



New Initiatives for Sustainability Planning from the CCC/IOU Partnership and the Board of Governors



Community College Facility Coalition Conference
November 14, 2012
Sacramento, CA

Board of Governor's Energy and Sustainability Initiatives

- Energy and Sustainability Awards
 - District Leadership, Facilities and Operations, and Faculty/Student Initiatives
- CCC Sustainability Template Implementation at 100% of Colleges
- Benchmarking
- Communications Strategies
- Partnerships with Non-Governmental Organizations (NGOs)
- Student Internships

What is the CCC/IOU Energy Efficiency Partnership ?

- Partners include:
 - All four IOUs: PG&E, SCE, SCG, SDG&E
 - CCC Chancellor's Office and Districts
- This collaborative Partnership:
 - Identifies energy savings opportunities
 - Provides district incentive funding and support for energy efficiency design and projects

California Community Colleges

Career Technical Education

- Largest provider of workforce training in U.S.
- More than 175 degree and certificate programs in occupational areas
 - 40 California Community Colleges offer classes in Green or environmentally sensitive areas
 - Construction & landscaping, conservation and ecology management, hazard waste management, and alternative energy

California Community Colleges

Systemwide Facilities Needs

- \$35.8 Billion over next 10 years
- 5 year needs in new & existing facilities
 - Enrollment Growth = 18.5m new ASF
 - Modernization = 27.3m ASF of existing bldgs
 - 67% over 25 years old
 - 46% over 40 years old

There will NEVER be enough money!

Need to work SMARTER:

- Better Planning & Facility utilization
- Streamlined project delivery systems
- Benchmark to industry best practices

AND

1. *Collaborative Partnerships*
2. *Focus on Life Cycle / Sustainable benefits*
3. *Capital investments relieve district budgets*



Sustainability Template Implementation

Fred Diamond
Director of Facilities & Construction
Citrus College



Our Goals Today

- Learn what it takes to undertake a successful Sustainability Plan
- Learn what is involved in implementing a successful Sustainability Plan
- Understand the challenges involved
- Identify your stakeholders for success
- Realize that some items require “control”
- **Become a successful coach**

Establish a Sustainability Committee

- Collaborative campus leaders
 - Faculty and staff
 - Students and administration
 - Local utility professionals
 - Chancellor's Office
 - Industry experts and extended community
- **Establish a Chairperson**
- The committee provides recommendations, initiates communication and deploys implementation direction

Vision Statement

- Once the Sustainability Committee is established...
- Develop your vision for the plan
- Formal Vision Statement
- This is where you solidify your goals and commitment to environmental protection, economic / fiscal issues and social equity
-**RESPONSIBILITY**

Goals, Objectives & Desired Outcomes

- After establishment of the Vision
- Define your goals and objectives
- What are your priorities?
- What are your objectives?
- What is your timeline?
 - *Brainstorm with your committee members and gain insight from the Template*

Hint...

- Look at areas where the largest potential for improvement resides
- Set specific criteria for success
- You must have a “benchmark”
- Don't set the bar too high or too low
- Perform an assessment of existing or current sustainability efforts
- You must have support from administration

Consider Economics

- What is the cost and the basic ROI?
- Do you have funding available?
- What are the lifecycle costs and benefits?
- What is the cost of doing nothing?
- Consider the current market conditions
 - ...floor market
- Are there economies of scale?
- Utilize your CCC-IOU incentives

Influential Programs

- Green curriculum development—staff
- DEEP development—students
- Behavior modification
 - Simple exercises in habits—foster change
 - Remind-o-grams—notes or memos
 - Positive reinforcement—awards
- Campus outreach
 - Clubs and community
 - Storyboards and marketing

Create the Action Plan

- The vision and goals—now become the deliverable “projects”
- Prioritize the “projects” that best fit your campus
- Use the MS Excel document from the Sustainability Template
 - Plug n’ Play
- Try to have fun with it and get the committee involved in active listening and participation

Measurement and Reporting

- You must have a benchmark or baseline to measure against
- Track your “projects” with measureable outcomes
- Gather and tabulate the data
- Compare the data against the baseline
- Communicate the results to your campus community in accordance with your plan

The Sustainability Template provides tools and suggestions for performance metrics and measurement processes

Measurement and Reporting

Sustainability Rating and Ranking Systems that Compliment the Template

Sustainability Tracking Assessment and Rating System (STARS)

STARS is a voluntary self-reporting system that colleges and universities can use to measure and rank their overall sustainability. STARS was developed by the Association for the Advancement of Sustainability in Higher Education (AASHE). Participants are given a score based on points accumulated in a wide range of areas pertaining to sustainability, including education and research; operations; and planning, administration, and engagement.

