

Community Microgrids

Unparalleled resilience for communities



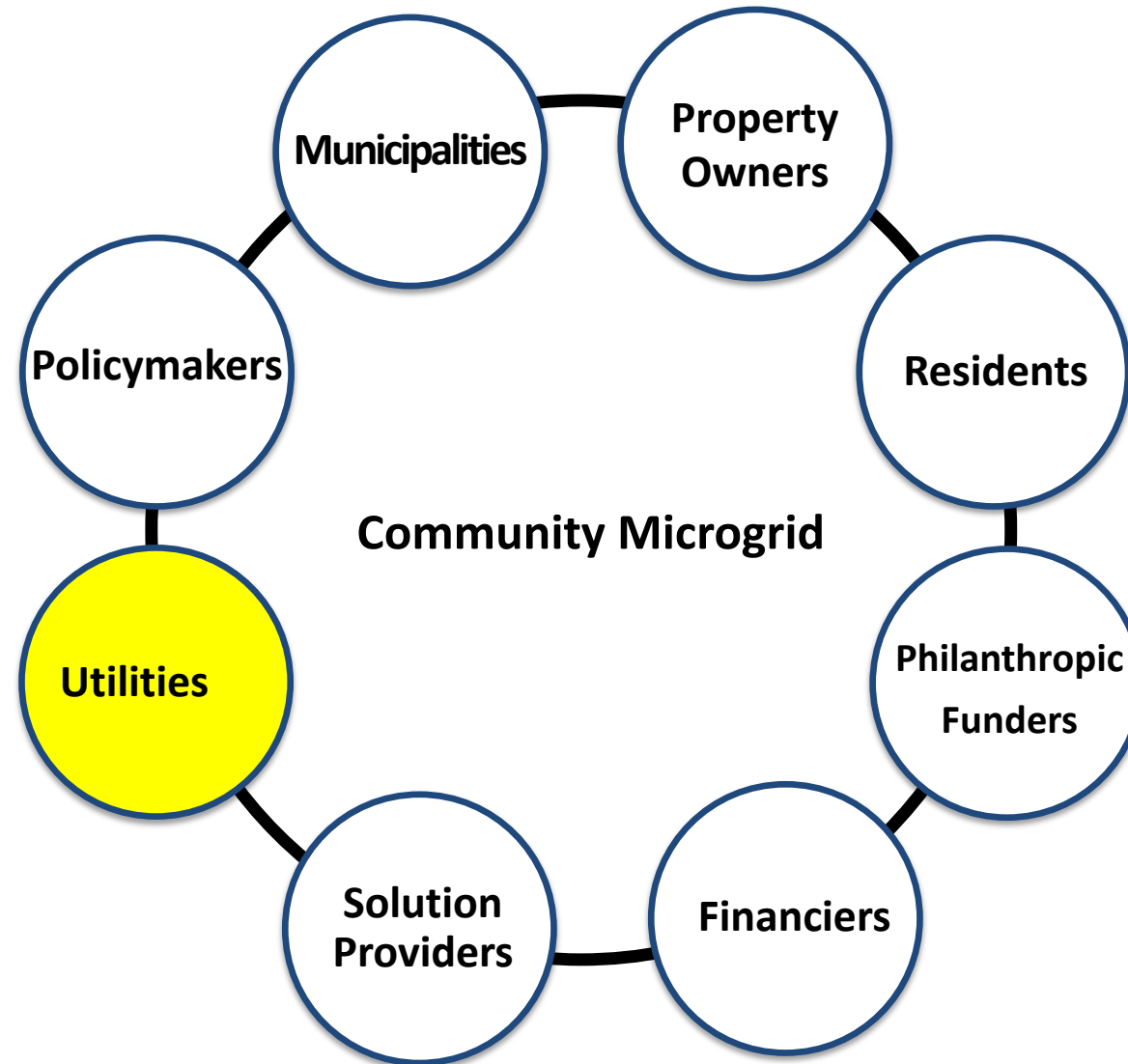
Craig Lewis
Executive Director
Clean Coalition
650-796-2353 mobile
craig@clean-coalition.org

A Community Microgrid is a new approach for designing and operating the electric grid, stacked with local renewables and staged for resilience.

