

SMCCCD and ZNE Strategy



SMCCCD is a community college district that contains three campuses across the peninsula and services over 23,000 students and 2,000 faculty and staff. As the district works towards Zero Net Energy (ZNE), producing as much energy as it consumes through the use of renewables, it strives to create facilities that foster high quality, accessible education. In my role with SMCCCD I have updated the ZNE strategy, worked to implement energy efficiency measures, and communicated our efforts to a variety of stakeholders.

EE Measures

LED Upgrade

- A \$1.2 million LED lighting retrofit was completed at CSM and Skyline College
- This project has a baseline of 300,000 kWh in annual energy savings

Advance Plug Load Controls

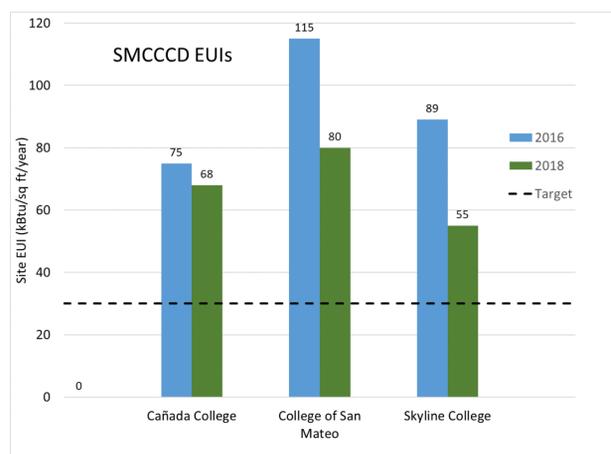
- Monitors energy use of plug load devices and shuts them off when not in use
- Conducted surveys of all three campuses to identify best areas to implement

Campus Curtailment

- During summer, consolidating classes to use less total buildings and shutting down entire buildings for the summer months
- No upfront cost
- Savings scale with number of buildings and length of shut down

Gauging Our Progress

- Gathered and analyzed building energy data from across the district
- Used Energy Use Intensity (EUI) to compare annual energy use across buildings of different sizes
- Used this data to show that all campuses are becoming more energy efficient



What's Next

As the district works towards ZNE, its efforts have mainly been focused on reducing the energy it consumes. However, in order to reach ZNE there must be production from renewables. One such option being explored is solar + storage.

Solar

- Currently Cañada College has a 1.25 MW solar array
- Recent studies have been done to show the benefit of a 2.6 MW array at Skyline and a 4.7 MW array at CSM

Energy Storage

- Energy Storage would allow the campuses to better serve the community as emergency response centers
- Energy Arbitrage would allow the district to offset some of its peak demand and costs

Communication

Campus as a Living Lab:

Spoke to an engineering 100 class about sustainability in the built environment and how it is beneficial to them. Students were then led on a tour of the campus's heating and cooling facilities

Sustainability Blitz:

Presented to an engineering design class on the principles of sustainable design and the long term effects of the various decisions they make in design

This Way to Sustainability:

Spoke at a student led conference at CSU Chico about the path I took to working in sustainability and how to maintain your drive through adversity



David Juarez, EIT, LEED GA

David received a bachelors of science in electrical engineering from Cal Poly San Luis Obispo in 2017. While there, he developed a passion for renewable energy by working on projects involving solar and wind power. David seeks to continue to work on energy in the built environment and creating greener buildings.

Acknowledgements:

Special thanks to my site supervisor Joe Fullerton for his guidance and mentorship, as well as Isaac Knipfing and Madeline Willett for their support in my projects and career and keeping the office a welcoming space. I would also like to thank the entire facilities team at SMCCCD and the other fellows at my site Josh Bonneson, Julie Nguyen, and Luis Zavala for their assistance