The cost of registering for STARS is \$900 for AASHE members and \$1400 for non-members. The cost of renewing a STARS registration is \$450 for AASHE members and \$700 for nonmembers (every three years)

For more information about STARS, visit <https://stars.aashe.org/>

Measurement and Reporting

Sustainability Rating and Ranking Systems that Compliment the Template

The College Sustainability Report Card

The College Sustainability Report Card is a rating system developed by the Sustainable Endowments Institute to grade higher education institutions on their sustainability in multiple areas, including administration, climate change and energy, food and recycling, green building, student involvement, transportation, endowment transparency, investment priorities, and shareholder engagement.

Districts that participate are asked to make a \$700 donation to the Sustainable Endowments Institute, though grant assistance is available.

For more information go to <http://www.greenreportcard.org/>

Measurement and Reporting

Sustainability Rating and Ranking Systems that Compliment the Template

Sierra Club Cool Schools

The Sierra Club ranks higher education institutions in their sustainability performance and publicizes results through the *Sierra magazine*. The rankings are determined by a score, which is developed by the Sierra Club through information collected through a survey. The survey includes sustainability in ten categories: energy supply, energy efficiency, food, academics, purchasing, transportation, waste management, administration, financial investments, and other initiatives. Learn more at:

<http://www.sierraclub.org/sierra/201009/coolschools/default.aspx>

See Section 9 of the Sustainability Template for more information on Rating and Ranking Systems

CCC Sustainability Template

Questions?

Thank You!

Download files from Chancellor's Office
Sustainability website:

[http://extranet.cccco.edu/Divisions/
FinanceFacilities/Sustainability.aspx](http://extranet.cccco.edu/Divisions/FinanceFacilities/Sustainability.aspx)



San Mateo Community College District

Facilities Excellence



José D. Nuñez, LEED AP
Vice Chancellor Facilities Planning , Maintenance & Operations
San Mateo County Community College District

SMCCCD Sustainability Template Initiative

- District Wide Steering Committee
 - Facility Managers
 - Campus Sustainability Reps (Chair Sub-Committees)
 - PG&E Rep
 - District Utilities Rep
- 3 Sub-Committees
 - Cañada College
 - College of San Mateo
 - Skyline College: “The Sustainability Ambassador Network”

SMCCCD Sustainability Template Initiative

- DW Steering Committee Timeline
 - August 30, 2012: Kick Off
 - Meeting every 2 weeks
 - Completion: January 31, 2013

Think. Act. Change!

Create a vision for Sustainability at Skyline!
Join the Sustainability Ambassador Network,

Monday, October 29th
2-3 PM
Room 1319

for our 2nd meeting. Bring your ideas to:
Conserve water & energy!
Improve campus awareness!
Divert waste & Go Paperless!
Promote Environmental Justice!

All faculty, students and staff are encouraged to attend.

For questions and RSVP contact Anjana Richards
richards@smccd.edu or 650.738.7076



SMCCCD Sustainability Template Initiative

● Next Steps

- Vision Statements
- Goals
 - Short Term
 - Long Term
- 1st Draft Template: January 2013

Be a leader for environmental change on campus!

Join the Sustainability Ambassador Network!

Thursday, October 11th 9:30 - 10:30 am
Building 1, Room 1319


The Sustainability Ambassador Network will unite faculty, students, and staff to create a Sustainability Plan for Skyline College. The objective of the SAN is to expand current campus initiatives and programs that promote:

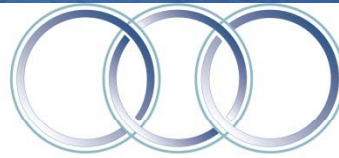
- ♻️ Environmental Protection
- ♻️ Greenhouse Emissions Reduction
- ♻️ Reduced Water and Energy Consumption
- ♻️ Waste Diversion
- ♻️ Environmentally-themed Curriculum
- ♻️ Environmental Justice

If you are interested in becoming a Skyline College Sustainability Ambassador or learning more about campus sustainability, join us for a kick off meeting on October 11 at 9:30 a.m.

ALL CAMPUS LEADERS ARE ENCOURAGED TO ATTEND

For questions and RSVP contact Anjana Richards, richardsa@smccd.edu or (650) 738-7076.





