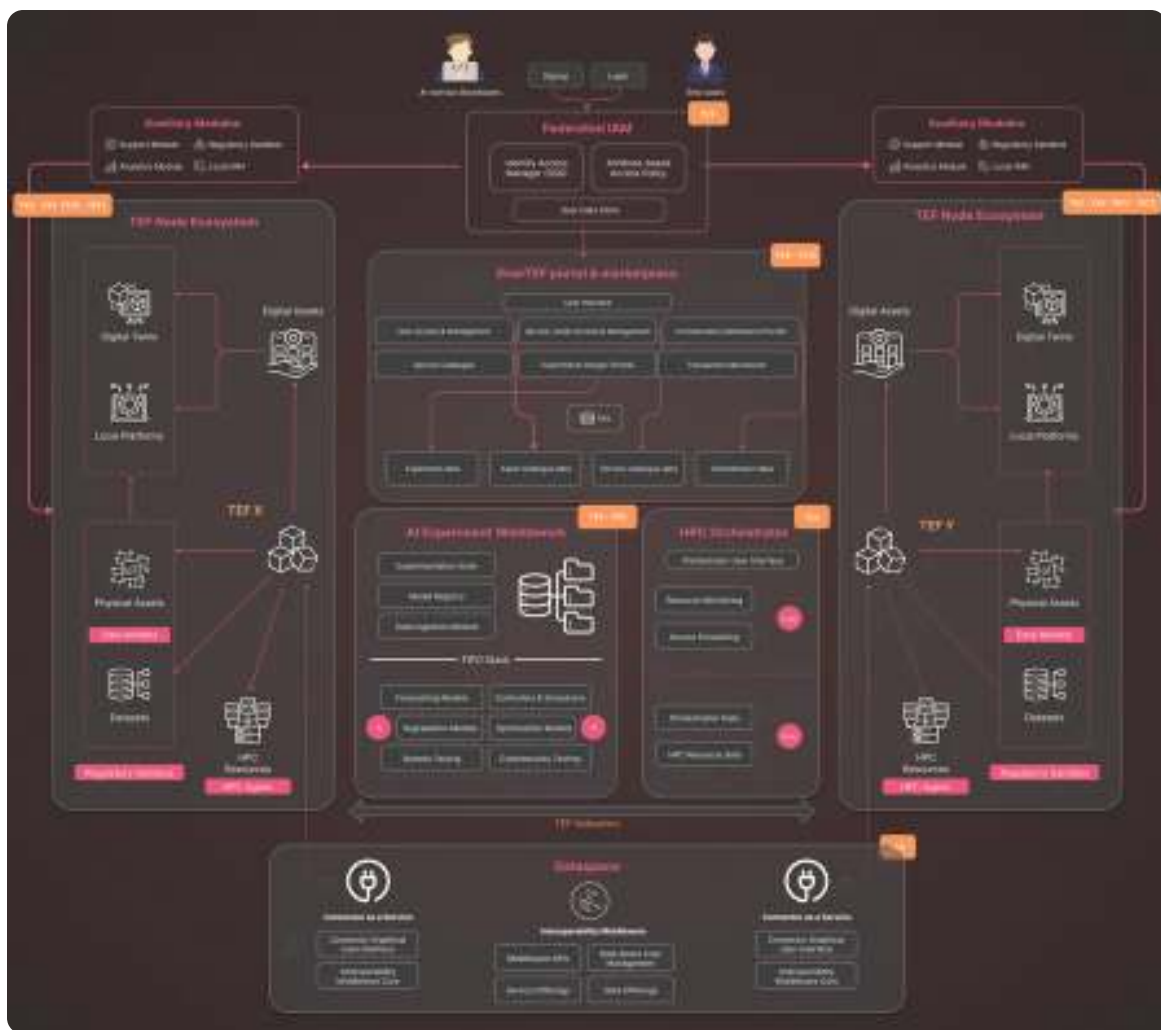




Common European-scale
Energy Artificial Intelligence
Federated
Testing and Experimentation Facility

Newsletter #3 | 18 Months of EnerTEF

News



The EnerTEF Reference Architecture is Finalised!

A major milestone for the project: the **Final Version of the EnerTEF Reference Architecture** has been completed, delivering an **open, interoperable, and modular framework** for the Common European-scale Energy AI Federated Testing and Experimentation Facility.

Built on the **Smart Grid Architecture Model (SGAM)**, the architecture maps five interoperability layers — Business, Function, Information, Communication, and Component — and defines the logical data flows between the key platform components: the **Portal, Federated IAM, HPC Orchestrator, AI Experiment Workbench, Dataspace Connector, and the TEF Nodes**.

The final architecture enables:

- **Scalable orchestration of AI experiments** across the distributed EnerTEF nodes
- **Secure, sovereign data and resource sharing** across national boundaries
- **Seamless onboarding of new nodes and satellites** as the facility grows
- **Compatibility with European infrastructures** such as AI-on-Demand (AIOD), the European Digital Innovation Hubs (EDIHs), and the DOME 4.0 marketplace

The Reference Architecture now serves as the **operational foundation** for the testing and experimentation activities that will bring the EnerTEF platform to life in the next phase of the project.

