Global Conference on **Energy and AI**

4-5 December 2024, Paris

Agenda Overview

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International Energy Agency

Energy for AI, and AI for Energy

Artificial Intelligence (AI) is emerging as one of the most consequential technologies of our time. Recent progress in AI models shows huge improvements, with the latest generation approaching – and even exceeding – expert human-level performance on test benchmarks. AI models have grown exponentially in size and capability, benefiting from the availability of massive datasets and improved computational power. The application of AI to technology innovation and invention has the potential to accelerate solutions to hard problems and unlock a new wave of material and chemistry discovery. At the same time, rapid transformation is not a given: incentives and institutions may also need to change to deliver the benefits of AI, particularly for the energy sector.

AI is also energy intensive. A wave of recent investment in power-hungry data centres is already straining the grid in some locations – and the outlook only seems to be accelerating. Power availability is now being seriously discussed as a possible constraint to the rate of AI growth and is shaping decisions about where companies build data centres and develop this cutting-edge technology. At the same time, energy planners are faced with an unusually wide range of uncertainty. The range of possible outcomes regarding AI uptake is huge. Stakeholders also lack understanding of the data centre value chain, market and technology outlook, making the outlook for electricity demand from the sector too often a "black box".

There is an urgent need for dialogue between the energy industry, tech sector and policymakers, and a structured, comprehensive assessment of the potential implications of AI in the energy sector.

The IEA's **Global Conference on Energy & AI** provides this space for dialogue. The outcome deliverable will:

- Build **strategic understanding** among global leaders of the implications of AI for energy and energy for AI.
- Develop a shared sense of **priorities** to unlock the potential benefits of AI for the energy transition and manage the risks, including the rise of electricity demand.
- Establish a lasting **platform** for dialogue between stakeholders.

This Conference will feed into the IEA's forthcoming **Special Report on Energy & AI**. The event will also help to support various **political fora** where the AI and energy nexus is discussed.

The Conference is structured around two days:

- **4 December**: the IEA will host a technical-level **Forum on Energy & AI**, bringing together key experts from across government, industry and academia.
- **5 December**: the IEA will host an invitation-only **High-Level Roundtable on Energy & AI** with global decisionmakers from government, the tech sector and the energy industry.

4-Dec: Forum on Energy & AI

The Forum on Energy and AI brings together leading subject-matter experts from government, the energy industry, the tech sector, civil society and academia. The objective is to engage in a series of expert roundtables on the implications of AI for energy systems, and energy for AI. Roundtables will be structured with input presentations from selected participants, and ample time for discussion. It is envisaged that participants will participate actively throughout the day, attending several roundtables, and that insights from one sector or issue area will spark reflections in another. The agenda overview is shown below. Exact timing and sequencing of sessions is subject to change.

Time	Room 1	Room 2
08:30 – 09:30	*Arrival and registration*	
09:30 – 10:00	Opening: **AI for energy, energy for AI** Welcome address and context setting by IEA	
10:00 – 11:00	**AI in Energy Supply and Generation** Applications of AI in electricity generation, networks, storage, and oil and gas supply	**AI in Energy Use** Applications of AI in energy consumption from industry, transport and buildings
11:00 – 11:30	*Coffee*	
11:30 – 13:00	*(Continuation of previous session)*	*(Continuation of previous session)*
13:00 – 14:00	*Lunch*	
14:00 – 16:00	**Energy Demand from Data Centres and Meeting it Sustainably** Demand outlooks, procurement strategies and what is needed from the grid and policy makers	**AI and Energy Innovation** Applications of AI in energy technology R&D, deployment and early commercialisation
16:00 – 16:30	*Coffee*	
16:30 – 18:00	*(Continuation of previous session)*	**AI in Emerging and Developing Countries** Applications of AI in meeting the energy security and transition needs of emerging and developing countries

For any questions or specific requests, please contact EnergyAI@iea.org.

5-Dec: High-Level Roundtable on Energy & AI

The High-Level Roundtable on Energy & AI brings together global leaders from policymaking, the energy industry and the tech sector. Discussions will be in roundtable format. Part of the discussions will be livestreamed to enable participation from the IEA's large global group of stakeholders. The remaining discussion will be closed-door to enable an open discussion. High-level participants will be able to network and book bilateral meeting rooms to conduct side meetings and the Conference organisers will offer opportunities to engage with the journalists present as desired. The agenda overview is shown below.

Time	Session overview
08:30 – 09:30	*Arrival and registration*
09:30 – 11:30	**Energy for AI, and AI for Energy**: Strategic Overview • Chair: Dr. Fatih Birol, IEA Executive Director • Remarks: government leaders • Remarks: tech sector and energy industry leaders • Roundtable discussion
11:30 – 12:00	*Coffee*
12:00 – 13:00	**Energy for AI:** Delivering on the Demand Challenge • Remarks: government leaders • Remarks: tech sector and energy industry leaders • Roundtable discussion The AI and digital boom are increasing energy demand, prompting questions about the role of efficiency, impacts on grids, investments in new generation and sustainability. This session will explore the outlook for energy demand from AI, key challenges, and sustainable options to meet the rising demand.
13:00 – 14:00	*Lunch*
14:00 – 15:00	**AI for Energy:** Unlocking the Transformative Potential of AI in the Energy Sector • Remarks: government leaders • Remarks: tech sector and energy industry leaders • Roundtable discussion AI's impact on the energy sector could be transformative. This session will explore the blue skies applications of AI in energy innovation, and how AI can be applied in the energy sector to boost productivity, safety and sustainability.
15:00 – 15:30	**Conclusions, Outlook, and Next Steps**: Summary Reflections on the Conference Outcomes and Next Steps

A limited number of meeting rooms will be available for bilateral meetings during the event and will be allocated on a first come, first served basis. To request a room booking, please email bilaterals@iea.org by Friday, 29 November 2024. Please note that rooms will be allocated for 30 minutes. For any other questions or specific requests, please contact EnergyAI@iea.org.