SAN MATEO COUNTY
COMMUNITY COLLEGE DISTRICT

CCC/IOU Partnership Campus Forum: Facilities Excellence

San Mateo County Community College District

- Three Campuses (1.4M GSF / 346 Acres)
 - Cañada College – Redwood City - 1968
 - Skyline College – San Bruno - 1969
 - College of San Mateo – San Mateo – 1963
 - District Office, San Mateo - 1978
- 25,000 Students / 1,000 Staff / Adjuncts
- \$900M Capital Improvement Program
 - Multiple Funding Sources
 - Multiple Delivery Methods

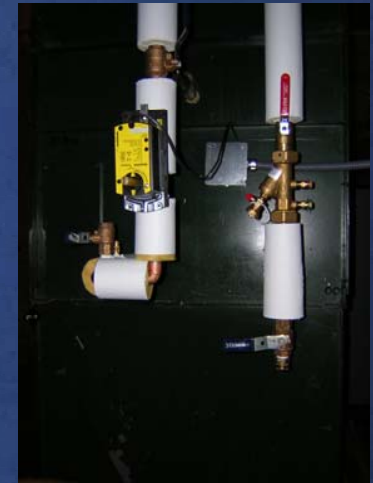
District Energy/Sustainability Goals

- Reduce Operating Costs through Renewable and Energy Efficiency Capital Projects
 - All new projects LEED Silver Certified
 - All Modernization Projects designed to LEED Standards
 - Every new project to achieve 15% better than Title 24 requirements
 - Mandatory PG&E Energy Efficiency/Savings by Design Application
 - Mandatory Life Cycle Cost Analysis on Major Equipment



Sustainability Planning

- Design Standards
 - Mandatory Goals
 - PG&E Energy Efficiency/Savings by Design
- Project Review (Different Goals)
 - College Leadership
 - Maintenance & Operations Staff
 - Designers
 - Constituents (Faculty/Staff/Students)
- Design/Construction (Constant Vigilance)
 - Programming
 - Schematic Design (SD)
 - Design Drawings (DD)
 - Construction (RFI/Submittal Review)
 - Commissioning (Programming through Occupa



New Facilities



Skyline College Building 4 Multi-Cultural/Cosmetology (21.3%)
LEED Gold



College of San Mateo Building 5 Health & Wellness
(36%) LEED Gold



College of San Mateo Building 10 College Center (21.5%)
LEED Gold



Cañada College Facilities Maintenance Center (FMC)
(16%) LEED Gold

New Facilities



Cañada College Building 9 Library/Learning Resource Center (30%)

Skyline College Building 6 Student & Community Center (28%)



Skyline College Facilities Maintenance Center (FMC) (18.2%) LEED Gold

Total Cost of Ownership

(An Additional ~ 441,537 gsf)

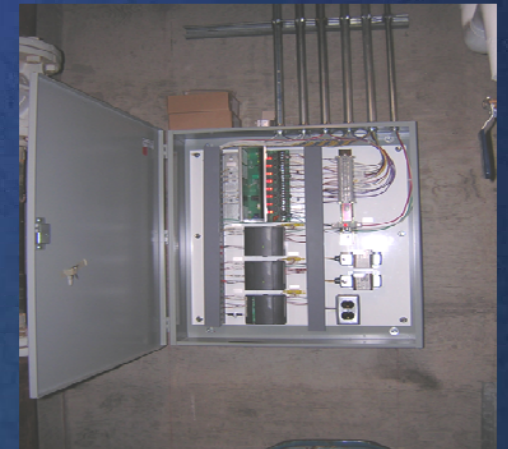
- Existing Facilities (as of 2000) 1,171,823 gsf

- New CIP Facilities
 - Cañada Bldg. 7 Facilities Maintenance Center ~ 17,292 gsf
 - Cañada Bldg. 9 Library/LRC ~ 75,917 gsf
 - Cañada Bldg. 22 Instructional Facility ~ 11,870 gsf
 - CSM Bldg. 5 Health & Wellness Center ~ 89,086 gsf
 - CSM Bldg. 10 College Center ~ 142,901 gsf
 - CSM Bldg. 35 Regional Public Safety Center ~ 9,244 gsf
 - CSM Bldg. 36 Science Building & Planetarium ~ 60,904 gsf
 - Skyline Bldg. 4 Multicultural/Cosmetology/Admin Center ~ 72,810 gsf
 - Skyline Bldg. 6/7 Student Union/Science & Allied Health ~ 106,816 gsf
 - Skyline Bldg. 11 Automotive Transmission Facility ~ 6,746 gsf
 - Skyline Bldg. 21-24 Facilities Maintenance Center ~ 17,618 gsf
 - Skyline Bldg. 14 Child Development Center ~ 11,000 gsf (Loma Chica Modernization)
 - DW Athletic Facilities (Restrooms / Press Boxes) ~ 10,508 gsf

