

Powering Through: The Role of Distributed Energy Resources in Crisis Response

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AGENDA

- State of Energy in California
- Traditional Approaches to Energy Projects
- DER Overview
- Considerations During a Crisis
- Planning for DER Implementation



STATE OF ENERGY IN CALIFORNIA

- Electric Vehicles (EV) proliferate the market
- Public Safety Power Shutoffs (PSPS) more frequent
- Alignment with Climate Action Plan (CAP) goals
- AWIA identified key risks related to backup power



TRADITIONAL APPROACHES TO ENERGY PROJECTS

- Standby Generators
 - Not in alignment with CAP goals
- Financially-driven Energy Projects
 - Driven by rebates, incentives, and cost savings
 - Leads to unrealistic expectations
 - Not driven by Operations



WHAT IS A DER?

- Distributed Energy Resources (DER) refers to **small-scale energy generation & storage**, located close to energy consumers or within local electric distribution systems.
- Enhance energy resilience by providing decentralized and self-sustaining power sources.
- Examples include:
 - Solar photovoltaic (PV)
 - Battery Energy Storage systems (BESS)
 - Microgrids
 - Micro-hydro systems

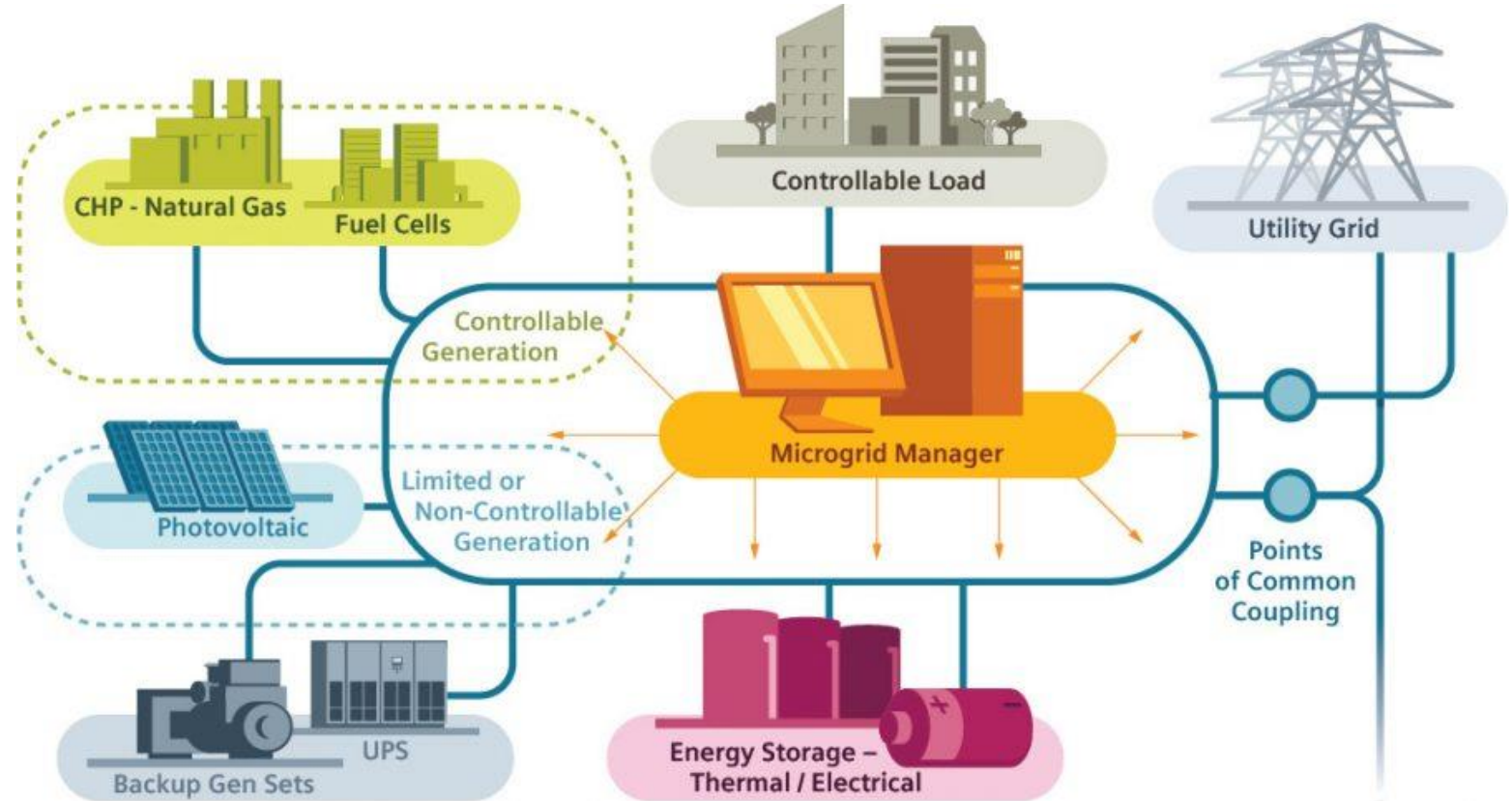
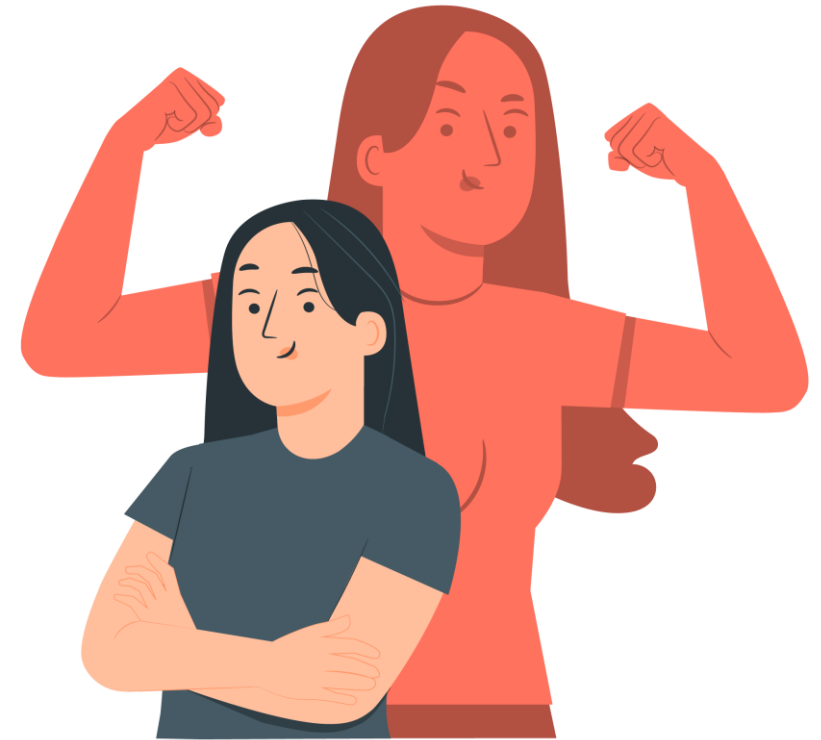


Figure 1: Microgrid Overview. Adapted from “Microgrid Example” by Center for Climate and Energy Solutions, 2023, retrieved from <https://www.c2es.org/content/microgrids/>

DER APPROACH: RESILIENCE FIRST

1. Resilience is the priority in DER design.
2. Financial benefits of DERs may be realized as a secondary goal.



BENEFITS OF DERS

1. Seamless Transfer (Resilience)
2. Time of Use (TOU) management
3. Lower Levelized Cost of Energy (LCoE) compared to generators
4. Improved alignment with CAP goals
5. Potential to generate excess energy



Considerations During a Crisis

- **Generators**
 - Fueling considerations
 - Vendor service-level agreements
 - Maintenance requirements
 - Movement, refueling, exercising
- **DERs**
 - How long will the batteries last?
 - How will they be recharged?
 - No logistics required around movement, fueling, and maintenance



PLANNING FOR DER IMPLEMENTATION

1. Start with feasibility study
 - a. Baseline assessment
 - b. Recommendations
 - c. Conceptual Design
2. Detailed Design
3. Implementation
 - a. Ownership
 - b. Delivery approach
 - c. Procurement lead times
4. After installation
 - a. Maintenance
 - b. Warranty



Panel Discussion



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