# UC San Diego Embarks on $73 Million Energy Efficiency Program

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The University of California, San Diego has embarked on a $73 million program to increase the energy efficiency of 25 of its older buildings to lower their combined energy consumption by at least $6 million a year. The project is part of a larger $247.4 million University of California initiative to reduce greenhouse-gas emissions and cut energy costs at its 10 campuses by $36 million annually.

The $73 million project won't actually cost UC San Diego a penny in the long run to complete because the university could receive an estimated $14 million in incentives from San Diego Gas & Electric (SDG&E) over the next three years. The remaining $59 million will come from low-interest revenue bonds that UC San Diego will repay with cost savings.

"This innovative program will not only allow us to lower heating and cooling costs in 25 of our older buildings, but will also enable us to install additional energy-efficient lighting, air-conditioning controls and computer servers, and replace outdated laboratory freezers and other appliances with the most energy-efficient models available," said Russ Thackston, assistant vice chancellor of Auxiliary and Plant Services. "The project will also be used to schedule the maintenance of energy-consuming equipment in order to minimize energy consumption."

As part of the University of California/California State University/Investor Owned Utility Partnership Program (UC/CSU/IOU), UC San Diego identified energy efficient improvements and operations and maintenance practices that will reduce its greenhouse gas emissions.

"UC San Diego's forward-thinking commitment towards energy efficiency and sustainability is a great example of how we can save money by saving energy," said Hal Snyder, vice president of customer solutions for SDG&E. "The environmental benefits from these efforts are something their students can be proud of."

The UC San Diego project is part of a larger statewide energy efficiency initiative on UC campuses. The UC Regents authorized the low-interest revenue bonds in March and the California Public Utilities Commission approved the utility incentives in October. For 2009-11, the entire University of California project could include roughly $61.4 million in utility incentives, $178 million in external financing through 15-year UC revenue bonds, and about $8 million from campus and auxiliary sources. The utility companies partnering with UC include SDG&E, Pacific Gas and Electric Co., Southern California Edison, Southern California Gas Co., and the Los Angeles Department of Water and Power.

UC San Diego has identified additional energy efficiency improvements or practices that are eligible for utility incentives. For example, in October UC San Diego received a $1.89 million incentive check from SDG&E's UC/CSU/IOU Partnership Program after the university completed a $6.5 million upgrade to computer servers at the San Diego Supercomputer Center. In that project, the university replaced 514 older computer servers with 270 new energy-efficient models that perform the same functions as the older servers, but with about half the energy consumption, saving the university $680,000 annually and reducing its energy consumption by 7.9 million kilowatt-hours per year.

Energy efficiency is built into every new building and even renovation projects at UC San Diego as part of a long-term campus-wide commitment to sustainability, lowering operating costs and reducing the impact of the campus on the environment. In an earlier energy efficiency project, UC San Diego completed $60 million in energy-saving improvements that cut electricity consumption by 20 percent, saving the university more than $12 million annually.

UC San Diego, which has received the highest sustainability rating given to U.S. college and university campuses by Sustainable Endowments Institute, will soon have only low- and zero-emission vehicles in its 800-vehicle fleet. The campus also has embarked on a program to use 7.8 megawatts of renewable energy within the next few years and achieve zero waste and carbon neutrality by 2025. In addition to adding alternative energy to its energy portfolio, cutting wastes and initiating sustainable building practices, UC San Diego has built in energy efficiency in every phase of its operations. For example, since electric lighting can account for 25 percent of a building's energy use, UC San Diego has replaced more than 55,000 fluorescent lamps with more energy-efficient fluorescents. The new fluorescent lamps are rated at 25 watts compared to 40 watts for the older lamps, yet the new lamps provide the same level of illumination as the older ones.

Currently, UC San Diego and its Medical Center spend about $43 million annually on energy to operate 67 permanent buildings with 13 million total square feet of classrooms, offices, administrative facilities, labs, libraries, residence halls and other buildings. Minimizing energy consumption in those buildings and installing more alternative energy are crucial because energy costs are expected to rise 8 percent annually over the next several years.

UC San Diego is on target to surpass, as a campus, UC goals of reducing greenhouse gas emissions to 2000 levels by 2014 and further reduce them to 1990 levels by 2020.

Energy efficiency and sustainability are part of UC San Diego's institutional DNA. Modern climate change science began at UC San Diego's Scripps Institution of Oceanography with the Keeling Curve in 1958, which has become the scientific icon of global warming.

"On an operational level, our campus is taking the lead in combating a problem that we've played a major role in identifying and monitoring," said Gary Matthews, vice chancellor of Resource Management and Planning. "Having already invested heavily in numerous sustainability programs and projects, UC San Diego is a living laboratory for climate solutions, working toward our goal of becoming the greenest university in the country."

For more information about sustainability programs at UC San Diego, visit http://sustain.ucsd.edu

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