Discover the EnerTEF Architecture

Click Here!



The EnerTEF Portal is Live & Operational!

The **EnerTEF Marketplace Portal** — the one-stop-shop and common access point to all EnerTEF services and assets — is now **operationally deployed at portal.enertef.eu**, marking the transition from design to a working federated platform.

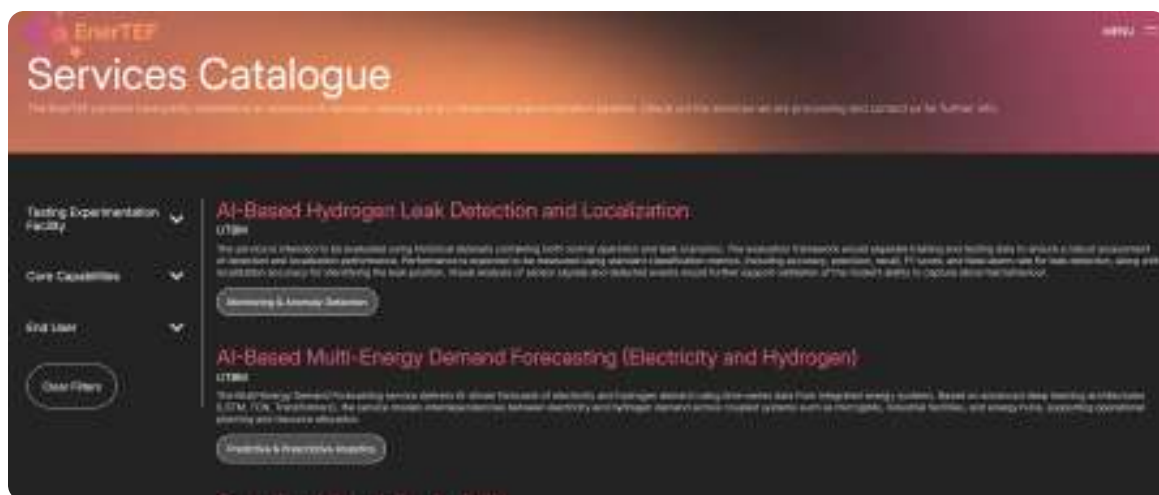
Behind the Portal, the core technological enablers of the EnerTEF ecosystem are now in place:

- **Centralised federation hub live** at auth.enertef.eu, with an Identity & Access Management framework supporting local, roaming, and external collaborator access scenarios
- **3 active TEF nodes** equipped with Dataspace Connectors and orchestrator agents, enabling the first interoperability demonstrations, secure data exchange, and federated monitoring
- **HPC Orchestrator** with a central dashboard aggregating and visualising distributed resource utilisation and telemetry in real time
- **AI Experiment Workbench** already deployed on the first TEF node, paving the way for AI service development, testing, and validation

Together, these components establish the **federated, interoperable, and Data Space-compliant ecosystem** that will support AI-driven experimentation and validation services for the European energy sector.

[Visit the EnerTEF Portal](#)

[Click Here!](#)



65 AI Testing Services & a Trustworthy AI Framework

Through the **AI Living Labs co-creation methodology**, EnerTEF engaged TEF providers, technology developers, and end-users across all partner countries — and the result is now here: **65 AI-based testing and experimentation services**, spanning the full breadth of the energy value chain.

From **demand and generation forecasting** to **grid anomaly detection, flexibility dispatch, predictive maintenance, and energy community coordination**, each service is categorised under the appropriate EnerTEF Node or Satellite and annotated with trustworthiness evaluation criteria and regulatory compliance checkpoints.

In parallel, the project established a **Trustworthy AI Evaluation Framework**, operationalising accuracy, explainability, fairness, and robustness into a single, quantifiable **Responsibility Score (RS)** — supported by an open-source toolbox mapping and an interactive **Responsible AI Dashboard** that allows TEF operators to benchmark AI solutions in a transparent and reproducible way.

All catalogue services and evaluation procedures are fully aligned with the **EU AI Act, GDPR**, and national regulatory sandbox provisions — ensuring that innovation on EnerTEF is trustworthy by design.

[Explore the Services Catalogue](#)

[Click Here!](#)

18 Months of EnerTEF: Our Community in Numbers

As EnerTEF reaches its 18-month milestone, our community keeps growing across Europe. Here is a snapshot of what we have achieved together so far:

5,000+

480+

LinkedIn followers

22+

website sessions on
enertef.eu

international events &
conferences

7

scientific publications

65

AI services in the catalogue

81

external social media
mentions

And there is much more ahead: in the coming months, EnerTEF will launch **eight Capacity Building Workshops** dedicated to SMEs, startups, and AI Service Developers, publish policy briefs, and expand its multimedia series with new expert interviews from our Nodes and Satellites. Stay tuned!

