

THE CALIFORNIA STATE UNIVERSITY
OFFICE OF THE CHANCELLOR



August 2, 2006

BAKERSFIELD

CHANNEL ISLANDS

MEMORANDUM

CHICO

To: CSU Presidents

DOMINGUEZ HILLS

From: Charles B. Reed
Chancellor

EAST BAY

Subject: Executive Order No. 987 – Policy Statement on Energy Conservation, Sustainable Building Practices, and Physical Plant Management for the California State University

FRESNO

FULLERTON

The attached Executive Order No. 987 delegates to each president, or his/her designee, the implementation of the California State University Board of Trustees' energy conservation, sustainable building practices, and physical plant management policy. This executive order reaffirms the need to conserve energy in order to achieve the goal originally set in 2001 and reevaluated in 2005. Our new goal is to reduce consumption by 15% by the end of FY 2009/10, as compared to 2003/04. The trustee policy is consistent with Governor Arnold Schwarzenegger's Executive Order S-12-04, which requests the CSU's active participation in statewide energy conservation and reduced electrical demand.

HUMBOLDT

LONG BEACH

LOS ANGELES

MARITIME ACADEMY

This executive order retains general operational provisions and sustainable building practices while adding the CSU Sustainable Measurement Checklist process. It encourages campuses to continue to adopt an integrated design approach that includes sustainable materials and practices. It also requires new goals for energy conservation, and the purchase and generation of renewable power.

MONTEREY BAY

NORTHRIDGE

In accordance with the policy of the California State University, the campus president has the responsibility for implementing executive orders, where applicable, and for maintaining the campus repository and index for all executive orders.

POMONA

SACRAMENTO

Should you have any questions regarding this executive order, please contact Ms. Elvyra F. San Juan, Assistant Vice Chancellor, Capital Planning, Design and Construction, at (562) 951-4090.

SAN BERNARDINO

SAN DIEGO

CBR:lf

SAN FRANCISCO

Attachment

SAN JOSÉ

cc: Vice Presidents, Administration
Executive Deans
Directors, Physical Plant
Energy Managers
Executive Vice Chancellor and Chief Academic Officer
Executive Vice Chancellor and Chief Financial Officer
Chancellor's Office Department Heads

SAN LUIS OBISPO

SAN MARCOS

SONOMA

STANISLAUS

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Executive Order No: 987
Effective Date: August 2, 2006
Supersedes: Executive Order No. 917
Title: Policy Statement on Energy Conservation, Sustainable Building Practices, and Physical Plant Management for the California State University

This executive order is issued pursuant to Section II of the Standing Orders of the Board of Trustees of the California State University.

I. Delegation of Authority

Authority is hereby delegated to each president, or his/her designee, to implement the following Board of Trustees' Energy Conservation, Sustainable Building Practices, and Physical Plant Management goal and policy, as adopted by the Board during its September 20-21, 2005 meeting subject to the conditions stated in this executive order. To the extent that some of the provisions contained herein involve coordination with the Chancellor's Office staff, each president shall take whatever steps are necessary to coordinate and provide input to the department of Capital Planning, Design and Construction, Office of the Chancellor, to assist in formulation and implementation of this policy.

II. Energy Conservation Goal

Each campus will continue to reduce energy consumption as established previously by Executive Order 917. The five-year goal of reducing energy consumption by 15% will be evaluated at the end of fiscal year 09/10 and reported to the trustees in July 2011. The baseline for this goal is fiscal year 03/04, and is measured by BTU/GSF (British Thermal Unit per gross square foot) for both state and nonstate supported areas of the campuses. The report will also assess the campuses' ability to achieve additional energy conservation.

