

Proposal to Housing Department Green Campus Programs for the 2006-2007 School Year

Green Campus is a program run by the Alliance to Save Energy, funded by the California Public Utilities Commission. Green Campus is a student led campaign to educate and encourage students, faculty, and staff on more efficient energy usage. In addition to helping the environment and reducing the current strains on energy resources, this campaign provides tangible benefits, in the form of energy savings, for the University of California. In the 2004-2005 and 2005-2006 school years, Green Campus programs have resulted a reduction in energy usage equivalent to **\$62,184** in avoided energy costs or a savings of **621 MWh**. In these two years there have been consecutive energy reductions of **3.69%** and **8.44%** during the months October through May in Units 1, 2, 3, Foothill, and Stern Halls. Green Campus knows the benefits its programs bring to the campus and will continue to offer programs in cooperation with Housing and other departments to foster more sustainable and supportable lifestyles, including money-saving habits.

This proposal outlines two main projects that Green Campus would like to coordinate in the upcoming school year: a Light Bulb Exchange, and the Blackout Battles Energy Competition.

Past Green Campus Programs

Green Campus has been working with the Housing Department at Berkeley since the start of the program in the summer of 2004. In the Fall of 2004, the two entities collaborated to implement the first CFL exchange which was followed with a consecutive exchange in the Fall 2005 semester. Green Campus has also held Blackout Battles energy competitions in the residence halls every semester since Spring 2005. In Fall 2005, Green Campus also worked to open the Green Room in Unit 1.

In on-campus endeavors, Green Campus has run a DeCal class, Energy 101, three semesters since the Spring 2005 semester. Students in the class have conducted lighting audits in campus buildings, given presentations to building managers on their energy performance, held Take the Stairs Days, and have assisted in running the Blackout Battles energy competition. More recently, Green Campus interns have started installing vending misers on campus vending machines.

Light Bulb Exchange

The light bulb exchange involves an exchange of students' incandescent light bulbs for 15-watt compact florescent bulbs, which use roughly 25% of the energy that incandescents consume. In the previous school year (2005-2006), Green Campus and the Residential Sustainability Education Coordinators (RSECs) collaborated to ensure the success of the light bulb exchange. The purchase of the 1,750 Compact Florescent Lamps (CFLs) was approved and financed by the housing department. The total savings in electricity costs for all Green Campus programs last year (including the Energy Competitions, Programming by Resident Assistants, as well as the energy conservation stickers placed in the halls in the 2004-2005 year by Lisa Bauer and the RSECs) accumulated in about \$43,000 compared to the 2003-2004 baseline year.

As a conservative estimate for the avoided costs (using 2003-2004 as a base), Green Campus's Light Bulb Exchange resulted in a total/net savings of **\$2,048.5**. The calculations for these gains are below:

Assumptions: Lights are used 4 hours a day
 There were 27 weeks the CFLs were in use (189 days)
 1,575 CFLs exchanged and in use
 Incandescent bulbs use 60 watts on average
 CFLs use 15 watts per hour
 It costs \$0.10 for 1 KWh
 It cost \$1.89 for 1 CFL

Calculations: (189 days) X (4 hours a day) = 756 hours each bulb was used in '04-'05
 (812 hours) X (1575 CFLs exchanged) = 1,190,700 hours of total usage
 (1,190,700 hours) X (.06 KiloWatts) = 71,422 kWh used by Incandescents
 (71,422 kWh) X (\$0.10 per kWh) = \$7,142 for energy used by Incandescents
 (1,190,700 hours) X (.015 KiloWatts) = 17,860.5 kWh used by CFLs
 (17,860.5 kWh) X (\$0.10 per kWh) = \$1,786 for energy used by CFLs
 (\$7,142) – \$1,786) = \$5,356 in costs avoided
 (\$1.89) X (1,750 CFLs) = \$3,307.5 for purchasing CFLs
 (\$5,755) – (\$3,668.75) = **\$2,048.5 NET SAVINGS**

