

UC SANTA BARBARA POLICY AND PROCEDURE

Sustainability Implementing Guidelines for the UC Policy & Guidelines on Sustainable Practices - Alternative Fuel/Ultra Efficient Vehicle

Contact: Administrative Services

Extended Interim Policy: June 1, 2010 through June 30, 2012

Pages: 3

ALTERNATIVE FUEL/ULTRA EFFICIENT VEHICLE

OVERVIEW

The campus is required to meet greenhouse gas reduction targets of 1990 levels by 2020. The move to alternative fuel/ultra efficient vehicles is part of the campus-wide strategy to meet these targets.

I. SCOPE

This policy governs the purchase or lease of all vehicles used for university purposes. This includes all light duty vehicles that have a gross weight rating up to 8,600 lbs. Examples include sedans, small SUV's, minivans, mini-trucks, and ½-ton pickup trucks.

II DEFINITIONS

Alternative Fuel Vehicles (AFVs) are defined as using the following fuel or technology: plug-in hybrid, Compressed Natural Gas (CNG), Ethanol 85 (E85), hydrogen, full-function electric, Neighborhood Electric Vehicle (NEV), or Biodiesel (minimum of B20 and up).

Ultra Efficient Vehicles are currently defined as vehicles using hybrid technology or vehicles achieving 30 MPG or greater and satisfying the Super Ultra Low Emission Vehicle (SULEV II) standard.

Ultra-Low-Emission Vehicles (ULEV) are vehicles that emit 50 percent cleaner emissions than the average new model-year vehicle.

III. POLICY

- A. 75% of the light-duty university purchases or leases will be alternative fuel and/or ultra efficient vehicles by June 30, 2011.
- B. 95% of the light-duty university purchases will be alternative fuel and/or ultra efficient vehicles (35.5 MPG to match CAFE standards-this may be modified should CAFE standards become more stringent) by 2016.
- C. The following will be considered and balanced for each vehicle purchase or lease: need, vehicle duty, fuel type, availability, and cost. Prior to the issuance of a purchase order, the department making the purchase or lease will evaluate the CO2 impact of the vehicle and the alternative fuel and/or ultra efficient standards. The vehicle selected for purchase or lease shall have the lowest CO2 impact (preferably all electric), while meeting performance and budgetary constraints.

IV. RESPONSIBILITIES

The senior associate vice chancellor for Design & Facilities and the associate vice chancellor for Administrative Services are responsible for collaboratively overseeing and coordinating the implementation of this policy.

V. APPENDIX

Policy Development

Impetus

New and proposed federal and state laws mandate fleets to increase the use of AFV's, improve fleet fuel economy, and reduce CO2 emissions. The automotive industry is in a period of transition and will be spurred on and supported by fleet purchases. This new policy will increase the number of university AFVs while helping us target grants that may reduce the fiscal impact. Transportation & Parking Services (TPS) has been purchasing advanced/alternative-fueled vehicles without having a formal policy. Having a formal policy in place will encourage other departments interested in purchasing new vehicles.

Benefits

The university will reduce its greenhouse gas emissions.

Financial Assessment

For this assessment, the base will be considered a gasoline vehicle. The total cost of a vehicle includes the purchase, fuel and maintenance/repair costs. These costs can vary quite widely, depending on the vehicle technology.

The purchase cost of an AFV using E85 fuel is about the same as a gasoline vehicle. The purchase cost of hybrid vehicles, such as the Ford Escape or Toyota Prius, are 15-35% higher than a gasoline vehicle. The purchase cost of a Compressed Natural Gas (CNG) vehicle, such as the Honda Civic, is 40% higher. The higher vehicle purchase cost can usually be offset by reduced fuel usage or, in the case of CNG vehicles, lower fuel cost. The estimated payback period, although somewhat difficult to accurately quantify, is between five and 15 years.

Low-speed Neighborhood Electric Vehicles (NEV) are now being used quite widely on campus. The purchase cost of a NEV is about the same as a gasoline sedan, while the fuel cost is near zero. Although the maintenance/repair costs are higher per mile, their ability to be used throughout the campus makes them very desirable.

Process

This policy was crafted by the UCSB Sustainability Change Agent Transportation Team (which includes faculty member Kostas Goulias and staff members from Transportation & Parking Services and Housing & Residential Services), the Procurement Team, and the Energy Team in consultation with Transportation & Parking Services.

Endorsement

The policy has been vetted by Transportation & Parking Services, Facilities Management, Housing & Residential Services, Purchasing, and the Sustainability Change Agent Committee. They have recommended it to the Chancellor's Sustainability Committee which in turn recommends adoption of the policy.

History

The Energy Policy Act of 1992 (EPAct) was passed by Congress to reduce our nation's dependence on imported petroleum by requiring certain fleets to acquire alternative fuel vehicles (AFV), which are capable of operating on non-petroleum fuels. For the purpose of this rule, a model year equals September 1 through August 31. UCOP reports to EPAct annually as one entity.

EPA Light-Duty Vehicle Emission Standards

Standard	Description
ZEV	Zero emissions – Electric vehicle
AT-PZEV	Meet SULEV II – Hybrid, CNG, no evaporative emissions
PZEV	Meet SULEV II – Gasoline, no evaporative emissions
SULEV II	90% Less vehicle emissions than average
ULEV II	50% Less vehicle emissions than average

In 2000 UCSB had a mix of 7% advanced/alternative fueled vehicles and in 2008, had a mix of 26%. TPS has been purchasing AFV's since 1993 and has successfully increased the percentage of AFV's from 7% in 2000 to 27% in 2009.

