CASE STUDY IoT analytics platform | AZURE DATA PLATFORM | ENERGY SERVICES

Azure IoT analytics that spot equipment issues before they fail.

A global energy services company tracks energy use with IoT sensors. As data grew, insights came too late. We built an **Azure analytics platform** that turns sensor data into **clear, early signals**.

CLIENT: A GLOBAL ENERGY SERVICES COMPANY SERVING INDUSTRIAL CUSTOMERS

SCALE
Millions
Of sensor records processed every day on Azure

VISIBILITY
Live
Energy metrics across sites in Power BI dashboards

MAINTENANCE
Early
Anomaly detection flags equipment issues before failures

CLIENT BACKGROUND

The client is a **global provider of smart energy services for industrial customers**. It deploys sensors across buildings and equipment to track energy use, improve performance and support sustainability goals.

Its focus is helping organizations lower energy costs, reduce waste and run more efficiently across large, distributed sites. As sensor counts grew, its systems could not turn the data into timely insight.

BEFORE
Scattered sensor data, batch processing
Different formats per site, delayed alerts

→

AFTER
One Azure analytics platform
Data lake, Databricks and live Power BI

THE CHALLENGE

Disconnected IoT data sources
Sensor data arrived in different formats across sites, so no one had a trusted view.

Data processing could not scale
Legacy infrastructure could not handle growing IoT data volumes.

Data quality and consistency
Data from many sources had to be cleaned and joined before anyone could trust it.

Delayed monitoring
Batch processing slowed alerts on energy spikes and device failures.

Large real-time data volumes
Many locations sent large volumes of data that needed fast processing.

Missed efficiency savings
Slow insight meant higher costs, slower responses and missed chances to save energy.

WHAT WE DELIVERED

01 **Centralized IoT data lake** — DATA LAKE
We built an Azure data lake to bring sensor and device data from every site into one place.

02 **Cleaning and anomaly detection at scale** — DATABRICKS
Azure Databricks ingests, cleans and analyzes sensor data to detect anomalies reliably.

03 **Streaming ingestion** — EVENT HUB
Azure Event Hub streams sensor data in as it arrives, instead of in late batches.

04 **Analytics layer** — SYNAPSE
Azure Synapse Analytics supports analysis across sites and over time.

05 **Real-time operational dashboards** — POWER BI
Power BI dashboards show live energy metrics across sites, so teams spot issues fast.

06 **Scalable streaming architecture** — ALERTS, SCALE
The design processes millions of records daily and supports alerts and new sensors.

RESULTS

Predictive maintenance
Early anomaly detection helps teams fix equipment before it fails.

Less energy waste and downtime
Real-time monitoring reduced energy spikes and downtime.

Sustainability visibility
Dashboards show energy use patterns, supporting carbon goals.

Future-ready data platform
New sensors join without redesigning systems or disruption.

One trusted operational view. Sensor data from every site now lands in one place, cleaned and ready for analysis.

TECHNOLOGIES USED

- Azure Data Lake Storage
- Azure Databricks
- Azure Event Hub
- Azure Synapse Analytics
- Power BI

FINAL PERSPECTIVE

We **unified IoT data on Azure**, enabling predictive maintenance and energy savings today. The same platform prepares scalable analytics for better sustainability, reliability and faster decisions across future operations.

Need real insight from your IoT data?

Talk to a Krish Azure data engineer.

krishservicesgroup.com/contact-us
+1 (813) 494-4015

Read this case study online: krishservicesgroup.com/case-study/driving-energy-efficiency-using-azure-iot-analytics-predictive-maintenance/