

Grid Modernization Initiative

Federal Energy Regulatory Commission

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U. S. Department of Energy
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Why Grid Modernization?

The existing U.S. power system has served us well...
but our 21st Century economy needs a 21st Century grid.

Security Threats



Changing Supply Mix



Extreme Events



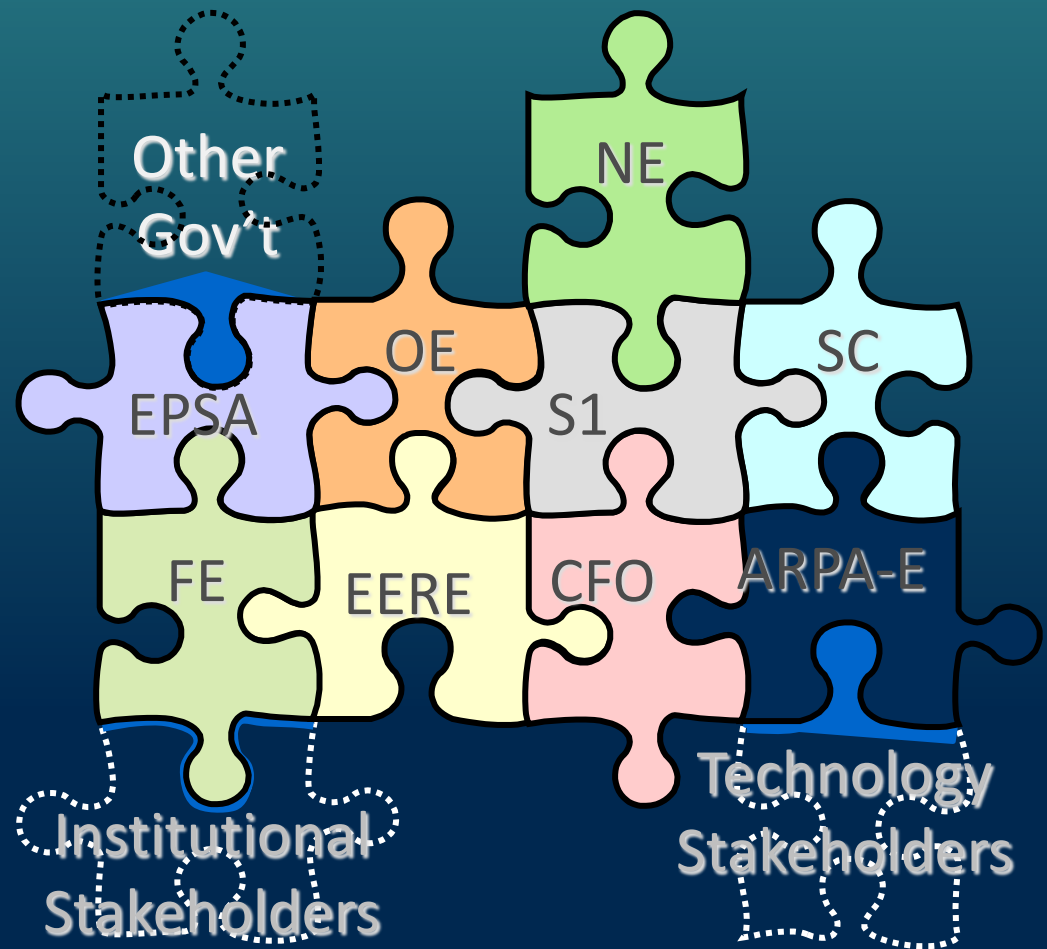
New Market Opps.



Grid Modernization Initiative

An aggressive five-year grid modernization strategy for the Department of Energy that includes

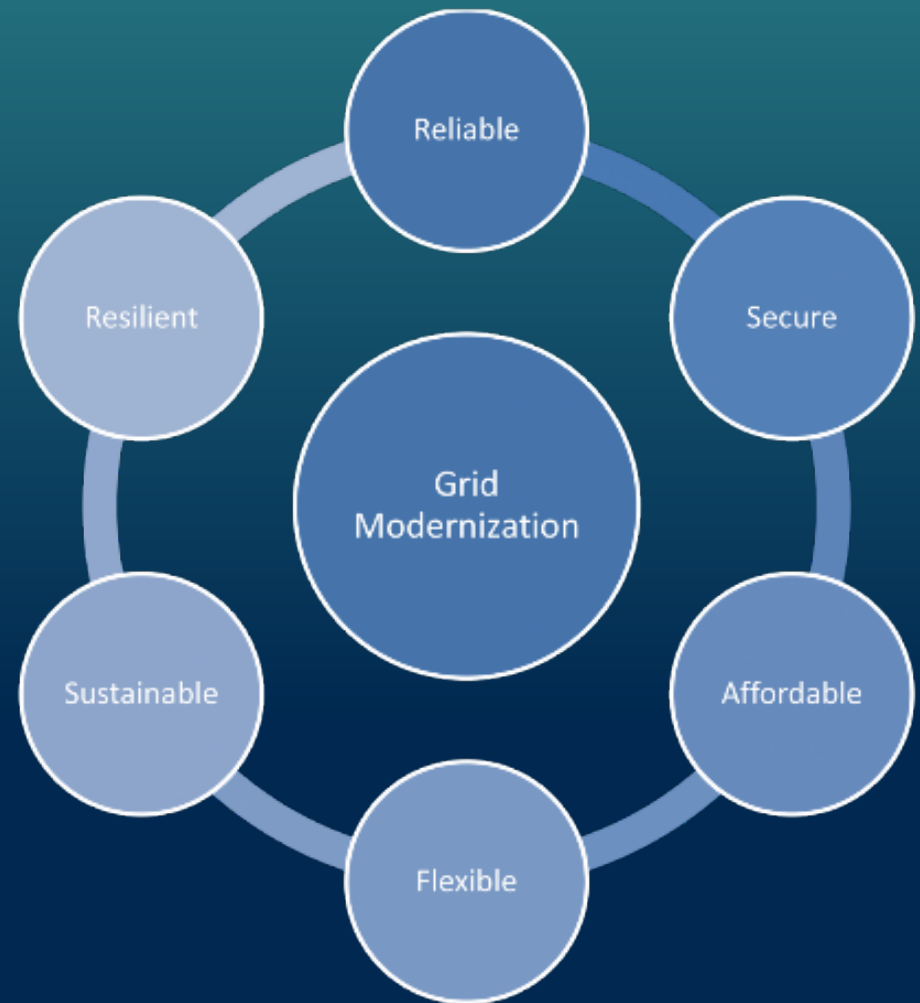
- Alignment of the existing base activities among the Offices
- An integrated Multi-Year Program Plan (MYPP)
- New activities to fill major gaps in existing base
- Development of a laboratory consortium with core scientific abilities and regional outreach



