IEA World Energy Outlook 2026: electricity demand, data centres and tight grid equipment

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Short answer: the IEA's World Energy Outlook 2026, published on 19 November 2026, says global electricity demand has grown 3.3% a year since 2019, faster than GDP at 2.9%, with data centres driven by the AI boom among the causes. It says at least 25 million kilometres of new power lines are needed over ten years, and that supplies of copper, transformers and cables are tight. This summary uses the report's executive summary page only.

TL;DR The short version

- The IEA's World Energy Outlook 2026 says electricity demand has grown 3.3% a year since 2019, faster than GDP, with AI-driven data centres among the causes.
- It says at least 25 million kilometres of new power lines are needed over ten years, while copper, transformers and cables are tight in supply.
- For technology teams, power availability and equipment lead times, not only chips, can limit capacity; this summary uses the executive summary only.

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What is the WEO-2026?

The World Energy Outlook is the International Energy Agency's flagship long-term energy projection. WEO-2026 sets out several scenarios because of what it calls an extraordinary moment of uncertainty: the Current Policies Scenario, the Stated Policies Scenario, an Additional Response Case and the Net Zero Emissions by 2050 Scenario.

What it says about electricity and AI

- Since 2019, electricity demand has grown 3.3% a year, against 2.9% for GDP and 1.5% for total energy demand.
- Electricity use is driven higher by industry (electric motors), appliances, air conditioning, EVs and heat pumps, and data centres because of the AI boom.
- Demand grows by more than 10,000 TWh over the next decade, and the global electrification rate closes in on 30% in the Current Policies and Stated Policies scenarios, up from 23% in 2025.
- The executive summary says the energy sector is starting to feel the potentially transformative impacts of AI. Detailed data-centre projections were not read.

The supply-chain constraint

- At least 25 million kilometres of new power lines are needed over the next ten years, and 15 million kilometres of existing lines need replacement or upgrade.
- Copper, transformers, cables and other key electrical equipment are described as tight in supply today.
- Efficiency gains over the past decade in lighting, televisions, refrigeration and other white goods, at 600 TWh, exceed the world's annual electricity consumption by data centres, per the report.

Security risks

The report says cyberattacks on energy utilities worldwide have risen steadily as systems are digitised, with more than 2,000 attacks per week in 2025, and that around 3,000 major outages linked to natural hazards have affected over 850 million households and businesses since 2022.

Limitations and open questions

- Only the executive summary was read. The chapters on electricity, data centres and the scenario tables were not.
- Scenarios are not forecasts, and the report says the length of the 2026 energy crisis will shape outcomes.
- The report does not, in the passages read, give a data-centre demand number, so none is quoted here.

What it means for technology teams and buyers

For infrastructure planning, power availability and equipment lead times, not only chip supply, can limit capacity. That favours efficiency work such as green software and software carbon intensity, better utilisation, and location choices. For cost levers see FinOps for engineers.

Frequently asked questions

- **Is the IEA saying data centres drive all electricity growth?** No. It lists several drivers, of which data centres are one.
- **Is there a figure for AI power use?** Not in the executive-summary passages read for this post.
- **What equipment is tight?** Copper, transformers, cables and other electrical equipment, per the report.

Related reading

- Green software and software carbon intensity
- FinOps for engineers: cloud cost optimisation
- Running AI workloads on Kubernetes
- Cloud Architecture Practitioner

Sources and currency

Sources were read on 22 November 2026. Products, rules and standards change, so check the linked originals before you rely on any detail.

Related credential: Cloud Architecture Practitioner. Explore the exam facts and syllabus.

Sources and further reading

1. International Energy Agency. World Energy Outlook 2026: Executive summary. 19 November 2026. iea.org/reports/world-energy-outlook-2026/executive-summary. Licence CC BY 4.0.

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