



Launching Greece's Renewable Energy Marketplace on AWS



Executive Summary

Hellenic Energy Exchange S.A. (HEnEx) — the designated operator of Greece's wholesale energy markets, supervised by both the Regulatory Authority for Energy (RAE) and the Hellenic Capital Market Commission (HCMC) — decided to develop its **first in-house web application**, a cloud-hosted platform designed to connect renewable energy (RE) providers with potential customers for Power Purchase Agreements (PPAs).

HEnEx engaged LCM Go Cloud to design, deploy and operate a **secure, compliant and cost-optimised AWS environment** — a containerised architecture on EC2 with a FortiGate NGFW, automated PostgreSQL backups to S3, and CloudWatch monitoring — enabling HEnEx to launch an MVP within weeks while maintaining GDPR compliance and production-grade security.

Although IT services for HEnEx were typically provided by ATHEX (Athens Exchange Group), this platform was the first to be developed and hosted independently. LCM Go Cloud delivered the **full AWS environment within the planned 8-week timeline and within budget**, including setup, testing, security hardening, documentation, and operational handover with SLA-backed support.

The success of this initial engagement established the trust that led HEnEx to subsequently commission LCM Go Cloud for the **Guarantees of Origin (GOs) Auction Platform** and the deployment of **CloudPosture**, a GenAI-powered CSPM platform — expanding the partnership into critical national financial market infrastructure.

About Hellenic Energy Exchange

Designated operator of Greece's wholesale energy markets, critical national infrastructure



Industry

Wholesale Energy Markets & Financial Market Infrastructure



Market

RAE & HCMC Supervised (Dual-Regulated)



PPA Platform

1~100 initial users, MVP scope, renewable energy marketplace



Shareholders

ADMIE (20%), EBRD (20%), DESFA (7%), Cyprus Stock Exchange (10%)



Markets

Day-Ahead, Intraday, Derivatives, Natural Gas



Regulation

MiFID II, REMIT, EMIR, GDPR, NIS 2 Directive

The Business Challenges

Deploying HEnEx's first in-house cloud application with regulatory compliance from day one



First In-House Application

IT services were historically provided by ATHEX. This web application would be the first developed and hosted independently by HEnEx — with no established cloud processes, tooling, or internal expertise.



MVP Speed-to-Market

Launch required within 1 to 1.5 months. The AWS architecture had to be simple enough for rapid deployment, yet extensible for future growth as the platform and user base expanded.



Regulatory Compliance from Day One

As a dual-regulated market operator, HEnEx required GDPR compliance, firewall and malware protection, and a 5-year backup retention policy — even for a minimum viable product.



Cost-Optimised for Uncertainty

The platform's future depended on market adoption. The architecture had to be production-grade and secure, yet lean and cost-efficient for an uncertain initial workload of approximately 100 users.

The Solution

A three-layer approach: FortiGate NGFW + Containerised Compute + Automated Operations

Layer 1 — FortiGate NGFW & Network Security

- FortiGate in public subnet with IPS, web filtering, malware protection
- Private subnet isolation for EC2 and database
- Security groups and ACLs controlling all traffic
- DDoS protection and outbound traffic inspection
- Internet Gateway with controlled routing

Layer 2 — Containerised Compute & Storage

- EC2 with Docker containers (web front-end + database backend)
- Auto Scaling group with dynamic scaling strategy
- PostgreSQL database on attached EBS volumes
- EBS snapshots for point-in-time recovery
- S3 automated daily database backups (5-year retention)

