



Introducing FLEXGRID

FLEXLAB® has added new distributed energy resources testing capabilities with FLEXGRID, a system that enables real-time comparisons between demand, renewables, inverters and storage.

FLEXGRID offers an unprecedented opportunity to research and develop technologies and controls that span both the supply and demand sides of the grid. With this highly instrumented and flexible infrastructure, separately metered and controllable inverters, batteries and building loads and can be paired with innovative controls strategies to manage energy use and create value for utilities and customers.

Find out more at: flexlab.lbl.gov/introducing-flexgrid

A Range of Control Modes

FLEXGRID's installed hardware includes photovoltaic arrays, a battery bank, inverters, Opal-RT grid simulator, Ametek regenerative power supply, programmable load banks, and has the capability to integrate with EV charging. Operational modes include:

- **PV to Grid** for developing baseline system operation and non-experimental power generation
- **PV to Loads**, representing typical installation of a PV array and battery system
- **Hardware-in-the-Loop** for emulating electric grid conditions to test programmed inverter response to simulated power quality issues
- **Direct PV to Battery Charging** for studying battery/inverter characteristics
- **Grid-Charging Battery** for testing load-shifting strategies for utility rate structure cost improvement
- **Electric Vehicle Charging** for studying EV charging systems in combination with distributed energy resource controls



FLEXLAB: The Facility for Low-Energy Experiments in Buildings

FLEXLAB® at Berkeley Lab is the most flexible, comprehensive and advanced building efficiency test facility in the world. We invite users to test energy efficient technology alternatives, perform cost-benefit analyses, and ensure a building's efficiency—before construction starts.

—Cindy Regnier, executive manager

About FLEXLAB

[What We Offer](#)

[Sample Projects](#)

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Our New Website

We have recently completed a new website for FLEXLAB. Check it out at:

flexlab.lbl.gov

Case Studies

Read about projects where FLEXLAB helped save time, money and energy

[Demand Response](#)

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