



Grid modernization

What is the Grid Modernization Initiative (GMI)?

The Grid Modernization Initiative (GMI) works across the U.S. Department of Energy (DOE) to create the modern grid of the future. Our extensive, reliable power grid has fueled the nation's growth since the early 1900s; however, the grid we have today does not have the attributes necessary to meet the demands of the 21st century and beyond.

What are the top goals in Grid Modernization efforts?

Top goals in grid modernization efforts. In our survey analysis, we identified four groups based on their grid modernization strategies, including demand flexibility, grid optimization, energy exchange, and smart assets.

Do utilities have a grid modernization strategy?

In our survey of nearly 600 global C-suite and senior utility executives, all say their organizations have a grid modernization strategy and execution plan. We found that utilities are spending, on average, 9.8% of their annual revenue on grid modernization investments, which is over 40% of their overall transmission and distribution investments.

What is the grid of the future?

The grid of the future will deliver resilient, reliable, flexible, secure, sustainable, and affordable electricity. U.S. Department of Energy (Attn: S4, Geraldine Richmond) Forrestal Building

Pioneering Integrators are the most advanced in grid modernization, excelling in demand flexibility, energy exchange, and utilization of digital twins to simulate and optimize grid performance.

Discover grid modernization trends, digital technologies, and renewable integration. Learn how infrastructure upgrades create a more resilient power grid.

Learn how DOE works with public and private partners to create the modern grid of the future. Find out about the GMI's portfolio of work, projects, ...

Discover how Dell Technologies and Intel are driving grid modernization and AI innovation at DTECH 2026. Explore cutting-edge solutions for energy management, data security, ...

Discover what grid modernization is, why it's critical, and how it drives a resilient, efficient energy future. Read the full article to learn more.

The Grid Modernization Initiative (GMI) partners with industry to develop advanced grid technologies.

One key initiative addressing grid modernization challenges is the CIRCUIT Act, introduced by Senators Catherine Cortez Masto (D-NV) and Jerry Moran (R-KS). The bipartisan ...

Tell Me Something Grid Meet NLR's grid modernization experts and explore their research shaping the future



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of the power grid.

Explore the importance of grid modernization and using smart grids as a renewable energy source, as we strive for a lower-carbon future.

Grid modernization will require a suite of policy changes to support advancements in grid technologies, grid management, and utility regulation. Grid modernization strategies, while ...

Grid modernization becomes a key energy security, transition and competitiveness constraint. Decades of underinvestment have created a critical bottleneck as the world races to ...

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