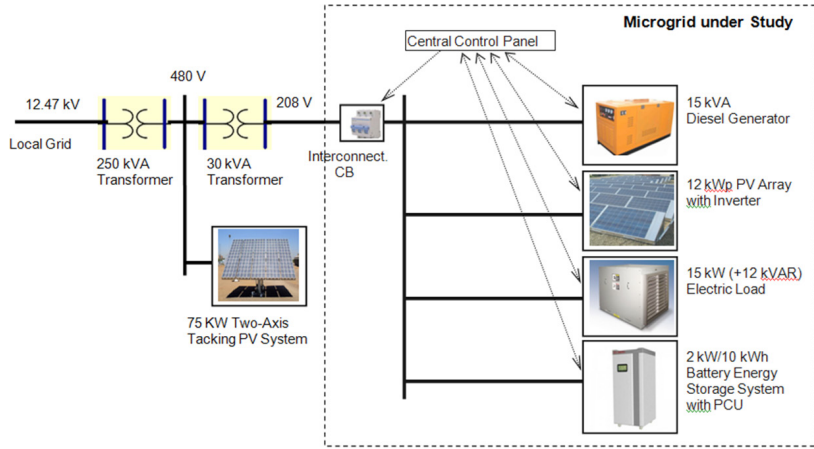


UNLV MICROGRID PROJECT



During the transition period from the current grid to a smart grid, it is critical to carry out testing, technology improvements, education and information sharing to ensure that the benefits we envision from the Smart Grid become a reality.

IMPROVE RELIABILITY, ECONOMIC MODELING, AND SUNLIGHT FORECASTING OF SOLAR ENERGY SYSTEMS

The State of Nevada's Renewable Portfolio Standard calls for 25% energy generation from renewable resources by 2030.

Renewable energy utilities can potentially realize large energy savings by generating some of their own energy from renewable sources on their own landholdings and operate these utilities independently from the power grid during power outages.

Improvements to solar forecasting can increase solar power generation, and management and planning of solar energy resources.

Economic evaluation of renewable energy and solar projects using water and energy as metrics, will allow Nevada to better allocate its scarce water resources.

RESEARCH TOPICS

1. Understand energy generation in landholdings: Develop secure communication and data storage for remote monitoring and control of the microgrid and install PMUs and remote monitoring and control of microgrid.
2. Solar irradiance forecasting: Develop short-term spot solar irradiance forecasting tool; test performance at UNLV Microgrid Test Facility; develop ways to apply such forecasting tool for power smoothing and voltage regulation; and assess the economic benefits with regard to grid operations.
3. Economic analysis of solar/renewable energy projects: Economic impact activities and investigate impacts on financial feasibility of solar projects.

RESULTS OR ANTICIPATED RESULTS

- Potential benefits to society will be to achieve affordable power quality.
- Allow for more PV system penetration into the electrical grid.
- Energy independence and environmental benefits.

CONTACT US

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