Key features:

- A targeted and coordinated local grid area served by one or more distribution substations
- High penetrations of local renewables and other Distributed Energy Resources (DER) such as energy storage and demand response
- Staged capability for ongoing renewables-driven power backup for critical and prioritized loads across the grid area
- A solution that can be readily extended throughout a utility service territory – and replicated into any utility service territory around the world





The GLP is the perfect opportunity for a comprehensive Community Microgrid



The Goleta Load Pocket (GLP) spans 70 miles of California coastline, from Point Conception to Lake Casitas, encompassing the cities of Goleta, Santa Barbara (including Montecito), and Carpinteria. Because the GLP is a highly transmission-vulnerable, disaster-prone region, the GLP Community Microgrid is being designed to deliver an unparalleled trifecta of economic, environmental, and resilience benefits to the area. To achieve indefinite renewables-driven backup power that provides 100% protection to the GLP against a complete transmission outage (“N-2 event”), **200 megawatts (MW) of solar and 400 megawatt-hours (MWh) of energy storage** needs to be sited within the GLP.

Transmission lines subject to preemptive shutdown



Source: CPUC FireMap

Given the recent passage of wildfire legislation and potential liability for wildfires started from utility wires and equipment, SCE has instituted preemptive measures, outlined on the right, that may result in more frequent de-energizing of transmission lines in advance of oncoming wildfires.

The CPUC FireMap above shows that the Goleta Load Pocket is surrounded by extreme (Tier 3) fire threats.