- CIP Demolished Facilities
 - CSM 5/6 ~ 73,588 gsf
 - CSM 10, 11 & 13 ~ 42,603 gsf
 - CSM Bldg. 20 & Greenhouse ~ 13,126 gsf
 - CSM Bldgs. 21 – 29 ~ 58,958 gsf
 - Skyline Bldg. 4 ~ 2,900 gsf

Ongoing Challenges

- Complexities of New Systems
 - Maintenance & Service Agreements
- Staffing & Technology
 - Old vs. New
 - Wrench vs. Computers
 - Old Timers vs. Younger Generation
- Diminished M&O Budget
 - General Fund Reductions



Freeing up Dollars for the Classroom: The Process

- Utility Savings Analysis
 - Estimated Savings due to Energy Efficiency & Sustainability Projects (kWh, therms, CCF, etc.)
- Space Analysis – Buildings and Grounds
 - Increased Square Footage
 - Labor (APPA Levels)
 - Materials and Supplies
- Facilities Budget Analysis & Request Process
 - Road Show: Information is Key

The Argument: Funding

● Capital (One-time) (as of September 2012)

- PG&E Energy Efficiency: \$1,024,778
- Savings by Design: \$494,147
- CCC/IOU Partnership
 - Received \$426,732
 - Pending \$55,847

● Operational (On-going)

- Energy & Sustainability Savings - \$1,712,553
 - Therms: \$146,960
 - KWH: \$802,593
 - Cogen: \$500,00
 - O&M: \$28,000
 - Athletic Field Conversion: \$235,000



Energy Efficiency & Sustainability Rebate Summary

- **CCC/IOU Partnership**

- **Rebates Received**

- Cañada 5/6: November 2011 - \$37,399
 - Cañada 8: Summer 2010 - \$7,990
 - Cañada 16/18 DDC Controls Retrofit: April 2009 - \$11,067
 - College of San Mateo 2/4 & 14/16: March 2009 - \$52,459
 - College of San Mateo 5 Aquatic Center: December 2011 - \$35,244
 - College of San Mateo DDC Controls Retrofit: April 2009 - \$52,459
 - College of San Mateo 8 VAV Retrofit: May 2007 - \$7,594
 - College of San Mateo 9 Library Chiller: September 2012 - \$22,207
 - College of San Mateo Transformer Replacement Project: December 2011 - \$8,914
 - Skyline 3 VAV Retrofit: May 2007 - \$39,686
 - Skyline 4: November 2011 - \$108,182
 - Skyline 5 Library Lighting: April 2009 - \$15,203
 - Skyline 7 DDC Controls Retrofit: April 2009 - \$9,011
 - Skyline Transformer Replacement: April 2012 - \$7,295
 - District Office Cooling Tower/Pump Project: June 2012 - \$10,108
 - District Wide Parking Lot Lighting: April 2009 - \$1,914

- **Rebates Forthcoming**

- College of San Mateo 10 MBCx: In Process (\$19,077)
 - College of San Mateo North Gateway: Out to Bid (\$27,600)
 - Skyline Loma Chica Furnace Replacement: In Process (\$1,200)
 - DW Burner Replacement: In Process (\$7,970)

Energy Efficiency & Sustainability Rebate Breakdown

- **PG&E Energy Efficiency**
 - CAN Air Handler Retrofits: Jan 2002 - \$27,000
 - DW High Efficiency Lighting Systems: July 2002 - \$102,600
 - CSM & SKY Co-Generation: November 2004 - \$878,557
 - CSM Demand Response Participation: February 2012 - \$16,621
- **Savings by Design**
 - Cañada 9: March 2008 - \$24,927
 - Cañada Facilities Maintenance Center (FMC): Summer 2010 - \$3,347
 - College of San Mateo 5 Health & Wellness: May 2010 - \$228,968
 - College of San Mateo 10: May 2011 - \$138,183
 - College of San Mateo 35: Summer 2006 - \$2,775
 - College of San Mateo 36: November 2006 - \$56,117
 - Skyline B6/7A: May 2007 - \$38,546
 - Skyline Facilities Maintenance Center (FMC): Summer 2010 - \$1,284

The Argument: Change in GSF

SMCCCD Facilities Square Footage Increase				
	2000 GSF	2012 GSF	Change	% Change
Cañada College	246,431	352,215	105,784	43%
CSM/District Office	592,230	727,039	134,809	23%
Skyline College	333,162	541,325	208,163	62%
Total	1,171,823	1,620,579	448,756	15%

The Argument: Association of Higher Education Facilities Officers (APPA) Guidelines

