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Office of the President

TO MEMBERS OF THE COMMITTEE ON GROUNDS AND BUILDINGS:

INFORMATION ITEM

For Meeting of January 16, 2007

ANNUAL REPORT ON GREEN BUILDING, CLEAN ENERGY, AND SUSTAINABLE TRANSPORTATION POLICY

EXECUTIVE SUMMARY

This is the third annual report on steps to implement the Policy on Green Building Design, Clean Energy Standards, and Sustainable Transportation Practices (Policy). New construction projects are complying with the Policy, progress is being made toward all clean energy targets, and numerous steps have been taken to begin implementation of the transportation policy.

Highlights of calendar year 2006 achievements include:

- The Santa Barbara and Merced campuses were chosen as pilot participants in a program of the leading green building organizations in the country;
- Continuation of energy efficiency grant funding;
- Increased annual cost savings from energy efficiency projects;
- Purchasing 100 percent renewable energy at the Santa Cruz campus;
- Development of a comprehensive Campus Sustainability Plan at the Santa Barbara campus;
- Earning the Environmental Protection Agency's "Best Workplaces for Commuters" designation at seven campuses;
- Proposed expansion of the Policy in the areas of existing buildings, renovation projects, waste reduction and purchasing; and
- Continued recognition through awards and media coverage.

BACKGROUND

At the December 2002 meeting of the Committee on Grounds and Buildings, The Regents requested that the President undertake a feasibility study for the adoption of a Green Building Policy and Clean Energy Standard for all proposed and to-be-renovated buildings. At the July 2003 meeting, The Regents approved "as University policy for all capital projects, the principles of energy efficiency and sustainability in the planning, financing, design, construction, renewal, maintenance, operation, space management, facilities utilization, and decommissioning of facilities and infrastructure to the fullest extent possible, consistent with budgetary constraints and regulatory and programmatic requirements." In June 2004, the President formally issued the Presidential Policy on Green Building Design and Clean Energy Standards (Policy).

One of the Policy items (II.e.) addressed reducing transportation-related fossil fuel consumption. At the September 2005, meeting of the Committee on Grounds and Buildings, The Regents expanded this policy and authorized the President to adopt guidelines supporting sustainable transportation efforts throughout the University of California. The expanded Policy Guidelines were issued by President Dynes in January 2006.

This item will serve as the third Annual Report and will describe the progress achieved toward implementation of the Policy during the calendar year 2006. Implementation progress for each item in the Policy is summarized in Attachment I, and the following section provides a list of some of the major implementation achievements of the past year.

Highlights of 2006 Accomplishments

Green Building Projects

During fiscal year 2005-06, 9 of the 10 projects that received budget and design approval will be in compliance with the Policy. The only project that did not comply was a parking structure which still received 16 of the 26 points required for compliance with the Policy, even though parking structures have fewer opportunities to achieve green buildings points.

Since the passage of the Policy in 2004, as shown in Attachment II, Table 1, 27 projects ranging in cost from $5 million to over $100 million and of varied building types have complied with the Policy. Of these projects, 4 have a goal of Leadership in Energy and Environmental Design (LEED) Silver rating, 8 a goal of LEED Silver equivalent rating, and the remaining projects seek to achieve a LEED Certified equivalent rating. In addition, 5 major renovation projects will comply with the proposed green building guidelines for renovations described below.

Fifty-two projects with budgets approved prior to 2004-05 have incorporated green building features which meet many of the requirements of the Policy. Attachment II, Table 2 lists the University's new construction and renovation projects pre- and post-Policy and their targeted LEED or LEED-equivalent rating.

Beyond these individual projects, the Santa Barbara and Merced campuses are two of the thirteen organizations from across the country chosen by the United States Green Building Council (USGBC) to pilot its "Portfolio Program." Other pilot participants include Bank of America,

Starbucks, the United States Department of State, and the California Department of General Services. The program is designed to help companies, government agencies, and universities achieve LEED certification quickly on a large number of buildings. In return for committing to certify all buildings under the LEED system, the USGBC provides discounts on certification fees, free consulting services, and other special support. The Santa Barbara and Merced campuses received international visibility when they were announced, along with the other pilot members, to the audience of 13,000 people from around the country and world at the USGBC's annual conference in November.

