



LAB TEST BED: INDIAN CONSORTIUM

Task Objectives:

- > To study the behavior of renewable integration into the distribution system.
- > Study and test various primary/secondary controllers and protections under grid unbalance .
- > Impact analysis for rapid connection and disconnection of microgrids in Indian distribution scenario.
- > Development of a set of energy storage prototype models and their validation under integrated test environment with microgrid system having hybrid DERs for various dynamical conditions.
- > Validation of an energy management system that will take care of appropriate power flow among renewable energy sources, storage, grid and loads .

IIT Kanpur: Study of DER Integration

Integration of PV into a weak distribution grid and testing primary/secondary controllers and protection.

Test bed will have multiple converter topologies with solar and battery interface and RTDS and Typhoon based real-time simulation platform for system studies.

IIT Delhi: Study of Hybrid DER with DG

Converters for integration of Renewable energy sources within AC microgrid.

Feasibility study of disruptive communication technologies, such as free-space optical, satellite, and other existing wired and wireless technologies including cable network .

Power-line channel modeling and characterization.

TERI: Energy Management In Distribution Feeders

Use of off-grid/ battery inverter, to perform the intentional islanded operation.

Study of frequency response application of Battery Energy Storage System

IIT Madras: Study of Hybrid Energy Resources

Dynamic Energy Management System for Grid Interactive Microgrid with Hybrid Energy Storage.

Modeling, Control and integration of various renewable sources (PV and wind energy sources) along with hybrid energy storage.

IIT Roorkee: Hybrid DC-AC Microgrid

To develop an efficient load flow strategy for AC-DC distribution systems consisting of distributed generations and various types of power electronics converters.

Resilient Scheduling of an AC-DC Residential Microgrid.

IIT BBS: Study of Storage Integration

Modeling of Lithium-ion storage system.

Integration of the storage to the hybrid AC-DC microgrid. with required control scheme for power management.

