Customer brief

Energy trading infrastructure

Introduction

Energy Trading Platform Amsterdam (ETPA) offers an independent platform to trade in electricity more simply and more efficiently.

The energy market has become more complex over the last decade due to new smaller (for now mostly solar and wind) players. The ETPA platform was developed to focus on short-term electricity trading. Participants can use it to sell their surplus or buy power to cover a shortfall. The ETPA platform facilitates both the delivery of electricity and related payments. Major energy market players already use it, as well as smaller ones such as greenhouses and waste processing businesses.

> *We have used Axon Framework and Axon Server for many years as the basis for our energy trading platform infrastructure."*
> - **Jorrit Nijholt**,
> Chief Technology Officer at ETPA

Challenges

ETPA needed an energy trading platform that was compliant with Dutch and European regulatory requirements, ready for scalability and reliability, and able to expand into Europe to adopt new business models and expand operations. The evolution of ETPA's energy trading platform is a result of years of building a platform that matches the requirements of compliance, scalability, and reliability for the future.

Compliance

The platform needed to be transparent and ready for ad-hoc inspections by regulators, such as Autoriteit Consument & Market (ACM) and the European Union Agency for the Cooperation of Energy Regulators (ACER). Regulators need to know what happened when and by whom in order to prevent or investigate market manipulation.

Scalability

ETPA wanted to expand its operation from the Netherlands to the rest of Europe. They needed to be ready for unpredictable and highfrequency trading demands from an ever-growing group of ETPA participants such as suppliers, traders, and consumers of energy, including horticulture, waste disposal, aluminum smelters, cars, batteries, solar panels, and windmills.

Reliability

Energy trading is a 24x7 and a 365-day operation, and downtime is not an option.

Solutions

ETPA selected Axon Framework in 2015 as a means of having an event-sourced Java system/framework. After a couple of years, they moved from MongoDB to MariaDB to Axon DB as their dedicated event store. Eventually, they moved as an early adopter to Axon Server Enterprise, now running on Amazon Web Services (AWS) using Kubernetes.

Compliance

Event sourcing is the technology of choice to ensure compliance. Because all data is accurately registered through event sourcing in Axon Server, they can look back through history, accurately predict the future, and recognize and qualify behavior.

Reliablity

(near) Zero downtime is achieved by running Axon Server with enterprise functionality on microservices in Kubernetes on AWS. This combines the disaster recovery and high availability capabilities of AxonIQ and AWS.

Scalability

When the electricity systems are stressed, trading demand will increase to regain the balance between supply and demand over certain periods, Axon Server provides flexibility and scalability. ETPA can guarantee stability in the network and continue to meet the trading demands for energy.

Next steps

The long-term plan from ETPA is to see if the Axon Synapse functionality to connect other platforms and languages to Axon Server can be of value in their complex and demanding environment.

Country
The Netherlands

Use cases
High frequency trading

Featured AxonIQ Products
- Axon Framework
- Axon Server Enterprise

Industry
- Energy trading
- Energy transition

Company size
40+ employees

Related Content
- ETPA: www.etpa.nl
- ETPA Presentation: https://youtu.be/t6wJN7hQuUI

Contact us

axoniq.io info@axoniq.io