

Eliminating **greenhouse gas**
emissions is your **goal**.

Energy **reduction**
is our **business**.



Let's talk.

True Impact of Fulfilling the ACUPCC vs. the Cost of Doing Nothing

Bundling Energy Efficiency Measures via Performance Contracting

Woodrow W. Clark, II, MA³, Ph.D.

Energy Director

Los Angeles Community College District

Alison Gangl

Client Representative

TAC Energy Solutions

We help the best buildings in the world get that way.

t.a.c.
by Schneider Electric

Today's Topics:

Signing the ACUPCC commitment

What does that mean?

- The facts
- Challenges to meeting the commitment
- Fulfilling the commitment through performance contracting

Benefits of utilizing performance contracting

Getting started...

Signing the ACUPCC – What does it mean?

The Facts = The Need

- The United States produces 25% of the world's greenhouse gases
- Commercial buildings account for 18% of the United States' energy usage
- The nation's education institutions spend almost \$14 billion annually on energy

America's Colleges and Universities need to be leaders in their communities and provide knowledge to students to achieve climate neutrality.

Challenges to Meeting the Commitment

Paradigm change required

Development of new campus policy

Implementation of a comprehensive, strategic plan

Tight budgets

Unsure of where to start or how to start

Lack of staff to manage

Identification of tracking and reporting tools

We help the best buildings in the world get that way.

Fulfilling the ACUPCC

Buildings use 40% of the total energy consumed in the United States

Buildings are responsible for 48% of greenhouse gas emissions – up to 90% on college campuses

Addressing your buildings' efficiency can make a big initial impact to move your campus toward grid neutrality.



We help the best buildings in the world get that way.

