

2006-2008 Energy Efficiency Programs

California Community Colleges/IOU Energy Efficiency Partnership

PGE2018 California Community Colleges/IOU Energy Efficiency Partnership (CCC/IOU)

1. Projected Partnership Budget

\$11,814,880

2. Projected Net Partnership Impacts

MWh:	30,705
MW (Summer Peak):	6.712
Therms:	988,985

3. Partnership Cost-effectiveness

TRC:	2.43
PAC:	2.61

4. Partnership Descriptors

Market Sector: Nonresidential: Commercial (Schools, Colleges, and Universities)

Partnership Classification: Statewide

Partnership Status: New

5. Partnership Statement

CCC/IOU Energy Efficiency Partnership is a partnership between the California Community Colleges (CCC) and the four investor-owned utilities (IOUs). CCC are two-year public educational institutions with 109 colleges statewide organized into 72 districts. It serves more than 2.5 million students and represents the largest system of higher education in the world. PG&E and the other IOUs (Southern California Edison, Southern California Gas Company and San Diego Gas & Electric) will collaborate with the CCC to share energy efficiency best practices and to implement energy efficiency projects for immediate and long-term energy savings and peak demand reduction.

This partnership brings a unique opportunity to deliver cost-effective energy savings while leveraging the CCC's \$13 billion in local bond funding. Through the partnership the campuses will be able to build an infrastructure that facilitates project identification and implementation. It will also allow PG&E and the utilities to focus on the varying needs of the Community Colleges and opportunities to tailor an initiative that will be able to capture even greater energy savings while developing long-term relationship.

The CCC/IOU Partnership will include the implementation of retrofits, new construction, and retro-commissioning (RCx)/monitoring-based commissioning (MBCx) projects. The Partnership will also focus its efforts on training and education, which will leverage existing vocational education programs, while training faculty and staff on best practices, on energy-efficient technology implementation, and energy management.

2006-2008 Energy Efficiency Programs California Community Colleges/IOU Energy Efficiency Partnership

6. Partnership Rationale

The IOUs and the CCC have embraced the opportunity for a 2006-2008 statewide Partnership. CCCC is committed to delivering cost-effective persistent energy savings and is looking to the IOUs for guidance and assistance to ensure success.

The CCC is a large, complex organization with a broad set of goals, stakeholders, processes and constituencies. They are diverse from a geographic, climate, and operational needs standpoint. Unlike the University of California and California State University systems, each district or single campus is autonomous from any single governing body. They are each managed by an elected board of trustees. The Community College System Chancellor's Office provides funding and services but does not have underlying authority over each of the individual districts or campuses.

With the size and statewide diversity of the colleges, there is a considerable opportunity to save energy and operating costs on a scale that is meaningful to the colleges, IOUs and the State of California. This partnership is designed to meet these challenges. Many of the campuses have not had the funding to implement energy projects throughout their campuses. Those that have are due for updated technology. Their stock of existing buildings can benefit from the commissioning process.

There is also a significant opportunity with new construction. Over 70 percent of the 109 campuses within the 72 districts have passed local bonds. These districts have over \$13 billion of funding, statewide, and are focusing on the expansion and modernization of the campuses.

With opportunity come challenges. The colleges have a time and budget constraint that they must work under when delivering their bond funding projects. Some of the energy efficiency opportunities are being value engineered out of the projects because of cost constraints and tight project implementation schedules. This challenge for the colleges presents a great opportunity for the Partnership to capture lost opportunities. The CCC/IOU Energy Efficiency Partnership can provide incremental funding to ensure that those measures are not left out of these projects and that the colleges can leverage this Partnership to create and maintain a sustainable and long-term energy focus.

7. Partnership Implementation Strategy

The new CCC/IOU Partnership will incorporate lessons learned from previous statewide partnerships in the areas of improved delivery efficiency and communication among the stakeholders. The timing for of this Partnership is critical; the CCC is embarking on a major construction cycle and needs technical and financial input from the IOUs to ensure that the resulting new and existing buildings are as energy efficient as possible. There needs to be a major focus on energy-efficient design for modernization and new construction projects. Furthermore, a solid foundation is required to educate community colleges on sustainability and persistent energy opportunities through optimizing performance of existing buildings.

