

INSIDE THE GRID STORAGE LAUNCHPAD

DISTINCTIVE CAPABILITIES IN A COLLABORATIVE FACILITY

Solutions to the pressing challenges of climate change, decarbonization, and power grid modernization require affordable, reliable, and safe energy storage deployed at scale. The U.S. Department of Energy's Office of Electricity has selected Pacific Northwest National Laboratory in Richland, Washington, as the site for the Grid Storage Launchpad (GSL). The GSL will be a new, national research and development facility to accelerate the development of next-generation grid energy storage materials and technologies.

GSL Vitals

- ▶ **Estimated Facility Cost:** \$75 Million
- ▶ **Leveraged Funding:** \$35 Million from State of Washington, Battelle, Pacific Northwest National Laboratory

 **85,000**
Square Feet

 **105**
Workstations

 **30**
Lab Modules

GSL Mission

- ▶ **Validate:** Independent testing of next-generation storage materials and systems (<100kW) under realistic grid operating conditions
- ▶ **Accelerate:** Reduce risk and speed development of new technologies by propagating rigorous grid performance requirements to all stages of development
- ▶ **Collaborate:** Link U.S. Department of Energy and storage research and development communities in a new collaboration center to solve key crosscutting challenges



1 New Materials

Novel approaches are used for materials discovery and synthesis using digital twins, physics-informed data models, and high-throughput experimentation.



2 In-Operando Characterization

Specialized facilities, insulated from sound and vibration, are used to better understand the fundamental material properties of storage technologies during operation.



3 Advanced Prototyping

Advanced equipment is used to design and build advanced prototype batteries quickly for testing, thereby reducing cost and risk in advancing new approaches.



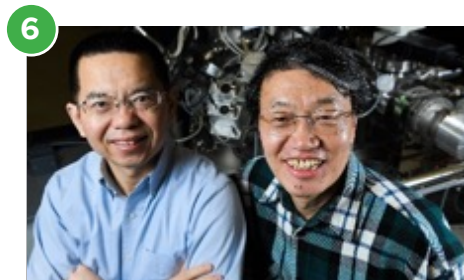
4 Testing Capabilities

Specialized chambers for safely testing energy storage technologies from milliwatts to 100kW-scale under realistic grid duty cycles, use cases and operating conditions.



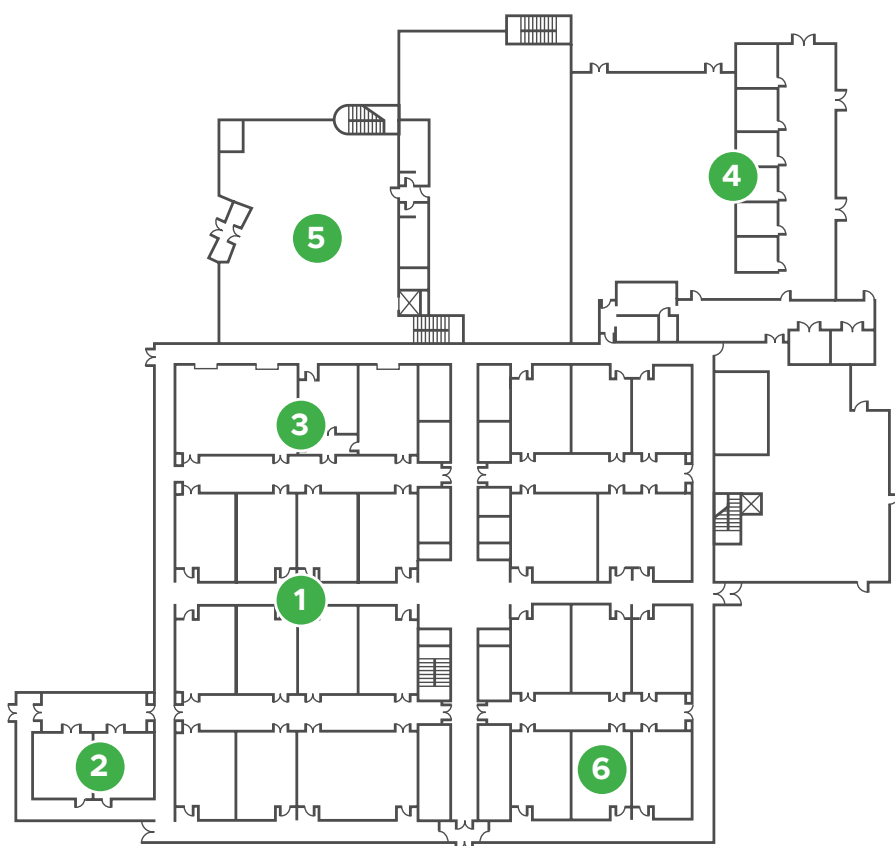
5 Visualization Laboratory

A visualization lab with multimedia audio-visual displays helps to analyze the role of energy storage in future grid scenarios and develop design criteria for new technologies.



6 Fellowship Laboratories

Flexible, collaborative workspaces host materials scientists and energy storage researchers from around the world to advance promising technologies.



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