



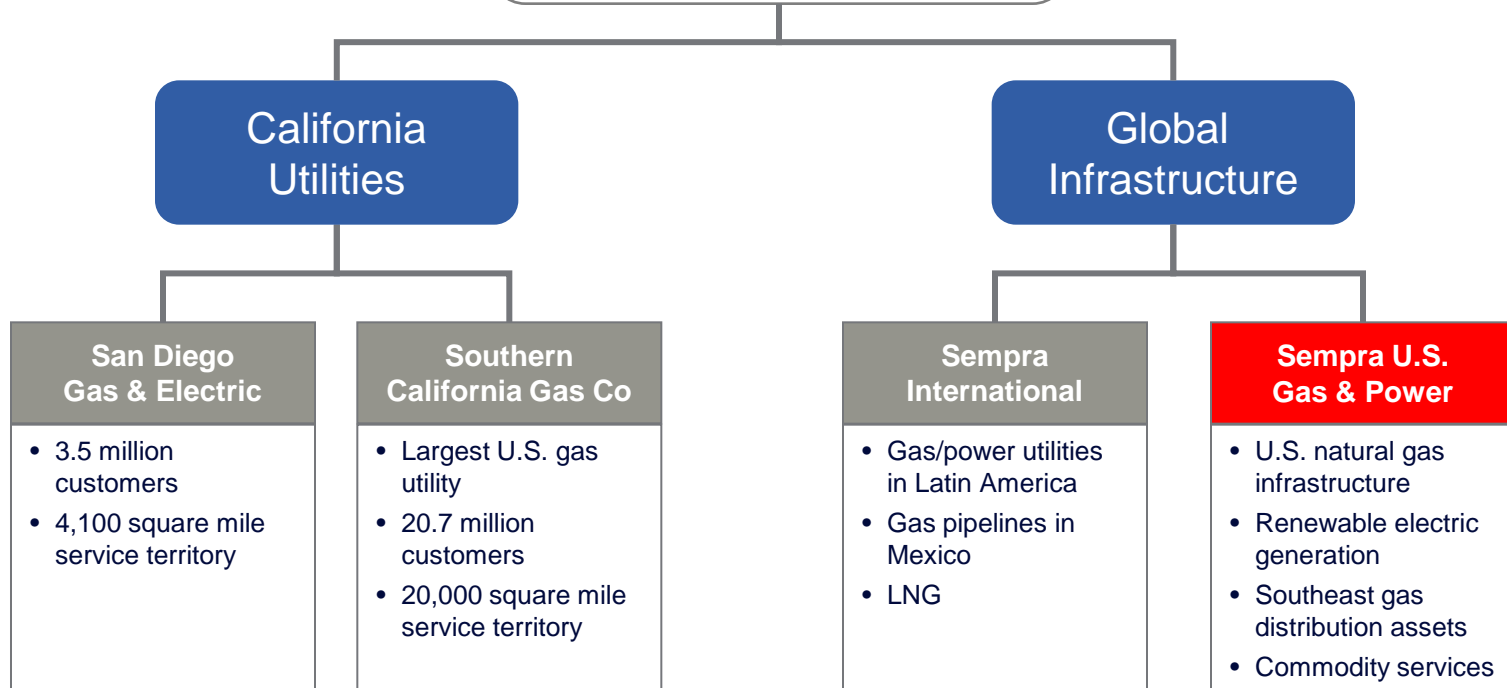
# Energy Storage Systems

Hawaii State Senate Committee on Energy and Environment  
December 4, 2012

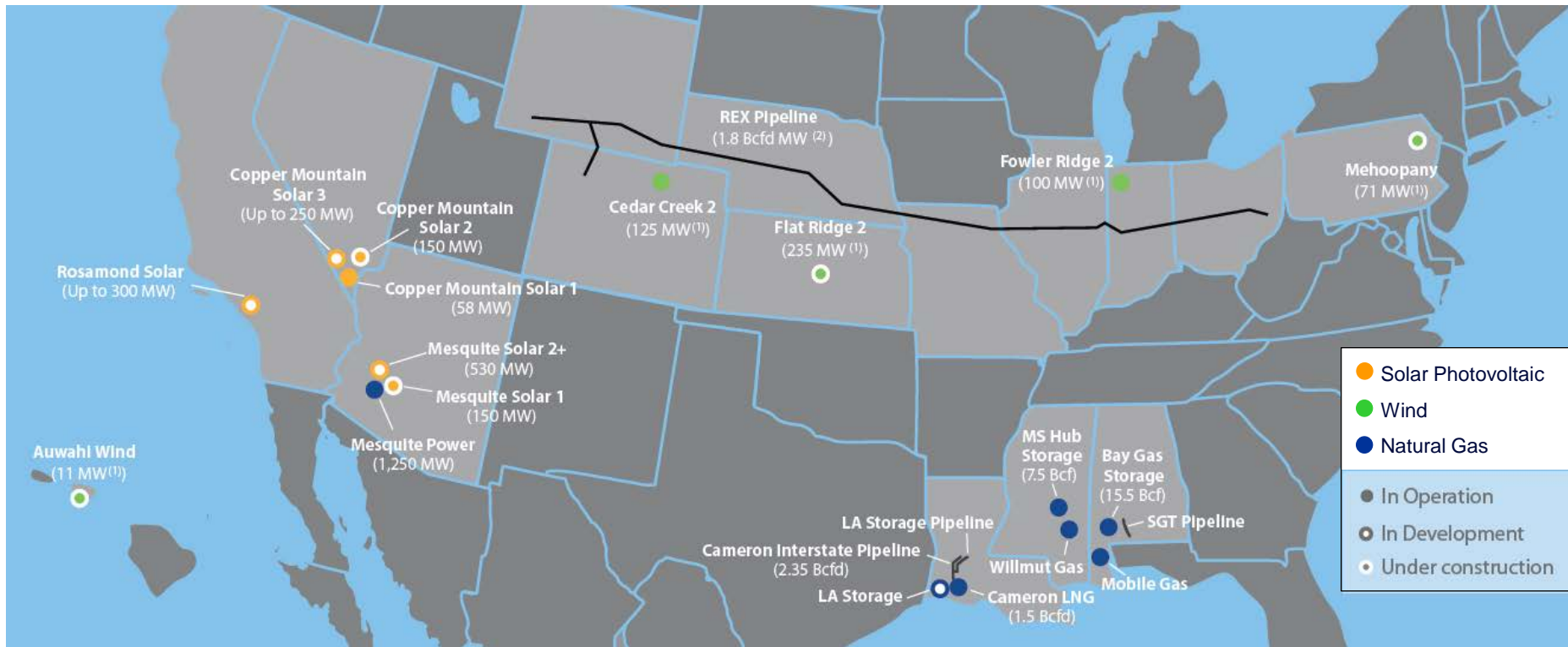
# Sempra Energy Overview



- ▶ Fortune 500 company
- ▶ 2011 Revenues: \$10 billion
- ▶ 17,500 employees serving more than 31 million customers worldwide