UC SANTA BARBARA POLICY AND PROCEDURE

Sustainability Implementing Guidelines for the UC Policy & Guidelines on Sustainable Practices – Bicycle Paths and Parking Improvements

Contact: Administrative Services

Extended Interim Policy: June 1, 2010 through June 30, 2012

Pages: 3

BICYCLE PATHS AND PARKING IMPROVEMENTS

OVERVIEW

The bicycle system at UCSB is a primary element of the campus transportation network, serving over 15,000 students, staff, and faculty daily. The unique pattern of separate bicycle paths was developed and funded during the intensive capital construction era of the 1960's. That plan integrated a system of paths with grade separations and roundabouts that separated motorists and pedestrians from bicyclists. This policy is to ensure appropriate infrastructure improvements are budgeted for any new projects to allow for increased numbers of cyclists as we move away from a single occupancy vehicle-dependant society.

I. SCOPE

This policy applies to all UCSB managed facilities (owned, operated, or leased) including, but not limited to, new buildings, renovation of existing buildings, campus infrastructure projects, and campus expansion projects.

II. POLICY

- A. All new campus building projects, including building expansions and renovations that have bicycle parking areas associated with their use are required to improve or create a connecting bicycle route (with any needed intersections) linking the existing bicycle path to the new bicycle parking area.
- B. Pedestrian crossings of bicycle paths (with high volumes of pedestrians and/or bicycles) shall include a pedestrian refuge zone with tactile warning markers at walkways. Turning refuges and safe dismount zones connecting the path to a bicycle parking area will also be provided in areas with high bicycle flow rates.
- C. Projects are required to provide areas for bicycle racks and secured bicycle parking. Bicycle parking lots shall have high visibility with immediate proximity to major entry points and self orienting layouts with an adequate capacity. In the event that it is not feasible for them to be placed in clear view of the building entrance, signage is required to be posted directing cyclists to the parking area. The design shall be clearly defined by a stable surface (permeable and non-slip surface) which is easily maintained, durable, and includes landscaped borders to improve their appearance and reduce visual impacts. Whenever feasible, a tree canopy shall be included or retained to reduce the heat gain. All bicycle parking lots shall have adequate lighting.
- D. Sufficient bicycle parking shall be provided for 25% of the building population, defined as the faculty, staff, and student occupants, plus a minimum of 60% of the classroom capacity, as a part of any new construction or renovation project. Bicycle parking ratios

related to building capacity will be periodically refined based upon future commuter mode-split surveys and bicycle usage statistics. If an increase in demand for bicycle parking is identified during site programming, increased parking is required to be accommodated by the building project.

- E. Secured bicycle parking shall be installed for 5% of the building occupants or two bicycle lockers (each with two spaces), whichever is greater. Bicycle lockers should be placed close to the building entrances in the dedicated bicycle parking areas. The UCSB Transportation Alternatives Program (TAP) currently manages the bicycle locker rentals at UCSB.
- F. Bicycle parking lots are required to be in place and accessible at the time of building opening. Where a building project displaces an existing bicycle parking lot, the replacement lot shall be completed before the existing one is removed.
- G. New buildings shall include shower and changing facilities to support bicycle commuting by faculty, staff, and students.
- H. In the event that construction and construction traffic causes damage to existing bicycle paths, repair of such paths is required to be included in the budget of that building project. When infrastructure projects need to cross the bicycle path, it is preferable for the work to tunnel under the path rather than divide the bicycle path.

III. RESPONSIBILITIES

The senior associate vice chancellor for Design & Facilities and the associate vice chancellor for Administrative Services are responsible for collaboratively overseeing and coordinating the implementation of this policy.

IV. APPENDIX

Policy Development

Impetus

The primary goal of this initiative is to develop an effective bicycle system as the campus continues to increase in size and enrollment. Increasing gas prices and awareness of human impacts on global climate change are resulting in greater numbers of bicycle commuters. By making bicycling a more convenient mode of transportation, UCSB will continue to be a leader in supporting campus members' efforts towards sustainability and can also earn points toward LEED™ certification, a campus objective.

Benefits

The benefits will be to improve the existing bicycle infrastructure; to encourage more bicycle commuting; and reduce the campus greenhouse gas emissions. A side benefit to incorporating permeable surfaces in the bicycle parking lots is critical to the successful protection of downstream surface waters. Pervious pavement permits treatment of storm water and allows it to infiltrate into the soil, resulting in less storm water runoff and an increase in groundwater recharge.

Financial Assessment

The initial costs of bicycle-commuter support infrastructure requirements would add a small percentage of additional cost to a capital project. For example, a typical campus bicycle parking area would currently cost approximately \$300,000 to construct. This amount could be adjusted up or down as the project would be scaled to the number of building occupants and visitors. Bicycle commuting is an especially attractive commute mode for those traveling less than five miles. The campus commitment to providing proximal bicycle infrastructure will lead to appreciable campus reductions in greenhouse gas emissions and motor vehicle trips to and from the UCSB campus.

Process

The UCSB Sustainability Change Agent Transportation; Built Environment; and Labs, Shops & Studios Teams, in conjunction with Associated Students, crafted this policy and recommended it to the Chancellor's Campus Sustainability Committee.

Endorsement

The UCSB Sustainability Change Agent Transportation, Built Environment, and Labs, Shops & Studios Teams and Associated Student Bicycle Infrastructure Group (A.S. B.I.K.E.S.), recommended these Bicycle Path/Parking Improvement Policy provisions to the Chancellor's Sustainability Committee which in turn recommends adoption of the policy.

UC SANTA BARBARA POLICY AND PROCEDURE

Sustainability Implementing Guidelines for the UC Policy & Guidelines on Sustainable Practices - ENERGY STAR® Procurement

Contact: Administrative Services

Extended Interim Policy: June 1, 2010 through June 30, 2012

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ENERGY STAR® PROCUREMENT

OVERVIEW

- A. The [UC Policy & Guidelines On Sustainable Practices](#) establishes environmentally preferable purchasing practices, including the procurement of energy efficient products.
 - 1. UC will utilize its purchasing power and academic and research excellence to advance the development of sustainable technologies by pressing markets to continually improve resource productivity.
 - 2. For products and services that do not currently offer environmentally preferable alternatives, the UC will work with its existing and potential suppliers to develop options.
- B. In the Energy and Water section of the Policy Guidelines for Sustainable Practices it states:
 - 1. For product categories that have ENERGY STAR® rated products available, UC will focus its procurement efforts only on products with an ENERGY STAR® rating, consistent with the needs of UC researchers.
 - 2. For all electronic equipment, the supplier will deliver the items to the university with energy efficiency and conservation features enabled.
 - 3. UC will utilize its strategic purchasing program to negotiate better pricing for rated commodities.
 - 4. UC shall establish an ongoing partnership with the ENERGY STAR® Program administered by the EPA, and continually press the market for greater energy efficiency for the products and services regularly purchased by the university.

