies are able to optimize resource efficiency, predict and repair machine failures, track compliance and sustainability goals and more. But reliable, real-time intelligence can be difficult to obtain—especially in the field.

Energy companies often operate with legacy infrastructure and outdated processes. In many cases, data is fragmented across multiple silos, making it difficult to gain a comprehensive view of assets in service. Manual processes—such as collecting and analyzing data on paper or spreadsheets—further hinder the ability to act on real-time insights. As a result, field workers are often forced into reactive maintenance, while central office teams lack the visibility needed to meet regulatory and sustainability reporting requirements.

These challenges are magnified as the industry undergoes a historic transformation: the transition to renewable energy sources and the push for greater grid resiliency. As solar, wind and other renewables are integrated into the grid, the complexity of managing distributed energy resources increases dramatically. Grid operators must now balance intermittent supply with fluctuating demand, all while ensuring reliability and minimizing outages. This shift demands a new level of agility, intelligence and coordination—powered by real-time data.

Fortunately, modern enterprise asset management (EAM) and asset performance management (APM) systems offer a path forward. By leveraging cloud-based data storage, embedded artificial intelligence (AI) and advanced analytics, utility companies can unify and streamline their data ecosystems. These technologies enable real-time monitoring and predictive maintenance, support the integration of renewable assets and enhance grid resiliency by enabling faster response to disruptions.

Leading the charge in driving these innovations are IBM, Microsoft and Red Hat—empowering energy and utility companies to modernize operations, accelerate the clean energy transition and build a smarter, more resilient grid for the future.

IBM Maximo Application Suite: Maximizing asset value for energy and utilities

IBM Maximo Application Suite now features pre-integrated AI capabilities built with IBM watsonx, further strengthening its position as a leader in asset lifecycle management. In the 2024 Green Quadrant reports for EAM and asset performance management from independent research firm Verdantix, IBM was the only company to be named a leader in both the EAM and APM categories—affirming Maximo's exceptional capabilities. Now available on Microsoft Azure and the Azure Marketplace, IBM Maximo offers a fully cloud-based solution that empowers energy and utility companies to manage the full lifecycle of their assets—from predictive and preventive maintenance to performance optimization—anytime, anywhere.

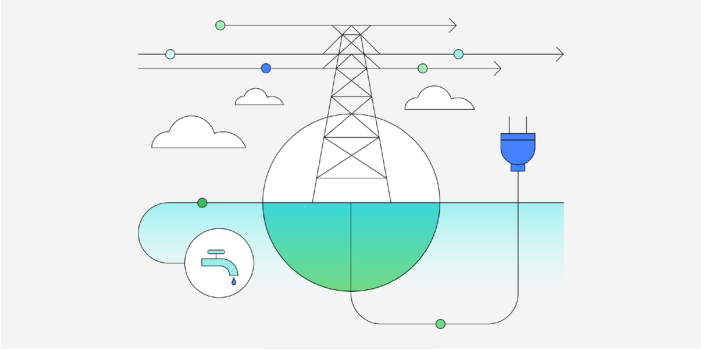
As the energy sector accelerates its transition to renewable energy sources, IBM is playing a pivotal role in enabling grid resiliency and operational continuity. With the introduction of IBM Maximo Renewables, organizations can seamlessly manage both traditional power generation assets and new renewable infrastructure—such as wind, solar and battery storage—within a unified suite. This integrated approach helps utilities balance the complexities of maintaining aging infrastructure while scaling up clean energy investments, ensuring a reliable, sustainable and intelligent energy grid.

KP Group, a renewable energy provider in India, provides a real-world example of how IBM Maximo can help energy companies. Today, they're using a solution featuring Maximo Renewables integrated with a Maximo-based data warehouse and Microsoft Power BI data visualization software hosted in Microsoft Azure. This solution has enabled KP Group to eliminate manual reporting and replace it with 100% fully automated hourly updates via dashboard that serve both their operational team and investors. And this is just one example. By bringing Maximo's EAM applications into the Azure cloud environment, energy companies can:

- Leverage Azure IOT Edge and Azure IOT Hub to more effectively collect and manage real-time machine data on the factory floor and beyond;
- Use Azure Data Lake and Azure Storage to store raw machine data in a single secure and easily accessible location;
- Take advantage of Maximo's integration with Power BI dashboards and the Microsoft Fabric solution to enable employees in the field or in the main office to quickly visualize and analyze data;
- Easily create digital models of their assets to assess real-time asset states, generate alerts for abnormal conditions and apply detailed data against benchmarks to manage the asset's full lifecycle using Azure Digital Twin.

IBM and Microsoft helped KP Group move from manual reporting to 100% fully automated reporting via hourly-updated dashboards.