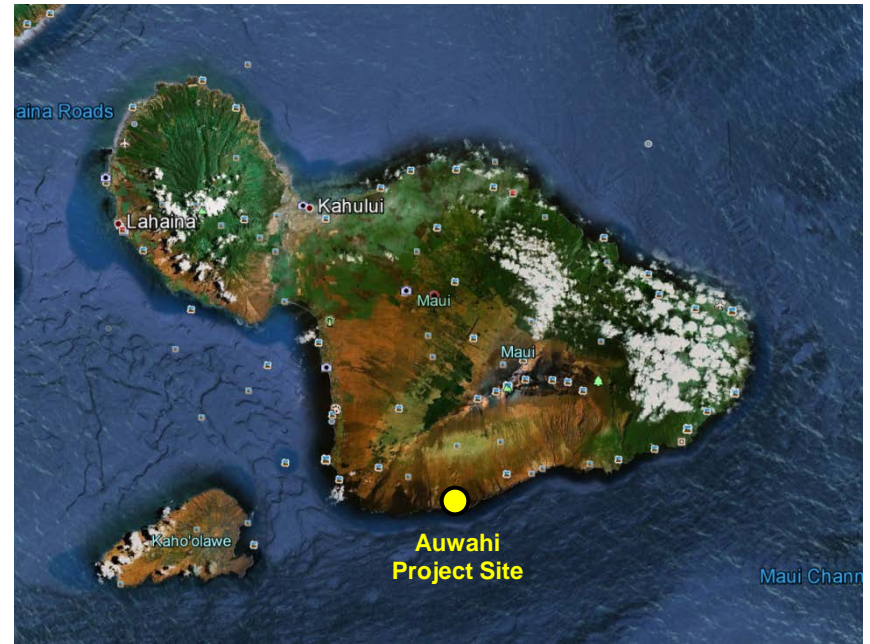
# Sempra USGP – Projects and Facilities



- ▶ 900 MW solar and wind operating or in construction
- ▶ ~\$2 billion invested in renewables since 2008
- ▶ 1,250 MW gas-fired generation
- ▶ 1.5 Bcfd LNG and 23 Bcf natural gas storage
- ▶ Interest in 1,700 miles of natural gas pipelines
- ▶ Natural gas distribution utilities

