Las Positas College
Energy Storage Microgrid

Integrating Campus Distributed Energy Resources: Renewables, Storage & Microgrids

CHESC- June 28, 2016
Las Positas College Microgrid
Las Positas 7 Day PG&E Power Profiles
Las Positas Microgrid Concept

Geli EOS Energy Apps
- Microgrid Operations
- Demand Charge Management
- Demand Response
- Frequency Regulation
- Auto & Triggered Dispatch
- Power Quality & Firming
- Energy Shift

Geli EOS Energy Drivers
- Power Conversion
- Energy Storage
- Meters
- PV Renewables
- Switches
- EVSE
- Lighting
- HVAC
- Generators
- Building Management Systems
Las Positas College Grid

PG&E Utility

500kW PV

Switch

Imergy Flow Battery

Switch

Ice Storage

Chiller Plant

Cooling Flow

Campus Building Cooling Loads

500kW PV

1300kW PV

Campus Building Electrical Loads

Maintenance and Operations Electrical Loads
Las Positas College Microgrid

Projected Peak Demand Management
Combining 1MWH Electrical Storage with 3200 Ton-Hrs Thermal Storage

Blue- Current Purchased Power, Red- Projected Purchased Power
Las Positas Microgrid -Issues

• Siting
  • Battery location, foundations
  • Location on Campus Grid

• Network Security
  • External Access Protocol

• Demand Response Participation with Solar Net Metering
  • Utility Restrictions

• Imbalance PV Solar to M&O Load to Battery
  • 500kW PV with 120kW Building Load and 1 MWH Battery

• Financial Evaluations
Las Positas Microgrid- Future Topics

- Demand Response Participation
- DR Cash Flow Predictability
- Other Services to Grid
  - Local Circuit,
  - Regional
- AB 2514 Energy Storage Procurement Plan
- Changing Peak Demand Charge Periods
- On-Site Generation Greater Than 1 MW
Las Positas Microgrid - Project Team

- Chabot-Las Positas Community College District
- Las Positas College - Host
- Parsons Brinckerhoff - Project Management
- Growing Energy Labs (GELI) - Microgrid Control
- Imergy - Vanadium Flow Battery
- Olivine - DR + Services to the Grid
- PG&E - Services to the Grid
- Contractors
  - PDE Total Energy Solutions - Electrical
  - Southland Mechanical - Mechanical
  - Syserco - Building Automation
Las Positas Microgrid-Contacts

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