



Energy



Transportation



Buildings



Industrial



Agriculture



Sequestration

ZNE Master Planned Community

Client: Pacific-Teal Development LLC
2015

The proposed Liberty Community in West Sacramento, California is an innovative master-planned community that aspires to be an energy neutral community. Liberty Community will have up to 1,503 residential units, a 17-acre school, up to 10,000 square feet of retail commercial, plus parks, greenbelts, and trails. It is envisioned to be a walkable/rollable community built with sustainable materials and the first ZNE master-planned community in the United States.

Pacific-Teal engaged Frontier Energy and Schweitzer & Associates to support a sustainability study. Frontier analyzed the community's anticipated energy loads and predicted community-level electricity and gas would be about 9,200 MWh and 470,000 therms annually. The team then looked at the potential for energy neutrality by either offsetting electricity loads alone or on a TDV basis. Results indicated that both strategies for ZNE were achievable.

Frontier continues to consult with Pacific-Teal as the Liberty Community moves through the planning processes, including recommending the orientation of homes to make best use of rooftop solar and the region's natural cooling breezes. In 2017 Liberty won the Gold Nugget Award for "Best on the Boards Site Plan" at the Pacific Coast Builders Conference (PCBC).

As technologies and regulations change between now and when construction starts, Frontier Energy will continue to support Liberty Community's ambitious sustainability goals.



FRONTIER ENERGY:

- Estimated the annual energy use (electricity and natural gas) for the entire community and individual loads from buildings, site lighting, site water pumping, facility pools and spas, community park facilities and proposed public electric vehicle charging stations
- Further disaggregated the loads by ownership: private residential, homeowner association operated facilities, school district facilities, and municipal facilities
- Created two pathways for energy neutrality, offsetting electrical loads or TDV, and then modeled strategies for reaching ZNE
- Recommended orientation of buildings to make the best use of natural sunlight and wind to produce power and cool homes



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