Savings by Design Program

All projects implemented under the Policy are required to register with the Savings by Design Program. This energy efficiency program, offered by California's four investor-owned utility companies, provides design assistance, energy analysis, life-cycle costing, and financial incentives for individual building projects. Financial incentives can be used to offset increased costs associated with constructing more energy efficient buildings. To date, 162 University projects totaling 13.7 million square feet of building space have been registered with the program. By the time these projects are completed, the utility companies will pay the University over $5 million in incentive payments for these projects and allow the University to avoid an additional $5.9 million per year in energy costs.

Sustainable Guidelines for Renovation Projects

A systemwide Renovation Projects Working Group (see Attachment III for list of systemwide working groups under the UC Sustainability Steering Committee) has been formed and has drafted new green building guidelines for renovation projects. Green building principles would be applied to all renovation projects so that design and specifications of renovation components meet or exceed the green building measures campuses have committed to in their "green building baselines."

In addition, specific requirements would apply to two categories of projects: (1) whole building renovations will have to comply with the Policy's requirements for new construction; and (2) projects that involve a partial renovation of buildings with a cost of $5 million (indexed) or greater would need to comply with a UC equivalent to LEED for Commercial Interiors Certified rating. Where eligible, campuses would be encouraged to register all renovation projects with the Savings by Design program. These renovation guidelines would apply to all projects that receive budget approval after June 2007.

Energy Efficiency in New and Existing Buildings

Campuses have begun to report on progress in achieving energy efficiency compared to the Policy's baseline year of 1999-2000. For State maintained space, 2004-05 energy consumption was approximately 3 percent lower than 1999-2000 energy consumption on a unit energy use per square foot basis. Several parameters are being examined for their impact on energy consumption from year to year. The most significant parameter appears to be ratio of complex (utility-intensive) space compared to basic building space in a given year. During the reporting period this ratio increased, masking some of the improvements in energy efficiency that campuses are making. Taking into account the fact that complex space is more energy intensive than non-complex space, it appears that campuses have reduced their unit energy consumption by 5 percent, indicating that they are well on their way towards meeting the 10 percent reduction required by the Policy.

The original Higher Education Energy Efficiency Partnership between the University, the state's four investor-owned utilities, and the California State University (CSU) has been completed after funding over $6 million worth of energy retrofits and commissioning projects at all University of California campuses during the calendar years 2004 and 2005. The program met or exceeded all of its energy efficiency goals and is projected to result in an annual systemwide energy cost avoidance of over $2 million. Of particular note, the monitoring-based commissioning element of the program, which paid for metering and re-commissioning existing buildings, was such a success that the utilities are replicating it for their other customers, demonstrating the value of the University as an innovator in energy efficiency program design.

In addition to funding energy efficiency retrofits, the Partnership program also provided extensive training to University staff in project management, facilities, and other related campus units (see *Training* on page 8). Due to the success of the original program, a new three-year joint program with the CSU and the utilities started in 2006. Through November 2006, $4.9 million in project funding has been allocated to campuses out of the three-year program total of $15 million. These projects are anticipated to provide an additional $2.9 million in avoided annual utility costs to the campuses.

Following a very successful first round, funding for three more years of the "Green Campus" program has also been secured. The nonprofit organization, Alliance to Save Energy, is managing student energy conservation programs on the Berkeley, Santa Barbara, San Diego, Irvine, Santa Cruz and Merced campuses. The Green Campus program provides opportunities for students to get directly involved in saving energy on campuses through programs such as light bulb exchanges, residence hall energy competitions, and educating laboratory users to not waste energy by leaving fume hood sashes up when not in use.

