



How We Drive Grid Resilience with Targeted R&D

Office of Electricity

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Advanced Grid R&D



U.S. DEPARTMENT OF

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How We Drive Grid Resilience With Targeted R&D

Office of Electricity – Core Services

- **Leading the U.S. to resilient electricity delivery systems**
- **Improving energy delivery technology and infrastructure**
- **Shaping electricity planning and operations in response to policy**
- **Modernizing the grid with research, partnerships, and more**



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Key Trends Driving Electric Grid Change

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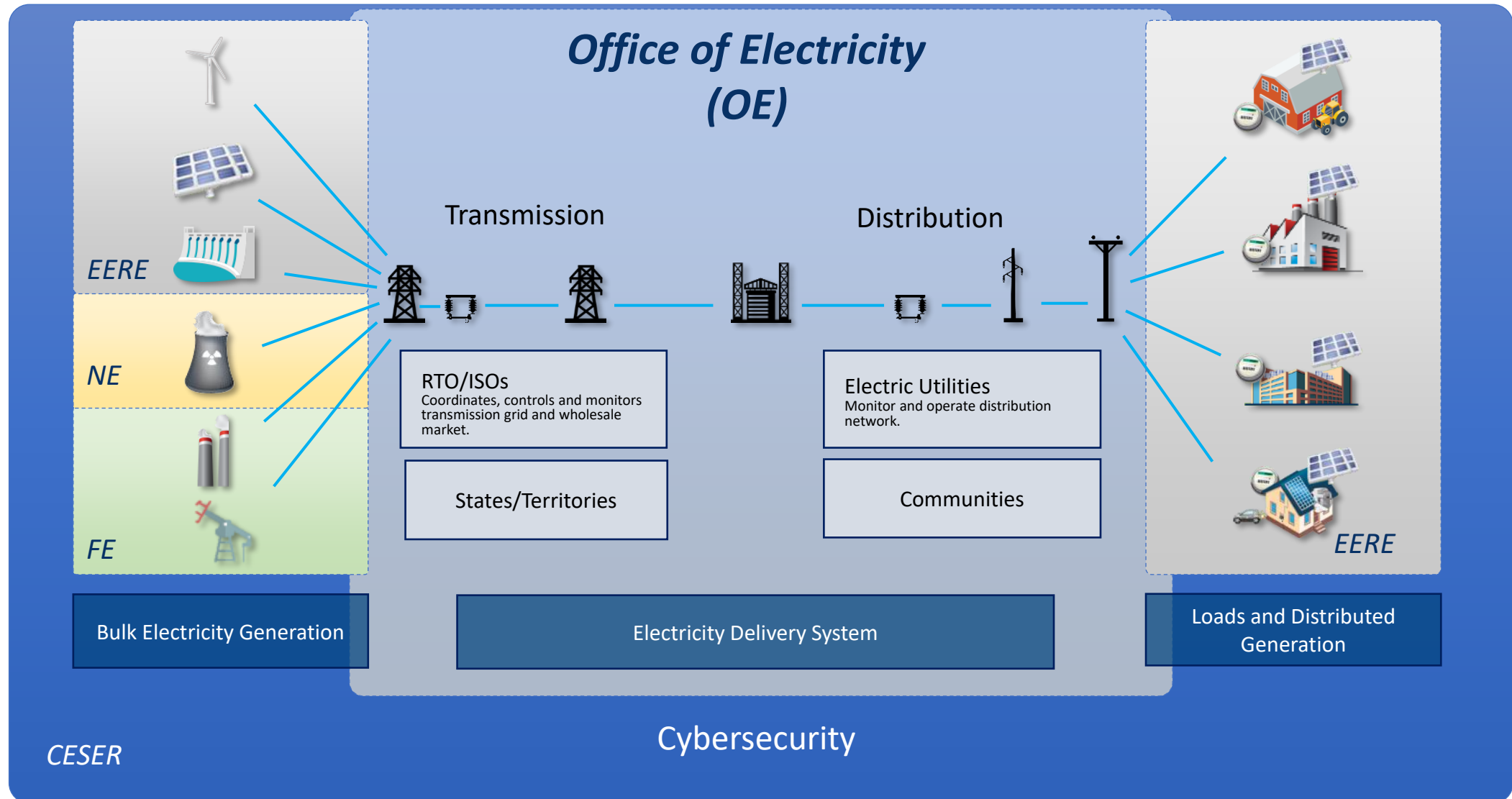
- Changing mix of types and characteristics of electricity generation
- Growing demands for a more resilient and reliable grid, especially due to weather impacts
- Growing threat of cyber and physical attacks
- Opportunities for customers to provide grid services and participate in electricity markets
- Increased use of digital and communication technology in the control of power systems



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OE Role in the Electric Grid