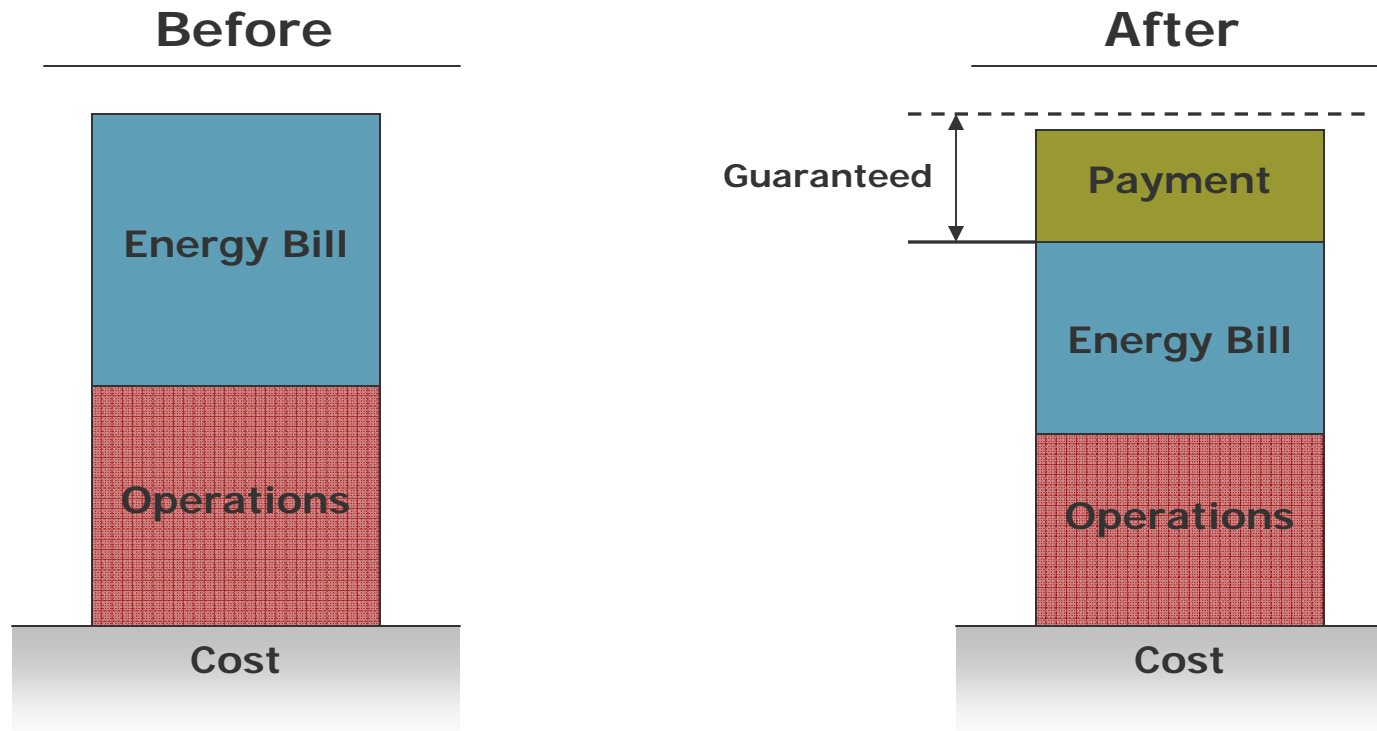
Fulfilling the ACUPCC through PC

What is performance contracting (PC)?

- An alternative construction method, focused on **identifying and addressing *real* needs**
- Allows for a facility to complete energy-saving improvements within an **existing budget** by financing them with money saved through reduced utility expenditures
- Energy savings are **financially guaranteed** and the project must perform as promise

Fulfilling the ACUPCC through PC

Performance contracting funding model



We help the best buildings in the world get that way.