Finally, the University and CSU have recently completed a $3 million program funded by the California Energy Commission to install thirteen pilot projects to demonstrate new energy efficiency technologies. Several technologies proved so successful that campuses are making plans to install them on multiple buildings. The California Energy Commission deemed this program a success and has agreed to fund a new round of pilot projects to demonstrate additional new energy efficient technologies.

Onsite Generation and Procurement of Renewable Energy

At the same time the University has reduced its energy consumption, it also has made progress in "greening" the electricity that it consumes. Earlier this year, legislation (SB 107) passed that advanced the date for the State to increase its renewable energy consumption to twenty percent of total electricity sales, from 2017 to 2010. The UC Sustainability Steering Committee reviewed this change in state law and recommended that the University also change its target date for procuring twenty percent renewable energy to 2010. The share of certified renewable energy in our direct access portfolio is now seventeen percent, putting us well on the way toward meeting the 2010 goal.

In April 2006, students at the Santa Cruz campus passed a fee referendum of $3 per student per quarter, providing funding to purchase renewable energy certificates. This will help the campus

exceed the accelerated Policy goals by equating to 100 percent of the campus' electricity consumption for four years starting in November 2006.

In October 2006, contract documents were completed by the Office of the President that would allow the campuses to contract with outside parties to install, own, and operate solar photovoltaic systems on University property and then sell the system's electricity output to the campus at rates comparable to what the campus would otherwise pay for electricity. The San Francisco campus first developed this approach for a project located on the new parking structure at its Mission Bay campus. Their innovative approach to the parking structure was featured as the cover story in *Parking* magazine's October 2006 issue. The Irvine campus is now piloting the newly developed UC solar power purchase agreement, which it hopes will provide up to one megawatt of solar power to the campus in 2007. If the Irvine campus pilot is successful, replicating this program on other campuses will accelerate progress toward meeting the ten megawatts of campus-based renewable energy generation required by the Policy.

Climate Change

In July 2006, the UC Sustainability Steering Committee convened a working group to review and recommend updates to the University's Clean Energy Policy sections on greenhouse gas emissions (GHG). In order to conform to new State legislation on climate change, as well as to make the policy consistent with the remainder of the clean energy policy, the working group recommended that the University set the following goals:

- For each campus to join the California Climate Action Registry and begin to track actual (GHG) emissions.
- To reduce GHG emissions to the year 2000 levels by 2014.
- To reduce GHG emissions to the year 1990 levels by 2020.
- Finally, by December 2008, to develop an action plan for becoming climate neutral as soon as possible.

By November 2006, seven UC campuses have joined the California Climate Action Registry and have begun to track and register their GHG emissions. Plans for joining in the near future are under way at the other three campuses.

Sustainable Transportation

A systemwide Sustainable Transportation Working Group has been formed to coordinate implementation of the Policy and Policy Guidelines on Sustainable Transportation Practices incorporated into the overall Policy in January 2006. Membership in the Working Group includes students, faculty, and staff involved in transportation, fleet services, and planning. The Working Group's priorities are to: (1) focus on those sustainable transportation measures that reduce the most pollution; (2) identify or create funding to support sustainable transportation programs; (3) make fleets more sustainable; (4) expand bicycle and pedestrian infrastructure on campus; and (5) advocate for regional transit that serves campuses.

The Working Group reaffirmed the importance of providing more housing on or near campuses to reduce trips and travel distances as specified in the Policy. Meetings on the specific topics of car sharing and biodiesel have been held to discuss issues related to implementation. Sherry Lewis,

from UCLA Fleet Services, is representing the University on the State's Department of General Services Advisory Committee on Fuel Efficient Vehicle Purchasing. A sustainable transportation student intern has been hired, and the University hosted a meeting with students to discuss their ongoing role in Policy implementation at the UC/CSU Sustainability Conference in June.

The conference also provided a venue for awarding best practices in sustainable transportation practices. An award for University owned transportation went to the San Diego campus' neighborhood electric vehicle fleet and an award for transportation demand management went to the Santa Cruz campus for its bike shuttle program. An entire track of sessions at the conference addressed sustainable transportation topics.

