

IEA 10th Annual Global Conference on Energy Efficiency, 12-13 June 2025

Thematic Session Efficiency Meets the Grid

Friday 13 June, 2025, 14:00 – 17:00 CET
The EGG, Brussels, Belgium

Objective: Rapid urbanisation, population growth and industrial development are all contributing to increasing global energy demand. At the same time, the shift towards electrifying transport, heating and manufacturing is placing more pressure on electricity grids.

Rising demand creates serious challenges for electricity grids. It can lead to instability, a greater risk of blackouts, higher energy prices and the need for costly upgrades to infrastructure. It also makes it more difficult to integrate renewable energy sources, which require more flexible and responsive systems. By reducing overall consumption and improving how energy is used, efficiency measures can lower peak demand, delay the need for new infrastructure, thus contributing towards affordability and improving the reliability of the grid.

This session will explore how energy efficiency can reduce pressure on electricity grids, from smart buildings and efficient appliances to industrial process improvements and digital energy management. It will also explore how energy efficiency can improve system resilience and support the transition to a low-carbon energy future.

Format: The session will open with an inspirational talk and panel examining how energy efficiency and flexible demand can contribute to system stability and affordability. The second part will once again open with an inspirational talk followed by a panel which will explore how improvements in energy efficiency, flexible demand, and circular economy practices can help reduce emissions, cut costs, and ease pressure on electricity networks. Drawing on examples from Europe, Asia, and Africa, speakers will share practical insights on how industrial zones can move beyond being energy users to become strategic assets for grid stability.

Target audience: Policymakers and regulators, utility and grid operators, energy efficiency solution providers, investors and financial institutions, academia, civil society and development organisations.

Expected outcome: The session will highlight the policy and investment measures

countries can undertake to increase stability, reduce pressure on grids and ensure energy security.