REGIONAL CONFERENCE

INCLUSIVE ENERGY TRANSITION IN SOUTH ASIA AND BEYOND

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Smart Energy Systems and Services: Techno-Economic and Social Challenges A Case Study

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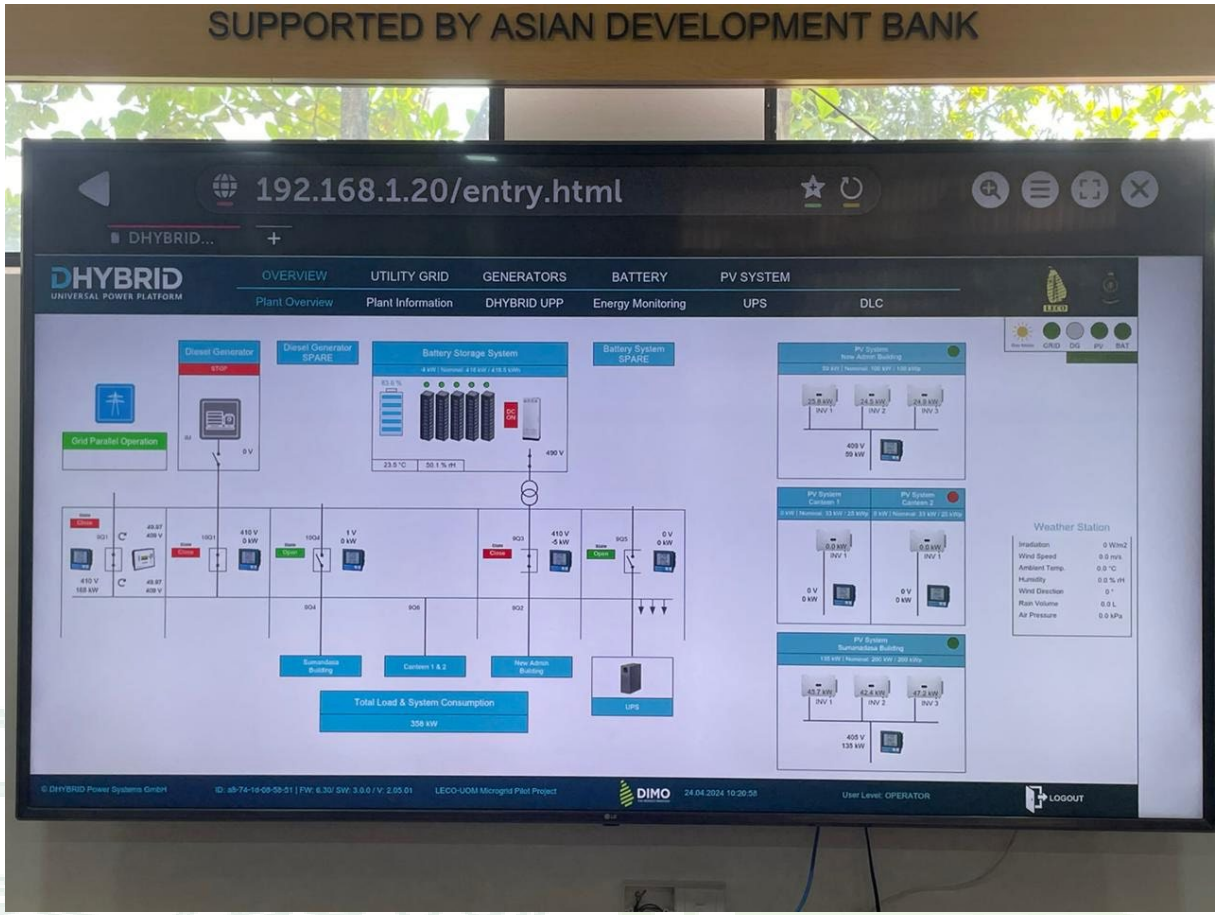
The Project

- Establishment of a pilot renewable energy micro-grid system and a R&D lab at the University of Moratuwa, Sri Lanka.
- Operates both in grid tied and grid isolated modes.
- Consists of PV solar systems with a capacity of 350kW, a battery system of 280kW/400kWh.
- Microgrid laboratory equipped with open source inverters, battery units, AC grid simulator, real time digital simulator facility, oscilloscopes, power analyzers, load simulators, and PV simulators etc.

