

HYP_Link

DOE Resources for Data Center Energy Demand Management

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RECENT DEVELOPMENT

The U.S. is entering a period of rapid electricity demand growth, driven by power consumptive technologies such as AI, coupled with data center expansion and economic development, including new domestic manufacturing. Electricity demand is expected to grow 15-20% in the next decade and double by 2050. The DOE Office of Policy recently released the blog post - [Clean Energy Resources to Meet Data Center Electricity Demand](#), highlighting DOE resources designed to assist data center developers in meeting electricity demands through clean energy solutions. DOE resources available to data centers include loans, grants, FOAs, tax credits, and technical assistance for the following initiative types:

- **Grid Scale Clean Energy Deployment:** Encouraging adoption of solar, wind, and battery storage, as scalable solutions
- **Infrastructure Enhancement:** Advocating for advancements in geothermal and nuclear energy to boost reliability and affordability
- **Energy Efficiency:** Promoting the COOLERCHIPS program to commercialize innovative cooling technologies, aiming for low Power Usage Effectiveness (PUE)
- **Demand Side Flexibility:** Identifying virtual power plants and efficiency improvements in various sectors to better meet demand
- **Technical Assistance:** Offering support to state and local officials, energy professionals, and large energy users in tackling electricity demand challenges

ANALYST COMMENT

These DOE resources are vital to addressing the electricity demands of the HPC market, particularly to accommodate the higher electricity consumption of AI training and inferencing. Scientists are continuously exploring the usefulness of AI across new applications, further expanding the demand for sustainable, cost-effective, and reliable energy supplies wherever these scientists do their research. In a world typified by regulatory compliance limitations and curbs, these DOE resources will likely serve as valuable and persuasive incentives for managers to find energy solutions that work best for their unique data center needs. As nations compete for leadership in emerging technologies, ensuring reliable and sustainable energy for data centers will be crucial for maintaining economic and strategic advantages.

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