



Community Microgrids

Unparalleled trifecta of benefits

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Mission

To accelerate the transition to renewable energy and a modern grid through technical, policy, and project development expertise.

100% renewable energy end-game

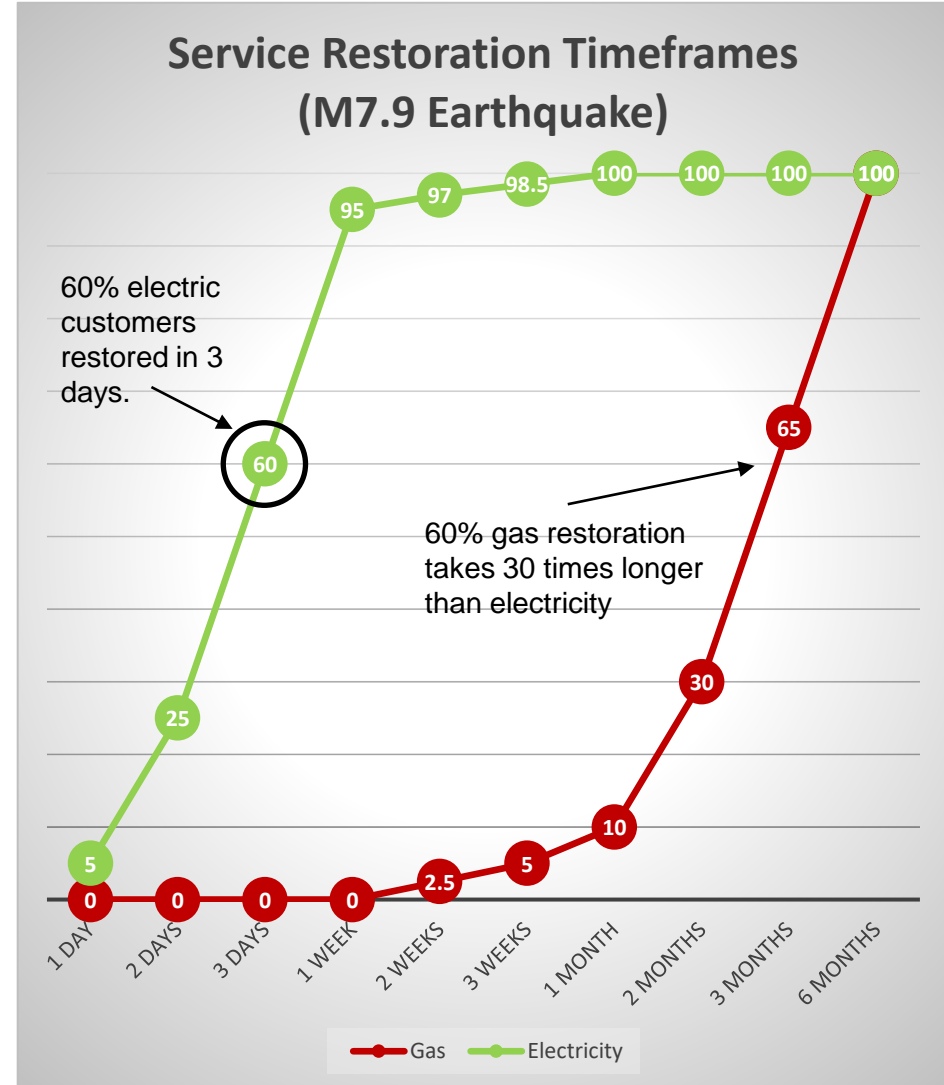
- 25% local, interconnected within the distribution grid and facilitating resilience without dependence on the transmission grid.
- 75% remote, dependent on the transmission grid for serving loads.

