

11th Global Conference on Energy Efficiency

Thematic session

*Digital and flexible
demand-driven power systems*

Tuesday 30 June 2026
13:30 – 15:00
Room 520-BE

International
Energy Agency



Event background

In today's context of energy market volatility and economic uncertainty, energy efficiency remains essential for affordability, energy security and competitiveness. The 11th Annual Global Conference on Energy Efficiency will bring together global leaders to accelerate action, with digital and flexible power systems playing a key role in addressing current energy challenges.

Power systems are undergoing rapid transformation as electricity demand rises from electrification, data centres and cooling needs, while growing shares of variable renewable energy increase system complexity. These trends are placing increasing pressure on grids and require new approaches to ensure reliability and resilience.

Demand-side flexibility and digitalisation are emerging as key solutions to address these challenges. By enabling consumers to adjust their electricity use in response to system conditions, flexibility can reduce peak demand, integrate renewables and defer costly infrastructure investments. Digital technologies play a critical role in enabling this transformation by allowing real-time monitoring, aggregation and control of distributed energy resources.

While progress is underway, deployment remains uneven. Regulatory frameworks, market designs and investment in grid modernisation are not yet keeping pace with the rapid evolution of power systems, particularly in emerging and developing economies. The challenge for policymakers is therefore to create the enabling conditions that allow demand-side flexibility and digital solutions to scale effectively.

This thematic session will reflect the messaging of the IEA 3DEN policy brief and will provide a platform to explore how countries can unlock these opportunities and build more resilient, efficient and flexible power systems. Participants will learn from international experience, explore policy and investment solutions, and engage with key stakeholders to identify actionable pathways for accelerating progress.

Objective

This session will bring together senior government officials, regulators, system operators, and international partners to take stock of where the world stands on digital and flexible power systems, and what it will take to accelerate progress at a moment of exceptional urgency. The discussion will focus on:

- *Understanding the system transformation:* Develop shared understanding of the scale and pace of change facing power systems, recognition that the current crisis represents a decisive moment for the transition,
- *Enabling conditions:* Examining practical policy, regulatory and investment conditions that determine whether flexibility potential is realised,
- *International cooperation:* Exploring the role of international cooperation in helping countries build the institutions, frameworks and capabilities they need.

Draft agenda

13:30-13:40	Opening remarks [10 min]
13:40-14:20	Panel Session 1 - The scale of the challenge: the rising importance of grids during accelerated energy transitions [40 min] <i>The power sector was already undergoing rapid structural change before the current crisis. Surging electricity demand, the accelerating deployment of variable renewables, and the additional shock of disruption to global energy markets have combined to create a moment of exceptional pressure on power systems. This session will set out the scale of what is happening, draw on the lessons of previous energy shocks, and ask whether the pace of change in policy and investment is matching the pace of change in the system itself.</i>
14:20-15:00	Panel Session 2 – Turning ambition into action: unlocking demand flexibility and efficiency at scale [40 min] <i>With power systems under growing pressure, demand-side flexibility and grid digitalisation have never been more important. Yet deployment remains uneven, regulatory frameworks in many countries are still catching up, and investment in grid modernisation is struggling to keep pace. This session will focus on what it will take to close the gap, examining the policy and regulatory conditions that unlock flexibility, the investment needed to modernise grids at scale, and the role of international cooperation in supporting countries that risk being left behind.</i>
16:55-17:00	Closing remarks [5 min]

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