I. SCOPE

This policy applies to all UCSB purchases of energy-consuming equipment.

II. POLICY

- A. When selecting supplies and equipment that require energy use, all campus departments will purchase ENERGY STAR® products effective July 1, 2010 through June 30, 2012.
- B. All product categories that have ENERGY STAR® rated products available, which meet the performance standards required by UC faculty and researchers, will be given priority over non-ENERGY STAR® alternatives. For high-value purchases, weight will be given for energy efficiency, quantity of recycled content, and proximity of manufacture to UCSB (preference will

be given to sources within a 500 mile radius), low or no VOC content, manufacture waste stream data, and price point to make final selections.

- C. Special-purpose equipment/hardware that does not have an ENERGY STAR® rated option will be reviewed annually by the Sustainability Committee with the goal of encouraging vendors to seek ENERGY STAR® ratings.

III. RESPONSIBILITIES

The senior associate vice chancellor for Design & Facilities and the associate vice chancellor for Administrative Services are responsible for collaboratively overseeing and coordinating the implementation of this policy.

IV. APPENDIX

Policy Development

Impetus

ENERGY STAR® rated options have increased over the past several years, yet this aspect of equipment is not currently given a priority in selecting hardware. Having a formal UCSB policy in place will allow us to meet goals stated in UC Policies regarding energy and will also aid in providing *LEED*™ points to help us achieve our certification process.

Benefits

There will be cost-savings on energy efficient/resource efficient equipment and supplies that are negotiated at the system-wide level. In addition, the campus will realize savings in utility expenses.

Financial Assessment

It is anticipated that any additional up-front hardware costs will be more than recovered via energy savings during the life of the hardware. However, quantifying energy savings would require an energy audit of all current hardware on campus, capturing its collective energy use, and determining if there is an ENERGY STAR® alternative available. The additional cost for purchasing ENERGY STAR® hardware cannot currently be determined as we do not have systems in place to capture each piece purchased in a benchmarking period.

Process

The Sustainability Change Agent Procurement Team, which includes members from Purchasing, Central Stores, and a campus organized research unit, crafted this policy. It was then reviewed and edited by the Sustainability Change Agent Energy Team, The Built Environment Team, and the Lab, Shops & Studios Team. These teams include members from Associated Students, Design & Construction Services, Facilities Management, Housing & Residential Services, the *LEED*™ Manager for the campus, and two academic departments.

Endorsement

The UCSB Sustainability Change Agent Procurement, Energy, Built Environment, Lab, Shops & Studios Teams recommended this policy to the Chancellor's Sustainability Committee which in turn recommends adoption of the policy.

History

The Regents adopted the Environmentally Preferable Purchasing Practices in 2007. It now encompasses the following categories:

- Sustainable Economy
- Energy and Water
- Recycled Content
- Green Seal Certified Products
- Reduction in Hazardous Electronic Waste
- Environmentally Responsible Packaging
- Effective Recycling and Manufacturer Take-Backs
- Supply Chain Environmental Responsibility
- Evaluating Environmental Claims
- Training and Annual Plan and Report

The UCSB ENERGY STAR® Procurement Policy is the first in a series of procurement policies to help the campus adopt and implement these requirements.

UC SANTA BARBARA POLICY AND PROCEDURE

Sustainability Implementing Guidelines for the UC Policy & Guidelines on Sustainable Practices – Sustainable Furniture

Contact: Administrative Services

Extended Interim Policy: June 1, 2010 through June 30, 2012

Draft: May 25, 2010

Pages: 3

SUSTAINABLE FURNITURE

OVERVIEW

The [UC Policy & Guidelines On Sustainable Practices](#) establishes environmentally preferable purchasing practices, including the procurement of sustainable furniture.

- A. UC will use its purchasing power and academic and research excellence to advance the development of sustainable technologies by pressing markets to continually improve resource productivity.
- B. For products and services that do not currently offer environmentally preferable alternatives, UC will work with its existing and potential suppliers to develop options.
- C. “Cradle to cradle” is the preferred purchasing standard and is defined as accountable, responsible, and environmentally preferable supply chain management from material extraction through production, marketing, sale, use, disposal, collection and re-use, forming a web of closed loop cycles and processes.
- D. UC will incorporate the credit requirements set forth by LEED™ (Leadership in Energy and Environmental Design) into product and service sourcing and procurement.

I. SCOPE

This policy applies to all UCSB furniture purchases.

II. POLICY

- A. [UC strategic sourcing vendors](#) will continue to be used for all furniture purchases. Effective July 1, 2010, within these existing contracts, the “green” options will be selected for all furniture purchases. If no “green” option is available, departments, in collaboration with Purchasing, will work with the UC strategic sourcing vendors to locate viable options that meet the following criteria:
 - 1. Contain a high recycled content
 - 2. Features energy efficient lighting
 - 3. Has low or no-VOC adhesives or finishes
 - 4. Are made from renewable resources in a socially responsible manner
 - 5. Travels the least distance to campus, thereby decreasing environmental impact due to transport

- B. The establishment of contracts with future vendors will be contingent upon vendors providing a diverse selection of green options. When deciding on a new vendor, weight will be given to the following:
1. Quantity of recycled content
 2. Proximity of manufacture to UCSB (preference will be given to sources within a 500 mile radius)
 3. Low or no VOC content
 4. Ergonomics
 5. Manufacture waste stream
 6. Energy efficiency
 7. Price point to make final selection
- C. Re-use of furniture is also critical and helps us meet LEED™ criteria. This policy recognizes the existing practice that all furniture no longer required by a department is transferred to the Surplus division of Central Stores, to be re-sold to another point on campus for re-use. If departments do not wish to re-use the surplus furniture, it is made available for sale to the public. If items are not sold to the public, they are transferred to a certified recycler.
- D. Modular furniture systems must include energy efficient lighting.