III. Energy Independence Goal

The CSU shall develop a strategic plan for energy procurement and production to reduce energy capacity requirements from the electricity grid, and to promote energy independence using available economically feasible technology (solar, wind, biomass) and for on-site generation. The CSU shall endeavor to increase its self-generated energy capacity from 26 to 50 megawatts (MW) by 2014. (05-Adopt)

1. Campuses will consider installing and operating clean and ultra-clean cogeneration plants and proven renewable energy generation technologies in order to reduce greenhouse gas emissions, and to improve campus energy efficiency, utility reliability, and service diversity to increase production from 24 to 40 megawatts (MW).
2. Campuses will pursue cost effective renewable generation in order to increase production from 2 to 10 megawatts (MW).
3. As the cost effectiveness of a project may change based on the (1) development of new technologies, (2) market forces on energy prices, (3) availability of subsidies for projects, and (4) changes in state regulations, campuses may consider the most economically feasible and cost effective self-generation method to support the systemwide 50 MW goal.

IV. Renewable Energy Procurement

The CSU will endeavor to meet or exceed the State of California and California Public Utilities Commission Renewable Portfolio Standard (RPS) that sets a goal of procuring 20% of its electricity needs from renewable sources by 2010 subject to the constraints of program needs and standard budget parameters. (05-Adopt)

V. Policy on Energy Conservation, Sustainable Building Practices and Physical Plant Management.

1. Energy Conservation

1. All CSU buildings and facilities, regardless of the source of funding for their operation, will be operated in the most energy efficient manner without endangering public health and safety and without diminishing the quality of education. (78-Adopt; 88-Revise; 01-No Change; 04-No Change)
2. All CSU campuses will continue to identify energy efficiency improvement measures to the greatest extent possible, undertake all necessary steps to seek

funding for their implementation and, upon securing availability of funds, expeditiously implement the measures. (78-Adopt; 88-Revise; 01-No Change; 04-No Change)

3. The CSU will promote the use of cost effective renewable non-depleting energy sources wherever possible, both in new construction projects and in existing buildings and facilities. The campuses will consider the implementation of load shifting technologies such as thermal energy storage. (78-Adopt; 88-Revise; 01-Revise; 04-Revise)
4. The CSU will take the necessary steps to provide adequate, reliable, and cost effective utilities infrastructure at all campuses for meeting the needs of present and planned buildings and facilities. (78-Adopt; 88-Revise; 01-No Change; 04-Revise)
5. The CSU will actively seek all available sources of funding for implementing energy efficiency improvement and utilities infrastructure renewal projects. Funding sources will include federal and state budget appropriations, federal, state and private sector grant opportunities, and other unique public/private sector financing arrangements, which have been made available through legislative actions in California and the United States Congress. In the event these funding sources are unable to meet the requirements for an approved energy program, priorities within the existing support appropriations will be examined to determine if funds could be made available for project development purposes. (78-; 88-Adopt; 01-No Change; 04-No Change)
6. The CSU will cooperate with federal, state, and local governments and other appropriate organizations in accomplishing energy conservation and utilities management objectives throughout the state; and inform students, faculty, staff and the general public of the need for and methods of energy conservation and utilities management. (78-Adopt; 88-Revise; 01-No Change, 04-No Change)
7. Each CSU campus will designate an energy/utilities manager with the responsibility and the authority for carrying out energy conservation and utilities management programs. The Chancellor's Office will have the responsibility to coordinate the individual campus programs into a systemwide program. (78-Adopt; 88-Revise; 01-No Change; 04-No Change)
8. The CSU will monitor energy usage monthly on all campuses and the Chancellor's Office, and will prepare a systemwide annual report on energy utilization. The Chancellor's Office will maintain a systemwide energy database in which monthly campus data will be compiled to produce systemwide energy reporting. Campuses will provide the Chancellor's Office the necessary energy and utility data for the systemwide database in a timely manner. (78-; 88- Adopt; 01-Revise; 04-No Change)

