

Make your buildings work for people



Funding For Energy
Efficiency Improvements
June 21, 2013

Agenda

1. What is Performance Contracting?
2. Local Hawai'i Performance Contracts?

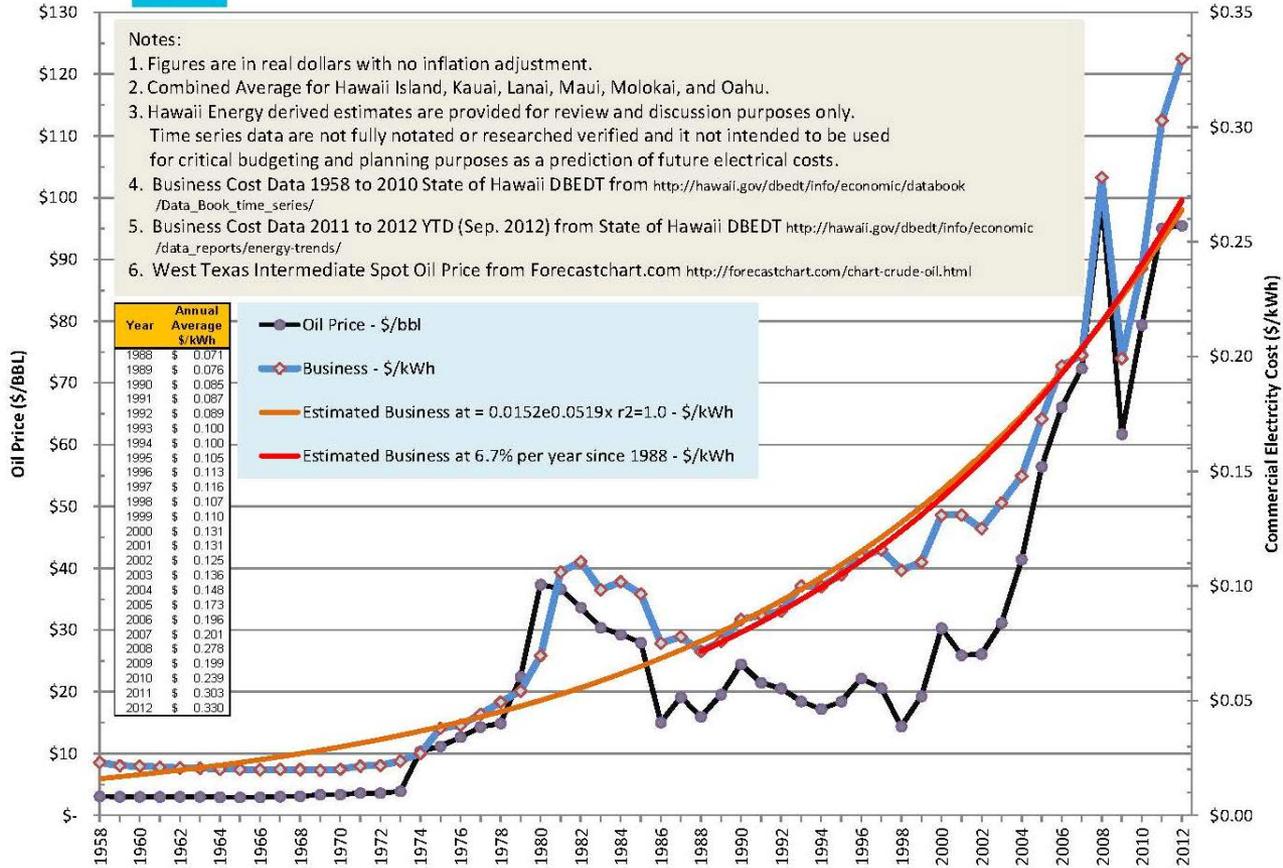


**Energy and You:
What in the world is going on?**

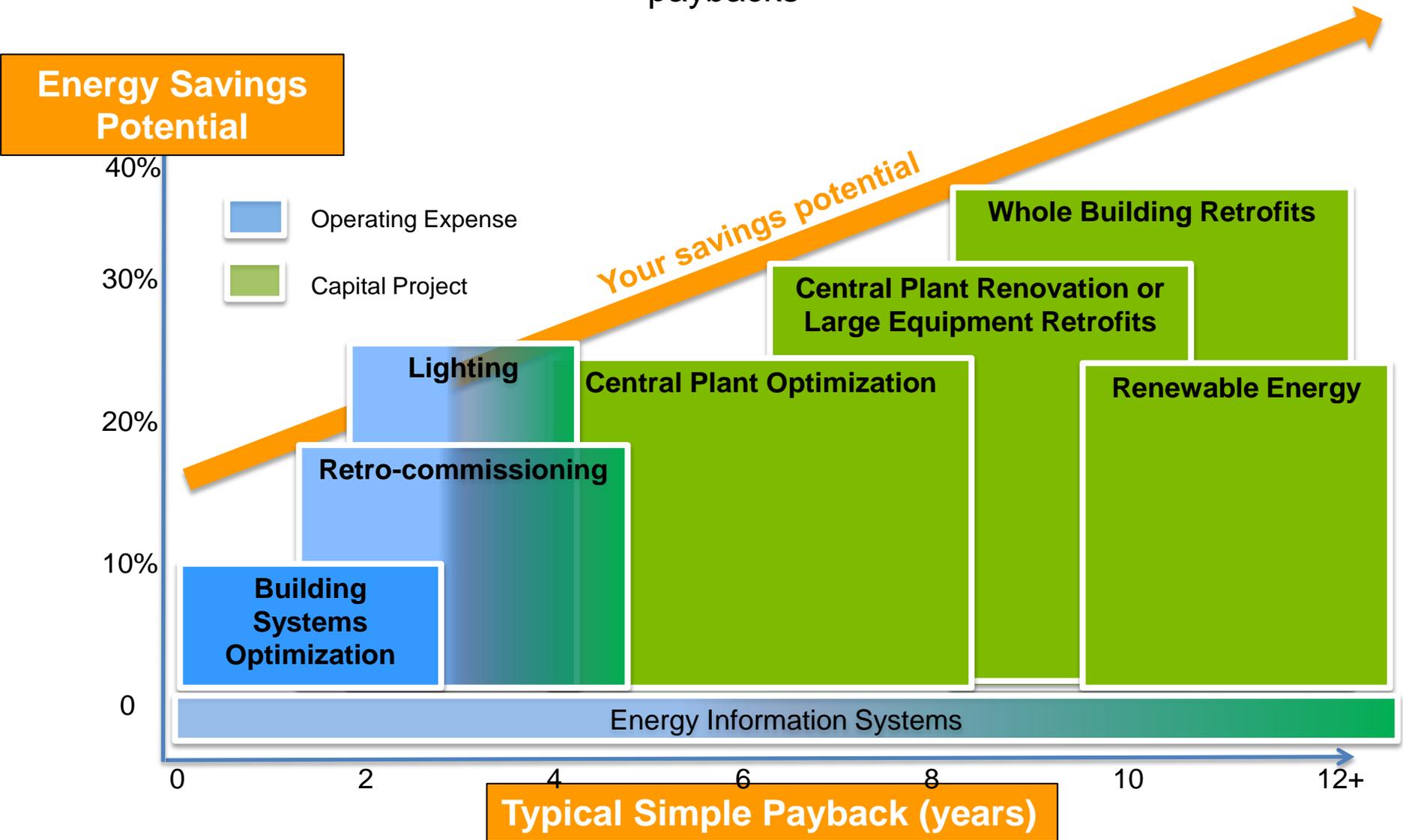




State of Hawaii - Historical Business Electricity Cost 1958 to 2012 YTD (Sep. 2012) - \$/kWh



The Spectrum of Energy Efficiency Solutions: typical ranges of savings and simple paybacks



Actual results can vary based on factors such as utility rates, system configuration, building characteristics, and weather conditions.



Be **smart** when choosing your strategy

- **Traditional building efficiency** focuses on one savings measure at a time (e.g., lighting)
- **Smart building efficiency** means evaluating an environment holistically:
 - energy
 - water
 - technology and useful information to drive actions
 - renewable energy
 - education and engagement of building occupants

"Energy efficiency is not just low-hanging fruit;
it is fruit that is lying on the ground"

–Steven Chu,
U.S. Secretary of Energy



Optimize building efficiency and performance



- Projects that focus on the entire “efficiency nexus” help owners optimize building efficiency and performance.
- Initiatives that address energy, water, renewables, technology, and occupant behaviors can complement and reinforce one another.
- The results can reach far beyond energy savings, helping to create a more engaged, more vibrant, and more productive organization.

