

14th BES Seminar: AI for Energy Regulation



Artificial intelligence meets energy regulation

How is artificial intelligence reshaping the way we manage energy systems? This was the central question of the 14th BES Seminar on “AI for Energy Regulation”, held online on 3 April 2026. The event was co-financed by the Central European Initiative (CEI) under the project “Applying Artificial Intelligence to the Electricity Sector in the Balkans.”

As AI becomes increasingly embedded in everyday life, understanding how to deploy it fairly, transparently, and safely in public services is essential. The seminar brought together experts and regulators to explore how these powerful tools can be leveraged while safeguarding fundamental rights.

The discussion focused on several key themes:

- AI beyond the hype: moving from buzzwords to concrete applications that deliver real value for citizens and institutions;

- Opportunities and risks: distinguishing between traditional AI and generative AI, while addressing challenges such as bias, “hallucinations”, and data privacy;

- The EU AI act: examining the emerging European regulatory framework, with particular attention to high-risk systems and obligations for public authorities;

- Citizen rights: reinforcing transparency and the “right to explanation” in AI-driven decision-making processes.

The seminar featured contributions from Prof. Avv. Giovanni Comandé, who explored the intersection of technology, law, and data governance.

The discussion also highlighted some structural challenges of AI systems. These include the so-called “black box” problem, where algorithms can produce highly accurate outputs without offering understandable reasoning, and the risk of bias embedded in data, which may lead to discriminatory outcomes if not properly addressed. Particular attention was also given to generative AI systems, which may produce plausible but incorrect information (“hallucinations”) and encourage users to attribute human-like qualities to machines, increasing the risk of misuse or overreliance.

Overall, the seminar provided a valuable opportunity to understand how the energy sector is preparing for an AI-driven future, balancing innovation with accountability.

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The Project: empowering the Balkan energy transition

The initiative “Applying Artificial Intelligence to the Electricity Sector in the Balkans” is a 24-month project running from January 2026 to December 2027. Its goal is to bridge the gap between traditional energy management and the digital future.

The challenge

Electricity systems in the Balkans face several structural challenges: limited operational efficiency, fragmented markets and regulatory frameworks struggling to keep pace with rapid digitalisation and decentralisation. The increasing penetration of renewable energy further amplifies the need for advanced, data-driven tools.

Recent regional experiences - such as large-scale grid disturbances and blackouts - have also shown how complex and interconnected modern power systems have become, and how critical real-time monitoring, forecasting, and coordinated responses are for system stability. In this context, AI can play a key role in anticipating risks and improving system resilience.

The objective

The project aims to strengthen both institutional and technical capacities of energy regulators and system operators across the region. By leveraging AI, it seeks to:

- Enhance market surveillance and anomaly detection;
- Improve grid stability and facilitate renewable energy integration;
- Support evidence-based policymaking through advanced forecasting and simulation tools;
- Foster regional cooperation and alignment with EU decarbonisation objectives.

The roadmap (2026–2027)

The project is structured around four specialised capacity-building workshops:

- AI for energy regulation (Q2 2026): tariff modelling and compliance monitoring;
- Smart grids & predictive operations (Q4 2026): focusing on TSOs, load forecasting, and predictive maintenance;
- AI-driven market surveillance (Q2 2027): algorithmic bidding and detection of market manipulation;
- Data governance & ethics (Q4 2027): privacy, interoperability, and ethical safeguards.

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A collaborative effort

The project is led by the Balkan Energy School (BES), a non-profit association dedicated to knowledge transfer in energy regulation across South-Eastern Europe.

It brings together a strong regional partnership, including ARERA (Italy) as know-how provider, and regulatory authorities from Albania (ERE), Bosnia and Herzegovina (SERC), Greece (RAAEY), Kosovo (ERO), Montenegro (REGAGEN), North Macedonia (ERC) and Serbia (AERS, as a observer) reflecting a well-established network of energy regulators in the region .

This initiative builds on BES's broader experience in capacity building, including programmes on gas market regulation, which aim to align Balkan regulatory frameworks with EU standards and support market integration and decarbonisation pathways .

The Impact

By creating a shared platform for dialogue, training, and experimentation, the project will contribute to more transparent, efficient, and resilient energy markets.

Ultimately, it supports the progressive integration of Balkan energy systems into the EU internal energy market, facilitating a sustainable, secure, and digitally enabled energy transition for the entire region.