



**Pacific
Northwest**
NATIONAL
LABORATORY

Proudly Operated
by **Battelle** Since 1965

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Electricity Infrastructure Operations Center

Advancing technologies for the integrated energy system

The Electricity Infrastructure Operations Center (EIOC) at Pacific Northwest National Laboratory serves as a unique platform for researching, developing and deploying technologies to better manage and control the grid. It's a national asset that brings together industry-leading software, cutting edge visualization, real-time grid data and advanced computation into a fully capable control room. Shaped with input from utilities, technology vendors and researchers across the Northwest, the EIOC is a fully functional grid control room that allows industry groups and power sector professionals to train grid operators, do contingency analysis, and test future grid configurations.



SMART GRID IN ACTION

In the future, grid operations will rely as much on indirect, market based “control” of customer and third-party resources as they will on direct control of grid assets. The Pacific Northwest Smart Grid Demonstration Project, managed by Battelle, is using facilities in the EIOC to test a transactive control system that coordinates responsive assets throughout five states in the Pacific Northwest. As the project's nexus, the EIOC gathers and evaluates data from across the region's power system and is laying the groundwork for future grid operations.

GRIDOPTICS™ POWERNET TESTBED

The EIOC is the hub for the GridOPTICS™ powerNET Testbed, a remotely accessible, multi-user, experimental user facility focused on enabling cutting edge power system and smart grid research. PowerNET users benefit from quick experiment setup, access to real power system equipment, sandbox environment where new ideas can be tested, and a collaborative scientific environment for sharing data and experimental configurations. By integrating hardware in the loop with simulations, powerNET creates a platform to explore the behavior and dynamics of alternative configurations of the future power grid.

ABOUT PNNL

Pacific Northwest National Laboratory, a U.S. Department of Energy Office of Science laboratory, solves complex problems in energy, the environment, and national security by advancing the understanding of science. PNNL employs more than 4800 staff, has a business volume of \$1.1 billion, and has been managed by Ohio-based Battelle since the lab's inception in 1965.