

# California Community Colleges Board of Governors Energy and Sustainability Policy

This Energy and Sustainability Policy of the Board of Governors of the California Community Colleges provides goals and guidance for districts to achieve energy conservation, sustainable building, and physical plant management best practices necessary to reduce energy consumption. This policy is consistent with Governor Arnold Schwarzenegger's Executive Order S-12-04, which requests the community colleges active participation in statewide energy conservation and reduced electrical demand.

Furthermore, Government Code section 15814.30 states that "All new public buildings for which construction begins after January 1, 1993, shall be models of energy efficiency and shall be designed, constructed, and equipped with all energy efficiency measures, materials and devices that are feasible and cost-effective". Section 15814.31 requires that "All public buildings, when renovated or remodeled, shall be retrofitted to meet... Title 24 of the California Code of Regulations", including Part 6; Energy Code.

**I. Energy Efficiency and Conservation Goals** In order for our system to begin to achieve these goals, each campus needs to reduce energy consumption from its 2001-02 baseline consumption by 15% by the end of fiscal year 2011-12. Consumption will be measured in BTU/GSF (British thermal unit per gross square foot) for both state and nonstate supported areas of the campuses. Also, all major capital projects starting design in the FY 2010-11 need at a minimum to outperform by at least 15% the current Title 24 Standards (California Energy Code) for new construction, and all major renovation projects should at a minimum outperform the current Title 24 Standards by at least 10%. In addition, each district shall develop a policy that takes advantage of all incentives available for these projects.

To help achieve these goals, the Community College System Office will provide an incentive of **2% for new construction** and **3% for modernization projects**. This incentive shall be applied to the construction cost component of the project budget. Because energy consumption will be measured in usage per square foot, as energy efficient space is added energy savings should continue to improve.

In order to be eligible for this funding, a district needs to provide the following two items to the System Office:

1. A simple, one-page worksheet (enclosed) submitted only once a year updating the energy savings by campus for the most recently completed fiscal year. The first worksheet will cover from 2001-02 to present. Each year's subsequent submittal will be for the most recently completed fiscal year only. This worksheet shall be submitted at the same time each year as the Scheduled Maintenance Five Year Plan. This information will then be compiled into a statewide report for the Governor.

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2. An energy modeling document for each project submitted for state funding. This document is normally prepared by your architect and submitted to DSA as part of that plan review process.

## **II. Energy Independence Goal**

The California Community Colleges (CCCs) are encouraged to 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 colleges are also encouraged to purchase natural gas through non-utility consortiums or co-operative arrangements.

The CCCs should endeavor to develop their self-generated energy capacity. To help accomplish this goal, each District should:

1. Consider installing and operating 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.
2. Pursue cost effective renewable generation in order to increase on-site production.
3. Participate in all utility offered Demand Response programs. Pursue all possible incentives offered by these programs.

In lieu of self-generation, colleges should consider procuring 20% of their electricity needs from renewable sources by 2010, and 40% by 2014 as noted above, subject to the constraints of program needs and standard budget parameters, to endeavor to meet or exceed the State of California and California Public Utilities Commission Renewable Portfolio Standard.

## **III. Policy on Energy Conservation, Sustainable Building and Physical Plant Management Best Practices.**

### ***1. Energy Conservation***

All CCC buildings and facilities, regardless of the source of funding for their operation, should be operated in the most energy efficient manner without endangering public health and safety and without diminishing the quality of education.

All CCCs should 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.

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The CCCs should 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 colleges should consider the implementation of load shifting technologies such as thermal energy storage and natural gas fired, on site generation with heat recovery capabilities.

The CCCs should actively seek all available sources of funding for implementing energy efficiency improvement and utilities infrastructure renewal projects. Funding sources should 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 should be examined to determine if funds could be made available for project development purposes.

The CCCs should 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. Each CCC should also establish appropriate guidelines, rules, and standards to assure effective energy management practices.

Each CCC should designate an energy/utilities manager with the responsibility and the authority for carrying out energy conservation and utilities management programs. The System Office will have the responsibility to coordinate the individual college programs into a systemwide program.

Each campus energy/utilities manager should solicit and evaluate feedback from faculty, staff, and students and community organizations to monitor the effects of energy conservation efforts on instructional programs and the environment. Training on new energy management concepts and programs should be a regular part of staff development for physical plant staff at each college.

Each CCC should develop a board policy for energy and sustainability, and should have an implementation plan for each. Several districts have included their polices within their Five Year Construction Plans.

## **2. *Sustainable Building Practices***

All future CCC new construction, remodeling, renovation, and repair projects should be designed with consideration of optimum energy utilization, low life cycle operating costs, and compliance with all applicable 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 CCCs should ensure that these facilities are designed to maximize energy

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efficiency. Energy efficient and sustainable design features in the project plans and specifications need to be considered in balance with the academic program needs of the project within the available project budget.

In an effort to reduce the creation of greenhouse gases, capital planning for CCC facilities and infrastructure should 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 should be implemented to the greatest extent possible. All CCC new construction and major remodeling projects should be designed to achieve at least a United States Green Building Council Leadership in Energy and Environmental Design (LEED) “Certified” or equivalent rating.

The following elements should be considered in the design of all buildings for the CCCs:

- 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;
- Durable systems and finishes with long life cycles that minimize maintenance and replacement;
- Optimization of layouts and designing spaces that can be reconfigured with the expectation that the facility should be renovated and re-used (versus demolished)
- Systems designed for optimization of energy, water, and other natural resources;
- Optimization of indoor environmental quality for occupants;
- Utilization of environmentally preferable products and processes, such as recycled-content materials and recyclable materials;
- Procedures that monitor, trend, and report operational performance as compared to the optimal design and operating parameters;
- Space should be provided in each building to support an active program for recycling and reuse of materials.

In order to implement the sustainable building goal in a cost effective manner, the process should: 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.

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The CCCs are encouraged to use materials and systems with reduced environmental impacts. The design team (architect/engineer) should recommend building materials and methods with life cycles (manufacture, installation, maintenance, repair, and replacement) of reduced environmental impacts. Considerations should also include energy efficiency, energy required in the manufacturing process, life cycle duration, and maintenance and replacement costs.

The CCC System Office shall encourage appropriate training programs for CCC facilities personnel with the aim of promoting and maintaining the goals of this policy.

#### *3. Physical Plant Management*

In order to conserve purchased energy resources, districts are encouraged to heat their facilities at or below 68°F and cool facilities at or above 78°F. Domestic hot water temperatures should not be set above 115°F. These limits should not apply in areas where other temperature settings are required by law or by specialized needs of equipment or scientific experimentation.

Each campus shall seek to operate and maintain a computerized energy management system that should provide centralized reporting and control of the campus energy related activities. Campus energy/utilities managers should 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 should be allowed to fluctuate between the limits stated above. Simultaneous heating and cooling operations to maintain a specific temperature in work areas should not be allowed unless special operating conditions dictate such a scheme to be implemented.

Scheduling of building and/or facility usage should 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 should be consolidated in a manner to achieve the highest building utilization. Further, the scheduling of buildings should 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 should make all attempts to change or update building operating schedules to match the changes in the academic programs on a continuing basis.

All air conditioning equipment, including supply and return air fans, should 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.

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All CCC campuses should 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.

The CCCs should 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 should be designed in such a fashion that they are adaptable to changing budget constraints from year to year.