# Auwahi Wind

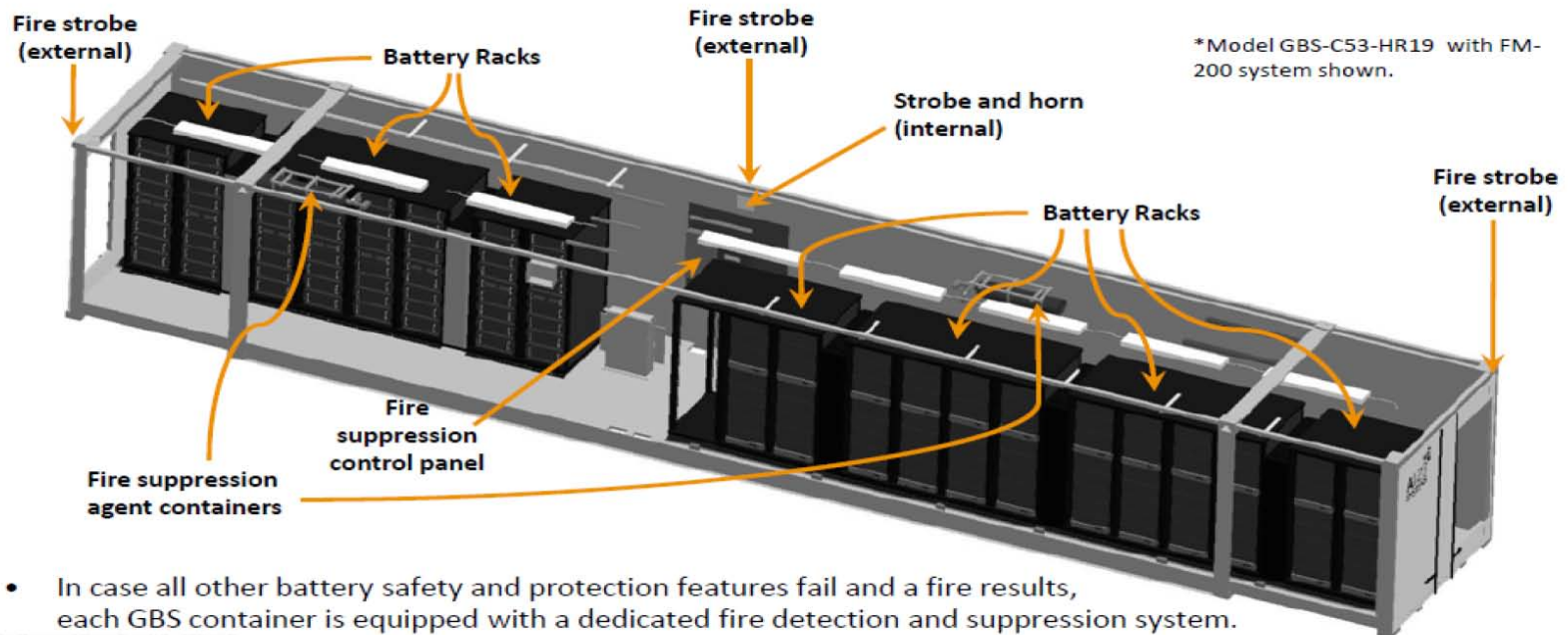
<b>Project Name</b>	Auwahi Wind and Energy Storage
<b>Location</b>	Ulupalakua Ranch, Maui, Hawaii
<b>Capacity</b>	21 MW Wind + 10 MW Energy Storage
<b>Technology</b>	Wind Turbines & Battery Storage
<b>PPA</b>	20-year 21 MW PPA with MECO, approved by the HPUC
<b>COD</b>	Construction began in March 2012; COD by Dec 2012
<b>Market</b>	HECO / MECO
<b>Wind Site</b>	Approx. 1,500 acres
<b>Interconnection</b>	<ul style="list-style-type: none"> <li>• MECO 69 kV substn via 9-mile gen-tie</li> <li>• Interconnection Agreement in PPA</li> </ul>
<b>Permits</b>	Major permitting completed in 2011



# Fire Detection and Suppression Overview



## GBS Fire Protection System Overview



\*Model GBS-C53-HR19 with FM-200 system shown.

