

Annual Report

2012-2013



UCSC Carbon Fund
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Acknowledgements

The Carbon Fund would like to express our sincere appreciation to the students of the University of California, Santa Cruz (UCSC) for their generous contribution of over \$100,000 through a \$3-per-quarter student fee, without which we would not be able to provide grants to projects that reduce local greenhouse gas emissions.

We would like to offer our special thanks to Collette Streight, our Interim Climate Action Manager who offered amazing support to the student team this year and played a vital role in the fund's success.

The Carbon Fund would also like to thank Ross Clark, Climate Action Coordinator for the City of Santa Cruz, who took the time to meet with the committee and brainstorm project ideas, one of which was implemented this year!

We would like to express our gratitude to all present Carbon Fund project leaders and the 2012-2013 Carbon Fund committee members for their hard work in running the program and their dedication to reducing greenhouse gas emissions.

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Executive Summary

Since its inception in 2010, the UCSC Carbon Fund has granted over \$265,000 to 22 projects resulting in an estimated lifetime reduction of more than 2,200 MTCO₂e.

This year the UCSC Carbon Fund Committee allocated about \$40,000 to five projects resulting in an estimated lifetime reduction of more than 200 MTCO₂e.

Last year the Carbon Fund Committee put to work the large carry-forward funds that had accumulated to initiate a Green Revolving Loan Fund (GRLF). The GRLF will provide up-front capital for campus greenhouse gas reduction projects. Loans are paid back using the savings realized by the reductions in operating and utility costs. The GRLF recently completed their first pilot project, a bi-level stairwell lighting retrofit at College 9 and 10, and are working to improve and finalize the program details based on lessons learned.



Members of this year's Sustainability Climate Action Team (from left to right): Camille Carrillo, Rielle Indya Green, Alex Mitroff, Elissa Martinez

Background

In spring of 2006 UCSC students passed Measure 28, a \$3-per-quarter student fee to provide funding to purchase renewable energy certificates in order to offset campus electricity usage.

In 2010 UCSC students voted, in record numbers, to change the use of the funds through the passage of Measure 44. The amendment allowed funds to be used for on-site renewables and energy efficiency projects that will directly reduce our campus' carbon footprint, in combination with supporting a local offsets program and purchasing renewable energy certificates to offset campus emissions. Through Measure 44 the UCSC Carbon Fund was born, proving to be a new point of pride and leverage in reducing UCSC's carbon footprint.

Committee

The Committee was established in accordance with Student Fee Measure 44 to publicize and manage the Carbon Fund. The Committee works to mitigate climate change through funding projects that reduce greenhouse gas emissions, conduct relevant research, or carry out education and behavioral change programs. The Committee's commitment is foremost to the campus and its students, but also to the wider community as climate change is a threat without boundaries.

The Committee is a student-run organization comprised of UCSC students, staff and faculty. As such, the Committee's first consideration in achieving its mission is that of student needs, education, and engagement. Below is a list of the committee members and their campus affiliation.

2012-2013 Committee Members

Voting Members	Name	Student/Staff
Student Environmental Center	Sarah Angulo	Student
Green Campus Program	Delia Bense-King	Student
Campus Sustainability Internship Program	Camille Carrillo	Student
Chancellor's Executive Committee on Sustainability and Climate Change	Nikki Fiore	Student
Path To A Greener Stevenson	Kristyn Glenn	Student
Sustainability Office Director	Lacey Raak	Staff
Campus Energy Manager	Patrick Testoni	Staff
Purchasing Working Group	Kathryn Cunningham	Staff
Interim Climate Action Manager	Collette Streight	Staff
Non-Voting Members	Name	Student/Faculty
Carbon Fund Student Facilitator	Alex Mitroff	Student
Carbon Fund Outreach Coordinator	Elissa Martinez	Student
Environmental Studies/ Electrical Engineering Faculty Consultant	James Barsimantov	Faculty

This Year's Awarded Projects

Santa Cruz Greenwharf Lighting Retrofit



Project Leader: Tiffany Wise-West, a graduate student in the Environmental Studies Ph.D. program, in collaboration with UCSC Electrical Engineering and Environmental Studies

Carbon Fund Grant: \$28,029.05

Estimated Lifetime GHG Reduction: 88.85 MTCO₂e

Project Description: Researchers from UCSC's Sustainable Engineering and Ecological Design consortium are working with the

Wharf Supervisor and Climate Action Coordinator for the City of Santa Cruz to retrofit the Wharf lighting from sodium halide bulbs to LED.