- Custodial – If cleaning activities are accomplished with decreasing frequency, appearance will suffer
 - Level 1: Orderly Spotlessness
 - Level 2: Ordinary Tidiness
 - Level 3: Casual Inattention
 - Level 4: Moderate Dinginess
 - Level 5: Unkempt Neglect
 - APPA Recommends Level 2 as the reasonable standard
- Standard Spaces – Not all spaces are created equal. Different space types require different cleaning approaches and effort
- All data presented in Cleanable Square Feet – an industry standard of measure

The Argument: Association of Higher Education Facilities Officers (APPA) Guidelines

- Engineering – If maintenance activities are accomplished with decreasing frequency, breakdowns will increase and service will suffer
 - Level 1: Showpiece Facility
 - Level 2: Comprehensive Stewardship
 - Level 3: Managed Care
 - Level 4: Reactive Management
 - Level 5: Crisis Response
 - APPA Recommends Level 2 as the reasonable standard
- Grounds – If grounds maintenance activities are accomplished with decreasing frequency, appearance will suffer
 - Level 1: State of the Art
 - Level 2: High Level
 - Level 3: Moderate Level
 - Level 4: Moderately Low-Level
 - Level 5: Minimum Level
 - APPA recommends Level 2 as the reasonable standard

The Argument: Staffing Needs

	FY10-11 Current Staffing				FY10-11 Proposed Staffing Needs			
	CAN	CSM	SKY	Total	CAN	CSM	SKY	Total
Custodial	8	17	13	38	1	3	3	7
Engineering	4	7	6	17	0	1	0	1
Grounds	3	6	3	12	0	2	2	4
Total				67				12

The Argument: Staffing Needs

Additional Annual Budget Needs					
	\$ per FTE	Cañada College	College of San Mateo	Skyline College	Total
Custodial	\$ 43,445	\$ 43,445	\$ 130,335	\$ 130,335	\$ 304,115
Engineering	\$ 59,712	\$ -	\$ 131,712	\$ 61,000	\$ 192,712
Grounds	\$ 44,076	\$ -	\$ 88,152	\$ 88,152	\$ 176,304
Total		\$ 43,445	\$ 350,199	\$ 279,487	\$ 673,131
Total Needs (w/ benefits @ 35%)		\$ 58,651	\$ 472,769	\$ 377,307	\$ 908,727

The Argument: Operational Needs

● GENERAL OPERATIONAL NEEDS (\$480,000) ●

- Fuel expense increases for vehicles and fuel-powered equipment
- Certification of backflow prevention devices
- Hazardous Waste Generator Fee
- Custodial supplies increases
- "new" Computerized Maintenance Management System
- FUSION
- Chiller/Cooling Tower maintenance
- Chiller/Hot water loop water treatment
- Boiler maintenance
- Elevator Inspection and Permit Fees
- Annual Fire Pump testing and overhaul
- Annual Fire Extinguisher inspections
- Air filters and V-belts for air handling unit
- Batteries for fire life safety devices and ACAMS
- Exterior/Interior Lighting replacements
- Replacement parts/services for BMS, Data RM AC, Sewage Pumps, VFDs, irrigation, to name a few
- Lawn chemicals

BUILDING SYSTEMS MAINTENANCE NEEDS

- Access Controls and Monitoring (ACAMs) (\$250,000)
 - Upkeep of equipment (cameras, servers)
 - Repair and replace parts (nodes, input/output, readers)
- Fire and Life Safety Systems Maintenance (\$170,000)
- Building Management Systems Maintenance (\$115,000)



The Argument: Summary

Additional Annual Budget Needs for Facilities

Needs	Cañada College	College of San Mateo	Skyline College	Total
Staffing	\$58,651	\$472,769	\$377,307	\$908,727
General Operational Needs	\$120,000	\$240,000	\$120,000	\$480,000
Building Systems Maintenance Needs	\$126,046	\$160,821	\$248,133	\$535,000
Total	\$304,697	\$873,590	\$745,440	\$1,923,727

The Argument: Buy-In Road Show

Information is Key

- One-on-One
 - CBO
 - CFO
 - Chancellor
 - College Presidents
- Chancellor's Cabinet
 - Chancellors, Presidents, Executive Staff
- Constituents – Road Show
 - SMCCCD Financial Officers
 - College Cabinet
 - President, VPs, CBO, Marketing
 - College Counsel (Shared Governance)
 - Admin, Faculty, Staff, Students