Read the full story here →

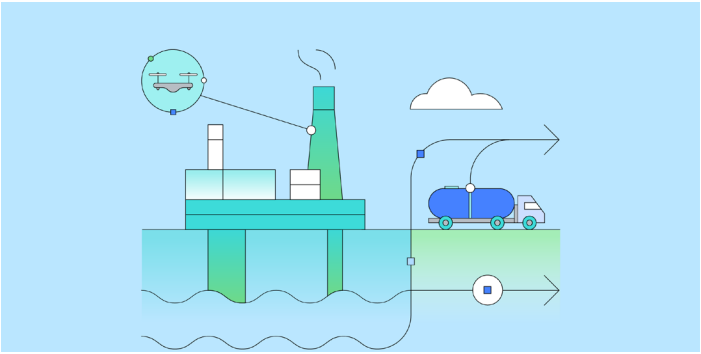


Bringing Agentic AI to the field

Energy companies face unique challenges when it comes to systems monitoring and maintenance. Assets are often distributed across broad territories and field maintenance can present less-than-ideal conditions. As an industry that relies heavily on legacy processes, however, bringing AI capabilities into the field requires an intuitive interface that field engineers can easily access and use. Maximo's pre-integrated AI capabilities eliminate the complexity often associated with AI. There are no complex queries required, no technical knowledge of AI needed and no multistep processes that need to be executed. IBM Maximo's AI agent uses plain-language queries that allow existing employees to easily retrieve and analyze data including work orders, service requests, real-time machine/sensor metrics and more.

For customers who prefer to use Microsoft Copilot, IBM Consulting can integrate Copilot's AI features with Maximo for new AI capabilities such as chat and voice AI prompts for field engineers. Both the native and Azure-based AI capabilities dramatically enrich asset management and maintenance for energy companies by allowing field engineers and operational teams to:

- Create, manage, review and approve work orders in real time;
- Locate and order parts during repair operations;
- Look up job plans;
- Access equipment manuals and online knowledge bases remotely for detailed diagnostic or repair information;
- Use multilingual voice prompts;
- Create work logs and log their daily work through voice mode;
- Integrate EAM tools with Microsoft Teams applications;
- Customize and optimize their asset lifecycle management solution around their unique business processes (with the assistance of IBM Consulting services).



Expanding EAM's horizons

There's even more to Maximo once you bring it into the cloud. As mentioned earlier, you can take advantage of Azure Digital Twin to easily create digital models of every asset in your organization. Digital Twin is a cost-effective and reliable way to predict, troubleshoot and manage asset performance over the entire lifecycle, from procurement to decommissioning. IBM Consulting has also teamed with Microsoft to create the Data Energy Hub solution on the Azure platform. Data Energy Hub provides a real-time, unified platform for the collection, consolidation, validation and interpretation of machine and sensor data.

> HashiCorp has surpassed one billion downloads on Azure with the HashiCorp Terraform AzureRM provider.

IBM's recent acquisition of HashiCorp brings new cloud infrastructure automation and security capabilities to Maximo users. HashiCorp solutions help extend Maximo's value on Azure by simplifying provisioning, enhancing security and enabling compliance in complex, distributed environments.

- With HashiCorp Terraform, Maximo customers can automate infrastructure deployments, scale environments consistently across regions and seamlessly integrate renewable energy sources—whether in the Azure cloud or on premises.
- HashiCorp Vault strengthens compliance and security by managing sensitive data and secrets across the asset lifecycle, ensuring secure access for highly regulated energy companies.
- Through IBM Consulting, customers can leverage custom solutions that integrate these tools with Azure and Maximo workflows to accelerate modernization and streamline operations.

IBM, Microsoft and Red Hat: A smartly integrated approach

For Azure customers looking to deploy Maximo across their business, Red Hat OpenShift provides a proven platform for deploying containerized applications to the cloud. Azure Red Hat OpenShift (ARO) is a managed application platform that is hosted on Azure and helps organizations quickly build, deploy and manage applications at scale. By combining IBM Maximo, Azure and ARO, energy companies have an end-to-end, cloud-based EAM solution built on open industry standards.

One company following this path is Kubota, a Japanese services provider in the agriculture, water and environmental industries. Using a combination of Maximo, Red Hat OpenShift and Azure, Kubota created a solution to improve the operational efficiency and maintenance of water and wastewater facilities with a new IoT system dubbed the Kubota Smart Infrastructure Systems (KSIS) BLUE FRONT. With the help of IBM Consulting services, Kubota has connected KSIS to IBM's facility maintenance and asset management platform, providing the scale needed to accommodate the approximately 100 facilities that Kubota currently operates as well as future expansion.

Energy companies have the option of deploying IBM Maximo using Red Hat Ansible Automation Platform with the Ansible DevOps Collection for IBM Maximo Application Suite. With Ansible DevOps Collection, IT teams execute automation scripts with Ansible Automation Platform. This provides a centralized configuration platform where automation can be easily shared and reproduced,. With Ansible Automation Platform, IT teams can streamline the deployment and provisioning process, resulting in a number of benefits, including:

Complete control over the solution deployment and configuration;

The ability to manage off-cluster resources, cloud operations, business continuity, lifecycle management and more from a central platform.

Get the maximum value from your assets with IBM and Microsoft Azure

With IBM software and services on Microsoft Azure, energy companies have the power to maximize their asset investments, increase asset performance and extend asset lifetime using real-time, data-based decisioning and AI. It's like giving your field engineers the most important tool of all to do their jobs: intelligence they can trust when they need it most. To learn how you can take your business to the max, follow the links below.

Explore the IBM/Microsoft partnership →

Learn more about Maximo →

Accelerate with Red Hat Ansible Automation Platform and ARO →