2006-2008 Energy Efficiency Programs

California Community Colleges/IOU Energy Efficiency Partnership

Implementation strategies for 2006-2008 will include energy efficiency retrofit projects at campuses, new construction projects, retro-commissioning (RCx) or monitoring based commissioning (MBCx) projects, and a training and education element. The elements will operate on a statewide, integrated basis providing immediate energy savings and setting the foundation for a long-term program that focuses on the sustainability and best practices.

The implementation strategies for the 2006-2008 CCC/IOU Energy Efficiency Partnership are listed below in detail.

- 7.1** Energy Efficiency Retrofits: The Retrofit projects in this component will be implemented by the CCC. The Partnership has identified potential projects through the project solicitation process, as noted above, and has a distribution of project types that provide valuable planning information to determine incentive levels, incentive payment structure, forecasting of budget for the each element and to establish the implementation strategies and schedules for the proposed projects. The energy efficient measures identified on the project list include both electric and gas measures such as lighting retrofits (T5 technology, light emitting diode (LED) applications, newer 28 watt T-8's), building wide lighting controls, boiler replacements, installation of water heaters, tankless water heaters, HVAC and chiller upgrades/replacements and central plant projects.
- 7.2** New Construction Assistance: New construction projects will focus on sustainability and long-term energy savings opportunities. PG&E will work closely with the CCC to identify new construction projects and use the Partnership to leverage those opportunities and energy savings potential. The Partnership will utilize the growing bond dollars totaling over \$12 billion within the community college system to implement those measures that show persistent energy savings and to capture the lost opportunities in those projects that have been value-engineered due to budget and time constraints.
- 7.3** Retro-Commissioning (RCx) / Monitoring-Based Commissioning (MBCx): This element is a unique approach to obtaining savings that combines the expertise of the community colleges statewide campus facility management staff, utility and subcontractor expertise, and the installation of energy monitoring and metering equipment at the building system level. Through these resources, a systematic, comprehensive RCx/MBCx element will be implemented in existing campus buildings. It will provide a cost-effective approach to achieving optimized operating facilities, save both electric and gas energy, reduce operating cost and improve occupancy comfort.
- 7.4** Energy Efficiency Education and Best Practices Development and Training: The partners will provide education and training for students and facility personnel. The education and training element will develop workshops, in collaboration with other partnerships, to target campus facility and maintenance staff. It will be a venue for those individuals responsible for managing energy use on campuses to share information and experiences related to facility operations, to gain knowledge of

2006-2008 Energy Efficiency Programs

California Community Colleges/IOU Energy Efficiency Partnership

industry best practices in energy efficiency management, and successful energy efficiency project implementation, among other issues.

The other strategy for the education and training element is the utilization of an energy efficiency vocational curriculum that will be offered to campus students to equip them with energy efficiency knowledge which they can apply in the industry. Lastly, this Partnership will seek opportunities to improve project coordination and communication to strengthen the relationships amongst the partners.

The primary vehicles for training and dissemination of information will be a series of training sessions and workshops (covering new construction, building operator training, retrofits, retro-commissioning, and monitoring based commissioning) to be held in Northern and Southern California. The partners will collaborate with the IOUs technology centers to assist with course offerings, curriculum and content development and will utilize the existing material and best-practices documentation developed by other partnerships during the 2004-2005 cycle.

The management structure of the Partnership will be customized to allow for more flexibility in overall administration, in project assessment and implementation and in outreach to campuses within the Community College system. The Partnership will be managed by a management team which consists of representatives from each partner (CCC and the IOUs). Each element will be coordinated through specific project teams for retrofit, new construction, RCx, and education/training. These project teams may involve additional partnership staff such as engineers and tech specialists as well as other CCC staff.

The CCC/IOU Partnership has developed and implemented a project solicitation process to generate a pool of potential projects for the retrofit, new construction, and RCx/MBCx elements. The project submission process has two phases. Phase 1 includes an initial project request (Form 1) sent out to all 109 college campuses to request potential project information. There was a high level of acceptance for the process. An overwhelming response rate of 75 percent was achieved from the campuses statewide. Further outreach efforts are being considered to reach the remaining 25 percent of the non-responsive campuses. The Form 1 exercise provided an initial list of over 900 potential projects with over 40 million kWh in potential savings and over \$60 million in projects.