University of Moratuwa in Smart Energy Research

- Smart Grid Pilot Project

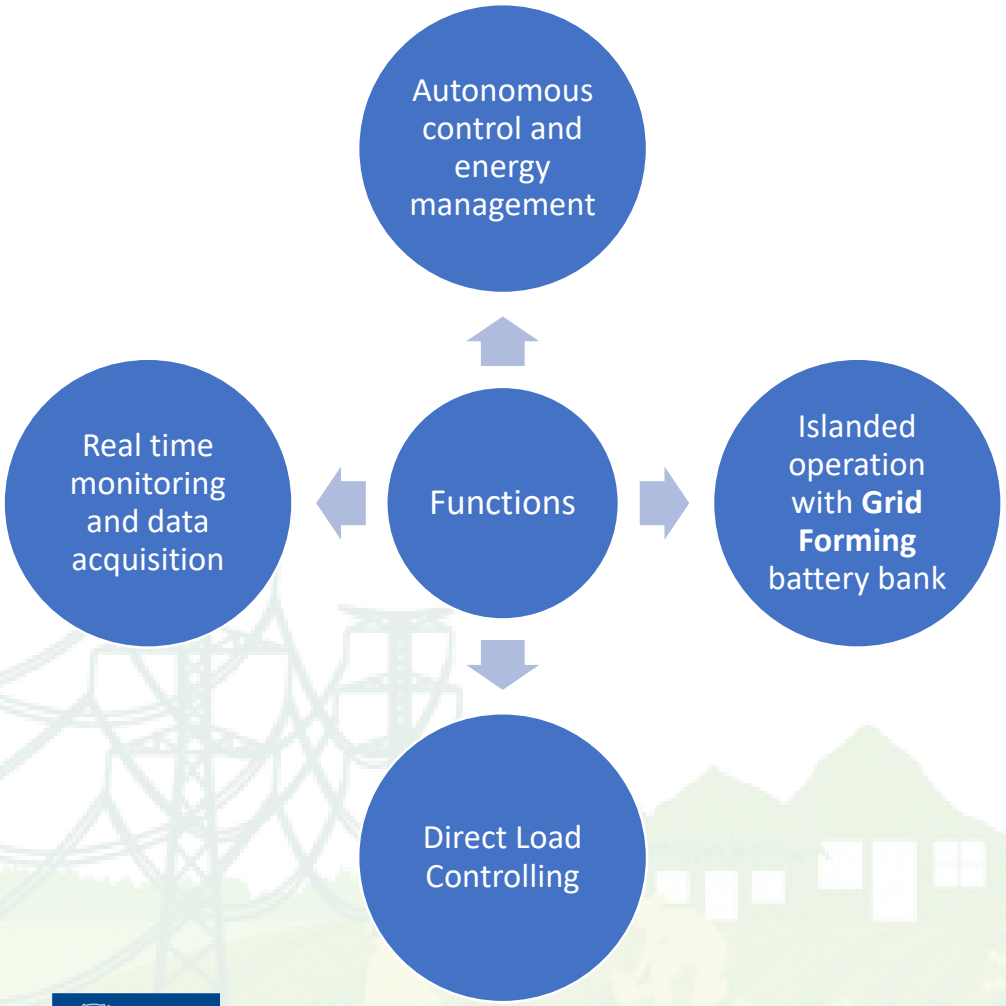


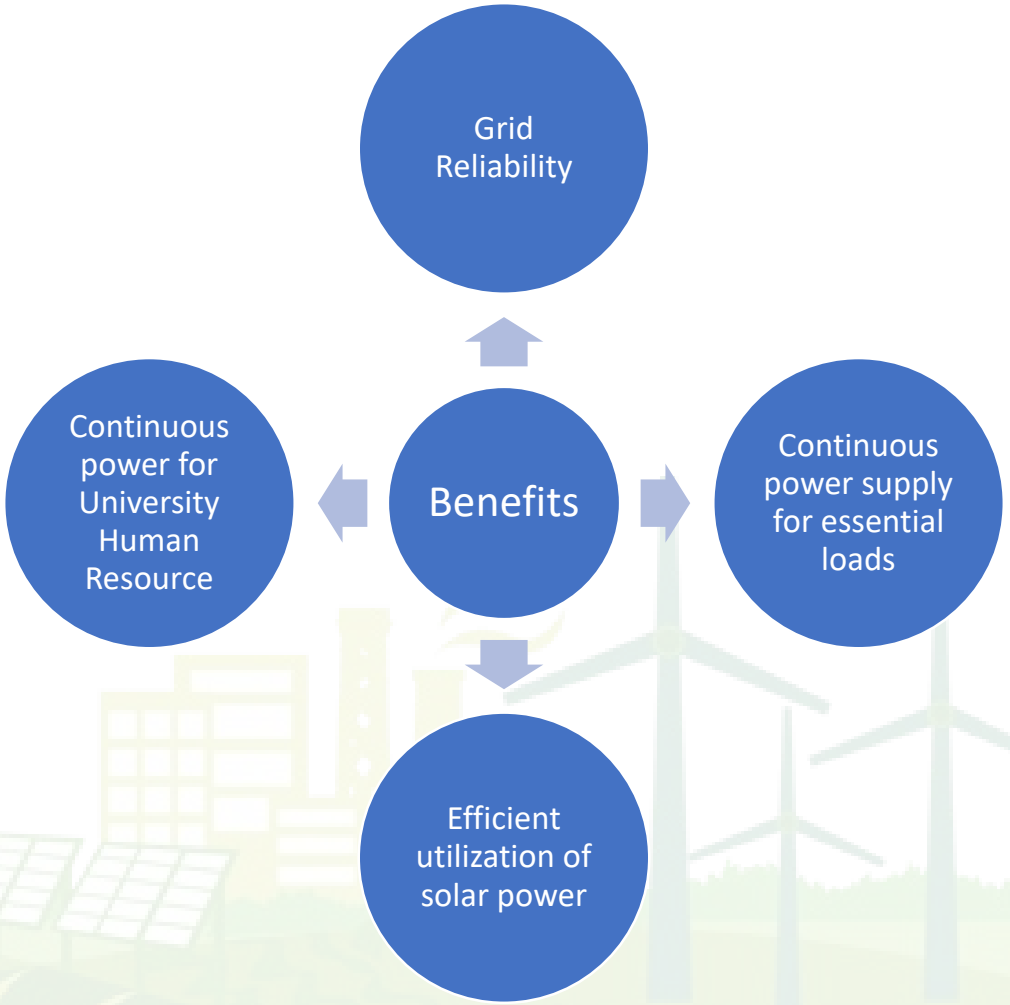
Provides continuous power supply to the University with PV and battery bank

- Smart Grid Research Lab

Conducts research related to microgrid control, power electronic control and optimization as well as real time simulation facilities

University of Moratuwa Microgrid





Smart Grid Research Lab

- Services
  - Microgrid feasibility assessment and designing
  - Inverter testing and quality checking
  - Research related to- controlling, protection, power electronics design and manufacturing

- Ongoing Projects
  - Digital Grid Router- Hardware-in-Loop testing, funded by ADB
  - Demand side management system development- funded by USAID
  - LACUNA funded demand response implementation project

Microgrid system and a Research and Development Laboratory

- Technology Transfer
  - Design and Operation of a microgrid facility.
  - Train 10 staff on design and operation of microgrids, of which 30% to be female staff.
  - Research and Development in the areas of Renewable energy, Solar PV systems, Distributed generation, and Demand side management.
  - New Curriculum for both undergraduate and post graduate studies (Currently 5 postgraduate students are carrying on research using the lab)
  - The laboratory facility is for the use of four Universities.

Scalability and Other Developments

- The laboratory has scaled up with additional equipment and collaborations with foreign partners.
- Significant interest on commercial application of microgrids since the pilot project
  - Hotel Sector (Feasibility study is ongoing)
  - Hospitals
  - Industry parks

Thank You!!!