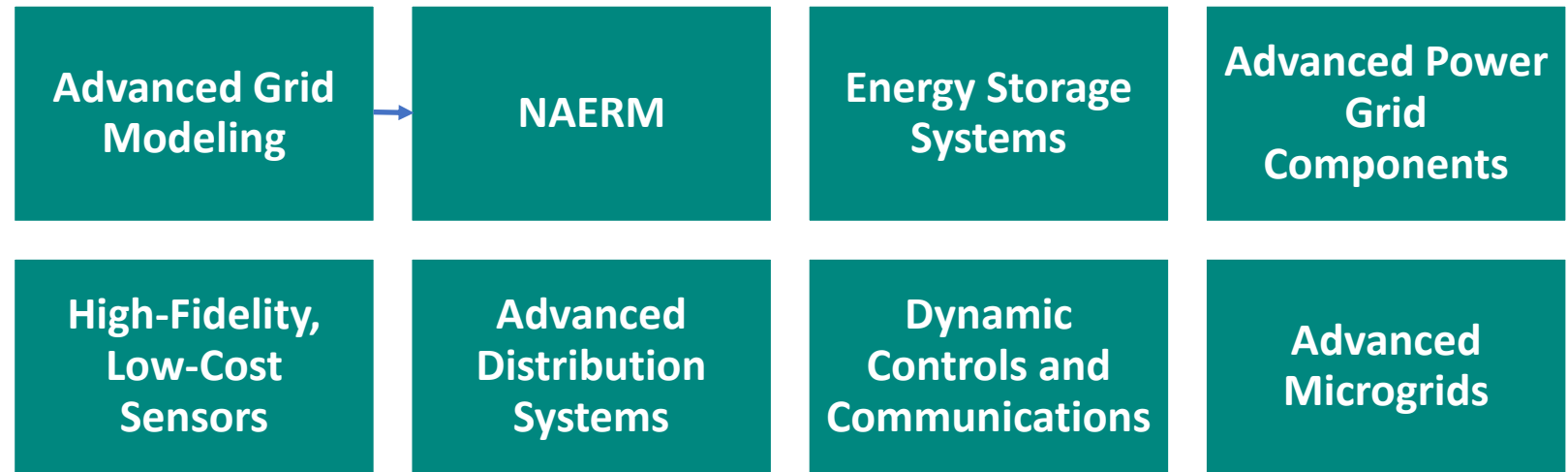
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Advanced Grid R&D (AGR&D) Portfolio





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Threats to U.S. Energy Infrastructure



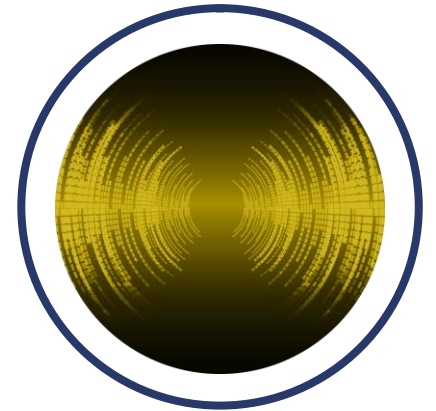
Cyberattacks

Extreme
Weather



Physical
Attacks

Electromagnetic
Pulse (EMP)



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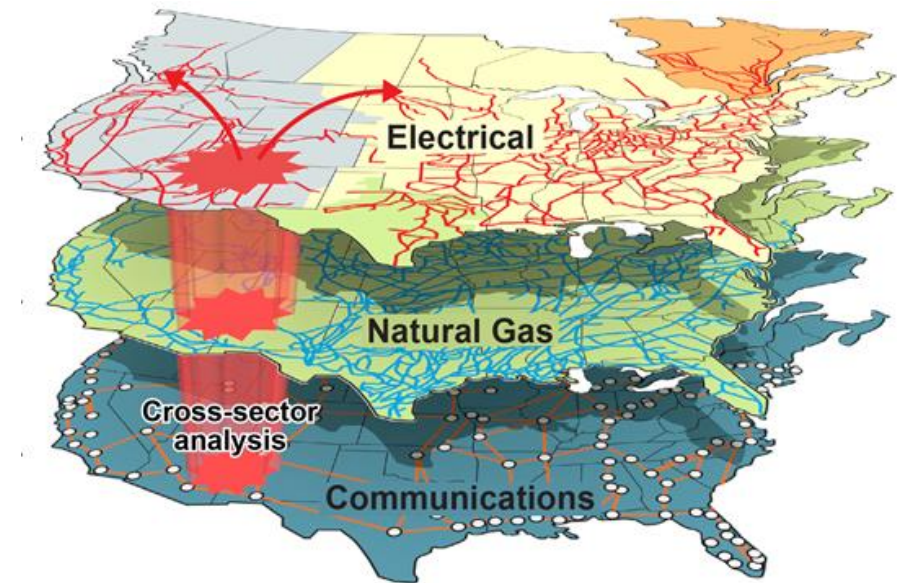
North American Energy Resiliency Model (NAERM)

How We Drive Grid Resilience With Targeted R&D

Vision - Rapidly predict energy system interdependencies, consequences and responses to extreme events at a national scale

Mission - Develop and deploy engineering-class modeling system for planning and real-time resilience analysis

Key Objective – Catalyze partnerships with industry, national labs, states/communities and other federal agencies to enhance coordination to support energy resilience



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Questions?

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