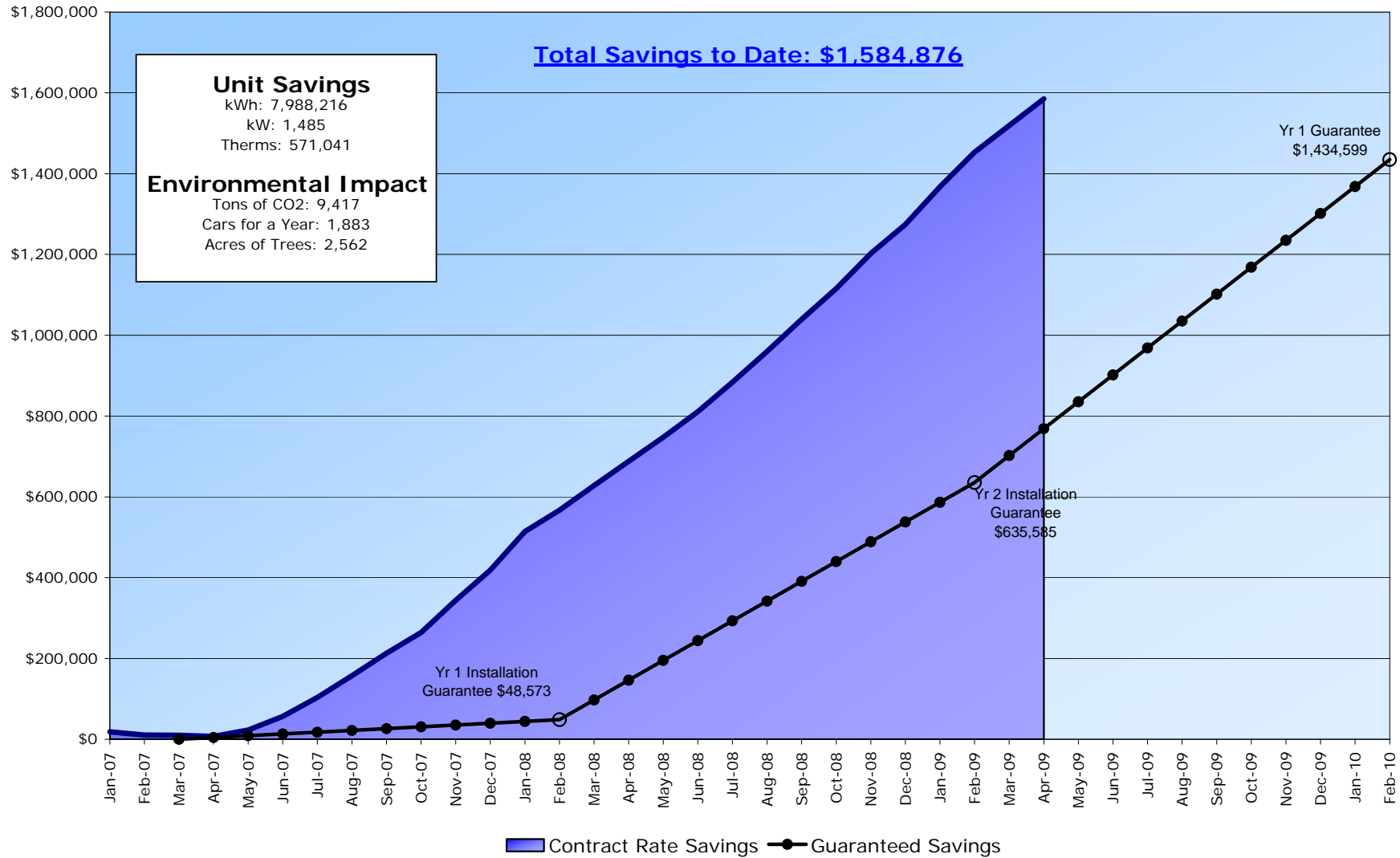
Fulfilling the ACUPCC through PC

Requirement #1: Initiate the development of a comprehensive plan to achieve climate neutrality as soon as possible

- a. Comprehensive inventory of all greenhouse gas emissions and update the inventory every other year thereafter
 - Initial facility audit to determine baseline energy usage and savings potential
 - Quarterly savings reports to track reduction in greenhouse gas emissions

Angelo State University
Actual Savings vs Guarantee

Annual Guarantee: \$799,014
 Current Guarantee: \$768,754



We help the best buildings in the world get that way.



Fulfilling the ACUPCC through PC

Requirement #1: Initiate the development of a comprehensive plan to achieve climate neutrality as soon as possible

b. Develop an institutional plan for becoming climate neutral

- Interaction of all mitigation strategies evaluated to determine their real impact
- Guaranteed building performance ensures accuracy in setting renewable generation goals
- Lower cost of generation due to higher efficiency levels in buildings