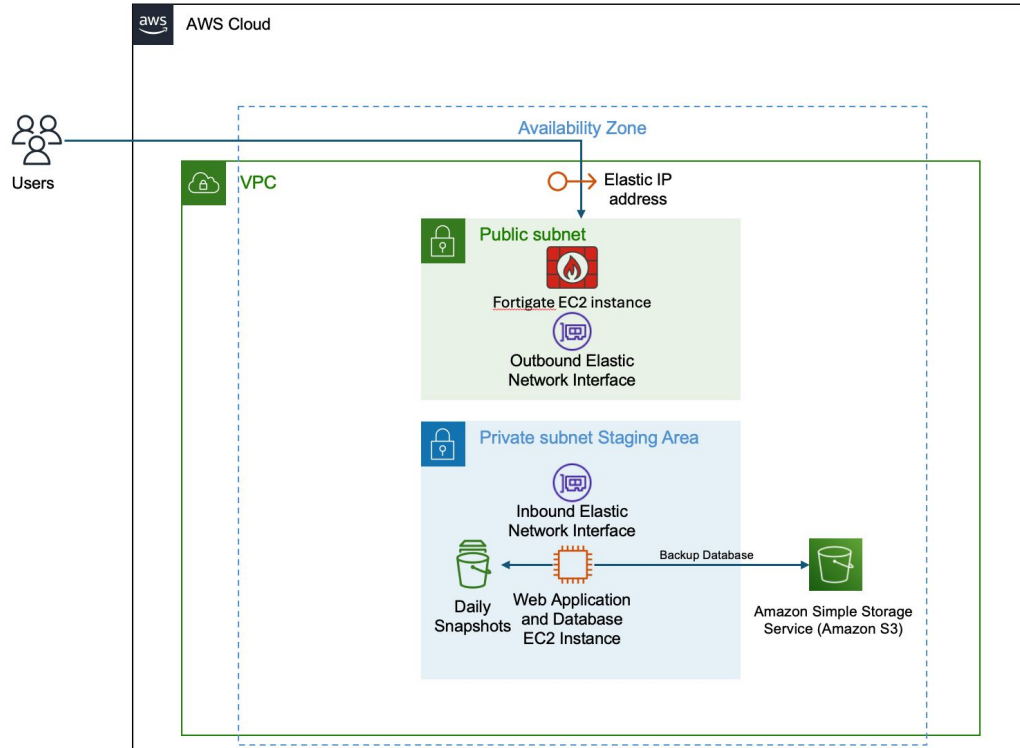
Layer 3 — Monitoring & Operations

- CloudWatch dashboards, metrics, and alarms
- System and instance status checks
- EBS volume health monitoring
- CloudFormation Infrastructure as Code documentation
- SLA-backed operational support (1hr critical response)

The FortiGate NGFW was purchased through AWS Marketplace with a 365-day commitment for optimised pricing.