9. Each CSU campus will develop and maintain a campuswide integrated strategic energy resource plan, which will include tactical recommendations in the areas of new construction, deferred maintenance, facility renewal, energy projects, water conservation, solid waste management, and a structured energy management plan. This plan will drive the overall energy program at each campus. (78-Adopt; 88-Revise; 01-Revise; 04-Revise)
10. Each campus energy/utilities manager shall solicit and evaluate feedback from faculty, staff, and students to monitor the effects of energy conservation efforts on instructional programs and the environment. Training on new energy management concepts and programs will be provided as necessary. (78-; 88-Adopt; 01- Revise; 04- No Change)
11. A component of each campus's emergency plan shall address action required to respond to short-term electrical outages, large-scale grid failures, natural gas curtailments, and other utility shortages or failures. (78-; 88-; 01-Adopt; 04-Revise)
12. All major capital projects starting design beginning in the FY 2006-2007 shall meet the following requirements: new construction projects shall at a minimum outperform the 2005 Title 24 Standards (California Energy Code) by at least 15% and all major renovations projects shall at a minimum outperform the current Title 24 Standard by at least 10%. These efforts will help to reduce the BTU/square foot consumption of the projects. (05-Adopt)

2. Sustainable Building Practices

1. All future CSU new construction, remodeling, renovation, and repair projects will be designed with consideration of optimum energy utilization, low life cycle operating costs, and compliance with all applicable energy codes (enhanced Title 24 energy codes) and regulations. In instances where a project's current funding does not include energy or sustainable design features consistent with low life cycle costing, augmentations may be sought, when warranted. In the areas of specialized construction that are not regulated through the current energy codes, such as historical buildings, museums, and auditoriums, the CSU will ensure that these facilities are designed to consider energy efficiency. Energy efficient and sustainable design features in the project plans and specifications will be considered in balance with the academic program needs of the project within the available project budget. (78-Adopt; 88-Revise; 01-Revise; 04-Revise)
2. Capital planning for state and nonstate facilities and infrastructure shall consider features of a sustainable and durable design to achieve a low life cycle cost. Principles and best practices established by leading industry standards or professional organizations shall be implemented to the greatest extent possible. The CSU is supportive of campuses pursuing third-party accreditation for campus

facilities, however current Department of Finance (DOF) policy does not permit the use of state capital funds for such administrative costs. Therefore, campuses considering outside accreditation shall identify alternative means of funding for associated costs. (04-Adopt)

3. Sustainable design for capital projects is a process of balancing long-term institutional needs for academic and related programs with environmental concerns. In the context of designing to provide for university and academic needs, the following attributes will be considered "sustainable:" (04-Adopt)
 - a. Siting and design considerations that optimize local geographic features to improve sustainability of the project, such as proximity to public transportation and maximizing use of vistas, microclimate, and prevailing winds;
 - b. Durable systems and finishes with long life cycles that minimize maintenance and replacement;
 - c. Optimization of layouts and designing spaces that can be reconfigured with the expectation that the facility will be renovated and re-used (versus demolished);
 - d. Systems designed for optimization of energy, water, and other natural resources;
 - e. Optimization of indoor environmental quality for occupants;
 - f. Utilization of environmentally preferable products and processes, such as recycled-content materials and recyclable materials;
 - g. Procedures that monitor, trend, and report operational performance as compared to the optimal design and operating parameters.
4. In order to implement the sustainable building goal in a cost effective manner, the process will: identify economic and environmental performance measures; determine cost savings; use extended life cycle costing; and adopt an integrated systems approach. Such an approach treats the entire building as one system and recognizes that individual building features, such as lighting, windows, heating and cooling systems, or control systems are not stand-alone systems. (04-Adopt)
5. The CSU encourages the use of materials and systems with reduced environmental impacts. The design team (architect/engineer) shall recommend building materials and methods with life cycles (manufacture, installation, maintenance, repair, and replacement) of reduced environmental impacts. Considerations shall include energy efficiency, energy required in the manufacturing process, life cycle duration, and maintenance and replacement costs. (04-Adopt)

6. Capital Planning, Design & Construction of the CSU Office of the Chancellor shall develop a CSU Sustainability Measurement System and self-verification standard. The system shall be based on LEED™ principles with consideration to the physical diversity and microclimates within the CSU. The Sustainability Measurement System shall support the energy efficiency goals and guidelines of this policy. (05-Adopt)
7. The CSU shall design and build all new buildings and major renovations beginning in the FY 2006-2007 to meet or exceed the minimum requirements of the CSU Sustainability Measurement System, which shall be equivalent to LEED™ “Certified.” Each campus shall strive to achieve a higher standard in the CSU Sustainability Measurement System equivalent to LEED™ “Silver” within project budget constraints.