The Efficiency Nexus optimizes the combined benefits of energy, water, renewables, technology, and education improvements

Understand the goals
for your organization and stakeholders

Preliminary audit/Site visit/Benchmark analysis

Your commitment to proceed

Detailed engineering audit
Result: Customized solution designed to
save energy and meet your goals

Energy Performance Contract with Energy Savings Guarantee

Improvements
such as:



Lighting



Water



HVAC



Renewable
Energy



Building
Technology



Building
Upgrades

Improved

budgets and lower
energy use

Lower

maintenance, repair
and waste costs

Reduced

environmental
impact and
emissions

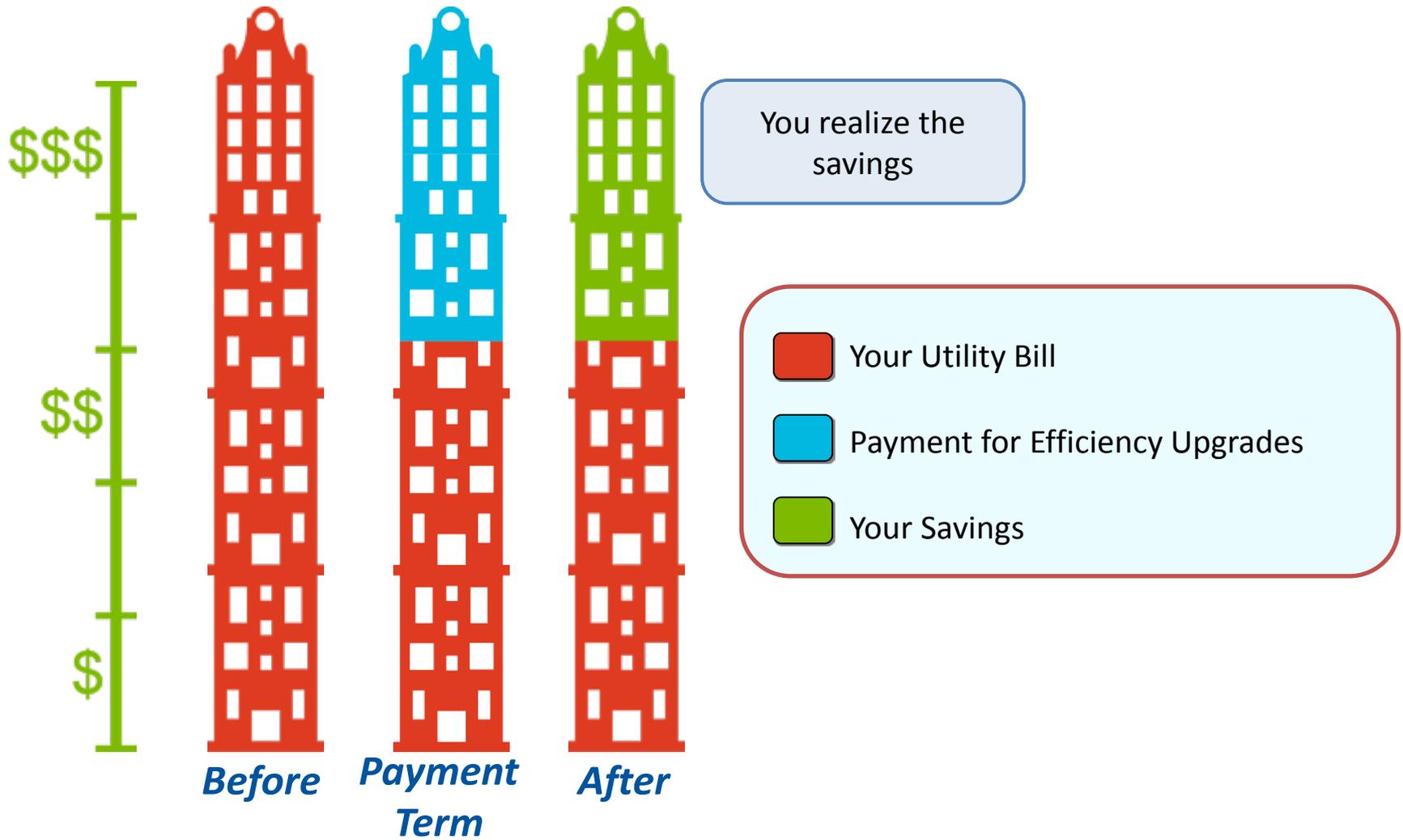
Engaged

and productive
employees

Meet Your Goals
and Validate with Ongoing Reporting



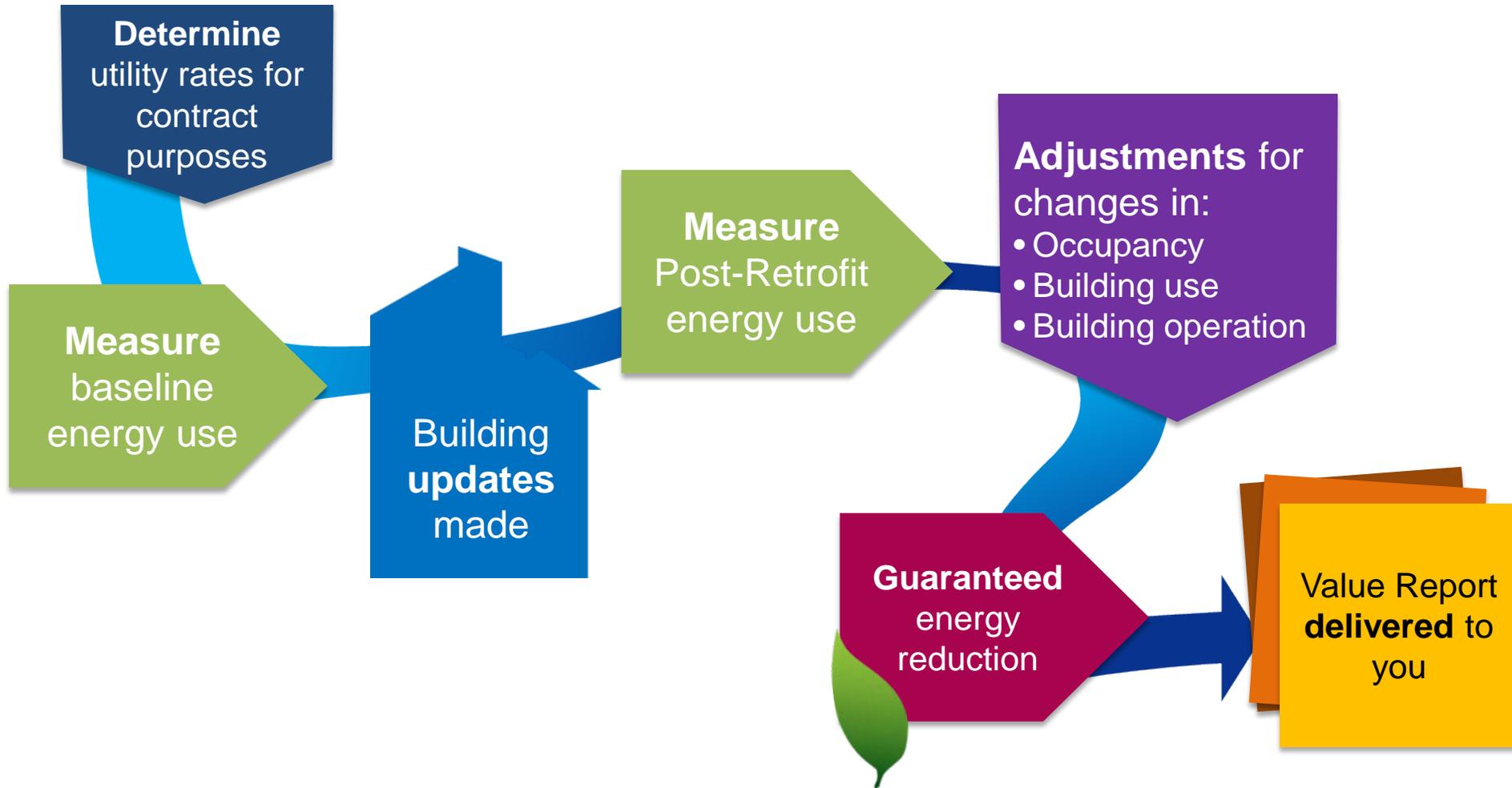
Performance Contracting – realizing the full savings



Note: this is for illustrative purposes



How does M&V work? How do I know if I am realizing my savings?