Current Status: The planning element of this project is finished, the team now awaits the purchase and shipment of all necessary materials to begin the retrofit.

Energy Dashboard and Behavior Change

Project Leader: John Bentley, an intern with the IDEASS program

Carbon Fund Grant: \$7,605.00

Estimated Lifetime GHG Reduction: 12.56 MTCO₂e

Project Description: This project's purpose is to provoke students in residential buildings to analyze their energy use and change their behavior in a manner that positively affects the environment and climate change. It aims to provide easy to use data on energy use, tips on how to improve energy consumption, and incentives to reduce.

Current Status: Meters that will monitor energy are being installed on dormitories at Crown College. Meanwhile, the team is working on a program that will make energy consumption data easily accessible with iPhone or Android. The goal is to have an energy competition ready for incoming students in fall 2013.



Drop Your Own Drip (DYOD)



Project Leader: Sarah Angulo, coordinator for the Student Environmental Center's DYOD campaign

Carbon Fund Grant: \$750.00

Estimated Lifetime GHG Reduction: 7.56 MTCO₂e

Project Description: DYOD is a project that focuses its efforts towards the production of simulated monthly water statements for on-campus apartment residents at UCSC. Included in the project is a

competition among students with incentives to reduce water use, as well as a celebration event upon completion.

Current Status: The project was completed over spring quarter 2013, and a winner for total water reductions declared. A celebration was held on May 23 to promote awareness and give prizes to students. The team is now collecting survey results from all of the college apartments to improve the project for next year.

This Year's Awarded Projects

Bicycle Transit Planning

Project Leader: Brendan Fant, an intern with the IDEASS program

Carbon Fund Grant: \$616.00

Estimated Lifetime GHG Reduction: 2.72 MTCO₂e

Project Description: This project aims to create a quality index for bike routes in the city of Santa Cruz. By identifying key gaps in the local bike network, the City can work to improve its transportation footprint. The team used survey data from local cyclists, bike collision data and Environmental Quality Index (EQI) analysis to characterize the conditions of current bike routes.

Current Status: The team prepared an in-depth report on biking conditions in Santa Cruz, based on the reports of their surveys, the EQI analysis of roads, and local records of cycling collisions. Their findings were presented to the City of Santa Cruz, with several key routes identified as deserving top priority for improvement.



Bike Generator For At Risk Youth



Project Leader: Leah Mosier, an intern with the Impact Designs: Engineering and Sustainability through Student Service (IDEASS) program

Carbon Fund Grant: \$1000.00

Estimated Lifetime GHG reduction: 70.0 MTCO₂e

Project Description: Working with students and staff at Natural Bridges High School, this project will use a human-powered bike generator that generates electricity. The project seeks to educate students about the energy needed to power activities that are

often taken for granted.

Current Status: The team has successfully designed and implemented a curriculum for the construction, use, and monitoring of two bike generators. Students at NBHS have been able to power appliances such as blenders and speakers. They now feel engaged and more connected to their personal power consumption.

Progress of Past Projects

Project	Funding	Estimated Lifetime GHG Reductions (tons of CO ₂)	Status	Latest Milestone	Contact
Watsonville High School Relamping	\$23,900.00	330.88	In Progress	Secured additional funding for project, retrofit under way.	Calvin Ye
Solar Tube Installation at Natural Bridges Green School	\$3,270.00	349.57	In Progress	Study complete, ready to purchase and install solar materials.	Tatiana Sujati
Rain Harvesting Project	\$2,205.00	1,115	In Progress	Project currently considering a location in City of Santa Cruz.	John Ford
Campus Sustainability Video	\$10,061.00	90.77	In Progress	Script has been drafted, student surveys being conducted.	Katie Roper
SC Municipal Wharf EV Charging Station	\$15,400.00	213.14	In Progress	Station is installed on the wharf, work on data platform currently in progress.	Tiffany Wise-West
UCSC Bus Tracking System 2.0	\$9,900.00	316.77	In Progress	A working prototype of the Bus Tracking System has been tested.	Teresa Buika
Bi-Level Stairwell	\$68,365.00	363.4	In Progress	The bi-level light fixtures will be installed by end of summer 2013	Lacey Raak
Coastal Energy Research Facility	\$15,000.00	18.13	Complete	Wind turbine and solar panels have been installed on wharf.	Tiffany Wise-West
Drought Tolerant Plants	\$10,000.00	10.69	Complete	Plant sales and lectures held throughout the year at arboretum.	Stephen McCabe
East Field House Lighting Retrofit	\$18,757.00	74.54	Complete	The East Field House Basketball gym has been newly retrofitted with induction lights.	Abbas Mohamed
Program Recognizing Offices Practicing Sustainability	\$2,415.00	31.24	Ongoing	Changed name to Green Office Certification Program, the team has certified 16 offices.	Shauna Casey
Natural Bridges High School Water Conservation	\$8,000.00	1.57	Complete	Rainwater catchment system has been installed.	Lucy Ferneyhough
Porter Greenovation	\$15,935.00	44.08	Complete	Some energy efficiency retrofit measures on the Porter College Study Center have been completed. Porter College will provide remainder of funding.	Sarah Gilchrist
Solar Powered Wetland	\$1,000.00	1	Complete	The constructed wetland is finished on top of Thimann Labs.	Elaine Ponce-Dick
Take Back The Tap	\$12,000.00	151.33	Complete	Several reusable bottle refill stations have been installed around campus.	Rebecca Wood
West Remote LED Retrofit	\$10,373.00	18.39	Complete	LED lights have been installed.	Erin Linney
TOTAL	\$226,581.00	3,130.5			

