



### Award Category

Sustainability Innovations

### Green Initiatives

2012 GHG emissions seven percent below 1990 levels

Reporting using Climate Registry protocol

Broad partnership of students, faculty and administration

Over 100 energy efficiency retrofits completed

Campus, utility and student-funded projects

### Budget

Over \$20 million invested

### Annual CO<sub>2</sub> Savings

10,000 tons saved through building retrofits

### Completion Date

Carbon reduction goal met in 2012

# UC Berkeley Cal Climate Action Partnership (CalCAP)

By implementing hundreds of energy-saving projects across campus, UC Berkeley reduced carbon emissions to 1990 levels, meeting state-wide goals eight years ahead of schedule. This project sets the stage for meeting a new goal of carbon neutrality for UC campuses by 2025.

The California Global Warming Solutions Act of 2006 established broad greenhouse gas (GHG) reduction goals for the state, with a target of reducing GHG emissions to 1990 levels by 2020. For UC Berkeley this goal was equivalent to a one-third reduction below the “business as usual” scenario. By engaging a diverse coalition of student, faculty and staff leaders, the campus met and exceeded this goal in 2012, eight years ahead of schedule, by deploying innovative energy and carbon reduction projects across the full range of campus activities.

## CalCAP was formed in response to student activists seeking to bring climate action to the forefront of campus considerations.

The work of meeting this goal was led by the Cal Climate Action Partnership (CalCAP) and managed by UC Berkeley’s Office of Sustainability and Energy. CalCAP was formed in 2006 in response to student advocacy for the campus to more actively address environmental and global climate change issues. A steering committee was established with 35 members comprised of students, faculty and administrators, with Catherine Koshland, Vice Chancellor for Undergraduate Education, as the chairperson.

In the first few years after its formation, CalCAP produced detailed reports on the path to meeting the carbon reduction goals. Key early documents include the 2007 CalCAP Feasibility Study and the 2009 Climate Action Plan. These reports outlined the opportunities and financial implications for carbon reductions.

The planning efforts have led to hundreds of projects implemented across campus, focusing primarily on energy efficiency, transportation, procurement, water, and travel. The projects were individually evaluated for feasibility in terms of the potential carbon reduc-

tion and cost, and are expected to have a simple cost payback of less than ten years. The campus has already committed \$20 million to energy efficiency projects, with additional funds dedicated for programs to reduce the carbon emissions from transportation, water and waste. Lisa McNeilly, UC Berkeley’s Director of Sustainability, notes that reporting carbon emissions each year is important as it helps to continuously identify actionable targets, and to alert responsible groups of carbon reduction opportunities.



In 2012 UC Berkeley met its GHG target by reducing emissions to below 1990 levels. Image: UC Berkeley.

As building operations contribute up to 80 percent of campus carbon emissions, CalCAP worked with stakeholders across campus to implement innovative ways to reduce energy use in new and existing buildings. Broad-based energy initiatives have driven numerous projects, such as implementing a campus team to manage ongoing energy performance in campus buildings. The Office of Sustainability and Energy also coordinates with the Higher Education Energy Partnership, taking advantage of incentives from campus utility PG&E to implement cost-effective retrofits for lighting and HVAC, and to conduct monitoring-based commissioning across campus. The Strategic Energy Partnership has completed over 100 projects since 2006. The campus now has 14 LEED-certified buildings as of 2014, and in

# BEST PRACTICES

## Additional Awards

2012 Clean Air Award  
from Breathe California

## Contacts

Director of  
Sustainability:  
Lisa McNeilly,  
lmcneilly@berkeley.edu  
510.643.5907

Sustainability Manager:  
Kira Stoll  
stoll@berkeley.edu  
510.642.0074

## More Information

<http://sustainability.berkeley.edu/calcap>

<http://sustainability.berkeley.edu/mypower>

<https://us.pulseenergy.com/UniCalBerkeley/dashboard/#/overview>

<http://sustainability.berkeley.edu/calcap/calcap-meeting-target>

<http://tgif.berkeley.edu/>

recent years new buildings and major retrofits are being LEED-Gold certified.

An innovative Energy Incentive Program was created to engage building operators and occupants by transferring energy costs directly to departments. In the first year, a total of \$870,000 in energy cost savings were paid back to departments, with savings based on the previously measured baseline. The campus also launched a “MyPower” outreach program, using an energy dashboard website to show historic and real-time energy data



*Students working with the Energy Management Initiative surveyed labs to identify energy-saving measures. Photo: Erin Fenley.*

for all major campus buildings and residence halls. The website allows users to make comparisons between buildings, and to see if buildings are meeting calculated targets. Combined, these building energy programs are reducing carbon emissions by 10,000 tons annually, while reducing energy costs.

Carbon reductions also resulted from PG&E transitioning to a cleaner energy mix, in compliance with state mandates. With the utility providing cleaner electricity for no additional cost, installing photovoltaic (PV) cells on campus has not been cost effective until recently. However, as the price of PVs has come down, and power purchase plans are available to reduce initial costs, the campus is now looking closely at four to five sites where PV contracts are expected to be put in place in the near future.

Transportation and housing programs are also important parts of the carbon reduction strategies. Since 1990 the campus has promoted alternatives to driving and has invested in new student housing close to campus, so that by 2014 only six percent of students drive to campus. Of the entire campus population, 83 percent commute by walking, bicycling, or using transit. The campus fleet of 550 cars is being gradually upgraded to energy efficient cars, including hybrids and electric vehicles for use on campus.

## Building energy conservation projects reduce energy costs significantly and eliminate approximately 10,000 tons of CO<sub>2</sub> annually.

Many of these carbon reduction projects, and the campus-wide accounting and reporting of carbon emissions, are accomplished through partnerships with students and expert faculty. For example, The Green Initiative Fund is a student-led program that provides small grants for projects related to energy, habitat, food, behavior, water and waste. The program is funded by a six-dollar per semester student fee, and since 2008 has awarded over \$1.8 million that have supported 123 projects.

## LESSONS LEARNED

Kira Stoll, UC Berkeley’s Sustainability Manager, explains that CalCAP’s strong steering committee structure has been valuable for keeping diverse groups connected and working towards a common goal, and for maintaining momentum year after year. One early challenge faced by the group was having a reduction target based on 1990 levels, as emissions data from that period data were not readily available. However with the recent phases of work completed and a key goal met ahead of schedule, campus sustainability managers are working towards the Carbon Neutrality Initiative, set by UC President Janet Napolitano in 2013, that requires the system to reach carbon neutrality by 2025.

*Best Practices* case studies are coordinated by the Green Building Research Center, at the University of California, Berkeley.

The Best Practices Competition showcases successful projects on UC and CSU campuses to assist campuses in achieving energy efficiency and sustainability goals. Funding for *Best Practices* is provided by the UC/CSU/IOU Energy Efficiency Partnership.