III. RESPONSIBILITIES

The senior associate vice chancellor for Design & Facilities and the associate vice chancellor for Administrative Services are responsible for collaboratively overseeing and coordinating the implementation of this policy.

IV. APPENDIX

Policy Development

Impetus

Vendors have increased their “green” options for furniture yet UCSB has not made significant strides to use these options. Having a formal policy in place will allow us to meet the “Cradle to Cradle” goals stated in UCOP Policies and will allow for accumulation of LEED™ points to help us achieve our certification process.

Benefits

Benefits from the sustainable furniture policy include improvement in indoor air quality, reduced utility costs via energy efficient task lighting, and long-term health benefits through providing ergonomic work spaces.

Financial Assessment

Determining the cost, if any, of this policy is not possible as it is dependent upon the amount of furniture purchased and the make-up of the furniture (tables, chairs, etc.). The amount UCSB spent on furniture, labor, and design fees over the past five years is as follows:

- 2004-2005 \$2,160,186.00
- 2005-2006 \$1,202,638.00
- 2006-2007 \$2,361,354.00
- 2007-2008 \$1,242,195.00

- 2008-2009 \$ 716,987.00

In reviewing Steelcase, one of our main Strategic Sourcing vendors for furniture, we found that there is no extra cost associated with Cradle to Cradle products as it is part of Steelcase design and manufacturing criteria. Steelcase has been Cradle to Cradle certified (e.g. Silver rankings for the Answer Workstation, the Universal Storage, and the Leap chair; Gold rankings for the Amia chair and Think chair). In institutionalizing this policy, it is possible that the only additional charge from Steelcase would be approximately \$4.00 for PVC free power panels vs. standard panels. The overall price differential for all furniture is dependent upon the specific products departments select and the furniture vendor chosen.

Process

This policy was crafted by the Sustainability Change Agent Procurement Team, which includes members from Purchasing, Central Stores, an organized research unit, and an academic department. It was then reviewed and edited by the Sustainability Change Agent Waste Team and the Built Environment Team, which include members from: Associated Students, Design & Construction Services, Facilities Management, Housing & Residential Services, the LEED™ Manager for the campus, and a campus academic department.

Endorsement

The UCSB Sustainability Change Agent Procurement, Built Environment, and Waste Teams recommended the Sustainable Furniture Policy to the Chancellor's Sustainability Committee which in turn recommends adoption of the policy.

History

The Regents adopted the Environmentally Preferable Purchasing Practices in 2007. It now encompasses the following categories:

- Sustainable Economy
- Energy and Water
- Recycled Content
- Green Seal Certified Products
- Reduction in Hazardous Electronic Waste
- Environmentally Responsible Packaging
- Effective Recycling and Manufacturer Take-Backs
- Supply Chain Environmental Responsibility
- Evaluating Environmental Claims
- Training and Annual Plan and Report

The Sustainable Furniture Policy is one in a series of procurement policies to help the campus adopt and implement these requirements.

UC SANTA BARBARA POLICY AND PROCEDURE

Sustainability Implementing Guidelines for the UC Policy & Guidelines on Sustainable Practices – Green Building Design

Contact: Administrative Services

Extended Interim Policy: June 1, 2010 through June 30, 2012

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GREEN BUILDING DESIGN

OVERVIEW

The [University of California \(UC\) Green Building Design Policy](#) for new construction requires campuses to meet a “minimum standard equivalent to a LEED™ NC Silver rating.” LEED™ NC stands for US Green Building Council’s Leadership in Energy and Environmental Design (LEED™) for New Construction (NC). UC’s policy also directs campuses to “...strive to achieve a standard equivalent to a LEED™ NC Gold rating or higher, whenever possible...”

As the University of California, Santa Barbara is committed to continuing its leadership role in using sustainable practices in new building construction, this policy states UCSB’s new construction will meet or exceed the equivalent of a LEED™ NC Gold rating.

This policy also integrates LEED™ for Existing Building (EB), as UCSB is also leading the nation with its portfolio program under LEED™ EB. To sustain this leadership position, it is proposed UCSB meet the LEED™ EB Gold certification standards for building renovations and modifications.

I. SCOPE

This policy applies to all construction for The Regents of the University of California, on behalf of UCSB, including all construction on University of California Regent-owned property, campus land lease projects, and third party lease-backs. It is effective for all new buildings programmed after July 1, 2010, all existing buildings, and any renovations with a total project cost exceeding \$5 million.

II. POLICY

A. New Construction

1. All new construction that 1) will be located on property owned or leased by The Regents of the University of California, including third party lease-backs, and 2) is built for UCSB, will be designed and constructed to meet or exceed the equivalent to a LEED™ – NC “Gold” rating. This shall be effective for all new buildings programmed after July 1, 2010. LEED™ Silver will be the minimum requirement for high intensity laboratories, vivariums, and cleanrooms.
2. All new buildings approved after July 1, 2010 shall exceed California’s Building Energy Efficiency Standard (2005 version) – Title 24 – by at least 30%.

3. All new low-rise housing/residential construction projects (defined as one to three stories in height) must meet or exceed the equivalent to LEED™ for Homes Gold level certification standards.
4. All new residential construction projects greater than three stories must meet or exceed the equivalent to the LEED™ NC Gold rating.

B. Existing Buildings, Renovations, & Modifications

1. All existing buildings (EB) in the Pilot Portfolio Program shall meet or exceed the equivalent to LEED™ EB Gold certification standards.
2. All renovations with a project budget over \$5 million must meet or exceed the equivalent to LEED™ for Commercial Interiors (CI) Gold certification standards.