Campuses have implemented numerous sustainability measures for their fleet operations prior to adoption of the Policy. Most campuses are using electric vehicles for a variety of on-campus trips. Several campuses have invested in compressed natural gas as an alternative fuel, while others are using biodiesel blends or other alternative fuels. The Los Angeles campus has launched a utilization study of fleet and departmentally owned vehicles to determine the right size of the fleet. Policy Guideline IIIa requires annual reporting to The Regents of systemwide fuel consumption data. Consumption figures for calendar year 2005 are:

- Unleaded gasoline: 1,784,628 gallons
- Diesel gasoline: 445,544 gallons (includes biodiesel)
- Compressed Natural Gas: 108,339 therms

These figures will serve as the baseline year and allow the University to track progress as it seeks to reduce fuel consumption in future years, as required by the Policy.

Seven of the University's campuses have earned the Environmental Protection Agency's "Best Workplaces for Commuters" designation, based on their transportation demand management programs.

The University is making significant initial progress toward the Policy's important goals, but campuses remain challenged by limited funding.

Staff, Faculty, and Student Participation in Sustainability Activities

To provide coordinated sustainability efforts that include all campus stakeholders, all campuses have established or are in the process of establishing chancellor- or vice chancellor-level Advisory Committees on Sustainability. These committees meet regularly and provide for organized involvement of students, faculty, and staff from all departments in implementing the Policy as well as in pursuing other campus sustainability initiatives.

Among many initiatives undertaken by these committees in 2006, the most impressive may be the development of a Campus Sustainability Plan at the Santa Barbara campus, one of the first such efforts at any university in the country. A consultant led 75 staff, faculty, and students (referred to as "Sustainability Change Agents") through the "Natural Step" process used by corporations such as Nike and Starbucks as a framework for their sustainability initiatives. The 75 Sustainability Change Agents participated in four full-day workshops and were divided into nine groups:

Academics and Research, Built Environment, Energy, Water, Food, Land Use/Landscape, Procurement, Transportation, and Waste. These workshops provided participants with a solid understanding of the principles of sustainability and how to implement those principles on a university campus. The workshops have resulted in each change agent group developing short-, medium-, and long-term sustainability goals that have been collected into a plan that was approved by the Campus Planning Committee in December 2006.

Other highlights of collaboration between students, staff and faculty include:

- Funding student internships at the Berkeley campus for sustainability projects such as assisting physical plant in performing outreach to individual buildings to help them reduce their energy consumption.
- Passing a student fee referendum at the Santa Cruz campus to purchase 100 percent renewable energy for that campus.
- Passing a student fee referendum at the Santa Barbara campus to create "The Green Initiative Fund" to fund clean energy projects that the campus otherwise would not be able to fund.
- Ongoing work of a Food Systems Working Group at the Santa Cruz campus with student, staff, and faculty involvement that is transforming the dining services on campus to educate students about the food they eat and to increase the sustainability of that food by purchasing as much as possible from local, organic, and socially responsible suppliers. The Santa Cruz campus purchased 18 percent of its produce from a local cooperative meeting those requirements, far exceeding the campus goal of 5 percent.

Partnerships with Government and Nonprofit Organizations
Partnerships with government agencies and nonprofit organizations continue to leverage additional resources to assist the University in implementing the Policy. A grant from the Alameda County Waste Management Authority enabled the Office of the President (OP) to pilot use of the LEED for Existing Buildings (LEED-EB) rating system for its building at 1111 Franklin Street in Oakland. In December 2006, OP submitted an application for LEED-EB certification for the Franklin building. Piloting the rating system within OP contributed significantly to the development of the new draft policy guidelines for sustainable operations and maintenance practices across the University.

The City of San Francisco's Environment Department provided free use of a valuable web-based green building database program they developed, and OP is seeking funding to adapt the program to its information technology security needs. The University continues to work with the USGBC to assist UC campuses going through the LEED certification process and to comment on green building standards currently under development. The University also actively participates in the California State Green Building Task Force, the California State Energy Policy Advisory Committee, and California State Environmentally Preferable Purchasing Task Force.