Fulfilling the ACUPCC through PC

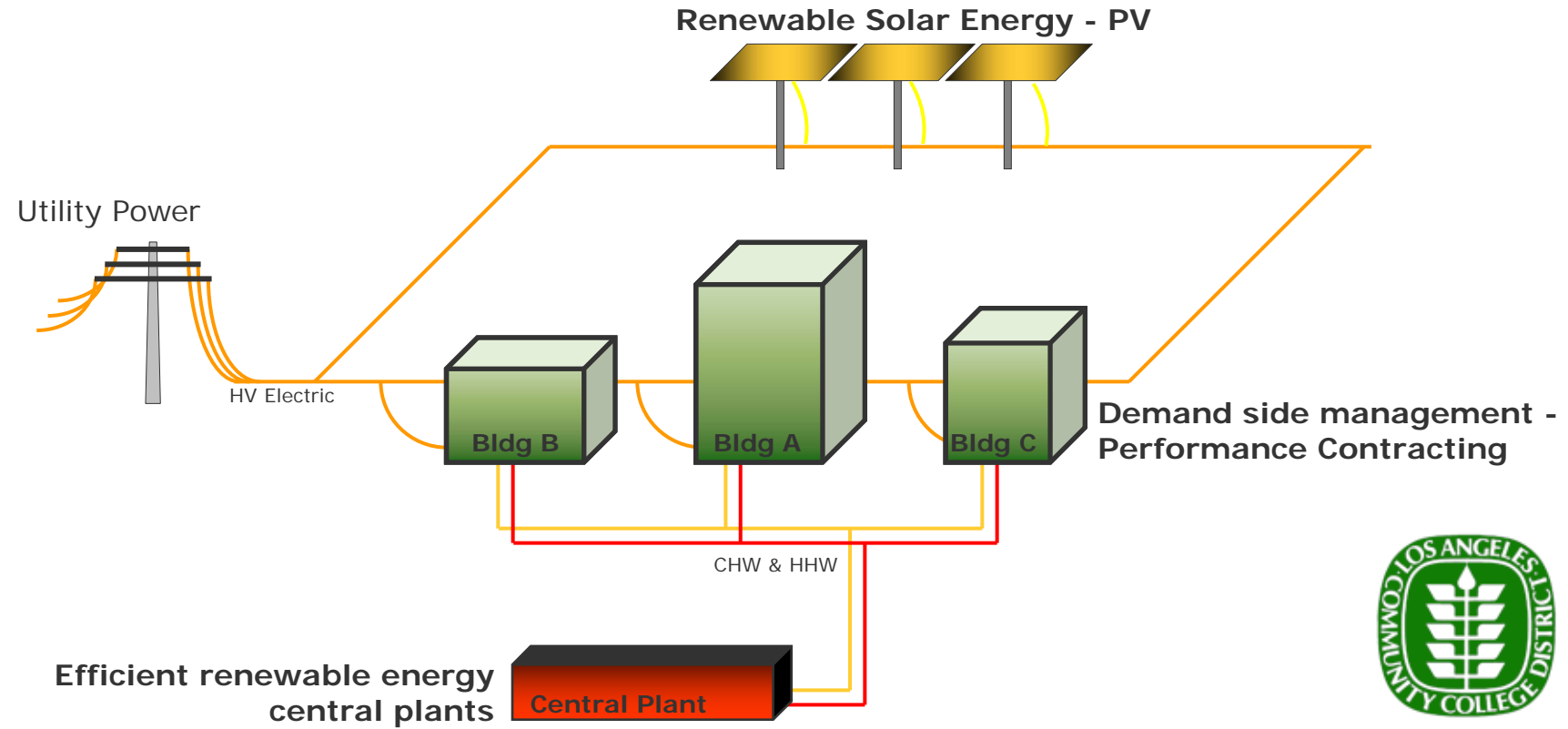
Los Angeles Community College District (LACCD)



We help the best buildings in the world get that way.

Fulfilling the ACUPCC through PC

Los Angeles Community College District (LACCD) Energy Strategic Plan



We help the best buildings in the world get that way.



Fulfilling the ACUPCC through PC

LACCD Energy Strategic Plan: Demand Management through PC

- Formation of Energy Team
- RFQ – 40 prospective companies
- RFP – 12 companies bid
- Review of proposals by Energy Team
- Issue contracts – 5 Energy Services Companies (ESCOs)
- Campus-by-campus selection of ESCOs by shared governance, campus administration, and district
- Recommendations made to campuses by ESCOs
- Implementation of Energy Conservation Measures (ECMs)



Fulfilling the ACUPCC through PC

LACCD Energy Strategic Plan: Demand Management through PC

- Sample Energy Conservation Measure (ECM) recommendations

ID	EWCM Description	Utility Savings	Energy Savings (MMBtu)
EWCM-0.3	Install Building Sub-meters	\$0	N/A
EWCM-1.0	Interior Lighting Upgrades	\$41,906	1,446
EWCM-1.1	Lighting Control Upgrades	\$22,609	1,161
EWCM-2.0	Plumbing Fixture Upgrades	\$5,797	N/A
EWCM-3.2	Connect Administration Building AHU-1-2 to CHW System	\$2,297	63
EWCM-5.0	Administration Building – Convert AHU-1-1 to VAV and Connect to CHW System	\$19,942	102
EWCM-6.0	Replace Existing Novar HVAC controls w/ TAC Vista System	\$191,509	15,591
EWCM-6.1	Integrate Existing Honeywell & Trane HVAC controls w/ TAC Vista System		
EWCM-7.1	Install Window Film	\$6,881	240
EWCM-8.1	PC Power Management	\$15,840	402
TOTALS		\$306,781	19,005

We help the best buildings in the world get that way.



