

Twenty Years of Alternative Fuels: From Fleets to Prime Time

By: Arjun Sarkar

It's been over twenty years since the Energy Policy Act of 1992 (EPAAct) was passed. One goal set forth in this Act was the diversification and displacement of petroleum by mandating that specific fleets utilize alternative fuels. UC Santa Barbara submits its annual EPAAct report to the UC Office of the President, and the report is then submitted to the Department of Energy (DOE) along with reports from the other UC campuses. Recently, UCSB adopted a new vehicle purchasing policy that goes above EPAAct requirements, and we have been successful in growing our alternative fuel vehicle fleet percentage from about 7% in 2000 to 27% in 2012.

Another 20 year anniversary occurs this year for the [Clean Cities project](#), which was created by the DOE in 1993 as a way to stimulate the use of alternative fuels within fleets. UC Santa Barbara is a founding member of our local Clean Cities coalition, the Central Coast Clean Cities Coalition (C-5), formally designated by the DOE in 2006. Arjun Sarkar, who works in UCSB Transportation Services as the university's Alternative Fuel Coordinator, was recently elected as Board Secretary of C-5. There are about 85 local coalitions and over 65,000 stakeholders throughout the United States that have together displaced over 2.4 billion gallons of petroleum.

About two years ago, Plug in Central Coast was formed to increase charging infrastructure and electric vehicle (EV) sales in Ventura, Santa Barbara and San Luis Obispo. Through two grants, one from the Department of Energy and one from the California Energy Commission, an Electric Vehicle Readiness Plan was created and is now in its second draft. UCSB is a member of Plug in Central Coast's Coordinating Council, and is participating in the development of the plan. The Ventura Air Pollution Control District and C-5 are the lead agencies on the grants. Here at UCSB, we now have 12 EV charging stations located in Parking Structures 10, 18, and 22. This charging infrastructure is supporting the growing number of people transitioning to electric vehicles. With auto manufactures continuing to release various options of vehicles and fuel choices, we are seeing this industry mature and become main-stream. On your commute to campus or running errands downtown, you are most likely accompanied on the road by hybrids, plug-in hybrids, battery electric vehicles, or possibly even a dedicated compressed natural gas vehicle.

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A Green Car Show exhibiting many different kinds of alternative vehicles has been held in conjunction with the Community Environmental Council's Earth Day festival in downtown Santa Barbara for over a decade. Arjun Sarkar has been the Coordinator of the Green Car Show for the past 13 years, and it is clear that this show is a catalyst for individuals making informed vehicle and fuel purchasing decisions. The vehicle is our most energy consumptive device we purchase; we all have the ability to make significant contributions in the reduction of petroleum.

As we look to the future, hydrogen as a transportation fuel will play a significant role in achieving California's goal of an 80% reduction in CO₂ by 2050. The State is in the process of funding 68 hydrogen stations through AB118 funds overseen by the California Energy Commission. Santa Barbara will be a destination for a hydrogen station as well as a part of the Los Angeles hydrogen station cluster network. We are living in exciting times when it comes to transportation fuels and vehicles and can't wait to see what the next 20 years will bring! □



AS Bike Committee: Supporting Sustainable Transportation

By: Zac Armour

The charge of the Associated Students (AS) Bike Committee is to prioritize expenditures of funds collected from the AS and Graduate Students Association (GSA) Bicycle Lock-In fees which support the value of biking as a healthy, sustainable, non-polluting means of travel. The Committee welcomes student input related to bicycle paths and bicycle parking at UCSB and is an active bicycle system advocate. The AS Bike Committee takes steps to increase student, staff, faculty, and administration awareness of bicycle system issues.

This year alone, the AS Bike Committee has coordinated and funded a number of maintenance and campus improvement projects. The bike path adjacent to Isla Vista, from Pardall to El Colegio was repaved during the 2012/13 winter break, as was the path next to the ROTC building. The AS Bike Committee has also directed a multitude of maintenance projects, ranging from the removal of roots on bike paths to filing down concrete lips that impede bicyclists. These improvements only strengthen the AS Bike Committee's third [Great Reason to Bike](#) - Reduce the amount of air pollutants your commute contributes. Even if your commute is only five miles each way, your car emits over one hundred pounds of air pollution each year!

