

Mutual Energy

HOW PRESIDIO HELPED MUTUAL ENERGY MODERNISE ITS CRITICAL NATIONAL INFRASTRUCTURE WITH AN AWS CLOUD MIGRATION, AI-ENABLED ENTERPRISE SEARCH, AND A FUTURE-PROOF APPLICATION ENVIRONMENT.

The Customer

Mutual Energy runs the energy interconnection infrastructure for Northern Ireland, operating the electricity and gas interconnectors between Scotland and Northern Ireland that connect the Northern Irish grid to the broader UK grid. Its assets are critical to national energy security.

Services Used

- ⦿ AWS DataSync
- ⦿ Amazon EC2
- ⦿ AWS Database Migration Service
- ⦿ Amazon RDS
- ⦿ Amazon CloudWatch
- ⦿ AWS Site-to-Site VPN
- ⦿ Amazon S3
- ⦿ AWS Security Hub
- ⦿ AWS Control Tower
- ⦿ Amazon Q Business
- ⦿ Landing zone

Business Challenges

- ⦿ Large volume of business-critical log data
- ⦿ Very high search performance demands
- ⦿ Complex business applications and services

Outcomes

- ⦿ More accessible, usable electromechanical operations logs
- ⦿ Higher productivity from AI-powered enterprise search
- ⦿ Robust, future-proofed business applications environment

The Relationship

Mutual Energy engaged Presidio to help modernise its business technologies on AWS, focusing on 3 key deliverables:

- ⦿ Migrating business-critical log data to the cloud
- ⦿ Implementing AI-enabled enterprise search across its operational documentation
- ⦿ Optimising business applications and services in a scalable AWS cloud environment.

The Challenge

As renewable energy forms an increasing proportion of the UK's energy supply, the country is becoming more dependent on interconnection infrastructure, the sophisticated systems that balance supply and demand to keep the lights on nationwide. This infrastructure relies on advanced electromechanical engineering and the technologies needed to control, maintain and operate it.

Mutual Energy is a key player in this sector, operating the electricity and gas interconnectors between Scotland and Northern Ireland. As the importance of its assets continued to increase, the company recognised that its existing technology infrastructure was limiting operational efficiency and future growth potential.

The Mutual Energy team engaged Presidio to help modernise their business technologies, addressing three distinct challenges: moving invaluable log data for the systems controlling the Moyle Interconnector, Northern Ireland's key electricity interconnector, from on-premises storage to the cloud; implementing natural language search to make the company's extensive operational documentation more accessible and easier to interrogate; and migrating Mutual Energy's business applications and services from on-premises infrastructure to a more robust, scalable AWS cloud environment.



The Solution

Presidio began by migrating log data from existing on-premises NAS systems to Amazon Simple Storage Service (Amazon S3). The team built an automated system that accepts and stores newly generated files as they are created and moves older data to lower-cost Amazon S3 Glacier storage as it reaches a defined age, reducing long-term storage costs while keeping all data readily accessible.

Next, Presidio used Amazon Q Business to build a retrieval-augmented generation (RAG) AI-powered search agent for Mutual Energy's extensive operational documentation. The solution provides a conversational, chat-like interface that allows staff to search large volumes of documentation using natural language and receive summary answers with direct links to source material for easy validation. The system is built with safety as a primary concern and is designed to focus exclusively on direct, specific references to Mutual Energy's data and documentation, with enterprise-grade safety controls throughout.

Finally, Presidio is working with Mutual Energy to migrate its business applications and services to the AWS cloud. The migration covers technologies including Active Directory, Sage, SQL Server, and FTP server. This process involves re-architecting and redesigning existing workloads using AWS-native services, along with extensive testing to ensure the environment can handle expected future workloads. The new environment will be hosted in AWS's carbon-neutral data centres.

Results / benefits

With log data migrated to Amazon S3, it is now directly and easily accessible to Mutual Energy's electromechanical hardware supplier, who is also an AWS user. This has accelerated the process of diagnosing and rectifying equipment faults. The new storage system also features full disaster-recovery capabilities, removing the risks previously associated with a more limited backup arrangement.

The AI-powered enterprise search capability has transformed how Mutual Energy's team works with documentation. Staff can now search using a conversational interface, with summary answers linking directly to source material for quick validation. The system enables significantly faster, more efficient workflows for handling large volumes of documentation and is expected to have a measurable positive impact on overall productivity.

The new AWS cloud environment for Mutual Energy's business applications and services delivers greater scalability, fault tolerance, and cost-effectiveness compared to the previous on-premises infrastructure. Hosting in AWS's carbon-neutral data centres further strengthens Mutual Energy's sustainability commitments and contributes to its broader environmental objectives.

