FULLERTON COLLEGE
Energy Plan

Energy Advancements

The following list summarizes energy management and energy conservation measures that Fullerton College has put in place. Many of these measures are ongoing as new buildings come online as part of our construction program:

- Removal of temporary buildings known as Cosmetology Village
- Pool pump frequency drive upgrades (currently in process and approved for rebate through the CCC/IOU partnership with the State Chancellor's Office and Southern California Edison)
- Lighting Retrofits campus-wide (started in 2005)
- Energy Management System (EMS); campus-wide centralized EMS control at unit level (started in 2002)
- Kitchen Retrofit to upgrade all kitchen equipment to more energy efficient equipment (completed in 2006)
- Steam plant upgrade with new steam boilers (completed 2004-2005)
- Steam and Condensate Piping: install new piping from tunnel to plant
- Vending Machine Controls: Add controls to operate lights and refrigeration only when needed (completed in 2009)
- Domestic Water Conservation: Install low flow devices on toilets, urinals, sinks, and showers
- Irrigation Controls: Add digital control to optimize irrigation system (completed in 2010)
- HVAC Systems (Each Building) to include, in general, numerous improvements such as:
    - Efficiency of air handlers
    - Efficiency of pumps and fans
    - Replacement of rooftop units with higher efficiency units

    - Installation of new chiller controls (EMS) and isolation valves
    - Replacement of aged and inefficient boilers
- Roof Replacement Projects - various buildings
- Natural lighting incorporated into building designs

In addition, the college completed, in 2008, an upgraded chilled water system for the campus. This system provides a long-term energy conservation program with a high quality solution to the heating and cooling needs of the campus. The chilled water distribution system provides the cooling needs and direct-expansion refrigeration systems for our buildings. These conservation measures consist of seven chillers with five cooling towers of varying sizes, nearly two miles of underground piping, and replacement of obsolete and worn out HVAC equipment.

The college has completed, during 2009-2010, a major energy efficiency project to replace sump pumps and condensate receivers in a large number of locations on campus and through previous construction projects, replaced all swimming pool equipment with state-of-the-art and highly energy efficient new equipment.

Future Energy Upgrades

The following list summarizes potential energy management and conservation measures that Fullerton College is considering as future projects, pending funding:

- New lighting upgrades to campus Interior spaces (Prop. 39 project)
- Removal of all temporary buildings throughout the campus
- HVAC System upgrades on older facilities
- Installation of automatic weather-sensing irrigation control system
- Any new construction projects to be LEED (Silver) rated
- Parking Structure Lighting Retrofit project (currently approved for rebate through the CCC/IOU partnership with the State Chancellor's Office and Southern California Edison) (Prop. 39 project)

- New lighting upgrades to all exterior building fixtures, walkway lamps, and parking lot lights (Prop. 39 project)
- Chiller cold water temperature reset controls to be installed (Prop. 39 project)

Energy Utilization

While the Measure X Bond program has resulted in an increase of Gross Square Footage at Fullerton College of approximately 150,000, the campus' energy usage has decreased by 2.1 Million KWHs from 2007-08 to 2012-13. Estimating an average $0.15 per KWH, Fullerton College has recognized a savings of approximately $315,000. At a time of campus expansion and escalating energy costs, a substantial savings of this magnitude is 'eye-opening' progress in the right direction.

"Green" Advancements in Instructional and Support Programs

Fullerton College has made considerable strides in introducing Green Initiatives into our Instructional Programs and specifically in certain classroom settings, such as:

- Installation of Artificial Turf at Sherbeck Field
- Recycling materials and metals
- Lighting Efficiency
- Dry Machining Techniques
- Utilization of Synthetic Materials
- Digital Shift from Chemical Development
- Hazardous Waste Reduction
- Shift to Water Soluble Inks
- Use of Sustainable Materials
- Upgrade of Campus M&O Vehicles from Gas to Electric Vehicles