Best Practices – Facilities Commitment

- 12 Month Systems Review
 - M&O Staff
 - A&Es
 - Retro-Commissioning
- Indoor Environmental Quality
- Regular Follow-up
 - End User
 - Facilities Staff
 - Commissioning Agent
 - CCC/IOU Partnership Staff





CCC/IOU Energy Efficiency Partnership

Economic & Environmental Sustainability



Lisa Hannaman – Southern California Edison

Incentives and Savings to Date

Program Cycle Year(s)	kW	kWh/yr	thm/yr	Incentive Paid
2006-2008	9,339	39,732,201	1,078,475	\$ 9,066,384
2009	1,827	9,004,448	281,193	\$ 2,196,724
2010-2012*	9,194	34,579,674	1,364,792	\$ 8,650,135
Total	20,360	83,316,323	2,724,460	\$19,913,243

***as of 10/3/12**

CCC/IOU EE Partnership

2010-12 Cycle Re-cap

- Retrofit projects
- Monitoring-Based Commissioning (MBCx) /Retro Commissioning (RCx)
- New Construction Design Assistance and Incentives
- IT Projects
- Demand Response

2013-2014 Partnership Vision

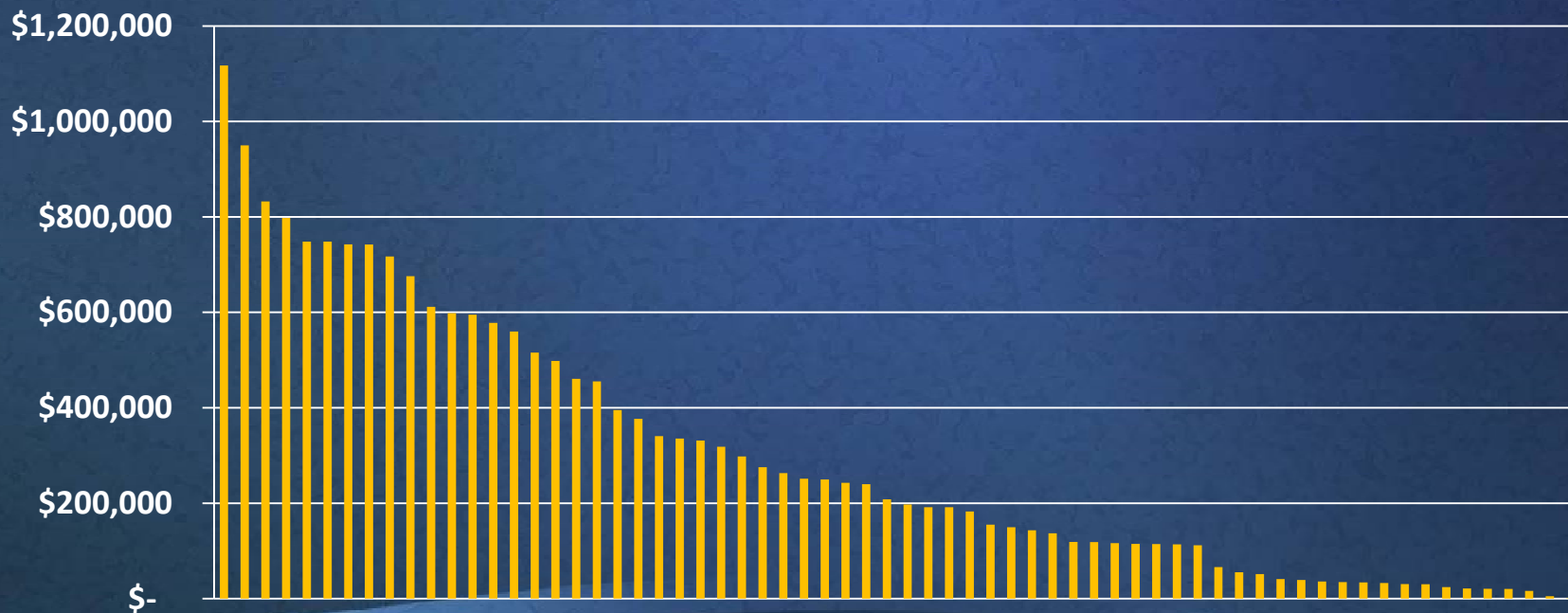
- Strive for 100% Participation from all Districts and Campuses
- Focus on activities that produce energy savings
- Provide innovative and flexible offerings that best meet needs of campuses
- NEW programs for the next cycle include:
 - Project Development Services
 - Retro commissioning (RCx) Pilot Program
 - DEEP Intern Program
 - Board of Governors' Initiatives
 - More Effective Outreach & Education to Campuses

Leadership from Community Colleges is Key to our Success!