Training
The University continues to promote excellence through training, both through individual targeted training workshops and a large annual conference. The fifth annual UC/CSU Sustainability Conference hosted by UC Santa Barbara in June 2006 attracted over 600 attendees – including 100 students – from the UC and CSU systems and California Community Colleges, which at the time

made it the world's largest higher education sustainability conference ever held. The conference program highlighted and shared best practices in energy efficiency, green buildings, sustainable transportation, and other sustainability topics on UC and CSU campuses. The second annual Higher Education Energy Efficiency Partnership Best Practice Awards were presented to exemplary UC and CSU energy efficient projects at a special ceremony during the conference. This year's awards program added categories for waste reduction, purchasing, and student programs.

The UC Project Management Institute also continued its ambitious series of trainings sponsored by the Higher Education Energy Efficiency Partnership grant mentioned above. In 2006, some 282 individual staff members attended more than 20 training offerings, with most attending multiple trainings. The training program provided energy efficiency and green building courses for the operation and maintenance of existing buildings as well as for the design, construction, and commissioning of new buildings.

Procurement

The University made positive strides integrating sustainability into its "Strategic Sourcing" initiative in 2006. For example, in addition to demonstrating their company-wide commitment to sustainable practices in manufacturing, product offerings, transportation, delivery, and end-of-life disposal, potential suppliers to the University are now required to offer sustainable products in every category for which they exist. After contract inception, suppliers are reporting sales figures and new sustainable product innovations at each quarterly business review. New and existing contracts for the following commodities all incorporate sustainable products and practices:

Office Supplies	Janitorial Supplies
Digital Copiers	Hazardous Waste
Printers/Faxes	Scientific Supplies
Expedited Mail	Gases
Carpet (Spring 2007)	Furniture (Spring 2007)
Computing Equipment	Organic Food
Travel	Food/Disposables
Telecom	Maintenance, Repair and Operations

The UC Sustainability Steering Committee created a Sustainable Purchasing Working Group during 2006 to draft updated policy guideline language in the area of environmentally preferable purchasing. The proposed policy language includes very specific procurement requirements in the areas of sustainable economies, energy and water, recycled content, Green Seal certified products, hazardous electronic waste reduction, packaging, manufacturer take-backs, training and reporting.

One recent success story is a University effort coordinated with the Lawrence Berkeley National Laboratory to work closely with Fisher Scientific, the University's strategically sourced supplier, to initiate an ENERGY STAR© certification for laboratory equipment. While the Environmental Protection Agency's development of such a certification usually takes up to three years, the University's advocacy has resulted in significant progress, and it appears that ENERGY STAR certification of this category of equipment may be completed in as little as one year. This effort

exemplifies how the University can leverage its buying power to make positive changes in the marketplace that support the University's Policy and its sustainability values.

The University continues to work closely with students in the California Student Sustainability Coalition and Toxic Free UC, as well as with the California State Environmentally Preferable Purchasing Task Force, to explore new environmentally preferable product offerings, new suppliers focused on sustainability, and best practices to foster continuous improvement in all areas of promoting environmental purchasing and operating practices.

External Recognition for UC

The Regents and the University continue to receive extensive recognition for green building, clean energy, and other sustainability efforts. Newspaper and magazine articles on the growing green building and campus sustainability movements have chronicled the University's leadership in these areas, especially at the new Merced campus. An article on green buildings and sustainability on the Merced campus was included in one of Senator Dianne Feinstein's daily briefings. Nationally, the *New York Times*, *Business Week* magazine, and greenbiz.com have all profiled the University's leadership in sustainability. In addition, the University has received recognition in many other publications. Correspondingly, University staff continue to be invited to give keynote speeches and other presentations on the Policy at other major public universities and at regional and national conferences.

(Attachments: One Two Three)