C. Training and Education

1. To prepare departments for the LEED™ EB certification process, pre-LEED™ training and education programs will be offered.
2. To foster student participation and training, a formal student sustainability internship program that supports sustainability program initiatives will be developed in collaboration with UCSB's LEED™ Program Manager.

III. RESPONSIBILITIES

The senior associate vice chancellor for Design & Facilities and the associate vice chancellor for Administrative Services are responsible for collaboratively overseeing and coordinating the implementation of this policy.

IV. APPENDIX

Policy Development

Impetus

Now that the UC system has caught up with our campus, the time has come for UCSB to strengthen its commitment to environmentally preferable building practices. As new LEED™ guidelines (LEED™ 3.0) have recently been introduced, it is important that UCSB take a lead in implementing these new standards.

Benefits

Certifying buildings through the LEED™ EB Portfolio Program will allow UCSB to realize substantial savings. A recent Princeton Review survey found that almost two-thirds (63 percent) of 10,300 respondents indicated that they would value having information about a college's commitment to the environment, and that it might impact their decision to apply to or attend the school. Almost a quarter (23 percent) said that such information would "strongly" or "very much" contribute to

decisions about which schools to apply to or attend¹. In strengthening its green buildings requirement, UCSB will bolster its reputation as a green campus and appeal to a wider range of students.

If UCSB mandates stronger green building requirements, then Design & Construction Services, Physical Facilities, and Budget & Planning will adapt to them. The highest standards are necessary to ensure that planners will mandate cost-effective and sustainable practices that ensure UCSB remains a leader in sustainability.

Financial Assessment

The most successful green building projects are those which establish clear and measurable sustainability goals from the earliest stages of project programming. Design professionals have become more familiar with LEED™ requirements and a robust industry is developing around the principles of sustainable building design, construction, and operations. Many project teams are now building high-performance green facilities with little or no added cost and with budgets well within the cost range of non-green buildings with similar programs². Tracking and documentation costs are often perceived as the most significant added costs of designing and building a LEED™ certified facility. At UCSB, this cost is mitigated somewhat by the experience gained through multiple LEED™ certifications at every level, as well as by the in-house capabilities of UCSB's sustainability coordinators and Built Environment Change Agent Team.

Although initial costs of such a mandate remain a concern, a recent study of 121 LEED™ certified buildings conducted by the New Buildings Institute concludes that Gold or Platinum certified new buildings cost 44% less to operate on an annual basis compared to standard buildings of similar size and function³. Given that green building features typically have a relatively brief payback period, a stronger commitment to green buildings will lead to appreciable campus savings.

Process

The Sustainability Change Agent Built Environment Team, which includes members from Design & Construction Services and the LEED™ Manager for the campus, drafted the proposed policy. The Chancellor's Sustainability Committee and Housing & Residential Services reviewed and edited the policy.

Endorsement

The UCSB Sustainability Teams (Change Agent Built Environment; Energy; Water; Labs, Shops & Studios; and Procurement), the Associated Students Environmental Affairs Board, Green Campus Program, and CalPIRG recommend these Green Building Policy provisions to the Chancellor's Campus Sustainability Committee which in turn recommends adoption of the policy.

¹ [How Do Campus Sustainability Initiatives Affect College Admissions](#)

² Peter Morris and Lisa Fay Matthiessen, *Cost of Green Revisited*, Langdon Davis LLP. July 2007.

³ [Cathy Turner and Mark Frankel, "The Energy Performance of LEED Buildings," New Buildings Institute, Internal Report, January 2008.](#)

History

- A. In spring 2004, Chancellor Yang approved a practice of achieving LEED™ Silver certification for all new construction programmed after July 1, 2004. In March 2008, the UC Regents approved a seven-point amendment to the UC system-wide Policy on Sustainable Practices. Included in this amendment was a LEED™ NC Silver mandate for all UC campuses, with a Gold target.
- B. Current LEED™ NC certified buildings on campus include Bren Hall (Platinum, 2002), the Marine Science Research Building (Certified, 2004), the Student Resources Building (Silver, 2008) and San Clemente Villages (Gold, 2009).
- C. Under the LEED™ EB rating system, Girvetz Hall was the first building in the UC system to be awarded LEED™ certification (Silver, 2005). The Recreational Center also achieved LEED™ EB certification (Silver, 2008). Through an agreement with the US Green Building Council, UCSB is in the process of certifying 25 existing buildings by 2012. UCSB is one of only three universities in the country taking part in the pilot phase of the LEED™ EB Portfolio Program.

The following is a list of the 25 LEED™ EB Portfolio Buildings:

- Bren Hall
- Buchanan Hall
- Campbell Hall
- Cheadle Hall
- Child Care Center
- Davidson Library
- Ellison Hall
- Embarcadero Hall
- Engineering 1 – Harold Frank Hall
- Engineering II
- Engineering II Addition
- Humanity and Social Sciences Building
- Inter Collegiate Athletics
- IV Theater
- Life Sciences Building
- Marine Science Research Building
- Material Research Laboratory
- Music
- Noble Hall
- North Hall
- Phelps Hall
- Physical Sciences Building North
- Recreational Center
- SAASB
- Storke Tower
- Student Resources Building

UC SANTA BARBARA POLICY AND PROCEDURE

Sustainability Implementing Guidelines for the UC Policy & Guidelines on Sustainable Practices - Laboratory Research and Technical Staff (LabRATS)

Contact: Administrative Services

Extended Interim Policy: June 1, 2010 through June 30, 2012

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LABORATORY RESEARCH AND TECHNICAL STAFF (LABRATS)

OVERVIEW

The University of California, Santa Barbara has taken a leadership role in both creating environmental solutions through research as well as modeling sustainable practices in the laboratory setting. UCSB is one of the first campuses in the nation to create a comprehensive assessment process for evaluating laboratory sustainability practices called Laboratory Research and Technical Staff (LabRATS).

