

UCSD Energy-Saving Upgrades In Chiller, Two Labs Earn San Diego Excellence In Energy Award

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Two energy-saving projects - upgrading a steam-turbine chiller and retrofitting two laboratories with more efficient air-handling systems - will together save the University of California, San Diego about \$1.5 million a year, and the latter project recently earned the university a San Diego Excellence in Energy (SanDEE) Award.

The first nominated project combined an energy-efficiency upgrade to UCSD's largest and oldest steam-turbine-powered chiller with the addition of a powerful new steam-turbine electrical generator. According to Russell Thackston, Director of UCSD's Facilities Management and a member of the campus team responsible for the improvements, the project will achieve thermal energy savings - over 200,000 thermal units per year in natural gas usage - and over 30,000,000 kilowatt hours in imported electricity per year, for a savings to UCSD of about \$1.3 million a year.

The award-winning project involved retrofitting two of the university's largest laboratory buildings - Pacific Hall and Stein Clinical Research - to provide constant-volume air supply and exhaust systems based on the newest standards. "We estimate saving approximately 1,700,000 kilowatt hours and 114,000 thermal units per year," said Thackston, "resulting in about \$240,000 annual savings to the UCSD campus."

Better yet, said Thackston, "is that it is 100 percent funded from the California Public Utilities Commission's public-purpose funds via a strategic partnership formed by the University of California, California State University, and state and regional energy providers."

UCSD works to conserve energy and reduce energy costs through a variety of programs, including:

Central Utilities Plant's cogeneration facility generates most of UCSD's on-campus electricity needs, freeing up much-needed energy resources for use within California.

UCSD's 69 KV electrical substation converts electricity from 69KV to 12KV, allowing UCSD to be charged at the much-lower 69KV rate.

Thermal Energy Storage (TES) stores 39,000 ton-hours of chilled water, enabling water to be chilled at night during off-peak hours when electricity rates are lower.

The Energy Management System (EMS) enables central operators to minimize energy consumption by monitoring and controlling heating, ventilating, and air-conditioning equipment in campus buildings.

Building efficiency has been increased through conversions and retrofitting with energy-efficient heating systems, ventilation systems, controls, and duct work.

Statewide Energy Efficiency Partnership with the statewide utilities, the public utilities commission and the UC Office of the President has produced funding for UCSD to perform ventilation-system improvements in high-energy-use buildings, lighting retrofits, and enhanced building performance monitoring and tuning.

SanDEE Awards recognize outstanding projects and activities that have achieved significant energy savings and contribute to the success of the San Diego Regional Energy Strategy 2030 through energy efficiency, energy conservation or renewable energy. The program recognizes accomplishments in the areas of (nonresidential)

building, transportation or infrastructure within the business, government and institutional sectors. The awards program is sponsored and managed by the San Diego Regional Energy Office (SDREO) in partnership with the San Diego Regional Chamber of Commerce (SDRCC), and is cosponsored by San Diego Gas & Electric (SDG&E), San Diego Association of Governments (SANDAG), and NRG Energy, Inc. (NRG).

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