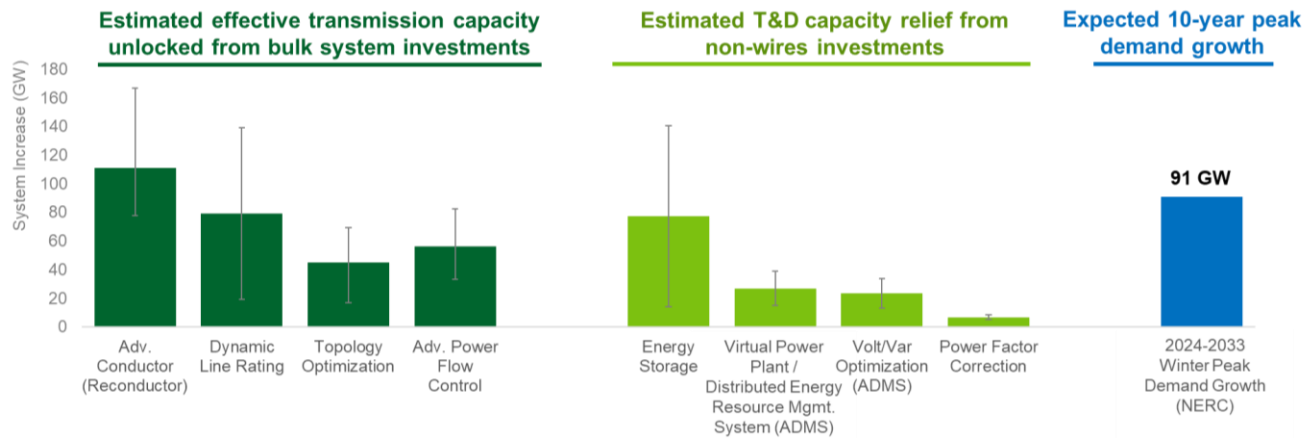




Innovative Grid Deployment

Multiple advanced grid solutions are **commercially available today** to help grid operators and regulators address **near-term capacity and reliability priorities** and **modernize the grid**—without increasing costs for ratepayers.

- Deploying these solutions today could increase effective T&D capacity to support **20-100 GW of incremental peak demand** when installed individually, while improving reliability, resilience, and affordability.
- With at least **91 GW of peak demand growth** expected within the next decade, these advanced grid solutions are an important bridge to address near-term needs while new infrastructure is built.
- Most solutions could be deployed on the existing grid in **under 3-5 years** and at **lower cost** and greater value than conventional approaches.
- Deployment is underway, but **adoption at scale and associated industry know how is lagging** largely due to a lack of industry incentives and prioritization.



Note: Represents system capacity benefits of deploying technologies to their full techno-economic potential, overnight and individually. Significant additional capacity potential possible when installed in strategic combinations.

Scope of Innovative Grid Deployment Liftoff Report*

- 1. Advanced transmission technologies**
(e.g., advanced conductors, point-to-point high voltage direct current)
- 2. Situational awareness and system automation**
(e.g., Advanced Distribution Management Systems (ADMS) and advanced ADMS applications, substation automation and digitization)
- 3. Grid-enhancing technologies and applications**
(e.g., dynamic line rating, topology optimization, advanced power flow control, energy storage, virtual power plants)
- 4. Foundational systems**
(e.g., communications technologies, system digitization)

- ✓ Transmission and distribution system
- ✓ Existing rights-of-way infrastructure
- ✓ Commercially-available, advanced grid solutions

*See report for full list of twenty technologies in scope

Pathway to Lifftoff

Lifftoff will be achieved when utilities and regulators comprehensively value and integrate these advanced grid solutions as part of core grid investment, planning, and operations.

Achieving Lifftoff within 3-5 years

Deploy no regrets solutions today...

...that simultaneously address four priorities for lifftoff to de-risk adoption at scale



6-12 large, in-field deployments

completed for each solution individually or in combination that holistically address Lifftoff priorities across a diverse set of grid contexts



Lifftoff priorities

▶ With efficient investment and cost allocation strategies, these deployments could happen without directly increasing cost to ratepayers while driving improved grid capacity, reliability, and equity outcomes

Priority actions to pursue today

Industry stakeholders can start acting today—taking advantage of unprecedented federal investment and policy incentives—to accelerate deployment of advanced grid solutions that unlock meaningful near-term value and long-term compounding benefits.

Stakeholders	Potential priority actions to pursue today (<i>not exhaustive</i>)
Grid operators & utilities	<ul style="list-style-type: none"> • Deploy “no regrets” solutions to address grid hotspots and support lifftoff • Transparently share deployment outcomes and best practices • Develop grid modernization strategies using emerging best practices
Regulators & governance boards	<ul style="list-style-type: none"> • Revamp grid modernization strategies and planning processes by adopting current best practices • Require consideration of advanced grid solutions in current planning and investment processes • Align utility incentive structures with the value of advanced grid solutions • Develop efficient cost recovery mechanisms
State & Federal Policymakers	<ul style="list-style-type: none"> • Collaborate with regulators to ensure advanced grid solutions are considered in current processes • Establish clear policy goals to inform grid investments at the state level • Coordinate multi-stakeholder grid modernization collaborations
Solution Providers	<ul style="list-style-type: none"> • Proactively articulate and value technology benefits • Share performance risk for proven but sub-scale solutions • Integrate advanced grid solutions into core services