Solution Architecture

A secure, compliant, high-performance, and cost-optimized AWS architecture



Key Capabilities Deployed



Containerised Application Hosting

Docker containers on EC2 with Auto Scaling for flexible, future-proof compute



Next-Generation Firewall Protection

FortiGate NGFW with IPS, web filtering, DDoS and malware protection



Automated Backup & Recovery

Daily PostgreSQL backups to S3, 5-year retention, EBS point-in-time snapshots



Well-Architected Foundation

VPC with public/private subnet isolation, security groups, ACLs, route tables



CloudWatch Monitoring

Dashboards, metrics and alarms with SLA-backed response times

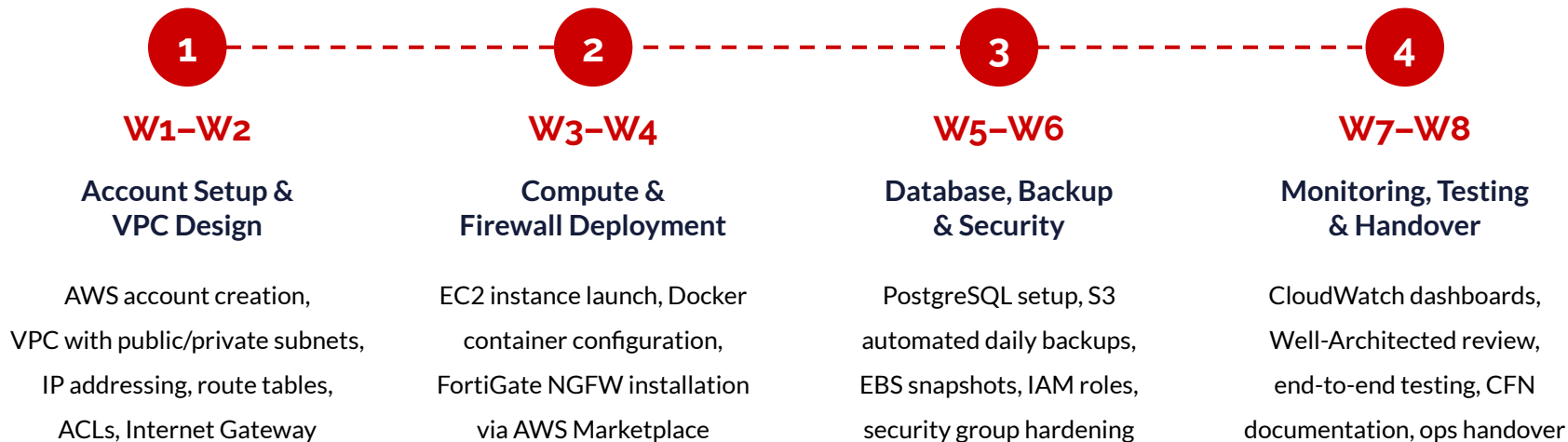


Infrastructure as Code

Full environment documented via CloudFormation for reproducibility and auditability

Delivery Timeline

From initial setup to operational handover in approximately 8 weeks



Outcomes & Results

8

**Weeks
to Production**

On time, within budget

~100

**Initial Users
Onboarded**

MVP launched successfully

5yr

**Backup Retention
Automated**

Daily to S3, GDPR-compliant

- ✓ Full AWS environment deployed: VPC, EC2, FortiGate, PostgreSQL, S3 backups, CloudWatch monitoring
- ✓ GDPR-compliant architecture with firewall protection, private subnet isolation, and encrypted backups
- ✓ Infrastructure as Code documentation via CloudFormation for auditability and reproducibility
- ✓ Operational handover with SLA-backed support: 1-hour response for production-critical issues
- ✓ Well-Architected review conducted against AWS best practices for security, reliability, and cost optimisation

Built on a Security-First Design

LCM Go Cloud designed the infrastructure AND secured it – security built in from day one

GOs Platform Infrastructure (new)

- ECS Fargate (4 clusters) with Container Insights
- RDS PostgreSQL with force_ssl and audit logging
- FortiGate NGFW with dual-ENI in-line inspection
- CloudFront + WAF with auction-specific rate limiting
- S3 encrypted storage with Block Public Access
- ECR with ScanOnPush + IMMUTABLE image tags
- Route53 DR failover to Ireland (eu-west-1)
- SSM Session Manager replacing SSH access

CloudPosture Security Layer (new)

- 757-check security assessment across 6 standards
- FortiGate + GuardDuty layered threat detection
- CMK encryption architecture
- Pre-auction security checklist for 12 annual auctions
- GenAI-powered remediation roadmap
- Continuous weekly monitoring & drift detection
- Knowledge transfer 50% under budget

Security & Compliance

Multi-layered security protecting HEnEx's renewable energy marketplace from network to data layer



FortiGate NGFW Protection

Next-generation firewall in the public subnet with IPS, web filtering, malware protection, and outbound traffic inspection for all application traffic



VPC Network Isolation

Private subnet for EC2 and database, security groups and ACLs controlling all inbound/outbound traffic, Internet Gateway with controlled routing



Encrypted Backups & Recovery

Daily automated PostgreSQL backups to S3 with 5-year retention, EBS point-in-time snapshots, and DDoS protection via FortiGate capabilities



CloudWatch Monitoring & Alarms

Dashboards, metrics, and alarms for system and instance health, EBS volume status checks, and scheduled event monitoring



GDPR Compliance

EU data residency (Frankfurt region), data protection policies, firewall and malware safeguards, and backup retention aligned with GDPR requirements



Well-Architected & Documented

Full environment documented via CloudFormation (Infrastructure as Code), Well-Architected review for security, reliability, and cost optimisation

About LCM Go Cloud

Advanced AWS Consulting Partner

Based in Athens, Greece with offices in Cyprus. LCM Go Cloud specialises in Cloud Resilience and GenAI solutions for enterprise clients, with deep expertise in AWS infrastructure, disaster recovery, and AI/ML workloads.

- ✓ Multiple active AWS certifications at Professional and Specialty levels, and multiple AWS Competencies
- ✓ Proven track record in cloud adoption, migration, and infrastructure design for regulated enterprises
- ✓ Full lifecycle AWS delivery: architecture design, deployment, security hardening, and managed operations
- ✓ Production-grade AI on AWS solving measurable business problems for mid-market enterprises
- ✓ Full-stack ownership: infrastructure, AI agents, user interface — one partner, one SLA

Let's Talk!

Discover how LCM Go Cloud can design,
deploy and secure your AWS environment.

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