Financial Report

Revenues

	FY'13 Measure 44 transferred to Carbon Fund	\$110,783.00
	Carbon Fund Carry forward FY'12	\$141,313.00
	Revenues Total	\$252,096.00

Expenses

Commitments

	Green Revolving Loan Fund	\$68,365.00
	Contingency (previous projects)	\$9,348.00
	Sub Total	\$77,713.00

2013 Projects

	Drop Your Own Drip	\$750.00
	Energy Dashboard and Behavior Change	\$7,605.00
	Santa Cruz GreenWharf Lighting Retrofit	\$28,029.05
	Bicycle Transit Planning	\$616.00
	Bike Generator for At-Risk Youth	\$1,000.00
	Sub Total	\$38,000.05

Other Expenses

	Staff Salaries	\$7,886.00
	Staff Benefits	\$1,091.43
	Outreach and Supplies	\$641.47
	Sub Total	\$9,618.90
	Expenses Total	\$125,331.95

Summary

	Total Revenues	\$252,096.00
	Total Expenses	\$125,331.95
	Balance	\$126,764.05

Looking Forward

This year has brought many changes to the Carbon Fund. While the transition in staffing proved challenging, the team is proud to welcome Chrissy Thomure as the new Climate Action Manger! She is committed to helping find and foster projects with large, measurable impacts that will help UCSC significantly lower their greenhouse gas emissions.

To make the funding process more efficient and effective this year, the committee added an abstract round to the application process. This helped the committee evaluate projects in their preliminary stage and identify areas to strengthen proposals and opportunities for collaboration. The team also added an interview component in which project teams presented their ideas to the committee and answered questions. This helped the committee to get critical information and provide feedback to project teams.

Although most of the projects that received grants this year were small in scale, the team will be strategizing to foster projects that will have a significant impact on both the campus' and community's carbon footprints. In particular, the team is exploring ways in which the fund can collaborate with more staff and faculty members, and leverage Carbon Fund monies with other sources of funding.

Carbon Fund staff plan to work over the summer to streamline the application and project management processes to make them more user-friendly. One way we will do this is by centralizing the fiscal management of funds within the Sustainability Office. The team hopes this will improve communication channels between the Carbon Fund staff and project managers while providing a more efficient means of acquiring materials and reimbursements. Carbon Fund staff also plan to identify and implement an improved project tracking system to centralize and streamline project communication, updates, reporting and metrics collection.

Finally, the Carbon Fund staff and committee are working to establish the Green Revolving Loan Fund. Since the College 9/10 bi-level lighting pilot project was able to pay back their loan in June 2013, the fund will have approximately \$70,000 for potential projects. Carbon Fund staff are developing an application process and project tracking system for the GRLF that will mirror the Carbon Fund. Since state-funded buildings do not pay their building's utility costs, the GRLF will primarily focus attention on non state-funded buildings on campus.

Overall, the Carbon Fund team has identified several opportunities for continuing to build and improve the program. We invite you to join us in fulfilling UCSC student's vision for an energy efficient, less energy-dependent campus and community by:

1. Developing a project to reduce emissions and applying for a carbon fund grant,
2. Participating in our Carbon Fund committee,
3. Providing feedback to the Carbon Fund staff and committee on how we can improve the program, or
4. Donating to the fund.

We are excited for the future of the Carbon Fund and we hope you will join us in fighting climate change through leadership and action!