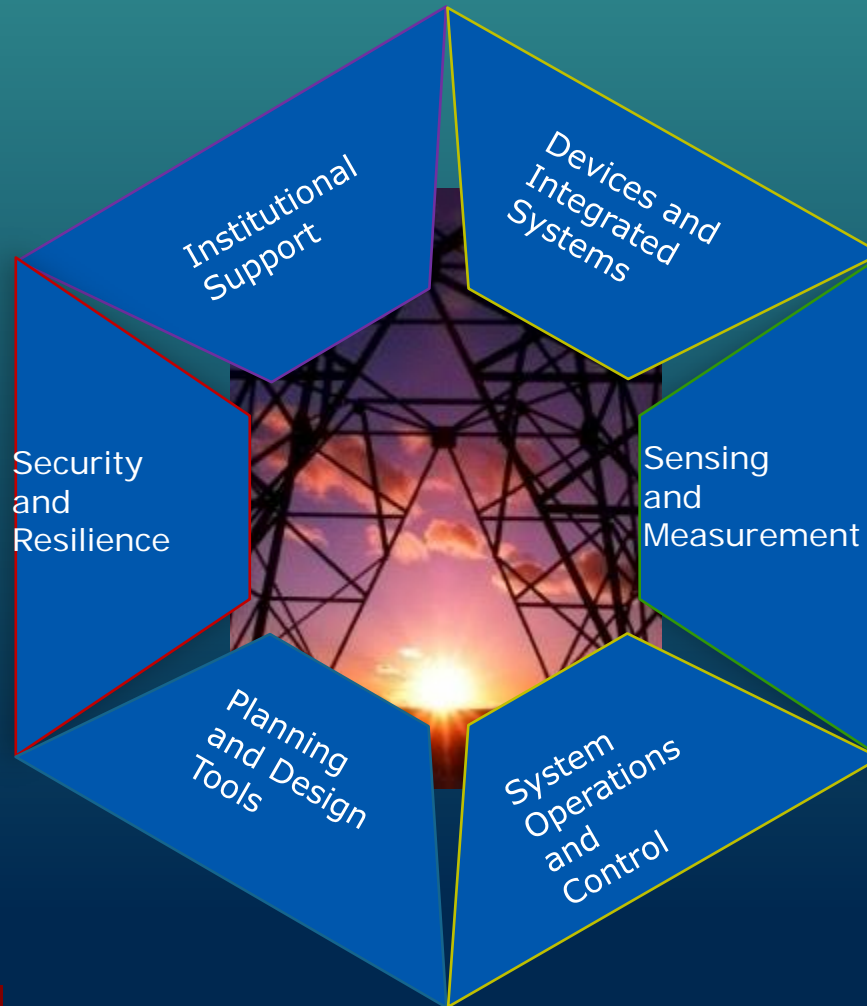
Grid Modernization Initiative

The vision of DOE's Grid Modernization Initiative (GMI) is:

- A future grid that will solve the challenges of seamlessly integrating conventional and renewable sources, storage, and central and distributed generation.
- The future grid as a critical platform for U.S. prosperity, competitiveness, and innovation in a global clean energy economy.
- A future grid that will deliver **resilient, reliable, flexible, secure, sustainable, and affordable** electricity to consumers where they want it, when they want it, how they want it.



Grid Modernization Laboratory Consortium



GMI Will Have National Impact

Drivers of change

Changing Electricity Supply Mix

Threats to Resilience and Reliability

New Market Opportunities for Consumers

Information and Control Technologies

Aging Infrastructure

MYPP

Devices and Integrated Systems

Sensing and Measurement

System Operations and Control

Design and Planning Tools

Security and Resilience

Institutional Support

Regional Demonstrations

Low Reserve Margin Demo

Clean Distribution Feeder

Grid Analytics Platform

Modernized Grid



Our path to a modernized grid to power American leadership in the 21st Century