I. SCOPE

This policy applies to all UCSB managed laboratories (spaces which are primarily used for physical, mechanical, biological, or chemical experiments).

II. POLICY

- A. Research laboratory managers and principal investigators are strongly encouraged to have their research laboratories assessed and certified through the LabRATS Assessment Program.
- B. The LEED™ Manager shall provide LabRATS with the opportunity to review blueprints for any buildings which contain laboratories as part of the current ecological charrette process during research laboratory design.
- C. All new and renovated laboratory buildings programmed after July 1, 2010 must be designed according to the principles of the LABS21 environmental performance criteria.

III. RESPONSIBILITIES

The senior associate vice chancellor for Design & Facilities and the associate vice chancellor for Administrative Services are responsible for collaboratively overseeing and coordinating the implementation of this policy.

IV. APPENDIX

Policy Development

Impetus

The current 773 laboratories at UCSB have a greater environmental impact in terms of energy, water, and waste than almost any other function at the university. If half of the private and public research laboratories in the US reduced their energy use by 30%, then the country could save enough electricity to power 2.2 million US households and save \$1.2 billion annually.⁴

⁴ <http://www.labs21century.gov/about/benefits.htm>

Benefits

Many critical human health and safety concerns have been successfully addressed through LabRATS programs and initiatives. One example is the 809 mercury thermometers and several mercury barometers that were removed from the campus. The effectiveness of this program was, in large part, due to proactive student-led outreach and educational initiatives. LabRATS is also a critical forum to promote professional collaboration and idea sharing between staff. Currently there are too few opportunities to support research staff in sharing best practices and lessons learned between lab groups. The LabRATS initiative allows researchers across the campus to connect and collaboratively address research-related sustainability issues.

Financial Assessment

- A. The LabRATS Program is an efficient and low-cost way to promote sustainability while building communication between researchers and promoting good lab management practices. Examples of savings to date include the program to train lab occupants to close fume hood sashes - the "Hoods Off" Program resulted in reduced energy costs for the campus of \$18,000 per year; the redesign of a still in one lab conserved 60,000 gallons of water per year; the reorganization and streamlining storage of samples, cleaning out unneeded material, and replacing older refrigerators and freezers, saved \$200 to \$300/ year per lab in energy costs, in addition to receiving up to \$100 in rebates from Southern California Edison. The innovations discovered by LabRATS often have campus-wide benefits such as the development of the web-based equipment exchange program. There is great potential to achieve further savings in this area, as LabRATS has already helped to reallocate over \$150,000 in equipment between labs on campus through no-cost transfers.
- B. By implementing the Labs21 Environmental Performance Criteria into laboratory designs, we will significantly reduce the energy use and operational cost of campus laboratory buildings. Some examples of the potential savings include:
1. Right sizing (LEED™ Energy and Atmosphere credit 9): Rightsizing means to choose the optimal size system for the function that the system needs to accomplish. The Lawrence Berkeley National Laboratory's MFL reduced first-time costs by 4%.
 2. One pass cooling (LEED™ Water Efficiency prerequisite: By avoiding one-pass cooling, EPA reduced water costs by ~50% at their Ann Arbor, MI lab.
 3. Indoor computational fluid dynamics (CFD) modeling (Indoor Environmental Quality credit 9.1) modeling (EQ9.1): CFD modeling can help optimize indoor airflow and ensure that proper safety concerns are addressed, creating a partnership between safety and sustainability goals. By reducing airflow from 10 air changes per hour to eight air changes per hour costs related to this change were paid back in less than a year.

Process

The Sustainability Change Agent Energy; Water; Built Environment; and Labs, Shops, & Studios Teams campus drafted the proposed policy.

Endorsement

The UCSB Sustainability Change Agent Labs, Shops & Studios Team (which includes members from Environmental Health & Safety), the Chairs and Co-Chairs of the 11 Sustainability Change

Agent Teams, Vice Chancellor for Research Michael Witherell, and MLPS Dean Pierre Wiltzius recommended this policy to the Chancellor's Campus Sustainability Committee which in turn recommends adoption of the policy.

History

The concept of LabRATS was formed in 2004 by Allen Doyle, a member of the first campus wide sustainability committee (the predecessor to the Chancellor's Sustainability Committee). The program started assessing research laboratories in 2006 and supports all researchers campus-wide to pursue sustainable solutions that are tailored to the unique specifications of their work. The greatest attribute of LabRATS is the ease of implementation and the communication it fosters. Once a lab has been engaged for an assessment, the LabRATS interns will identify and interview a key contact in the lab, take a tour, meter equipment, collect lighting data, and write up the results to be presented orally and as a written report. All recommendations are, and should remain, optional for the laboratory. LabRATS was awarded the 2008 "Go Beyond Organization Award from the International Institute for Sustainable Laboratories (I2SL) and was featured in *Science Magazine*.⁵

Laboratories that have been assessed as of May 2010 include:

- Bishop, Emily, EEMB
- Bren, Teaching Lab
- Cardinale, Brad, EEMB
- Chadwick, Oliver, Geography
- Clean Room, Engineering
- Coldren, Larry, ECE
- D'Antonio, Carla, Bren
- Dinh, Mary, Mech. Eng.
- Doherty, Patrick, Chem. Eng.
- Doyle, Joe, MRL
- English John, MBE, Materials
- Foltz, Kathy, MCDB
- Gaines, Steve, EEMB
- Harold Frank Hall Computer Labs (Gritt, Paul), Mech. Eng.
- Hofmann, Gretchen, EEMB
- Holbrook, Sally, EEMB
- Holden, Trish, Bren
- Jordan, Mary Ann, MCDB
- Keller, Arturo, Bren
- Kosik, Ken, MCDB
- Lea, David, Geology
- Lenihan, Hunter, Bren
- Levine, Jonathan, EEMB
- Little, Dan, Chemistry
- Melack, John, Bren

