

# The Energy Efficiency Foundation in Integrated Demand-Side Management

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## What is a Microgrid?

*“A group of **interconnected loads and distributed energy resources** with clearly defined **electrical boundaries** that acts as a **single controllable entity** with respect to the grid and can connect and disconnect from the grid to enable it to **operate in both grid connected or island mode.**” \**



# Microgrid Configuration Categories

## (1) Single-customer facility

### Description

- Customer-side of the meter
- Military bases, universities, prisons, commercial facilities/campuses, schools, hospitals

### Key Drivers

- Customer reliability & resiliency
- Sustainability
- Avoided customer outage costs

### Example

- Santa Rita Jail (operational)

Santa Rita Jail



## (2) "Remote" community

### Description

- Utility-sponsored projects, typically hybrid ownership (e.g., utility-owned distribution assets, customer-owned DG)

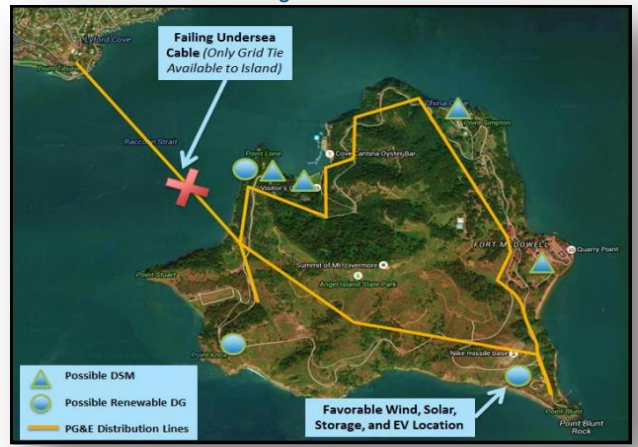
### Key Driver

- Potential T&D alternative in remote locations

### Example

- Angel Island (PG&E DRP demo. proposal)

Angel Island



## (3) Multiple accounts on-grid

### Description

- Typically Cities seeking to enable multiple critical care facilities to island in the event of broader grid outage and enhance local resiliency

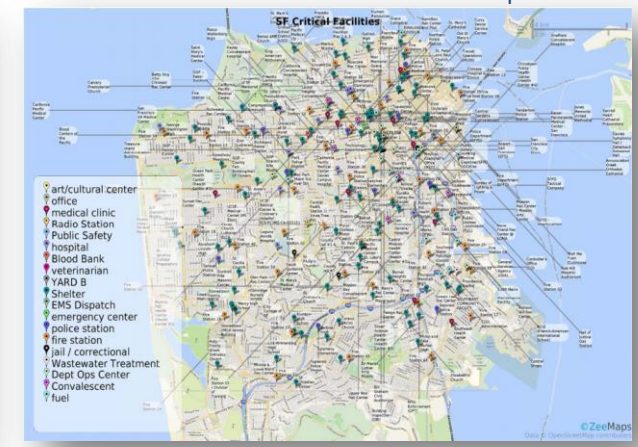
### Key Driver

- Community resiliency

### Example

- CCSF Solar + Storage for Resiliency microgrids (planning)

San Francisco Critical Facilities Map





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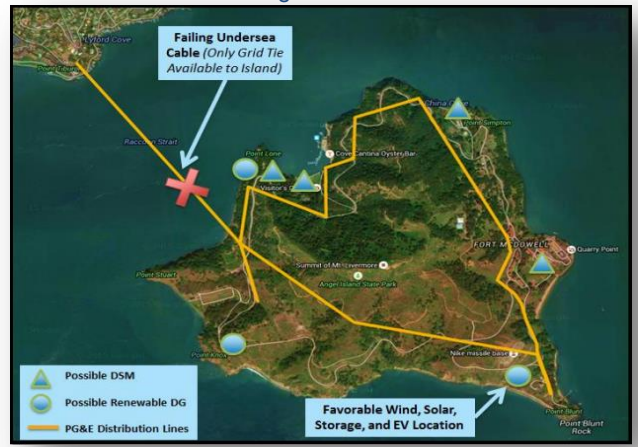
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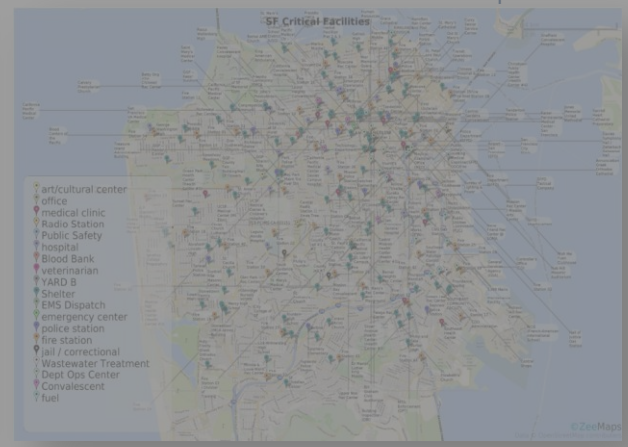
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# Category 2 exe: Angel Island

## Background

- State Park
- Peak Demand of ~100kW
- History of investing in “1<sup>st</sup> gen” DERs



## Situation

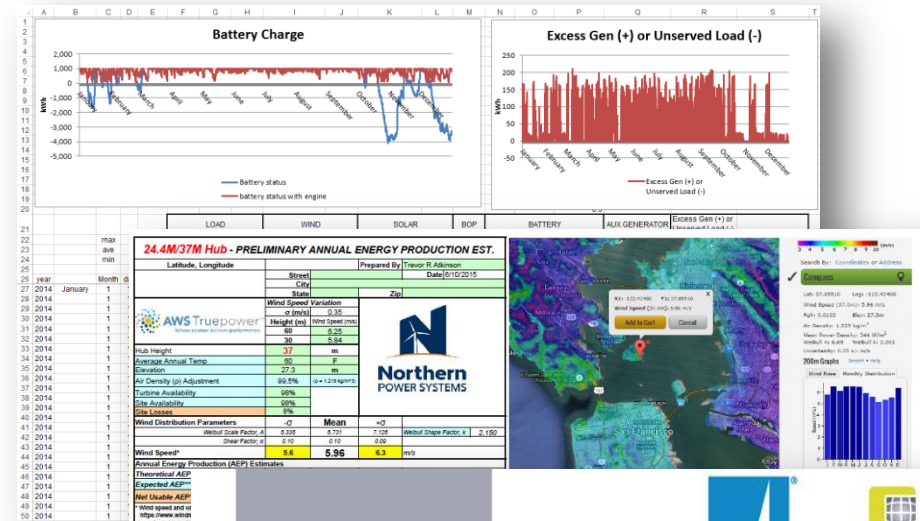
- PG&E-owned on-Island distribution system
- Submarine cable failure and deterioration



# Category 2 exe: Angel Island

## Progress to date

- Large Integrated Audit (LIA) and microgrid feasibility assessment (May-Sept 2015)
- Filed as DRP demonstration pilot (July 2015)
- Revised Preliminary Planning Report (Sept 2015)



## Next steps

- DRP workshops (ongoing)
- EE plan implementation
- EO planning
- State DPR coordination

### Today's Agenda

1. Audit Site
2. Meter List
3. Meter Charts
4. Load analysis
5. Energy Efficiency
6. Micro-grid model
7. Options
8. Finance
9. Next Steps

**Angel Island State Park**