In the second project phase, a more detailed project request form (Form 2) was distributed to all the participating campuses. Form 2 will provide the Partnership team with enough information to effectively review and perform due diligence on each project application. The process will ensure project compliance with requirements. The implementation plans and project schedules will be finalized upon completion of the Form 2 evaluations and approval of projects. The process of finalizing the inventory and installation of measures will be well documented and passed on for use in the retrofit, new construction, and RCx/MBCx elements.

2006-2008 Energy Efficiency Programs California Community Colleges/IOU Energy Efficiency Partnership

8. Partnership Outcomes and Objectives

The CCC/IOU Energy Efficiency Partnership will work towards the achievement of immediate, long-term energy and peak demand savings and the establishment of a permanent framework for sustainable, long-term energy management programs for partner entities.

The CCC/IOU Energy Efficiency Partnership will leverage the ongoing expansion and modernization of community college campuses. Each campus has a master plan in place or in development. With the Partnership, the IOUs can help develop an emphasis on energy efficiency to incorporate into the overall campus plan. It will capitalize on the vast resources and expertise of the community college system and the California IOUs to deliver successful and cost-effective services to meet the objectives set forth by the California Public Utilities Commission (Commission), the goals of the State Energy Action Plan to optimize energy conservation and resource efficiency, and the Governor's Green Building Action Plan goals by assisting campuses with the retrofit and retro-commissioning of existing buildings.

Desired outcomes include:

- An energy efficiency partnership that is designed to efficiently accomplish immediate and long-term energy and peak demand savings goals;
- Improved communication and collaboration among the CCC and four IOUs to delivery energy efficiency offerings;
- Effective dissemination of information to increase awareness and acceptance of energy efficiency practices;
- Improved efficiencies in delivery, sharing of best practices and educational tools, and leveraging of local knowledge;
- Creation of an infrastructure for the permanent adoption of processes at the campus system level; and
- A paradigm shift at the campus energy manager level for energy planning and decision making.

PG&E's objectives for CCC/IOU Energy Efficiency Partnership include:

- Extending the reach and effectiveness of PG&E's integrated demand-side management (IDSM) programs and garnering greater energy savings than would otherwise be possible through traditional methods;
- Positioning the partnership to be strategic partners that help PG&E reach additional customers and impact their energy decisions,
- Leveraging existing organizational infrastructure to effectively implement initiatives and projects;

2006-2008 Energy Efficiency Programs

California Community Colleges/IOU Energy Efficiency Partnership

- Engaging the Partnership to deliver energy savings and demand reduction both through Partnership activities and as channels for PG&E's other energy efficiency and demand reduction programs;
- Leveraging the bond funding available at 70 percent of the CCC campuses to expand the energy savings potential

CCC objectives for CCC/IOU Energy Efficiency Partnership include:

- Achieving immediate, cost-effective energy and demand savings;
- Implementing energy-efficient components in new buildings that are currently being valued engineered out of the project due to funding constraints;
- Developing a successful energy efficiency Partnership that will build momentum and create Partnerships that extend beyond the 2006-2008 program years;
- Improving energy-efficient operations and maintenance practices; and
- Training of CCC energy managers to identify and implement energy-efficient opportunities while leveraging vocational education programs that expand to all Community Colleges.

9. Partnership Customer Description

The community college campuses and administrative offices in the PG&E's service area.

10. Partnership Customer Interface

The 2006-2008 CCC/IOU Energy Efficiency Partnership will utilize a streamlined program management and team interface structure similar to the one established for the UC/CSU/IOU Partnership. Staff from each utility, the Community College Chancellor's Office, the Districts and campuses along with the Foundation for California Community Colleges will be responsible for the successful execution of the Partnership. The Partnership will use a consultant to provide overall program management and provide partner interface and communications functions. The consultant will also coordinate activities with the Foundation for California Community Colleges to perform outreach and disseminate information. The 2006-2008 Partnership will benefit from the significant opportunity within the community colleges and the communication among the many partner organizations.

11. Energy Measures and Partnership Activities

11.1. Measures Information

The cost-effectiveness calculator contains end-use summary measures for the calculated incentive component.

2006-2008 Energy Efficiency Programs

California Community Colleges/IOU Energy Efficiency Partnership

11.2. Energy Savings and Demand Reduction Level Data

As noted in section 11.1 above, measure-specific energy savings and demand reduction level data are contained in the cost-effectiveness calculators. The end-use specific values provided in the Large Commercial program calculator are based upon historic values from statewide programs such as Savings By Design. The achieved energy savings and demand reduction levels will be calculated for each project employing the calculated savings approach.

