

# ENERGY STAR Success Story San Diego Convention Center



Since opening 20 years ago, San Diego's bayside convention facility has been a green industry leader and continues to receive accolades for environmental stewardship. The San Diego Convention Center Corporation (SDCCC) joined the Environmental Protection Agency's (EPA) ENERGY STAR program as a partner in 2008. Using the EPA's online energy management and tracking tool, [Portfolio Manager](#), the SDCCC tracked its energy consumption and has improved the facility's overall performance. Since then, the San Diego Convention Center has become a model for other convention and meeting facilities demonstrating the value of benchmarking to improve efficiency and to save money. .

The Convention Center is managed and marketed by the SDCCC, a non-profit public benefit corporation created by the city of San Diego. The facility is ranked twenty-fourth in size out of approximately 450 convention centers throughout North America. A 2001 expansion nearly doubled the building's size to more than two-and-a-half million gross square feet, including 615,701-square-feet of exhibit space and 204,114-square-feet of meeting space.

## **Environmental Commitment**

Joining EPA's *Green Lights* program in 1995, the SDCCC installed energy efficient lighting throughout the building. Since then, the Convention Center has used EPA's ENERGY STAR [Guidelines for Energy Management](#) to institute an aggressive energy efficiency program.

Six major areas of conservation form the core components of the SDCCC's environmental program. These areas include energy efficiency, waste minimization, water conservation, food composting, environmental purchasing, and the donation of excess foods and goods to local charities and schools.

The Convention Center places a strong emphasis on employee and public education. Upon hire, new employees learn about conservation efforts and are encouraged to contribute ways to prevent the waste of resources. When planning events, both staff and guests are encouraged to minimize environmental impacts before, during, and after each event.

## **Energy Management with ENERGY STAR**

Since 2008, the Convention Center has been tracking energy use with Portfolio Manager with the goal of reducing consumption and identifying system inefficiencies. By benchmarking with Portfolio Manager, the Convention Center has been able to monitor consumption, set reduction targets, and realize savings over time.

After completing a number of energy efficiency projects in 2009, the Convention Center has reduced electricity consumption by four percent and natural gas consumption by 26.7 percent. Retrofit projects were selected based on a number of criteria including the projected energy and cost savings as well as availability of utility incentives offered by San Diego Gas & Electric (SDG&E). While the majority of projects resulted in significant

electricity savings, the Convention Center also realized substantial gas savings through operational decisions to shut down boilers during the summer and increase the intake of outside air. The building's energy use intensity per square foot is 61 percent better than the national average for convention and meeting facilities across the country.<sup>1</sup>

Completed Energy Management Projects of the San Diego Convention Center in 2009		
Project	Annual Energy Savings	Annual Cost Savings
Retrofit of Hi-bay HID fixtures in mezzanine and corridors with fluorescent fixtures and motion sensors*	227,800 kWh	\$34,170
Installation of Vending Misers on 15 machines*	18,054 kWh	\$2,708
Retrofit of information system computer room with virtual servers*	8,826 kWh	\$1,324
Retrofit 32 watt T-8 lamps operating 24 hours with 25 watt T-8 counterparts*	3,066 kWh	\$460
Installation of occupancy sensors in public restrooms, storage rooms and some offices*	4,821 kWh	\$723
Installation of improved energy meters (EMON) providing real time consumption data	427 KW demand reduction	\$19,733 saved in first year
Infrared imaging for all VIP events to reduce energy waste; Installation of infrared windows on all electrical equipment in P-2 vaults	N/A	\$4,521 in labor savings
Operation of chilled water loop as thermal energy storage system to cool electrical and storage rooms	710,850 kWh	\$64,687

\* Indicates projects paid for through utility incentives offered by SDG&E

Prior to 2009, the SDCCC also implemented other measures to improve the building efficiency, which are listed below.

<sup>1</sup> "The Energy Information Administration's Commercial Building Energy Consumption Survey (CBECS) 2003 indicates that the average energy intensity of an entertainment facility is 265 kbtu/sf/year."

Additional Projects of the San Diego Convention Center Completed Prior to 2009		
Project	Annual Energy Savings	Annual Cost Savings
Retrofit of Hi-bay HID fixtures on loading docks and motion sensors*	270,494 kWh	\$40,574
Installation of plastic air curtains and improved door seals on all coolers and freezers*	Savings not calculated	Savings not calculated
Replacement of five natural gas chillers (3,400 tons) with three new high-efficiency centrifugal chillers and associated equipment	2,887,836 kWh	Total Cost: \$4,067,500 (\$113,000 under budget) Incentives of \$467,769 from SDG&E

Several other initiatives are already underway or pending including:

- Installation of a 538 kW solar panel on the roof of the facility through a power purchase agreement (savings not calculated)
- Installation of a cool roof (projected annual energy savings 238,410 kWh, cost savings \$35,284)
- Installation of exhaust fans in the pre-function glass ceilings to extract solar heat\* (projected annual energy savings 18,910 kWh, cost savings \$2,798, 90% projected costs paid by SDG&E)
- Installation of energy relays to turn off food and beverage equipment in eight concession stands\* (savings not calculated)
- Retrofit of 1,200 exhibit hall HID lighting fixtures to a combination of fluorescent and inductive lighting (projected annual energy savings 1,283,783 kWh, cost savings \$190,567, 70% projected costs paid by SDG&E)
- Reclamation or diversion of water pumped from underground dewatering system into City sewer system (projected annual water savings 12,000,000 gallons, incentives currently unknown)
- Installation of weather station on roof to track and forecast weather impact on future events\* (projected annual energy savings 9,285 kWh, cost savings \$1,374, 90% projected costs paid for by SDG&E)

The SDCCC is dedicated to working with other convention centers on energy and environmental issues. They also participate in the industry-led ENERGY STAR convention center benchmarking initiative, a voluntary collaboration of convention centers to share energy performance information and resources.

### **Center for Green Meetings**

The SDCCC is committed to environmental education and outreach to both employees and visitors. Through its marketing materials and Web site, they encourage meeting planners to identify methods before, during, and after events to minimize their environmental impact where possible.

General Manager Brad Gessner sits on a number of national committees, including the International Association of Assembly Managers' (IAAM) Committee for Environmentally Responsible Events and Exhibitions, which are focused on green meeting practices and energy conservation across the globe.

The Convention Center has been awarded a number of prestigious environmental honors, including the *Large Champion Honoree for Excellence in Energy Savings* from San Diego Gas and Electric in 2009 and the *San Diego Excellence in Energy (SANDEE) Award* for Central Plant Efficiency for a Non-Profit in 2005 for the new chiller system installation.

According to Building Superintendent Ronald Barham, "Our FREE program (Facility Retrofits in Energy Efficiency), takes full advantage of utility incentives. The Bright Green attitude at the San Diego Convention Center helps us to stay focused on the product we deliver to our guests. By incorporating Portfolio Manager and other resources into our green program, we have enjoyed dramatic energy reductions."