The A.S. Bike Committee also funded and coordinated the new bike lot at South Hall. This lot was completed just before fall quarter and consisted of around 500 bike racks that added much needed parking to the area. There are currently plans to upgrade the UCen and Music lots this summer, as well as plans for a \$200,000 project that would increase the safety of the Student Affairs and Administrative Services Building (SAASB) intersection. Over the past couple of years the committee has been responsible for patching the bike paths adjacent to the lacrosse fields, removing large roots from the Engineering II lot, adding 48 peak racks to Physical Sciences Building North, and adding 400 peak racks to the Music building.

The Committee also puts on a number of quarterly events. The *Bike Gripe* allows the Committee to receive feedback from the students about biking issues they are experiencing, *Bike Safety Week* helps promote good biking practices, and the *Bike Auction* serves as a cost-efficient way for the students to purchase bikes so they have an environmentally-friendly and easy way to travel around campus.

The AS Bike Committee is also responsible for the maintenance of the permanent air pumps that were implemented in winter of this year and updating and distributing campus bike maps. The AS Bike Committee works with a number of departments on campus to improve the infrastructure of one of the highest-rated bike friendly campuses in the country. These include UCSB Sustainability, Campus Planning and Design, Design and Construction Services, CSO, Engineering Department, AS Business Services, The AS Bike Shop and more. The Committee is constantly looking for student feedback, so let us know your thoughts!

If you would like more information about the AS Bike Committee, please e-mail bikes.ucsb@gmail.com or check out their website at <http://bikes.as.ucsb.edu/>. □

Zac Armour is the Program Coordinator for the AS Bike Committee



Want to send us an article for the next newsletter?

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The 2013 TGIF Projects Have Been Chosen!

By: Kate Kokosinski

The Green Initiative Fund (TGIF) Grant Making Committee is pleased to announce the selected projects for the 2012/13 funding cycle! A total of 23 projects applied for TGIF grants this year requesting a total of \$341,310.93. Of those projects, two were removed from the review process, as they received funding from other sources. The TGIF Grant Making Committee awarded funds to **14** projects, totaling **\$191,172.33**. Below is an overview of the projects that you can expect to see completed within the next academic year.

Bren Hall Inverter Upgrade (\$25,000)

Bren Hall currently has a 45-kW photovoltaic array mounted on its rooftop. However, the inverter for the array has not been functioning properly since last spring (2012). The 45-kW inverter and isolation transformer will be replaced with six 8-kW string inverters using the TGIF grant. This multiple inverter configuration ensures that Bren Hall will still produce electricity in the event that one of the inverters has a problem. Bren Hall serves as living example of green building on campus. The dashboard located in the Bren Hall Edison International Visitor Center will inform students and the public of the improvements.

CHESC Scholarships for UCSB Change Agents (\$4,150)

UCSB is hosting the California Higher Education Sustainability Conference (CHESC) on June 23rd-27th, 2013. This TGIF grant will be used to provide scholarships for 20 students and about five change agents from UCSB to attend the event. CHESC is designed by and for campuses from each of the four systems of higher education in California. CHESC provides top quality sessions highlighting the most innovative best practices in campus-based sustainability efforts from the past year.

Sustainability Model in the Eastern Sierra (\$20,000)

The Sierra Nevada Aquatic Research Laboratory (SNARL) is a unit in the UC Natural Reserve System near Mammoth Lakes, CA and is in the process of designing a classroom that would be a "net-zero" consumer of fossil fuel by employing photovoltaic energy generation and ground source heating and cooling (aka geothermal heat loop). As part of the project, there is an opportunity to retrofit the existing SNARL dormitory building to use ground source heating and cooling. The TGIF grant will be used to fund this retrofit of the dormitory, eliminating the building's use of liquid propane for air and water heating.

Educational Energy Efficiency Video for the Residence Halls (\$950)

This TGIF grant will go towards the production of an educational energy audit video aimed at students living in the UCSB residence halls. The video will cover different energy and water saving techniques one can implement daily in a dorm room. It will be produced just before the start of the PowerSave Campus annual energy competition in the residence halls and will be one of the main ways of marketing the event and promoting energy conservation on campus.