11.3. Non-energy Activities (Audits, Trainings)

CCC/IOU Energy Efficiency Partnership will include non-energy activities such as making presentations; attending conferences, meetings, and outreach events; distributing marketing materials; on-site meetings to develop and deliver workshops, and vocational energy efficiency training classes.

The training and education component of the Partnership involves training campus design staff, project managers, energy managers and others in using best energy practices in the construction, retrofit, and retro-commissioning/monitoring based commissioning of campus buildings and central plant infrastructures.

The Partnership will utilize a statewide approach to training and building operation so that the best energy practices approach can be incorporated into the campuses' standard operating procedures and will ensure long-term energy efficiency savings. The training and education component will work hand-in-hand with the three elements—energy efficiency retrofits, new construction and retro-commissioning/monitoring based commissioning.

11.4. Subcontractor Activities

Subcontractors will be used to assist in administration and management and in each of the three elements.

A consultant will assist in day-to-day coordination and communication among the partners (the colleges and four utilities) as follows:

- Provide staffing to the management team and element-specific implementation teams;
- Assist in identifying project tasks, establishing a schedule of deliverables and responsibilities, helping to ensure successful implementation, and obtaining CCC input and decision-making on key elements;
- Assist in the three elements, especially in facilitating coordination and communications with and among campuses, providing analytical assistance to the IOUs and to the CCC System Office, as needed;

2006-2008 Energy Efficiency Programs

California Community Colleges/IOU Energy Efficiency Partnership

- Provide assistance with successful retention of subcontractors through competitive procurement processes and helping to track and ensure successful implementation based on specific deliverables required by the Commission;
- Track element and project activities and milestones via an interactive Web site;
- Assist the IOUs and CCC in Commission reporting and regulatory communications; and
- For the training and education component, the consultant may assist in development of workshop agendas and materials, identification of experts, facilitation of workshops and training sessions, and preparation of the minutes.

The campuses will hire energy efficiency retrofit subcontractors to install energy-efficient measures for the retrofit component and consultants to assist with RCx/MBCx projects. Campuses may also hire engineering consultants to assist with project development, as needed.

As seen in other 2004-2005 partnerships, the campus facilities management staff will play a major role in this component with the assistance of subcontractors, particularly in campuses in their commissioning efforts. The team will conduct a competitive process to develop a pool of qualified commissioning agents/trainers that will be available to the campuses.

11.5. Quality Assurance and Evaluation Activities (including EM&V)

The CCC/IOU Energy Efficiency Partnership team will establish and oversee quality assurance measures for the partnerships including oversight and verification of subcontractor activities. These procedures and the associated reporting will be developed in more detail as part of implementation.

Sampling and inspection activities will be developed at a later date as part of the detailed evaluation, measurement and verification (EM&V) plan for the CCC/IOU Energy Efficiency Partnership. The Commission-mandated EM&V effort will be completed by independent subcontractors managed by the Commission. If requested, the Partnership will fully cooperate with the EM&V contractor to support the EM&V activities.

11.5.1. *Expected Number/Percent of Inspections (planned percent of projects)*

The partnership will perform due diligence and quality assurance for any energy efficiency offerings including a representative percentage of pre-/post-installation confirmation inspections for 25 percent of the small hardware projects, and pre-/post-inspections on 100 percent of the large or specialized hardware projects (installation of energy-efficient equipment, facility retrofits, and building commissioning and new construction).

2006-2008 Energy Efficiency Programs California Community Colleges/IOU Energy Efficiency Partnership

11.6. Marketing Activities

The CCC/IOU Energy Efficiency Partnership has a built-in marketing and communication network among the California Community Colleges System Office, the Foundation for California Community Colleges, the CC districts and the campus energy managers. The Foundation for California Community Colleges will play a key role, as the CCC liaison, in the marketing and outreach efforts to the college campuses. Due to support from the top of the organization, this buy-in opens up communication channels to the whole system.

Partnerships are very visible and provide opportunities to leverage existing CC conferences and meetings to raise awareness among campuses about the Partnership. As an example, in November of 2005, the partnership team used the Community College Facilities Conference (CCFC) to promote the 2006-2008 partnership offerings. Partnership information and the project submission process were presented to CCC facilities directors and managers from campuses throughout the state. With this type of venue, marketing efforts will be minimal and very cost-effective.