

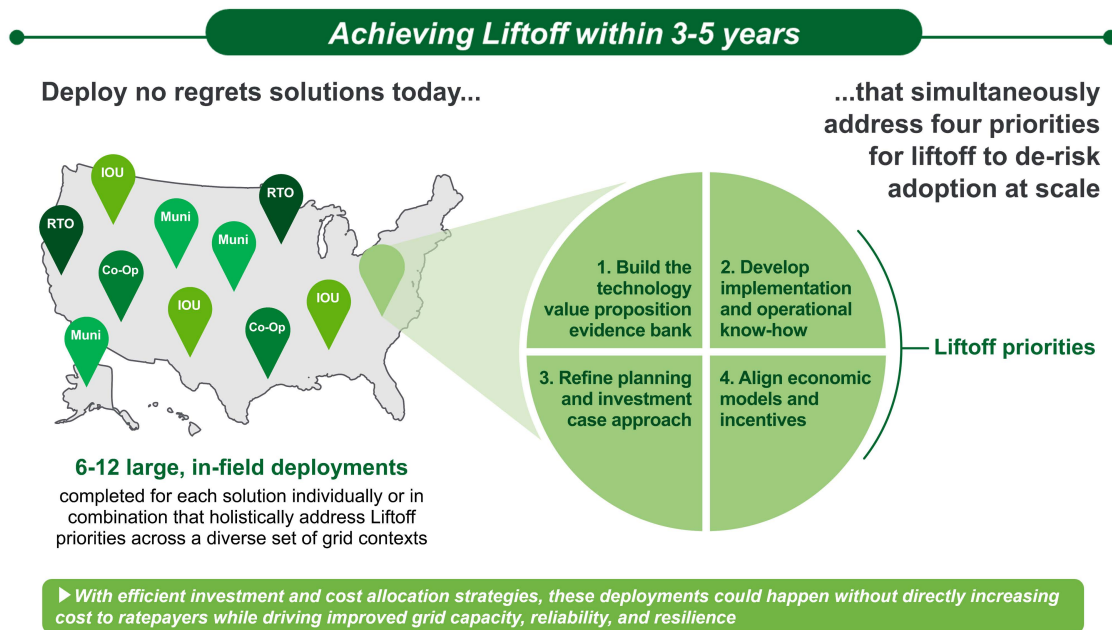


The DOE National Lab Complex possesses numerous capabilities that support the accelerated commercialization and scale-up of modern power grid technologies. These capabilities include subject matter experts, user facilities, intellectual property (IP) and technical assistance & training programs for industry, regulators, and policymakers.

Innovative Grid Capabilities

DOE's Innovative Grid Deployment Liftoff report identifies what it takes to scale multiple advanced grid solutions that could enhance the capacity, reliability, resilience, and affordability of the existing transmission & distribution grid in the near-term. These advanced grid solutions (e.g. advanced conductors, grid enhancing technologies, distribution automation systems) are commercially available today but under-deployed relative to their potential impact. This addendum provides a non-exhaustive summary of National Laboratory capabilities that can accelerate deployment of advanced grid solutions.

The figure below summarizes the key elements of the pathway to achieve liftoff of advanced grid solutions:



The National Labs support each of the four pillars of the above framework with their capabilities:

- 1. Advanced Grid Solution Testing and Evidence Building:** The National Labs build understanding and confidence in advanced technologies as viable alternatives to existing solutions.
- 2. Operational and Implementation Support:** The National Labs provide grid operators with support on how to install, operate, and maintain advanced technologies.
- 3. Planning and Investment Case Support:** The National Labs support grid operators to more effectively evaluate and understand the benefits and costs of advanced technology solutions.
- 4. Regulatory Technical Assistance:** The National Labs support regulators and grid operators as they look to innovate regulatory structures so that economic and operational incentives are aligned with advanced technology deployment.

Collectively, these activities enhance the DOE's ability to support commercial companies in developing and deploying advanced grid technologies, ensuring a more reliable, resilient, and affordable power grid.

Find resources at the [Lab Partnering Service \(labpartnering.org\)](http://labpartnering.org), with OTT available to help quarterback connections to the National Labs.