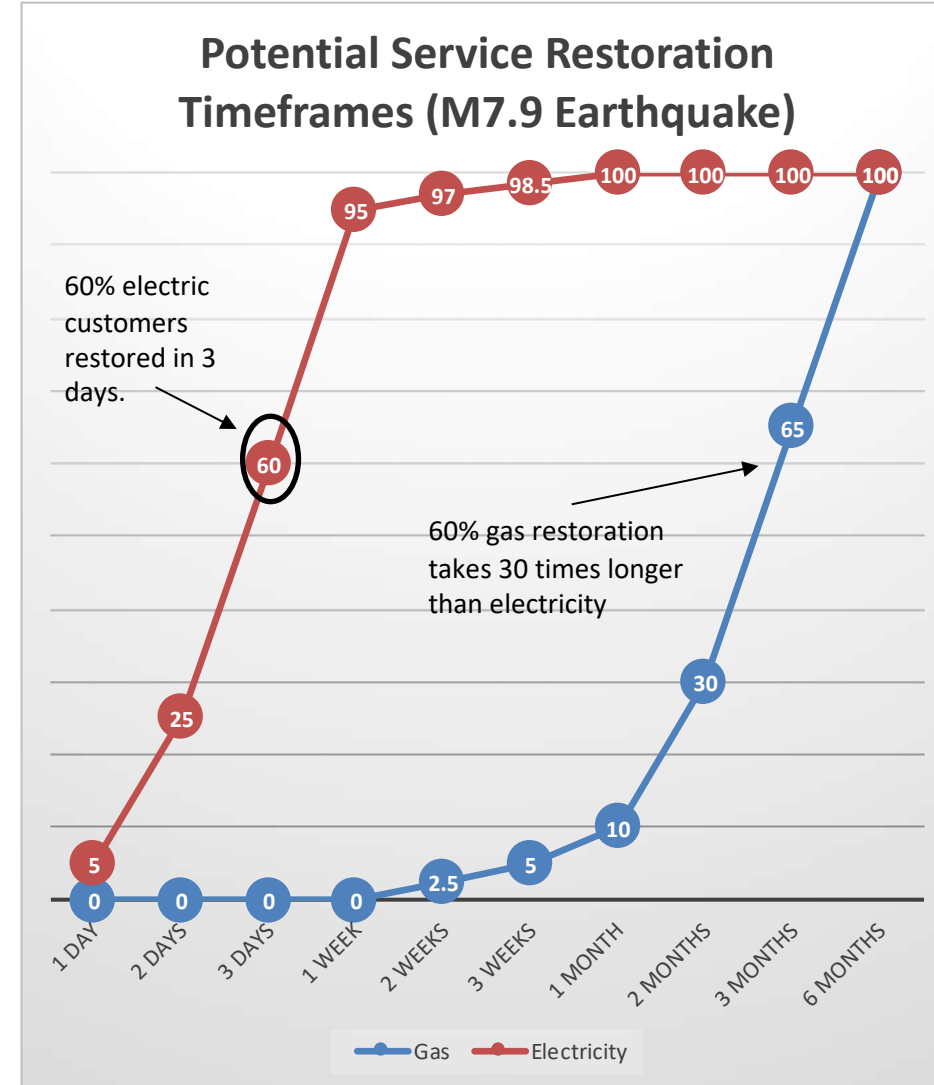


Natural gas infrastructure is not resilient

- **Assertion:** SCE will frame gas-fired generation (GFG) as resilient.
- **Reality:** Gas infrastructure is not resilient and requires 30 times longer to restore service than electricity.
- **Threats:** Gas infrastructure is vulnerable to earthquakes, fires, and mudslides, as well as terrorism.



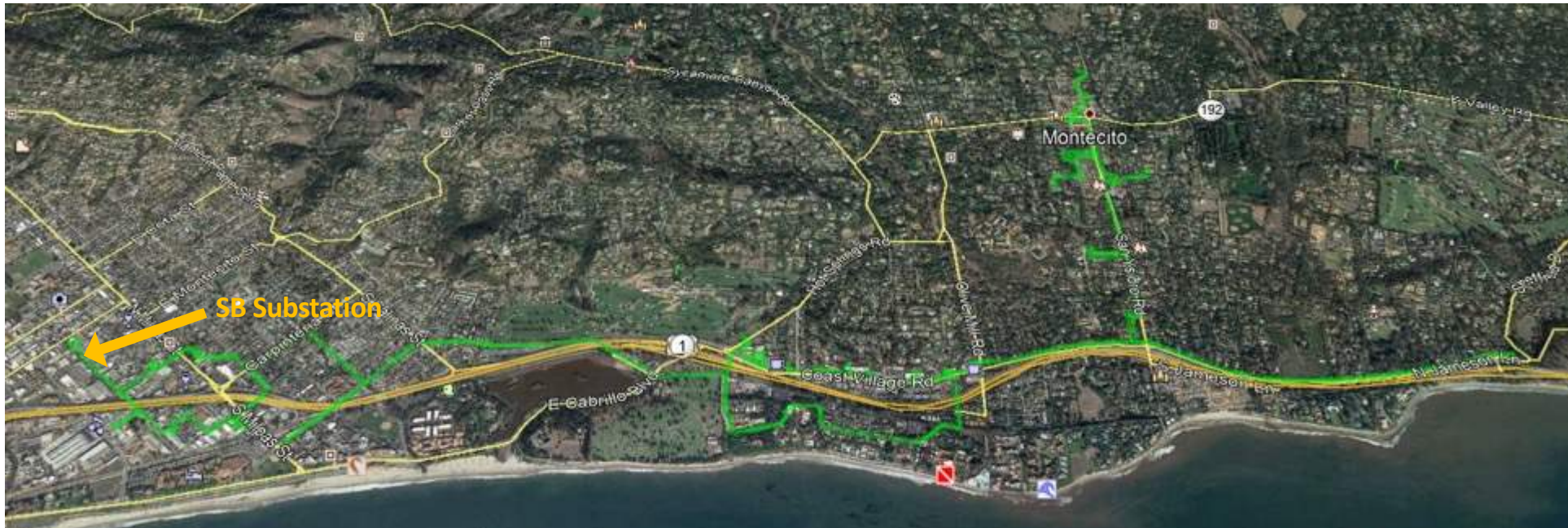
2010 San Bruno Pipeline Explosion




Source: The City and County of San Francisco Lifelines Study

Hot Springs Feeder – backbone of the Montecito Community Microgrid Initiative (MCMCI)

- Originates at Santa Barbara Substation
- Extends through Coast Village Road, then to Upper Village via San Ysidro
- All Properties Connected to Hot Springs should be able to share power!



Upper Village Community Microgrid block diagram

 **Diagram Elements**
Autonomously controllable microgrid relay/switch (open, closed)

