

**Alliance to Save Energy - Stars of Energy Efficiency Awards  
"Galaxy" Star of Energy Efficiency  
California State University, San Bernardino (CSUSB)**

As the second largest emitter of greenhouse gases in the U.S. and approximately the world's twelfth largest, California's efforts to reduce its emissions will lead the way for other governments, as well as ease the severity of environmental and economic impacts experienced this century. In California, the Governor's Executive Order S-20-04 calls for the state to commit to aggressive action to reduce state building electricity usage by retrofitting, building and operating the most energy and resource efficient buildings by taking all cost-effective measures to reduce grid-based energy purchases for state-owned buildings by *20% by 2015*.

CSUSB's goal was to improve campus-building performance while reducing its carbon footprint by continuing to practice responsible stewardship using available resources—all in the context of sustainable practices that meet community standards. However, CSU's ability to implement these projects at its 23 campuses was constrained by state procurement requirements, project funds, and access to the intellectual capital of firms experienced in energy optimization and retrofitting existing plant and facility systems.

The Chancellor's Office Plant Energy and Utilities group, working with the Contract Services and Procurement, General Counsel and the Finance and Treasury departments, developed the **CSU Energy Services Agreement (CSU ESA)** program to enable its campuses to aggressively seek and implement conservation opportunities. CSU ESA also provided campuses with a delivery system to promote the development of utility and infrastructure improvement projects to lower operating costs, reduce deferred maintenance backlog and compliment the CSU's sustainability initiatives. As the first campus to use CSU ESA, CSUSB completed a \$12 million energy infrastructure improvement and carbon management project in 2007.

This agreement enabled CSUSB to procure resources to complete this massive, campus-wide, highly visible project, and showed students, staff, faculty and fellow Californians CSU's intention to lead the way to a greener California. In addition, it enabled CSU to address rising energy costs, improve aging infrastructures and replace older equipment with new, more efficient equipment while increasing chilled water capacity for future buildings.

The CSU ESA provided the CSUSB a simple process to choose the best firm among seven pre-qualified companies; training and support on the necessary contracts and paperwork; access to financing; and guaranteed savings. The process was designed to leverage the existing University equipment lease financing terms, while allowing the campus to use new technologies and renewable energy generation. Working together with its selected consultant - DMJM Harris Energy & Power Services - the team managed, designed and built the **Energy Services Infrastructure Improvements Project**.

This project was comprised of the following individual energy components:

- Central plant expansion and optimization
- New thermal energy storage tank
- New photovoltaic system – 325 kW
- Direct digital control upgrades
- High efficiency lighting retrofits
- Personal computer energy management system
- Water conservation measures
- Well water for irrigation

CSUSB's energy project reduced carbon emissions by 1,960 metric tons—the equivalent to taking 14,000 cars off the road or planting 2.9 million trees. This project promoted a "Green Environment" on a university campus thus setting an example for the students and community, and contributed to the expansion of "green collar jobs" in California. As the energy conservation and renewable energy industry grows, it is creating green jobs at every level—from mechanics who are learning to install new renewable technologies to the very specific engineering skills needed to design projects that assure persistent energy savings.

Without creative, innovative delivery solutions like the CSU ESA, the California State University System and other American education institutions will be hard-pressed to meet aggressive energy reduction guidelines. The CSU ESA proves that with adequate support from the governing body of a university system, a willingness to think about procuring services differently and a team of dedicated employees willing to shepherd and champion the process, the result is a successful project which can be shared nationwide.

This project saves **4,841,589 KWh and 121,743 therms of natural gas** annually. Measurements and verifications to date indicate that this project is saving in excess of **\$1 million** annually in utility costs.