Innovative Grid Lab Resources

Facilities	Experts	Licensable Technologies
64	90	223

- **Facilities:** Leverage the National Laboratories' [state-of-the-art facilities](#) to innovate and tackle the world's most challenging scientific issues.
- **Experts:** Connect with top [scientists, engineers, and energy experts](#) ready to answer your questions.
- **Licensable Technologies:** Review [hundreds of advanced technologies](#) that were developed with DOE funding and are available for licensing.
- **Patents and Software:** Explore DOE's open source and proprietary [software and technology](#) to address specific business, technical, or operational challenges.

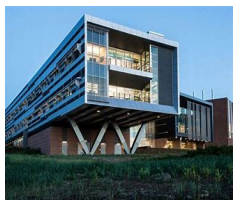
APPENDIX: FACILITIES

Argonne National Laboratory Argonne Collaborative Center for Energy Storage Science (ACCESS) Advanced Mobility Technology Laboratory Center for Nanoscale Materials Smart Energy Plaza (SEP) Argonne Leadership Computing Facility Advanced Photon Source	Lawrence Berkeley National Laboratory Demand to Grid (D2G) Lab Grid Integration Group Grenada Living Lab	Pacific Northwest National Laboratory Electricity Infrastructure Operations Center (EIOC) Clean Energy and Transactive Campus GridLAB-D Reliability Test Laboratory Environmental Molecular Sciences Laboratory (EMSL) Atmospheric Measurements Laboratory (AML) Advanced Building Controls Laboratory VOLTTRON Joint Global Change Research Institute (JGCRI) Grid Storage Launchpad Computational Science Facility (CSF) Lab Homes Advanced Battery Facility (ABF) Building Operations Control Center Redox Flow Prototyping Laboratory	Sandia National Laboratories Grid Storage Management and Security (GSMS) Laboratory Battery Test Facility Energy Storage Test Pad and Energy Storage Analysis Laboratory Scaled Wind Farm Technology Facility Battery Abuse Testing Laboratory Distributed Energy Technologies Laboratory Control and Optimization of Networked Energy Technologies Laboratory Energy Storage Controls and Analytics Laboratory (ESCAL) Battery Energy Storage Test Laboratory National Solar Thermal Test Facility Secure Scalable Microgrid Testbed Advanced Power Electronic Conversion Systems Laboratory
Idaho National Laboratory Electric Grid Test Bed Cybersecurity Facilities Power and Energy Systems Real-Time Laboratory Battery Test Center Microgrid Test Bed Transmission Optimization with Grid-enhancing Technologies Project (TOGET)	Lawrence Livermore National Laboratory Laboratory for Energy Applications for the Future (LEAF) Skyfall Test Bed SLAC National Accelerator Laboratory Grid Integration Systems and Mobility (GISMo)	National Energy Technology Laboratory Advanced Sensors for Energy Infrastructure: Materials and Devices Institute for the Design of Advanced Energy Systems (IDAES) Magnetic Materials Processing and Testing Laboratory Energy Infrastructure Monitoring Sensor Development and Testing Facilities Quantum for Energy Systems and Technology Hybrid Performance Lab	Brookhaven National Laboratory Northeast Solar Energy Research Center Interdisciplinary Science Department
National Renewable Energy Laboratory Advanced Research on Integrated Energy Systems (ARIES) Energy Systems Integration Facility Nanogrid Laboratory Flatirons Campus Solar Radiation Research Laboratory	Oak Ridge National Laboratory Battery Manufacturing Facility (BMF) Grid Research Integration and Deployment Center Powerline Conductor Accelerated Test Facility Distributed Energy Communications and Controls Laboratory Building Technologies Research and Integration Center National Transportation Research Center (NTRC) Technical Testing and Analysis Center		



Transformational Opportunities for Growth and Energy Transition (TOGET)

The Idaho National Laboratory (INL) launched the Transformational Opportunities for Growth and Energy Transition (TOGET) program to accelerate the development and deployment of innovative energy technologies. By offering access to state-of-the-art facilities and expert resources, TOGET supports researchers and developers in overcoming technical barriers, validating new energy solutions, and advancing the commercialization of cutting-edge technologies



Systems Integration Facility

The National Renewable Energy Laboratory (NREL) established its Systems Integration Facility to advance the integration and reliability of renewable energy sources within the power grid. By providing access to cutting-edge infrastructure and expert knowledge, these facilities enable researchers and developers to address technical challenges, validate innovative grid technologies, and support the transition to a more resilient energy system.



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