Fulfilling the ACUPCC through PC

LACCD Energy Strategic Plan: Demand Management through PC

- Retrofit all energy consuming elements for maximum efficiency
- Install conservation features in all buildings
- State of the art and new technologies
- Metering and monitoring systems
- Audit of facilities completed by a company not currently engaged with the campus



We help the best buildings in the world get that way.

Fulfilling the ACUPCC through PC

LACCD Energy Strategic Plan: Why use PC?

- Design, installation & financing are all done by private sector Energy Services Company (ESCO)
- Utilizes private sector funding
- Guaranteed payback within *existing* utility charges
- State, local & utility incentive funds available to further offset costs
- Ability to select equipment & subcontractors (no low bid)
- Avoids change orders with fixed, guaranteed pricing
- Long-term partnership with single-source of accountability
- Student and staff involvement in project

Fulfilling the ACUPCC through PC

LACCD Energy Strategic Plan: Why use PC?

- Student and staff involvement examples
 - Facility audit walkthroughs
 - Develop building energy models
 - Financial modeling
 - Measurement and verification
 - Sustainable development curriculum
 - Learn from actual green projects
 1. Renewable technologies
 2. Economics, business, life cycle, etc.
 3. Operations and maintenance
 - Certificates, licenses, and degrees
 - Training for green collar jobs
 - Climate solutions today



We help the best buildings in the world get that way.

Fulfilling the ACUPCC through PC

Requirement #2: Initiate two or more tangible actions to reduce greenhouse gases while the more comprehensive plan is being developed

a. Within one year of signing the ACUPCC, begin purchasing or producing at least 15% of your institution's electricity consumption from renewable sources

- Reduced and controlled consumption and demand =
Maximized renewable energy investments
 - More cost effective
 - Further reduction of carbon footprint
- Focus on long-term, comprehensive solution

Fulfilling the ACUPCC through PC

Requirement #3: Make the action plan, inventory, and periodic progress reports publicly available by providing them to the Association for the Advancement of Sustainability in Higher Education (AASHE) for posting and dissemination

- Energy Services Company (ESCO) provides savings reports, press releases, and other documentation for your use
- Reports are tailored to meet the requirements of AASHE
- Climate Action Registry inputs provided



We help the best buildings in the world get that way.

What are the benefits of utilizing performance contracting to meet your ACUPCC requirements?

- Most cost-effective investments in facilities
 - Exceed 15% minimum of renewable generation
 - Reduce operational budget
 - Long-term commitment
- Improved public image → Increased enrollment
- Avoided future costs
 - Rising energy rates
 - Cap and trade
- Mitigated impact on environment
- Support the green economy – education, job/career training, new ventures

Action Plan...

Getting Started

- **Establish a conservation policy**
- **Contact an ESCO to perform an initial energy survey**
- **Qualification process and ESCO selection**
- **Preliminary Energy Audit**
 - Complimentary study with energy saving recommendations
 - Preliminary energy savings dollar figures provided
- **Investment Grade Audit**
 - Defines the scope of work
 - Finalizes energy conservation measures and savings figures
- **Installation**
 - Improvements implemented
 - Energy savings begin
- **Performance guarantee**

We help the best buildings in the world get that way.

Questions/Comments

We help the best buildings in the world get that way.



Contact Information

Woodrow W. Clark, II, MA³, Ph.D.

Energy Director

Los Angeles Community College District

Cell: 310.666.3937

wwclark13@gmail.com

www.laccd.edu

<http://gogreen.laccd.edu/>

Alison Gangl

Client Representative

TAC Energy Solutions

Cell: 323.472.0018

alison.gangl@tac.com

www.tac.com/energysolutions

We help the best buildings in the world get that way.