Each campus may pursue external certification through the LEED™ process. Campuses that elect to pursue LEED™ certification shall seek nonstate funding sources to support that effort. (05-Adopt)

8. The CSU shall incorporate appropriate training programs for CSU facilities personnel with the aim of promoting and maintaining the goals of this policy. (05-Adopt)

3. Physical Plant Management

1. Purchased energy resources on CSU facilities will not be used to heat above 68°F or cool below 78°F. Domestic hot water temperatures will not be set above 115°F. These limits will not apply in areas where other temperature settings are required by law or by specialized needs of equipment or scientific experimentation. (78-; 88-Adopt; 01-Revise; 04-No Change)
2. Each campus shall operate and maintain a computerized energy management system that will provide centralized reporting and control of the campus energy related activities. (78-Adopt; 88-Revise; 01-Revise; 04-No Change)
3. Campus energy/utilities managers will make the necessary arrangements to achieve optimum efficiency in the use of natural gas, electricity, or any other purchased energy resources to meet the heating, cooling, and lighting needs of the buildings and/or facilities. Except for areas requiring special operating conditions, such as electronic data processing facilities, or other scientifically critical areas, where rigid temperature controls are required, building and/or facility temperatures will be allowed to fluctuate between the limits stated above. Simultaneous heating and cooling operations to maintain a specific temperature in work areas will not be allowed unless special operating conditions dictate such a scheme to be implemented. (78-; 88-Adopt; 01-No Change; 04-No Change)

4. Scheduling of building and/or facility usage will be optimized consistent with the approved academic and non-academic programs to reduce the number of buildings operating at partial or low occupancy. To the extent possible, academic and non-academic programs will be consolidated in a manner to achieve the highest building utilization. Further, the scheduling of buildings will be implemented in a manner to promote central plant and individual building air conditioning system shutdown to the greatest extent possible during the weekend and other holiday periods. Campus energy/utilities managers will make all attempts to change or update building operating schedules to match the changes in the academic programs on a continuing basis. (78-; 88-Adopt; 01-No Change; 04-No Change)
5. All air conditioning equipment, including supply and return air fans, are to be shut off on weekends, holidays, and for varying periods each night, except where it would adversely affect instruction, electronic data processing installations, or other scientifically-critical or 24-hour operations. (78-; 88-Adopt; 01-No Change; 04-No Change)
6. Campuses will participate in state sponsored demand reduction programs, where practical, during periods of CAISO (*California Independent System Operator*) Stage Alerts. Reductions in non-critical loads will be made in an effort to aid in the state electrical grid integrity. (78-; 88-; 01-Adopt; 04-No Change)
7. Outdoor air ventilation will be set at 10 cfm/person or such other higher limits as prescribed by state law or regulations. This restriction does not apply to situations where 100% outside air is called for by properly installed and tuned economizer cycles. (78-; 88-Adopt; 01-Revise; 04-Revise)
8. All windows in buildings and/or facilities that are air-conditioned will be kept closed and as secure as possible to prevent loss of conditioned air, unless facilities are equipped with an air-conditioning and heating interlock that shuts off mechanical cooling or heating when windows are opened. (78-; 88-Adopt; 01-No Change; 04-No Change; 05-Revise)
9. Portable electric heaters and fans are not to be used in CSU facilities unless specifically required by occupants because of medical conditions, failure of the building heating, ventilating or air conditioning systems, or when building heating, ventilating or air conditioning systems cannot be adjusted to achieve minimum comfort levels within the provisions established under Item No. 1. Campus energy/utilities managers will grant such exemptions on a case-by-case basis. Use of refrigerators for non-instructional purposes should be consistent with good energy management practices. Each campus will prepare its own guidelines to discourage proliferation of personal refrigerators. (78-; 88-Adopt; 01-No Change; 04-Revise)