Natural gas infrastructure is not resilient

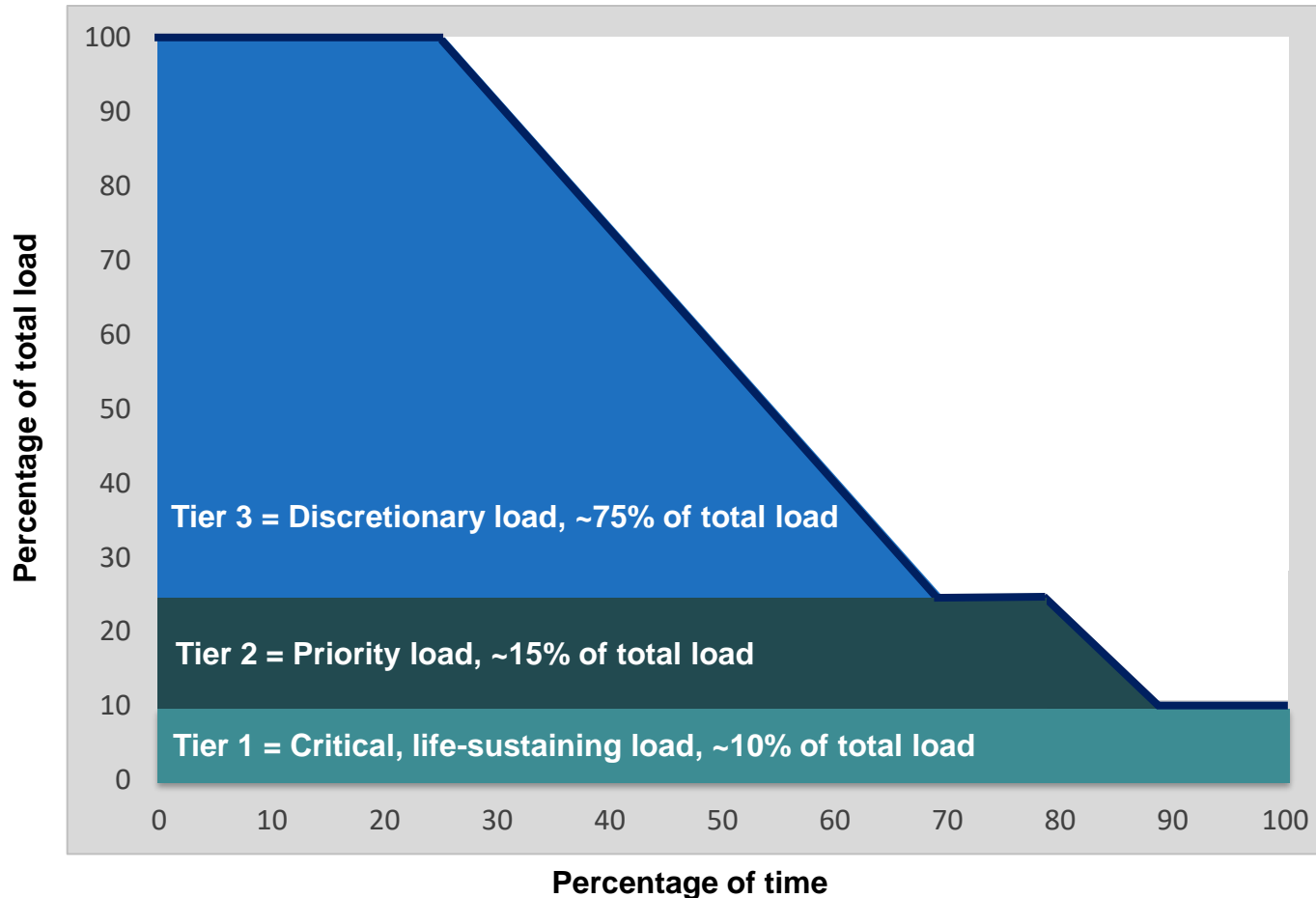
- **Assertion:** Gas-driven generation is often claimed to be resilient.
- **Reality:** Gas infrastructure is not resilient and takes much longer to restore than electricity infrastructure.
- **Threats:** Gas infrastructure can be flat-out dangerous and is highly vulnerable to earthquakes, fires, landslides, and terrorism.



