

# Integrated Energy Security R&D

*Developing a resilient power grid from threat to consequence*

## Mesa del Sol

Commercial-scale microgrid with state-of-the-art energy management system for control and forecasting research.

## Physical Security

Enduring contributions to secure our government against high-consequence terrorist threats and national incidents.

## National Infrastructure Simulation & Analysis Center

A source of national expertise to address critical infrastructure protection research and analysis.

## Communications & Optimization for Networked Energy Technology

Coordinated communications, controls for distributed systems, optimal dispatch, protection & reconfiguration, as well as prognostics and decision support.

## HERMES III Accelerator

Demonstrates the effect of gamma radiation using the world's most powerful gamma simulator.

Industry, Utility, & Academia

## Secure Scalable Microgrid Testbed

Performing hardware testing for advanced controls, informatics, and stochastic optimization.

## Electro Magnetic Pulse Facility

Simulating the electromagnetic pulse emitted by a nuclear detonation to testing responses to hostile electromagnetic radiation environments.

## Civilian Cyber

Control and visualization center for all grid and cyber assets.

## Scaled Wind Farm Technology (SWiFT)

Full-scale wind turbine research facility for rapid, cost-effective testing to improve wind farm performance.

## Emulytics & Threat Analysis

Hardware in loop simulations, control system, and SCEPTRE, a general-purpose code used for particle modeling.

## Energy Storage

Solving critical problems to make energy storage safe, reliable, and cost effective across all markets.

## High Performance Computing

Aggregates computing power to deliver solutions to grid and cyber challenges, and provides a data repository for large-scale analytics.

## Distributed Energy Technologies Laboratory

Interoperable distributed energy resource test bed and control and data acquisition system for vulnerability assessments.