



Peninsula Advanced Energy Community (PAEC)

Components of an Advanced Energy Community (AEC)

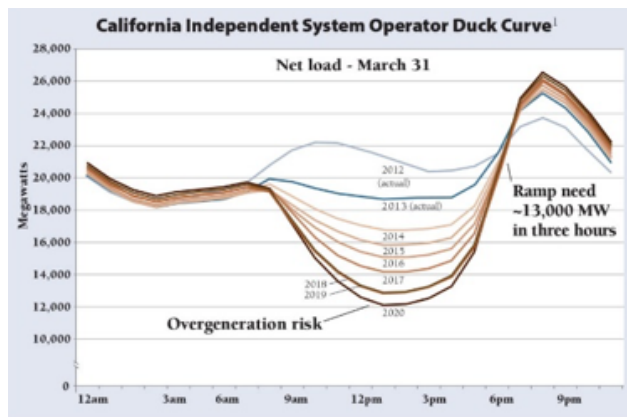
- Energy efficiency
- Renewable energy
- Energy storage
- Zero net energy (ZNE)
- Electric vehicle (EV) charging infrastructure



A rendering of the Atherton Civic Center in Atherton, CA — an AEC

Benefits of an AEC

- Reduces** need for new energy transmission and distribution infrastructure
- Bridges** the electricity overgeneration gap via energy storage and demand response
- Promotes** grid reliability and resilience
- Saves** customers money on their energy bill
- Provides** clean local energy
- Creates** clean energy jobs
- Obviates** the expenses of new power plant construction
- Helps** mitigate climate change



PAEC report highlights

Challenges

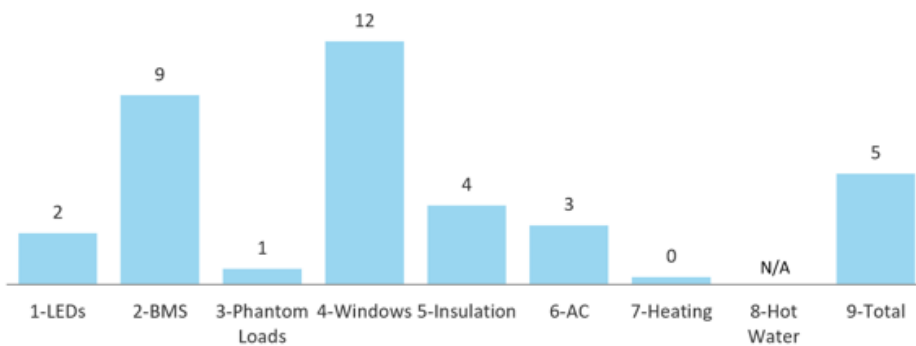
- Inconsistent municipal and utility permitting processes
- Insufficient financial instruments available to fund AEC investments
- Split incentives between building owners and tenants
- Tension between capital and operating expenses
- Initial costs favored over life cycle costs
- EV range anxiety and lack of fast chargers

Recommendations

- Implement bundles of energy efficiency measures
- Facilitate energy efficiency retrofits for residential and commercial properties
- ZNE for all buildings
- Expand EV charging infrastructure with battery storage
- Develop EV-ready codes for multi-unit dwellings
- Continue subsidizing energy storage as the market brings prices down

Tools and Solutions

- Streamlined permitting
- Model interconnection process checklist
- Model ordinances
- Green lease language
- Solar Siting Surveys



Energy efficiency ROI for office building (years)

Projects with AEC components in San Mateo County



Facebook: Energy efficiency, solar PV, EV charging, energy storage, onsite black water treatment



Kaiser Permanente: Energy efficiency retrofits, solar PV power purchase agreement, EV charging



City of Palo Alto: Solar PV, solar covered parking garages, EV charging, energy storage



Redwood City: Solar Emergency Microgrid, solar PV, EV charging, energy storage



Stanford University: Energy efficiency, district-scale heat exchange system, solar PV, EV charging



Oshman Family Jewish Community Center: Energy efficiency, air-source heat pump, solar PV, EV charging