2010 San Bruno Pipeline Explosion

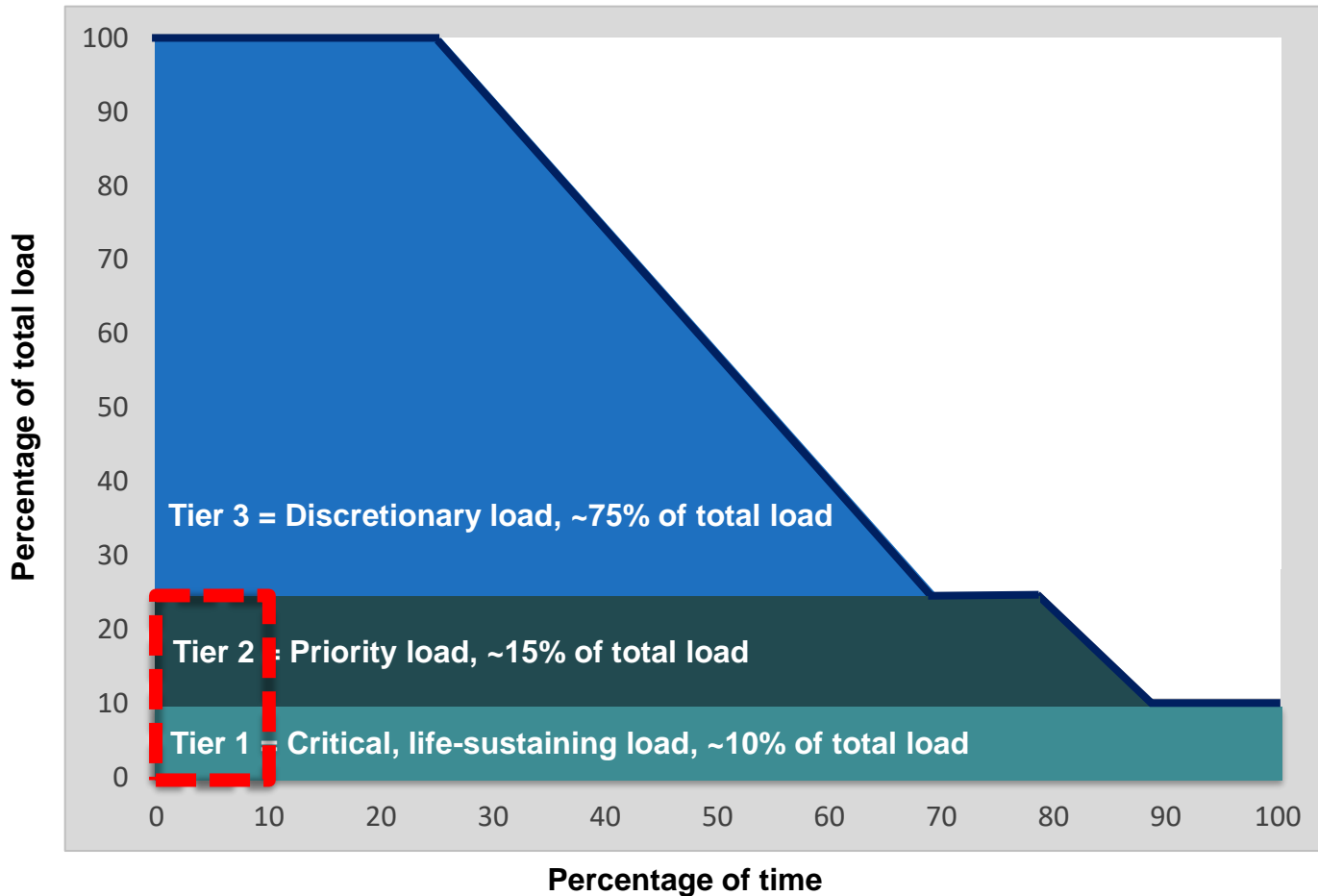


Source: The City and County of San Francisco Lifelines Study



Percentage of time online for Tier 1, 2, and 3 loads for a Solar Microgrid designed for the University of California Santa Barbara (UCSB) with enough solar to achieve net zero and enough energy storage capacity to hold 2 hours of the nameplate solar (200 kWh energy storage per 100 kW solar).

Diesel generators are designed for limited resilience



A typical diesel generator is configured to maintain 25% of the normal load for two days. If diesel fuel cannot be resupplied within two days, goodbye. This is hardly a solution for increasingly necessary long-term resilience. In California, Solar Microgrids provide a vastly superior trifecta of economic, environmental, and resilience benefits.