Future Energy Savings and Sustainability for Hawaii

Hawaii Clean Energy Initiative

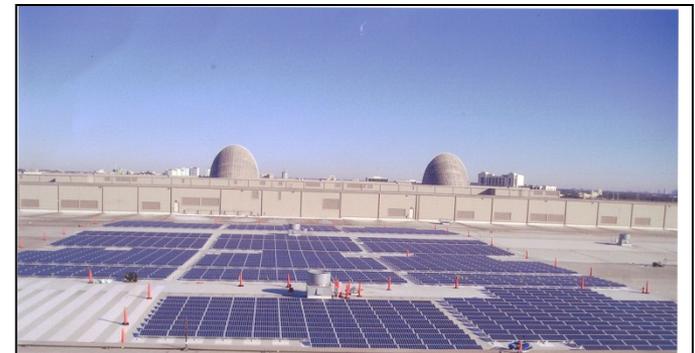
- Achieve clean energy based economy
- 70% reduction in oil dependency by 2030



State of Hawaii

- Performance Contracting \$99,161,315
- Dollars per Capita \$77.76

(2010 Data)



Past ESPC Hawaii Projects

- University of Hawaii Hilo
- Wilcox Memorial Hospital
- PJKK Federal Building
- The Judiciary – State of Hawaii
- Tripler Army Medical Center
- City & County of Honolulu Hale



Current ESPC Hawaii Projects

Project Name

Project Phase

- | | |
|--|--|
| • University of Hawaii
Community College (ESPC) | Completing Construction
Measurement & Verification |
| • University of Hawaii
Community College
(Renewable) | Starting Construction |
| • Maui College (ESPC,
Renewable) | Completing Construction
Measurement & Verification
Starting Construction |

Current ESPC Hawaii Projects

Project Name

Project Phase

- Hawaii Department of Transportation (ESPC, Renewable)
 - Airports
 - Harbors
 - Highways(All Islands)

Development of Investment
Grade Audit (IGA)



\$80 million in energy savings. Now that's paradise.

With Hawai'i having the highest electricity prices in the United States, the University of Hawai'i Community Colleges are taking action to conserve energy.

Working with Johnson Controls, the community college system is upgrading five of its campuses. Improvements include energy-efficient lighting, heating, ventilation and air conditioning upgrades, and a Metasys® building management system to monitor and control energy use. Additionally, solar photovoltaic and solar hot water systems take advantage of the islands' abundant sunshine.

These improvements are expected to save \$80 million over 20 years, preserving more funds for education. Carbon emissions will be reduced by 5,200 metric tons, complementing Hawai'i's respect for the land. And students and faculty benefit from more comfortable learning environments and sustainability education programs provided by Johnson Controls. Aloha paradise!

Johnson Controls makes buildings more energy efficient and sustainable, and we can do the same throughout Hawai'i and around the world. After all, when buildings work better, people work better. Visit [johnsoncontrols-hawaiienergy](https://www.johnsoncontrols-hawaiienergy.com)

University of Hawaii Community Colleges Sustainable Benefits

- Electric: **6,941,414** kWh
- Therms: 7,653
- Water/Sewer: **25,352,000** gallons
- Reduction of 5,200 metric tons of Greenhouse gases (GHG)



Unique Project Details

University of Hawaii Community Colleges

- Lighting Interior/Exterior/Controls
- Energy Management Control System
- Energy & Emissions Management System
- Retro-Commissioning/Balancing
- HVAC Improvements
- Central Chiller Water Plant Improvements
- Kitchen Exhaust Systems



Unique Project Details

University of Hawaii Community Colleges

- Electrical Sub-metering
- Irrigation Controls
- Water Conservation
- PC Monitoring Software
- Trash Management
- Vending Machine Controls
- Solar Hot Water Systems
- Electric Vehicle Charging Stations
- Building Kiosks



Unique Project Details

University of Hawaii Community Colleges

UHCC

- Leeward CC 691.37 kWDC
- Kapi'olani CC 125.85 kWDC
- Honolulu CC 221.83 kWDC
- Total 1,039.05 kWDC