Events

The poster is divided into two main sections. The left section, on a dark background, contains the title 'AI Testing & Validation for the energy Sector:' in white, followed by the subtitle 'Use Cases, Challenges, and Real-World Impact' in pink. Below this, it states the date 'February 5, 2026' and time '11:00 AM CET'. The EnerTEF logo is at the bottom. The right section, on a pink background, is titled 'SPEAKERS' and features four circular portraits of the speakers: Daniel Lohr, Alexander Gatt, Radosław Marczuk, and Maria Wesoł. At the bottom of the poster, there is a small banner with logos of the European Union, the Spanish Government, and the project partners.

WEBINAR

AI Testing & Validation for the energy Sector:

Use Cases, Challenges, and Real-World Impact

February 5, 2026 11:00 AM CET

SPEAKERS

Daniel Lohr
Chairman of the Board, EnerTEF

Alexander Gatt
Director of Research and Innovation, EnerTEF

Radosław Marczuk
Senior Research Analyst, EnerTEF

Maria Wesoł
Professor of Software Engineering and Chair of the Data Science in Energy, EnerTEF

1st Joint TEF Webinar: AI Testing & Validation for the Energy Sector

5 February 2026

Online

EnerTEF organised its **first joint TEF Webinar** together with the sister projects **EnergyGuard** and **AI-Effect**, bringing together **74 participants** from across

Europe to explore AI testing and validation for the energy sector, through use cases, challenges, and real-world impact.

Missed it? The full recording is available on our [YouTube channel](#).



Artificial Intelligence & Ethics Conference

20 February 2026

EnerTEF contributed to the **Artificial Intelligence & Ethics Conference**, presenting how the project embeds trustworthiness, ethics, and regulatory compliance — including alignment with the **EU AI Act** — at the core of AI testing and experimentation for the energy sector.



BRIDGE General Assembly 2026

22 March 2026

EnerTEF took part in the **BRIDGE General Assembly 2026**, the European Commission's cooperation initiative uniting Horizon Europe projects in the fields of smart grids, energy storage, islands, and digitalisation, contributing to the panel session on **the role of AI in the grids** and reinforcing EnerTEF's active contribution to EU-level knowledge sharing.



Athens Energy Portal Co-creation Workshop

2 April 2026

Athens / Greece

EnerTEF organised a **co-creation workshop on the Athens Energy Portal**, the digital platform developed by NTUA that centralises and monitors the energy performance of the Municipality of Athens' building infrastructure. The workshop gathered municipal stakeholders and end-users to shape the next iteration of the portal, in line with EnerTEF's human-in-the-loop and co-design philosophy.



European Sustainable Energy Week (EUSEW) 2026

10 June 2026

Brussels / Belgium

EnerTEF joined **EUSEW 2026**, Europe's largest annual event dedicated to renewables and efficient energy use, strengthening the project's policy outreach and presenting how federated AI Testing and Experimentation Facilities can accelerate the clean energy transition for regulators, policymakers, and energy stakeholders.



2nd Joint TEF Webinar: From Experimentation to Deployment

17 June 2026

Online

EnerTEF, together with **EnergyGuard** and **AI-Effect**, organised the **2nd Joint TEF Webinar**, titled “**From Experimentation to Deployment: Aligning AI Testing Services with Industry Needs**” — the next chapter of the Energy TEF cluster’s shared mission to build a trustworthy AI experimentation landscape in Europe.



IISA 2026

7 July 2026

A major European initiative for energy digitalisation was presented at **IISA 2026** under the EnerTEF Project: **Elissaios Sarmas** introduced **AI.grids**. What began as a shared vision between **DSS Lab EPU-NTUA (ICCS-NTUA)**, **Fraunhofer FIT**, and **INESC TEC** has become a European flagship initiative, bringing together **48 partners** — grid operators, research organisations, and leading industry actors — to develop a next-generation **AI Foundation Model for Europe's power grids**.

The initiative aims to deliver more **trustworthy, secure, and sovereign AI capabilities** for grid planning and operation, strengthening Europe's ability to manage an increasingly complex, digitalised, and decentralised energy system.

Meet our cluster!

Follow the #SmartEnergyCluster on social media & visit our website at smartenergycluster.eu !



Clustering with our Sister Projects

Ongoing

EnerTEF remains an active member of the **Smart Energy Cluster** and the **TEF Cluster**, joining forces with fellow EU-funded projects to amplify visibility and foster knowledge exchange across the European energy and AI innovation ecosystem.

Do you want to see more and learn about EnerTEF?
Follow us

[LinkedIn](#) · [X](#) · [YouTube](#)

Our Partners



**Co-funded by
the European Union**

This project has received funding from European Union's Horizon Europe Research and Innovation programme under the Grant Agreement No 101172887.



EnerTEF

Athens, Greece

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