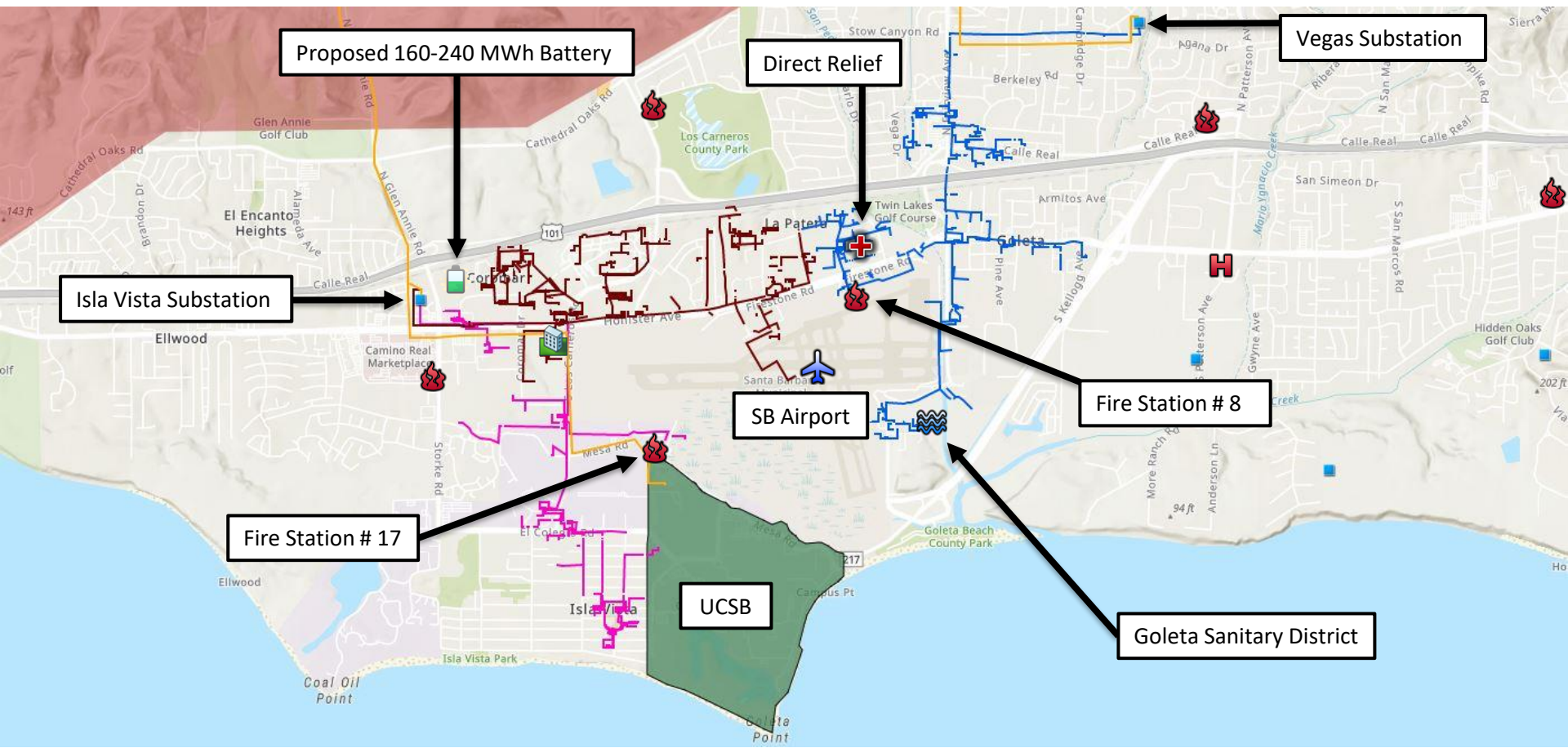
Goleta Load Pocket (GLP) Community Microgrid

