

# Hawaiian Electric: Data-Driven Sustainability

## A STORY OF OWNING CHANGE

Energy company powers grid modernization with enterprise data and analytics platform on Azure.



## Hawaiian Electric Owns Change

Hawaiian Electric powers 95% of the islands of Hawaii. Committed to their customers and communities, the energy leader strives to bring reliable, affordable and clean energy to Hawaii. Their goal? **Reduce carbon emissions by two-thirds within 10 years and become net-zero in carbon emissions by 2045 by creating a cost-effective, sustainable and resilient energy system for future generations.**

### THE CHALLENGE: GETTING GRANULAR WITH DATA Smart Meters To Inform Grid Modernization Investments

Hawaiian Electric is on a mission to help Hawaii become fully self-sufficient in energy production and consumption. Their focus? Making a down payment on a decarbonized Hawaii economy by investing in power generation, transmission and distribution infrastructure. To make it happen, they would need to dig into current energy consumption data, directly from the source.

The energy company rolled out an advanced metering infrastructure (AMI) for precise usage readings and smart-meter data. With hundreds of thousands of smart meters already in the field and growing, the time-series data would help them:

- Get a clear picture of their community's electric energy consumption
- Understand how electric vehicles, solar panels and distributed energy resources affect grid modernization efforts
- Create transparency by safely democratizing data access and increasing reporting for internal and external stakeholders
- Lay the groundwork for performance-based rate making and more customer savings
- Inform capital investments for renewable energy to build a greener future

To collect, store and consume so much data, Hawaiian Electric needed a **modern data architecture**. They looked for a team with enterprise data management expertise, as well as onshore and offshore support to power their mission. Enter TEKsystems.

### OUR SOLUTION: A FITTING FRAMEWORK A Modern Data Architecture on Azure

We rolled up our sleeves to get straight to work, building a cloud-based modern data architecture on [Azure](#). Our goal was to support Hawaiian Electric's needs today but also leave room for growth. We used the perfect blend of technology to handle large volumes of data with rapid response times. Using Databricks and Microsoft Power BI to build a customized solution, Hawaiian Electric could:

- Use data visualization to tell a clear story
- Extract deeper insights and business intelligence through complex algorithms, machine learning and exploratory analysis
- Build household energy consumption profiles based on factors like electric cars and solar panels
- Make data easily accessible and usable for internal and external stakeholders while maintaining security standards to minimize risk for potential exposure

Now Hawaiian Electric better understands consumption and voltage levels from large amounts of meter-level data. And there's always room for more. Hawaiian Electric's collection of smart meters is already increasing tenfold, supported by a callable solution that grows with them.

## POWERFUL PARTNERSHIP: AN ELECTRIFYING ALLIANCE

### Fused Together and Future-Focused

Hawaiian Electric knows a greener future requires action today to create a lasting impact. Together, we challenged ourselves with aggressive timelines to build the proof of concept. And we didn't stop there.

We met Hawaiian Electric where they were and empowered them with a strategy and roadmap to translate their vision into true transformation, bringing practiced expertise and tried-and-tested frameworks around change management, DevOps and security.

In their robust cloud environment supporting production-oriented applications, Hawaiian Electric can self-manage and build on their new data environment over time. With the right security disposition, governance and rigorous security controls to meet internal and external requirements, Hawaiian Electric is democratizing data and creating maximum transparency while protecting sensitive information and minimizing possible exposure.

## Real-World Results

With their modern data architecture, Hawaiian Electric has the foundation to power the possible with reliable, safe, clean and affordable energy. Smart-meter data insights will help them prioritize capital investments in grid modernization. Near real-time data will support development and optimization of new, performance-based rate making programs and policies so customers pay only for what they use and can even sell back excess energy.

Committed to energy transformation to distributed renewable energy, Hawaiian Electric uses their near real-time data to understand and improve the effectiveness of their renewable programs and the grid to better predict renewable grid service while ensuring reliability and resilience of the grid. They are supporting electrification projects throughout the islands with a data and analytics clearinghouse for external stakeholders to securely access and analyze time-series usage data. Hawaiian Electric is helping Hawaii build a renewable tomorrow.

The data and analytics clearinghouse aligns to performance-based regulation (PBR). PBR framework includes a service of scorecards and metrics that provide a clear picture of Hawaii's performance in achieving goals for cost control, customer engagement and the use of clean energy. The clearinghouse supplements the portfolio of scorecards and reported metrics that monitor the utility's progress and are important to its customer and to Hawaii's clean energy future.

# 2TB

of raw data supported

# 1B

of rows of  
time-series data  
generated daily

# Hundreds

of thousands of smart  
meters supported

## About TEKsystems and TEKsystems Global Services

We're TEKsystems. We accelerate business transformation for our customers. We bring real-world expertise to solve complex technology, business and talent challenges—across the globe. We're a team of 80,000 strong, working with over 6,000 customers, including 80% of the Fortune 500 across North America, Europe and Asia, who partner with us for our scale, full-stack capabilities and speed. We're strategic thinkers, hands-on collaborators, helping customers capitalize on change. We're building tomorrow by delivering business outcomes and driving positive impacts in our global communities. TEKsystems is an Allegis Group company.

Learn more at [TEKsystems.com](https://www.teksystems.com).