10. All lighting, except what is required for security purposes, will be turned off when buildings and facilities are unoccupied, such as at the end of the workday. Custodial personnel will turn lights back on only for the time actually required for custodial work. (78-; 88-Adopt; 01-No Change; 04-No Change)
11. All CSU campuses will, to the greatest extent possible, change custodial hours from evening/night shifts to day shifts to reduce custodial energy usage. Any revisions to the custodial shift schedule will be made in consultation with the energy/utilities manager. Building ventilation and lighting systems will not be operated any more or longer than what is required under health and safety codes during the low load custodial occupancy periods. (78-; 88-Adopt; 01-No Change; 04-No Change)
12. Indoor lighting will be reduced in number and/or wattage, wherever possible, to provide for the minimum but adequate lighting levels consistent with the needs of instructional programs and state-mandated standards for the efficient and effective use of the space. Existing incandescent lamps for general-purpose lighting will be phased out and future incandescent lamps will not be allowed unless exempted for very limited and specialized tasks by the campus energy/utilities managers. New lighting systems will be in the form of the latest energy saving technology. (78-; 88-Adopt; 01-Revise; 04-No Change)
13. Outside lighting on building exteriors and campus grounds will be maintained at levels necessary to provide security and safety to promote confidence within the campus community. Good energy management practices shall be observed within this guideline. (78-; 88-Adopt; 01-No Change; 04-No Change)
14. Purely decorative lighting on CSU campuses beyond reasonable display lighting, inside or outside, will not be added. Existing decorative lighting beyond reasonable display lighting will be eliminated on a continuing basis. In general, decorative lighting will not be used for commercial or holiday purposes unless specifically exempted by the campus president. (78-; 88-Adopt; 01-No Change; 04-No Change)
15. All natural gas fired boilers on the campuses will be tuned at least twice annually and brought up to maximum efficiency unless automated combustion controls are installed. In the case of automatic controls, verification of combustion efficiency shall be conducted routinely or at least monthly for central plant and quarterly for decentralized boilers. A permanent record of these readings will be maintained on each campus. (78-; 88-Adopt; 01-No Change; 04-Revise)
16. All CSU campuses will maintain their energy plant and utilities infrastructure improvements in good working order and will undertake preventive maintenance

schedules to maintain the highest possible system efficiencies and, hence, the lowest operating costs. (78-; 88-Adopt; 01-No Change; 04-No Change)

17. When replacing energy consuming and/or utilities infrastructure equipment, the most cost effective models will be selected. Life cycle costing procedures, instead of first capital cost only, will be utilized as the basis for all future equipment selection. All possible efforts will be made to secure additional funding if required to effect lowest life cycle procurement. (78-; 88-Adopt; 01-No Change; 04-No Change)
18. All CSU campuses will implement a utilities charge back system to recover costs of utilities provided to self-supporting and external organizations. (78-; 88-Adopt; 01-No Change; 04-No Change)
19. All CSU campuses will take every necessary step to conserve water resources, including such steps as installing controls to optimize irrigation water, reducing water usage in restrooms and showers, and promoting the use of reclaimed water. The use of decorative fountains should be minimized. In the event of a declaration of drought, the CSU will cooperate with the state, city, and county governments to the greatest extent possible to effect additional water conservation. (78-; 88-Adopt; 01-No Change; 04-No Change)
20. The CSU will encourage continued energy conservation and lowest utilities operating costs on its campuses by instituting incentive plans designed to recognize and reward meritorious achievements by campus staff, faculty, and students beyond normal expectation. These incentive plans will be designed in such a fashion that they are adaptable to changing budget constraints from year to year. (78-Adopt; 88-Revise; 01-No Change; 04-Revise)



Charles B. Reed
Chancellor

Dated: August 2, 2006