The GLP is the perfect opportunity for a comprehensive Community Microgrid



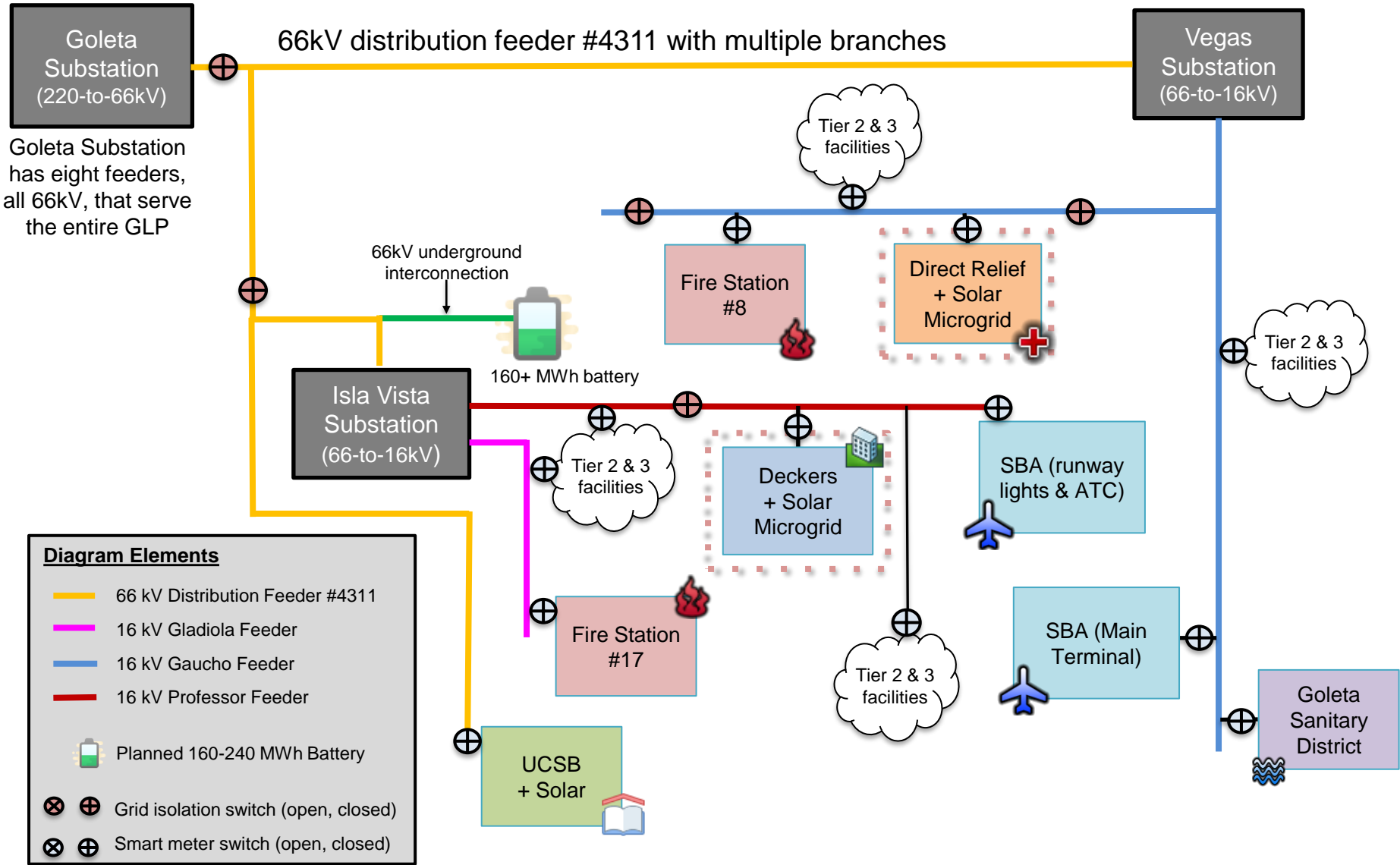
- GLP spans 70 miles of California coastline, from Point Conception to Lake Casitas, encompassing the cities of Goleta, Santa Barbara (including Montecito), and Carpinteria.
- GLP is highly transmission-vulnerable and disaster-prone (fire, landslide, earthquake).
- **200 megawatts (MW) of solar and 400 megawatt-hours (MWh) of energy storage** will provide 100% protection to GLP against a complete transmission outage (“N-2 event”).
 - 200 MW of solar is equivalent to about 5 times the amount of solar currently deployed in the GLP and represents about 25% of the energy mix.
 - Multi-GWs of solar siting opportunity exists on commercial-scale built environments like parking lots, parking structures, and rooftops; and 200 MW represents about 7% of the technical siting potential.
 - Other resources like energy efficiency, demand response, and offshore wind can significantly reduce solar+storage requirements.