Electric Hand Dryers in Library Bathrooms (\$11,148.60)

This project will complete the installation of energy efficient electric hand dryers in each of the four bathrooms on the first and second floors of the library as a pilot. The amount of paper towels purchased and used in these areas will be greatly reduced, thus saving the campus money and reducing our use of natural resources. Educational plaques will also be installed near the dryers to educate users about the project. The monetary savings and impact on electricity will be monitored during the project.

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Upcoming Events

Wednesday/Thursday, May 1st/2nd – IEE Summit on Energy Efficiency

This year's UC Santa Barbara Summit on Energy Efficiency will be held at the Fess Parker Resort in Santa Barbara. The Summit will focus on Materials for a Sustainable Energy Future. In addition to our opening keynote speaker -- Dr. Steven Chu, U.S. Secretary of Energy -- we have many other experts gathered to discuss the latest science and technology innovations that are driving energy efficiency. Register today!
<http://ice.ucsb.edu/summit2013>

Monday, May 12th & 20th – LEED Green Associate Workshop

Jordan Sager will teach our annual LEED Green Associate Training! Come get your FREE training so you can take the LEED GA exam! On your own, this workshop would normally cost around \$200 dollars, USGBC provides this to students for FREE!

Dates & Times: May 13th & May 20th 5-8pm
Location: Student Resource Building's MPR

Energy and Comfort Re-commissioning of the ICA Building (\$15,550)

Leveraging two successful previous TGIF projects (SRB and Student Health), this project focuses on another UCSB Student Affairs building to perform re-commissioning for building environmental systems. The ICA building is relatively new, but consumes a significant amount of energy. An initial walk through suggests that better operation of the HVAC systems can be performed to save energy. Interns will use energy modeling and data analysis to identify optimal operation of the building.

UCSB Farmer's Market (\$8,000)

The UCSB Farmer's Market project was brought to us by a group of staff participating in Human Resources' new Gaucho U program. The TGIF grant will be used as initial funding for a one-year pilot project in which a weekly Farmer's Market is held on campus. Farmer's Markets provide local and sustainable food, and soon faculty, staff, and students will be able to stock up on fruits and vegetables for the week and learn the benefits of local and organic food.

Green Grow Lights for Greenhouse Expansion (\$38,785)

The Ecology, Evolution, and Marine Biology department is finishing construction of a \$1.7 million research greenhouse project funded by the National Science Foundation, which includes funds for 1000-watt high intensity discharge (HID) light bulbs and ballasts. The TGIF grant will enable the acquisition and installation of 325-watt light emitting diode (LED) grow-lights instead of the planned HID lighting. The LED lights produce the same light intensity but eliminate 70% of electricity consumed by HID lights. LED lights also facilitate plant growth and last over twice as long as HID lights.

Interactive Campus Map Mobile Application (\$8,861)

This project will increase the number of impressions via the Interactive Campus Map (ICM) Sustainability Dashboard by developing a mobile application that can be used on smart phones. This is an exciting opportunity to further raise the bar regarding how universities can demonstrate to the online community the advanced, cutting-edge use of spatially displayed data. Recently, an Energy Dashboard module that works on standard computing platforms has been integrated into the ICM. The TGIF grant will allow for the continued development of this and other modules (sustainability tours, hydration station locations, TGIF projects, etc.) for use on a mobile application for smart phones, reaching a significantly larger part of the student population. Check out the ICM Sustainability Layer [here!](#)



Last Mile Delivery (\$5,050)

At UCSB a large fleet of gas burning vehicles delivers packages to hundreds of locations in and around the campus every day. Many of these deliveries originate from a small population of vendors that could significantly reduce their carbon emissions by consolidating delivery routes to a single delivery point for "last mile" delivery by a dedicated campus-based fleet of low impact green vehicles. The TGIF grant will allow a student intern to work with purchasing staff to identify and convert high impact vendors to a last mile delivery model.

