

Energy Bureau Microgrid



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[A new approach could fractionate crude oil using much less energy](#)

MIT engineers developed a membrane that filters the components of crude oil by their molecular size, an advance that could dramatically reduce the amount of energy needed for crude oil

Microgrid Program Strategy

By 2035, microgrids are envisioned to be essential building blocks of the future electricity delivery system. The Strategy development process began with



[MIT Energy Initiative conference spotlights research](#)

At the MIT Energy Initiative's Annual Research Conference, industry leaders agreed collaboration is key to advancing critical technologies amidst a changing energy landscape.

Grid Deployment Office U.S. Department of Energy

A microgrid is a group of interconnected loads and distributed energy resources within clearly defined electrical boundaries that acts as a single controllable entity with respect to the grid.



[New materials could boost the energy](#)



Explained: Generative AI's environmental impact

MIT News explores the environmental and sustainability implications of generative AI technologies and applications.



Microgrid Overview

While pairing a solar photovoltaic system with energy storage to support a single building (behind the utility meter) may be considered a small microgrid by some, for the purposes of this document we



[efficiency of microelectronics](#)

MIT researchers developed a new fabrication method that could enable them to stack multiple active components, like transistors and memory units, on top of an existing circuit, which



[New facility to accelerate materials solutions for fusion energy](#)

The new Schmidt Laboratory for Materials in Nuclear Technologies (LMNT) at the MIT Plasma Science and Fusion Center accelerates fusion materials testing using cyclotron proton beam



[Energy , MIT News , Massachusetts Institute of Technology](#)

Massachusetts Clean Energy Center CEO MBA '12 Emily Reichert highlights the state government's unique approach to fostering and keeping clean energy innovation.

Community Microgrid Assistance Partnership

The U.S. Department of Energy (DOE) Office of Electricity (OE) helps communities and energy providers to design, develop, repair, revitalize, or improve isolated



Evelyn Wang: A new energy source at MIT

As MIT's first vice president for energy and climate, Evelyn Wang is working to broaden MIT's research portfolio, scale up existing innovations, seek new breakthroughs, and channel

[Concrete "battery" developed at MIT now packs 10 times the power](#)

New concrete and carbon black supercapacitors with optimized electrolytes have 10 times the energy storage of previous designs and can be incorporated into a wide range of architectural



Using liquid air for grid-scale energy storage

Liquid air energy storage could be the lowest-cost solution for ensuring a reliable power supply on a future grid dominated by carbon-free yet intermittent energy sources, according to a new

[How artificial intelligence can help achieve a clean energy future](#)

A look at how AI can be used to help support the clean energy transition by helping to manage power grid operations, plan infrastructure



investments, guide the development of novel



[Lessons Learned from Energy Commission Microgrid Projects: Best](#)

Microgrid demonstration and implementation is a major focus for the California Energy Commission and has been supported by funds administered by the commission under the Electric

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