Need to properly value local energy

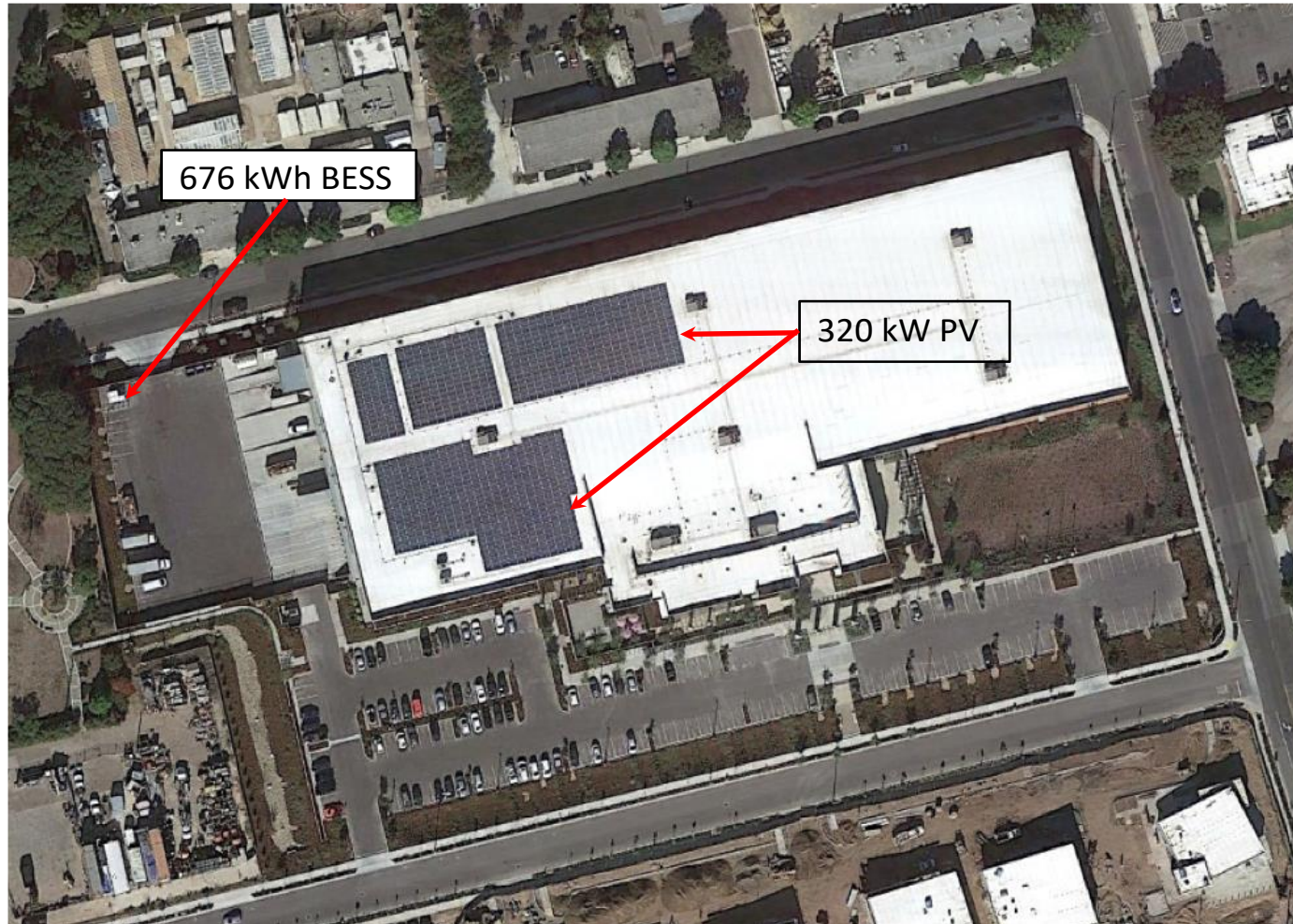


Legend			
	220 kV Transmission		16kV Gladiola Feeder
	66 kV Feeder #4311		16kV Gaucho Feeder
	Substations		16kV Professor Feeder
	Santa Barbara Airport		Tier 3 Fire Threat
	Fire Stations		University of California Santa Barbara
	Sanitary or Water Districts		Goleta Valley Cottage Hospital
	Direct Relief		Deckers
	Proposed 160-240 MWh Battery		

Need to streamline Interconnection



Direct Relief Solar Microgrid needs a FIT to maximize solar



676 kWh BESS

320 kW PV