2006-2012 *Who got the money?*



36% of districts received 74% of the money

CCC/IOU EE Partnership Incentives Paid to Each District
2006-Present
Data as of 10/3/12



Program Incentives for 2010-12

2013-2014 Pending CPUC decision...

MEASURE	INCENTIVE RATE
Electricity	 <u>\$0.24 /</u> <u>kWh</u>
Packaged HVAC, HVAC Controls, Motors, Drives	
Lighting, Lighting Controls, Daylighting	
Central Plants, Chiller Retrofits, and other major Energy Efficiency Infrastructure Projects	
Monitor Based Commissioning (MBCx)	
IT Projects	
Natural Gas	 <u>\$1.00 /</u> <u>therm</u>
<u>ALL</u> Gas Measures	

Three Year Program Benefits

10-Year Cumulative Impacts

Electricity Savings:

725,562,048 kWh

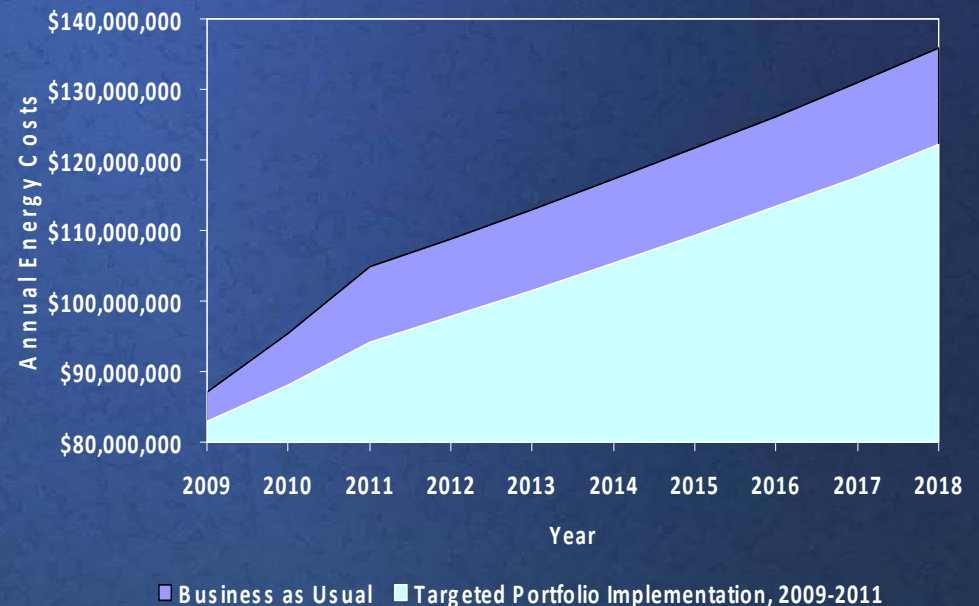
Natural Gas Savings:

23,080,884 therms

**\$1 for sustainable facilities
yields \$2 energy savings**

**Every \$1 invested by a district
for sustainable facilities improvements
through the 2009-11 Partnership will yield
\$2 in energy savings over the next 10 years**

10 Year Effects of 3-Year Program Implementation
Statewide CCC Campus Energy Costs (IOU Served Campuses Only)



Best Practice – Mt. SAC College

- Mt. San Antonio College – Multiple projects running at once:
 - MBCx: 59,000 sq. ft building: 291,270 kWh and 15,359 therm savings = \$85,264 estimated incentive
 - Demand Control Ventilation – 394,803 kWh's and 67 kW = \$94,000
 - New Construction: Design Technology Center
 - HVAC, Lighting, Server Virtualization, Retrofit

Best Practice – Chaffey College

- Mixed Lighting Projects - 4 Measures:
 - Lighting Controls – Occupancy Sensors
 - Interior Linear Fluorescent Retrofits
 - Exterior Induction Retrofits
 - Interior Compact Fluorescent Fixture Retrofits
- 1.3 million kWh and 105 kW saved
- Total Estimated Incentive: \$312,000

Program Financing: On-Bill Financing

- The Financial Solutions Element is a non-resource (*no energy savings claimed*) program, that provides Nonresidential customers additional options for financing their energy efficiency projects.
- This Element will be offered in conjunction with and through other incentive and rebate programs to stimulate and enable higher levels of customer participation.