Proposed Light Bulb Exchange for Fall 2006

- The Housing Department purchases 1300 CFLs
 - CFLs can be purchased at \$2.29 a piece (or possibly much less)
 - With 1300 bulbs the total cost is \$2977 plus shipping
 - Assuming students use their lights for four hours a day for 28 weeks during the school year, and 60 watt incandescent bulbs are exchanged for 15 watt CFLs the avoided electricity cost is \$4,586 at \$.10 a kWh
 - The estimated net savings for this project is \$1,609
- Green Campus will send out a bid to five different CFL vendors for the bulbs and choose the vendor with the best pricing. We will then proceed to arrange payment and delivery.
- Green Campus along with the RSECs will table at each of the dining halls during Sustainability Week (September 25-29) to pass out the CFLs.

This project would bring immediate energy savings as well as financial benefits to the Housing Department. Along with passing out the free CFLs to students living in the residence halls, we will also have information about purchasing Energy Star products, government certified energy savers, give tips on how to reduce energy usage with behavioral changes, and will be advertising for the Blackout Battles Energy Competition and Green Demonstration areas.

Blackout Battles Energy Competition

Green Campus has now held three Blackout Battles energy competitions between the residence halls: one in February of 2005, another in October and November of 2005, and one in March of 2006. Within the Blackout Battles, there are two competitions, one between Unit 1, Unit 2, and Unit 4 (Foothill and Stern), the other between the individual buildings in Unit 3 (Spens-Black, Priestley, Norton, and Ida Sproul). The winners have included Unit 1, Unit 2, Unit 4, and Spens-Black. The winners of each competition have chosen prizes such as Ping-Pong tables, foosball tables, board game collections, exercise equipment, or food items for parties as voted on by

each areas hall associations. The first two competitions also included Ben & Jerry's ice cream parties as arranged by Green Campus interns.

The winning halls have achieved energy reductions of **7.23%**, **9.30%**, and **10.58%** when compared to the 2003-2004 baseline year. Over the four months that these competitions have been held, there has been an overall energy reduction equivalent to **\$19,615** in avoided energy costs when compared to the 2003-2004 baseline year. This reduction is also a result of the light bulb exchange, Resident Assistant programming, and RSEC light switch conservation stickers.

Proposed Energy Competitions for the 2006-2007 School Year

- Dates:
 - October – November in the Fall Semester
 - February or March in the Spring (to be determined)
- Green Campus will publicize the competition by contacting Hall Staff members, such as Resident Assistants, Residence Hall Assembly (RHA) officers, and through word of mouth.
 - Students in the Energy 101 DeCal class will work in each area to publicize by posting posters, tabling in the dining halls, and holding events in the courtyards.
- Green Campus would also provide prizes for the winners of the competition, such as a Ben & Jerry's ice cream party and a sum of \$300 for each winning Hall Association to use to purchase non-electrical prizes.

This competition would give students incentives for reducing their electricity consumption and help to make them more aware of the effects of using electricity and the reasons why they should try to reduce their electricity consumption.

Future Programs

Along with continuing the Light Bulb Exchange and Blackout Battles energy competitions, Green Campus is also excited to be working on the new Global Environment House Green Suite and Green Apartment. We are also looking into coordinating energy consumption education programs in the fraternities and sororities in Berkeley and implementing computer management and fume hood programs in on-campus buildings.

To ensure the success of its programs, Green Campus will further develop relationships with interested parties such as Lisa Bauer and the Campus Recycling and Refuse Services (CRRS), Troy Gilbert and the Office of Student Development (OSD), Housing, the Residential Sustainability Education Coordinators (RSECs), Resident Assistants (RAs) and other Hall Staff members, and the California Student Sustainability Coalition (CSSC), and the Chancellor's Committee on Sustainability (CACS).

Green Campus looks forward to working with Housing and other university departments to forge a mutually beneficial friendship and coordinate mutually beneficial programs in the future.

Please feel free to contact us with any questions, comments, or concerns at BerkeleyGreenCampus@gmail.com. Thank you for your time.