- In case all other battery safety and protection features fail and a fire results, each GBS container is equipped with a dedicated fire detection and suppression system.
- The system uses two ionization smoke sensors and a linear heat sensor cable to detect presence of a fire.
- The system has a centrally located internal strobe light/horn to provide indication of smoke and fire detection for personnel inside the container, and three external strobe lights for personnel outside the container.
- The system uses a gaseous, clean firefighting agent to suppress fire
- The system also has optional security cameras to provide remote video of conditions inside the container.

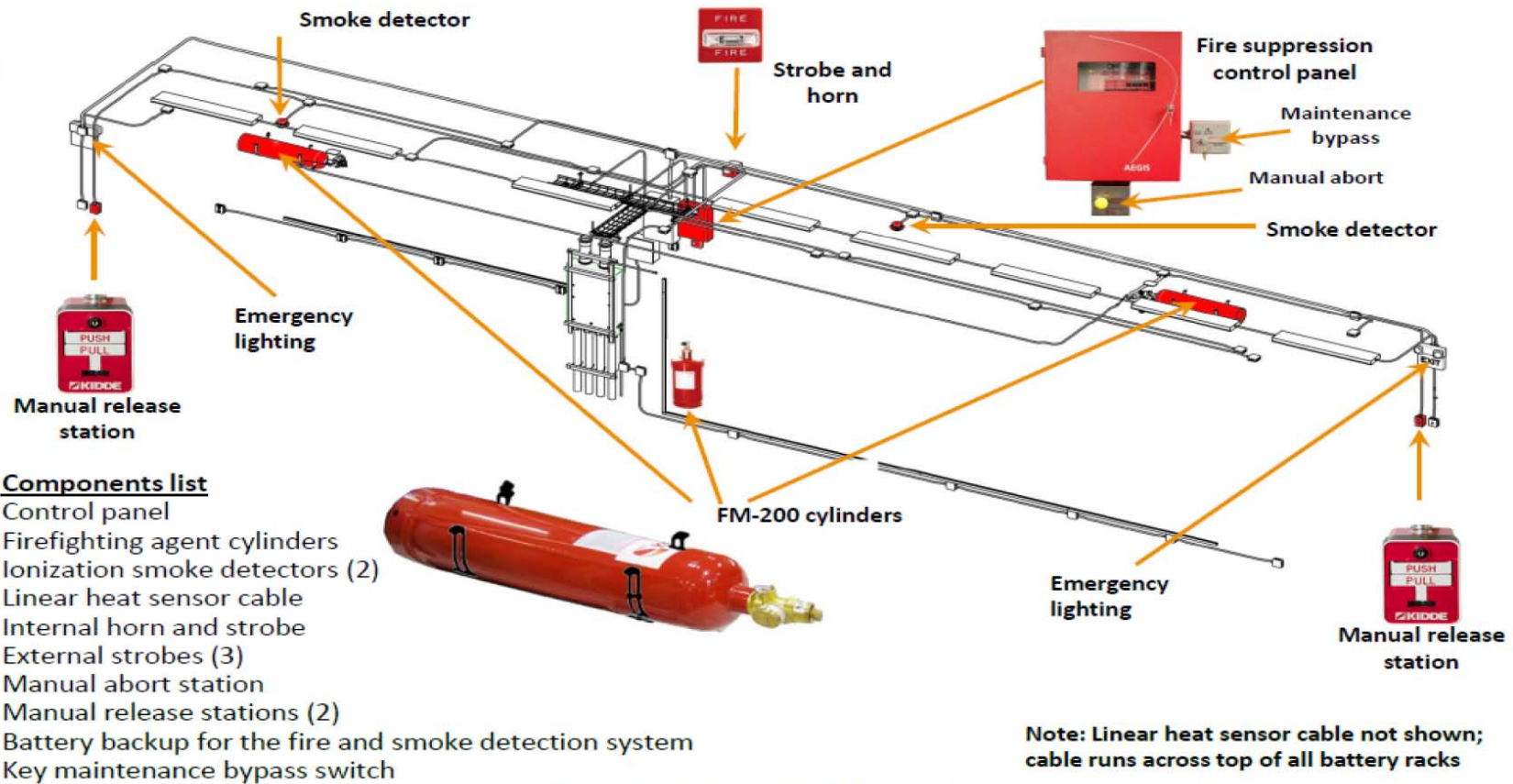
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# Battery Storage Fire Detection & Suppression



## GBS Fire Protection System Internal Layout



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