DEEP Intern Program

- **Developing Energy Efficiency Professionals (DEEP)** is an SCE sponsored employment development program that trains and educates CCC students in energy efficiency and demand side reduction through classroom learning, projects, and outreach within the campus community.
- **Three Goals:**
 - Promote Sustainability and Efficiency Awareness
 - Engage Students with Hands on Learning & Promote Peer-to-Peer Learning Opportunities
 - Provide Green Workforce Exposure and Real World Experience

Retrocommissioning (RCx)

- **RCx** is a systematic process for identifying less-than-optimal performance in a facility's existing equipment and control systems and making necessary repairs or enhancements to save energy. Whereas retrofitting involves replacing outdated equipment, RCx focuses on improving the efficiency of what is already in place.
- RCx projects typically identify multiple energy efficiency measures with low SPBs
- CCC/IOU Partnership is developing an RCx program for the '13 -'14 program cycle

CCC RCx Pilot Objectives

- Create an innovative program offering to meet customer needs and complement existing offerings
- Incentivize customers to save energy through RCx
- Cover customer's up front RCx study costs
- Leverage existing campus familiarity for cost effectiveness
- Allow CCC customers more flexibility than standard Core Program
- Leverage longstanding experience with RCx
- Prove that savings can be cost effectively delivered (<\$0.36/kWh)
- Offer training for RCx Providers to ensure effective study delivery
- Gather data to determine RCx's role in future CCC Program Offerings

SCE Program Comparisons

	Core RCx	MBCx	Pilot CCC RCx
RCx Agent	10 pre-approved Agents	Customer can hire Agent of choice	Edison & Customer select Pilot providers
Incentive	\$.05 - \$.15/kWh \$100/peak kW \$1/therm	\$.24/kWh \$1/therm	\$.09/kWh (TB confirmed) \$1/therm
Timing	~ 30 wks excluding installation time	~ 40 wks excluding installation time	~ 25 wks excluding installation time
Savings	Measure level, limited to systems analyzed	Whole Building Savings	Measure level, limited to systems analyzed
Customer's Cost	Measure Installation	Sub-Meters Measure Installation MBCx Agent	Measure Installation
Utility Cost	RCx Agent Investigation Incentive	Incentive	RCx Agent Investigation Incentive
Persistence	Owner trained on installed measures	Continuously monitored by trend data	Owner trained on installed measures
Calculations	Based on measure level trend data	Based on whole building metering	Based on measure level trend data

RCx Pilot Project Campuses

- Citrus Community College
- West LA College
- East LA College
- Coastline Community College
- Rancho Santiago CCD District Office

New CEC Resources for CCC's

Low Interest Loan Program

- 1% Loans For Energy Efficiency and Energy Generation Projects
- Over \$20 million in loan funds available on a first-come, first-served basis.
- \$3 million maximum per application, and no minimum
- The repayment schedule is based on the estimated annual energy savings and is structured to be revenue neutral.
- May be used in conjunction with other funding, rebates and incentives.

For more info go to:

<http://www.energy.ca.gov/efficiency/financing/>

New CEC Resources for CCC's

Energy Partnership Technical Assistance Program

- Program provides a wide range of technical assistance to local governments and public institutions. Typical services include
 - Conduct energy audits
 - Review existing proposals and designs
 - Develop equipment performance specifications
- Provide technical assistance services (up to \$20,000 of CEC consultant costs)
- Project Financing may be obtained through Low Interest Loan Program

For more info go to:

<http://www.energy.ca.gov/efficiency/partnership/index.html>

Breaking Down Barriers for Success

- Access to Decision Makers
 - The Big Picture
 - Benefits to the Program
- What does Districts need from the Partnership?
 - Resources
 - Financial Impacts
- How do we empower CBOs and Facilities Directors?
 - Project Development
 - Strategies for Success
- How to get projects approved?
 - Packaging
 - Methods of Contracting
- Feedback from audience
 - Interactive
 - Here to listen to your thoughts

Resources to Improve Energy Efficiency

- Knowledge is Power
 - Energy Management Systems
 - Monitoring Based Commissioning
 - Automated Demand Response
- Navigating Your Facility's Needs
 - Energy Efficiency Audits
 - Design Recommendations
 - Feasibility Studies
 - Integrated Strategies for Energy

Prioritization of Project Development

- Meeting your campus comfort needs
- Indoor airflow and air quality
- Behavioral Changes/Creating an awareness campaign
- Replacing old equipment
- Enhancing your energy efficiency design
- Establishing an energy strategy that meets all of your campus needs
- Alternative Energy Sources

Be a Sustainability LEADER !

- We need Energy Efficiency leadership from the CCC's!
- Encourage development of a local Sustainability / Energy Policy
- Offset budget cuts with strategic investment of bond dollars
- Use the Partnership programs for short-term incentive and long-term energy savings

Thank You!

Questions?

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