⁵ *Science*, 5 October 2007; 318: 39-41

- Nakamura, Shuji, and DenBaars, Steven, SSLEC, ECE
- Oakley, Todd, EEMB
- Paradis, Georges, MSI
- Perona, John, Chemistry
- Porter, Susanna, Geology
- Reed, Daniel, MSI
- Reese, Benjamin, Psychology
- Reich, Norbert, Chemistry
- Rothman, Joel, MCDB
- Schimel, Josh, EEMB
- Schmitt, Russell, EEMB
- Still, Chris, Geography
- Valentine, David, Geology
- Warner, Bob, EEMB
- Wilson, Leslie, MCDB

UC SANTA BARBARA POLICY AND PROCEDURE

Sustainability Implementing Guidelines for the UC Policy & Guidelines on Sustainable Practices – Sustainable Paper Use

Contact: Administrative Services

Extended Interim Policy: June 1, 2010 through June 30, 2012

Pages: 2

SUSTAINABLE PAPER USE

OVERVIEW

The [UC Policy & Guidelines On Sustainable Practices](#) establishes environmentally preferable purchasing practices, including the procurement of paper.

- A. UC will phase out the use of virgin paper and adopt a minimum standard of 30% Post Consumer Waste (PCW) recycled content paper for all office supplies.
- B. UC will use its strategic purchasing program to negotiate better pricing for commodities with recycled content as compared to commodities without recycled content.
- C. UC will continually work towards increasing the procurement of products with high recycled content.

I. SCOPE

This policy governs all UCSB paper purchases.

II. POLICY

- A. No virgin paper will be used by campus departments after their current supplies are depleted.
- B. Faculty are strongly encouraged to require class-work that is submitted to be printed on both sides, where the nature of the work does not demand single sided submittals.
- C. All campus departments are to use, at minimum, 30% post consumer waste and recycled content paper.
- D. All printers and copiers purchased by departments shall include duplex capability. The duplex feature shall be enabled when installed and shall remain enabled for the life of the hardware or as long as it remains at UCSB.
- E. In academic year 2010-2011, the Purchasing Department and UC Strategic Sourcing will identify a suite of ENERGY STAR® product options that will print duplex for both printers and copiers and that will work efficiently and hold their warranties in place while utilizing 50% and 100% post consumer waste recycled content paper.

III. RESPONSIBILITIES

The senior associate vice chancellor for Design & Facilities and the associate vice chancellor for Administrative Services are responsible for collaboratively overseeing and coordinating the implementation of this policy.

IV. APPENDIX

Policy Development

Impetus

Increases in recycled content paper use and duplex options will allow us to meet goals stated in UC policies (30% recycled content paper) and minimize waste sent to the landfill). Past history suggests this is a realizable goal. The Storehouse increased sales of recycled content paper to 48% in 2006; 71% in 2008; and 78% in 2009.

Benefits

Implementation of this policy will allow UCSB to reduce its impact on natural resources, reduce its waste stream, and save funds in the process.

Financial Assessment

For fiscal year 2009, the campus spent \$248,820 for white copy paper products, which is a mix of recycled papers and one non-recycled Xerox brand paper. If the campus had purchased only 30% recycled content paper, the cost would have been \$237,385 or a reduction of \$11,435 (4.6%). Note that this is for benchmarking only; some higher-levels of recycled content may still be purchased.

For Fiscal Year 2009, paper purchases from Central Stores from Storehouse stock were as follows:

- Total reams purchased of every type of copy paper: 64,247 reams
- Reams that are of some degree of recycled content: 52,810 reams or 82.2%
- Reams that are not made of recycled content: 11,437 reams or 17.8%
- Purchased directly from OfficeMax catalog and online order system:
- Total reams purchased of every type of copy paper: 11,375 reams
- Reams that are of some degree of recycled content: 6,032 reams or 53%
- Reams that are not made of recycled content: 5,343 reams or 47%
- Grand Totals including Storehouse stock and OfficeMax figures above:
- Total reams purchased of every type of copy paper: 75,622 reams
- Reams that are of some degree of recycled content: 58,842 reams or 78%
- Reams that are not made of recycled content: 16,780 reams or 22%

Process

This policy was crafted by the UCSB Sustainability Change Agent Procurement and Waste Teams which include members from Central Stores and Purchasing. It was then reviewed and edited by the Chairs and Co-Chairs of the 11 Sustainability Change Agent Teams.

Endorsement

The 11 Sustainability Change Agent Teams, which include members from Purchasing, Central Stores, academic departments, organized research units, Associated Students, Facilities Management, and Housing & Residential Services recommended the draft policy to the Chancellor's Sustainability Committee which in turn recommends adoption of the policy.

UC SANTA BARBARA POLICY AND PROCEDURE

Sustainability Implementing Guidelines for the UC Policy & Guidelines on Sustainable Practices – Renewable Energy

Contact: Administrative Services

Extended Interim Policy: June 1, 2010 through June 30, 2012

Pages: 4

RENEWABLE ENERGY

OVERVIEW

The campus is committed to a dual sustainability strategy; increasing its energy productivity by implementing a number of energy efficiency measures and increasing its investment in renewable energy sources both on and off campus. An important added benefit of this dual strategy is a significant reduction of campus greenhouse gas emissions.

I. SCOPE

This policy governs all UCSB managed spaces (owned, operated, or leased) that require electricity for their operation.

II. DEFINITION

Renewable energy is energy that is 1) generated from natural resources, such as sunlight, wind, rain, tides, geothermal heat, and 2) naturally replenished.

III. POLICY

- A. UCSB will explore and invest in renewable energy both on and off-site to obtain:
 - 25% of its power via renewable sources by 2014
 - 45% of its power via renewable sources by 2020
 - 75% of its power via renewable sources by 2030
 - 95% of its power via renewable sources by 2045
- B. For all new construction programming after July 1, 2010, the potential for the installation of photovoltaic panels shall be evaluated. If the project meets the criteria for installation, at minimum programming shall include the infrastructure for future installation of photovoltaics (including all new low-rise housing/residential construction projects). If the building is not a good candidate for the installation of photovoltaic panels, the Design Team shall evaluate the feasibility of installing a Green Roof System or wind energy.
- C. UCSB will use both solar and wind power, on and off campus, in the most effective way.
- D. UCSB will reduce greenhouse gas emissions:
 - To 2000 levels by 2014
 - To 1990 levels by 2020
 - Achieve net carbon neutrality by 2050

IV. RESPONSIBILITIES

The senior associate vice chancellor for Design & Facilities and the associate vice chancellor for Administrative Services are responsible for collaboratively overseeing and coordinating the implementation of this policy.