Refuse & Recycling Research Center (\$5,425)

The Refuse & Recycling Research Center (R3C) will refine existing waste management programs and develop new programs and practices that will assist UCSB in meeting the University of California's Zero Waste by 2020 goal. The TGIF grant will fund two student researchers that will have opportunities to collaborate with faculty, staff, and other organizations at UCSB, as well as local, regional, and state agencies. They will investigate new waste management technology, the UCSB community's behavior towards waste, and best management practices.

Sustainable Food Distribution and Education (\$1,861)

The goal of this project is to increase students' access to healthy and sustainable food by offering fresh produce at the Associated Students (AS) Food Bank and educating students about how they can grow more at home. In order to accomplish these goals, TGIF is granting funds that will be used toward cold storage for fresh produce and other perishable items at the AS Food Bank.

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UCSB Students GIVE! (\$2,060)

TGIF is supporting a brand new component of this project. Funds will pay two students to develop educational and outreach materials to explain the impact of our actions on the environment and raise awareness about sustainable and practical actions students can take locally, highlighting the benefits of donating items they no longer want or need to GIVE. The goals of this new educational component are to promote conscious consumption, showcase GIVE as an opportunity to reduce, reuse and recycle, and generate a spirit of giving to the community. The students will disseminate the materials widely to their peers during student organization meetings, in classrooms, at events, in the residence halls, and through social media.

Water Minimization (\$44,450)

This grant will be used to install faucet aerators and dual flush valves in the balance of the restrooms across campus. We anticipate that the water reduction from this project will garner an annual potable water savings of approximately 23,767,400 gallons, decreasing our total potable water consumption on campus by an additional 8%. This project will unify all restrooms on campus with the same low-flow infrastructure. □

UCSB's Transportation Alternatives Program: It Takes a Village



By: James Wagner

What do you get when you combine favorable weather, a 2-mile campus radius, long-term parking permit sales ban for undergraduates, seven miles of Class I bicycle path, three bicycle underpasses, and seven bicycle roundabouts? You get one of the highest human-powered commuter-mode-splits of any UC campus. Over 10,000 bicycles whirl around campus on any given day...Home-Class-Library-Class-Lunch-Home-Class-Work-Study-Home. UCSB is also home to the only skateboard lane in the UC system!

UCSB's great weather combined with an amazingly large segment of our population living very close to the campus or living adjacent to transit, has made opting to commute by foot, skateboard, scooter, bicycle, bus, carpool, vanpool, or train almost commonplace for our campus community.

Undergraduate students primarily commute by bus or under human-power (bicycling or walking). On average, approximately one-third of UCSB's faculty, staff, and

graduate students use some form of transportation alternative to a single occupant vehicle (SOV).

UCSB's Transportation Alternatives Program (TAP) offers vanpool options for staff and faculty living farther away from campus. TAP currently has 13 vanpools, and each one carries up to 11 passengers as far north as Santa Maria and as far south as Thousand Oaks. On a per person basis, a UCSB vanpool carrying 11 people gets better gas mileage than a Toyota Prius carrying one person!

TAP also offers its members up to 57 hours of complimentary campus parking per quarter, discounted 30-day MTD bus passes and other monthly transit passes, access to the Carpool Match Service, and an Emergency Ride Home program.

Many departments and units come together with students to collaborate and co-create our transportation alternatives commuter culture here at UCSB, such as the Transportation Alternatives Board; the Associated Students Bike Committee (BIKE COMM); Transportation and Parking Services; the Chancellor; Budget & Planning; Design & Construction Services; Facilities Management; UCSB Police; Isla Vista Foot Patrol; UCSB Sustainability; and the Parking Ratepayers Board.

In May 2012, UCSB was recognized as one of the 10 Most Bike-Friendly Campuses Across America by Best Colleges Online. UCSB also received a Bicycle Friendly Business Gold Award from the League of American Bicyclists in 2011.

If you are interested in learning more about commuting by foot, skateboard, carpool, vanpool, bicycle, bus, or train, please visit UCSB's Transportation Alternatives Program (TAP) on the web <http://tap.ucsb.edu>. You may also feel free to send us an email at <http://tap.ucsb.edu/contact.aspx> or call James Wagner, Transportation Alternatives Program Manager, directly at 805-893-5475 for your FREE commuter consultation. □