V. APPENDIX

Policy Development

Impetus

For Climate Protection Practices, UC has adopted an overall goal of reducing greenhouse gas (GHG) emissions while maintaining enrollment accessibility for every eligible student, enhancing research, promoting community service, and operating campus facilities more efficiently. UC will develop a long term strategy for voluntarily meeting the State of California's goal, pursuant to the California Global Warming Solutions Act of 2006. That goal is by 2020 to reduce GHG emissions to 1990 levels. In addition, consistent with the Clean Energy Standard sections 1, 2, and 3 in IV above, the University will pursue the goal of reducing GHG emissions to 2000 levels by 2014, and provide an action plan for becoming carbon neutral by 2050. In order for us to achieve these levels, we need to invest in renewable resources.

Benefits

Current renewable energy resources used at UCSB are photovoltaics, solar water heating, and biodiesel. UCSB consumes approximately 85 million kilowatt hours of electricity per year. Seventeen percent of our purchased electricity is currently from renewable sources and another one percent is generated from renewable energy on-campus. The benefit from implementing this policy will come from utility cost diversion and from reduction in our GHG emissions.

Financial Assessment

The requirement for utilities to increase their renewable sources could lead to a rate increase of up to 20-25% over the next seven years. By 2030, the increase could be as much as 50%, depending on the evolution of technological efficiencies. As the campus realizes reductions in energy costs through energy conservation and renewable projects, these savings can be leveraged to fund future projects. Plus, the potential exists for selling renewable energy credits the campus generates as this market develops over the next several years.

Process

This policy was crafted by the Sustainability Change Agent Energy Team; the Built Environment Team; and the Labs, Shops, & Studios Team. These teams include members from Facilities Management, Design & Construction Services, Housing & Residential Services, the campus LEED™ Manager, and two academic departments. In addition, the policy received input from Professors John Bowers (Electrical & Computer Engineering) and Mel Manalis (Environmental Studies). The policy was then forwarded to the Chancellor's Sustainability Committee.

Endorsement

The UCSB Sustainability Change Agent Teams (Energy; Built Environment; Lab, Shops & Studios), in conjunction with the Renewable Energy Sub-Committee of the Chancellor's Sustainability Committee, recommend the Renewable Energy Policy to the Chancellor's Sustainability Committee which in turn recommends adoption of the policy.

History

- A. In the UCOP Clean Energy Standard, the University of California is committed to the implementation of a system-wide portfolio approach to reduce consumption of non-renewable energy. The portfolio is to include a combination of energy efficiency projects, the incorporation of local renewable power measures for existing and new facilities, green power purchases from the electrical grid, and other energy measures with equivalent demonstrable effect on the environment and reduction in fossil fuel usage. The mix of measures to be adopted within the portfolio is to be determined by each campus. UCSB is currently in year one of a three year process of completing energy efficient retrofits and energy savings projects as part of the Strategic Energy Portfolio (SEP) program. The investment in this phase of the SEP totals approximately \$17m. There will be a second phase of SEP projects that UCSB will propose/implement after the current phase is complete in in 2011/2012.
- B. The portfolio approach provides valuable analytical information for improving energy efficiency, resulting in an overall improvement in UC's impact on the environment and reduced reliance on fossil fuels during the next decade of capital program growth. This program also helps each campus realize long-term financial savings in their utilities expenses. The Clean Energy Standard consists of six main points:
1. UC will strive to achieve a level of grid-provided electricity purchases from renewable sources that will be similar to the State's Renewable Portfolio Standard, which sets a goal of procuring 20% of its electricity needs from renewable sources by 2010.
 2. With a goal of providing up to 10 megawatts of local renewable power by 2020, UC will develop a strategic plan for siting renewable power projects in existing and new facilities. The plan will include demonstration projects for photovoltaic systems and other renewable energy systems, such as landfill gas fueled electricity generation or thermal energy production. The strategic plan will include criteria for evaluating the feasibility of a variety of projects, such as incorporating photovoltaic systems or Green Roof Systems in replacement roofing projects and in new buildings, as well as forecasting the accommodations necessary for eventual installation of either systems. UC will assess the progress of renewable energy technology improvements, both in terms of cost and technical efficiency. To achieve the renewable power goal, the UC will maximize the use of available subsidies, negotiate pricing reductions in the marketplace and develop funding sources for financing the costs of renewable energy measures.
 3. With a goal of reducing system-wide non-renewable energy consumption, the UC will develop a strategic plan for implementing energy efficiency projects for existing buildings and infrastructure to include operational changes and the integration of Best Management Practices (BMP's). UC will monitor industry progress in energy retrofits and implement technical improvements as they become available. UC will continue to strengthen its alliance with Southern California Edison in identifying renewable energy projects and the development of various funding sources and incentives. The initial goal for energy efficiency retrofit projects will be to reduce system-wide growth-adjusted energy consumption by 10% or more by 2014 from the year 2000 base consumption level. UC will strive to achieve even greater savings as additional potential is identified and funding becomes available.
 4. UC will continuously evaluate the feasibility of other energy-saving measures with equivalent demonstrable effect on the environment and reduction in fossil fuel usage. In particular, campuses will strive to implement the Sustainable Transportation Practices.

5. UC will develop a variety of funding sources and financing alternatives for energy efficiency, renewable energy, and clean energy projects that will enable campuses to be flexible in addressing their energy needs.
6. UC will pursue marketing of emissions credits as a means to bridge the cost feasibility gap for green power projects.