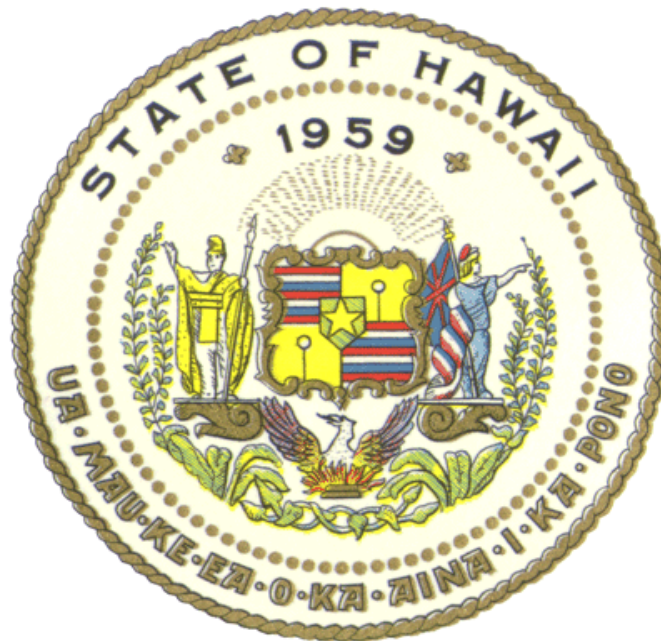


Promoting Energy Efficiency Financing and Incentives

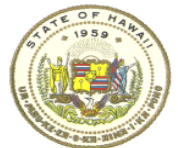
*State of Hawaii
Department of Accounting &
General Services*



August 14, 2012

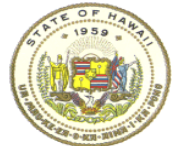
Governor's Energy Initiatives

- Reduce Hawaii's dependency on imported fossil fuels and associated greenhouse gas emissions
- Use Energy Savings Performance Contracting as the delivery method for timely implementation of conservation and efficiency measures
- Governor signs agreement with the U.S. Department of Energy on Hawaii's Clean Energy Initiative
- 70% Clean Energy by 2030
(40% renewable, 30% efficiency)



DAGS Energy Objectives

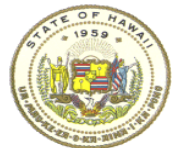
- **Increase energy efficiency** and building performance with the goal of reducing energy usage and demand
- Accelerate **reducing life cycle costs** of operating the buildings including maintenance cost, equipment service life, water usage, solid waste generation, etc.
- **Improve indoor environmental quality** for occupants
- Address the **deferred repair and maintenance backlog** of projects
- **Leverage available annual cash flow** from Energy Savings



Energy Savings Performance Contracting

Provides the opportunity for private business to bring capital dollars to state and local government agencies

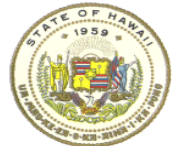
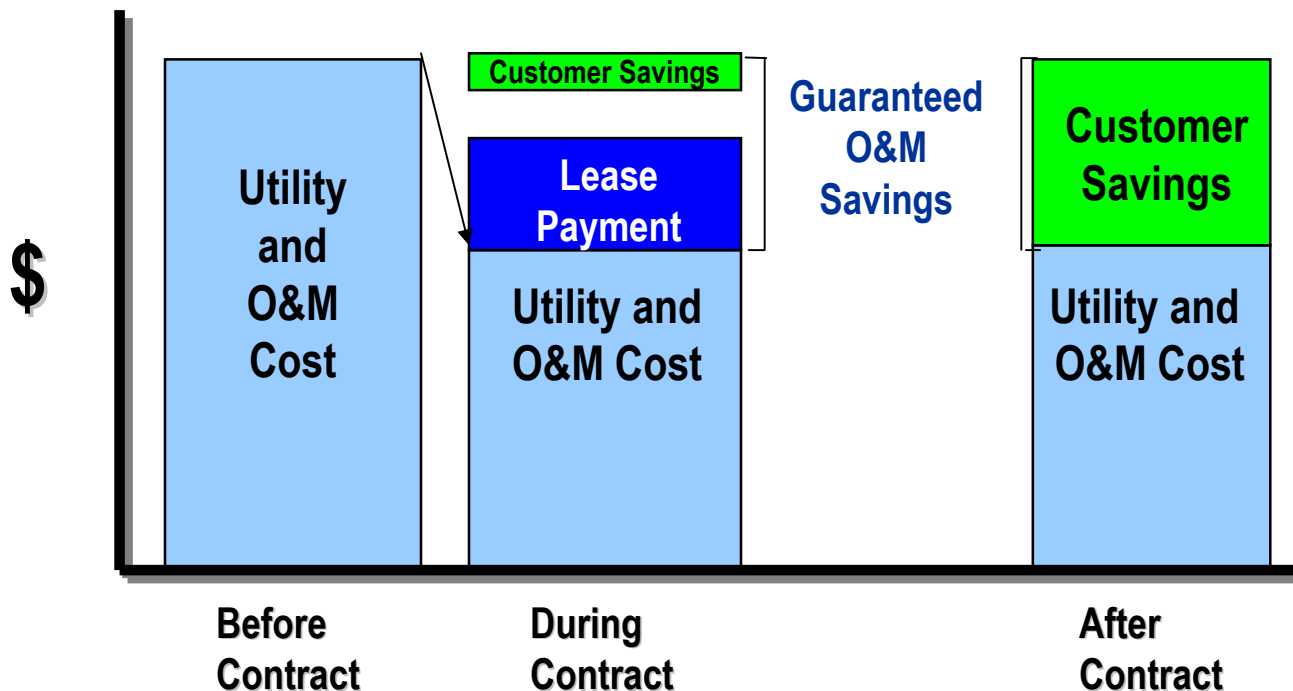
A method of paying for facility improvements using energy and operational savings



Energy Savings Performance Contracting

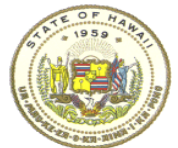
Project Costs Paid From Existing Operating/Utility Budgets

- Savings fund facility improvements
- Savings and performance are guaranteed
- Tax Exempt Lease Agreement paid from savings



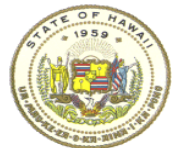
Energy Savings Performance Contracting

Inaction or delay means these lost savings are paid to Utility Companies and not available to fund facility improvements



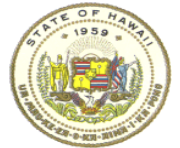
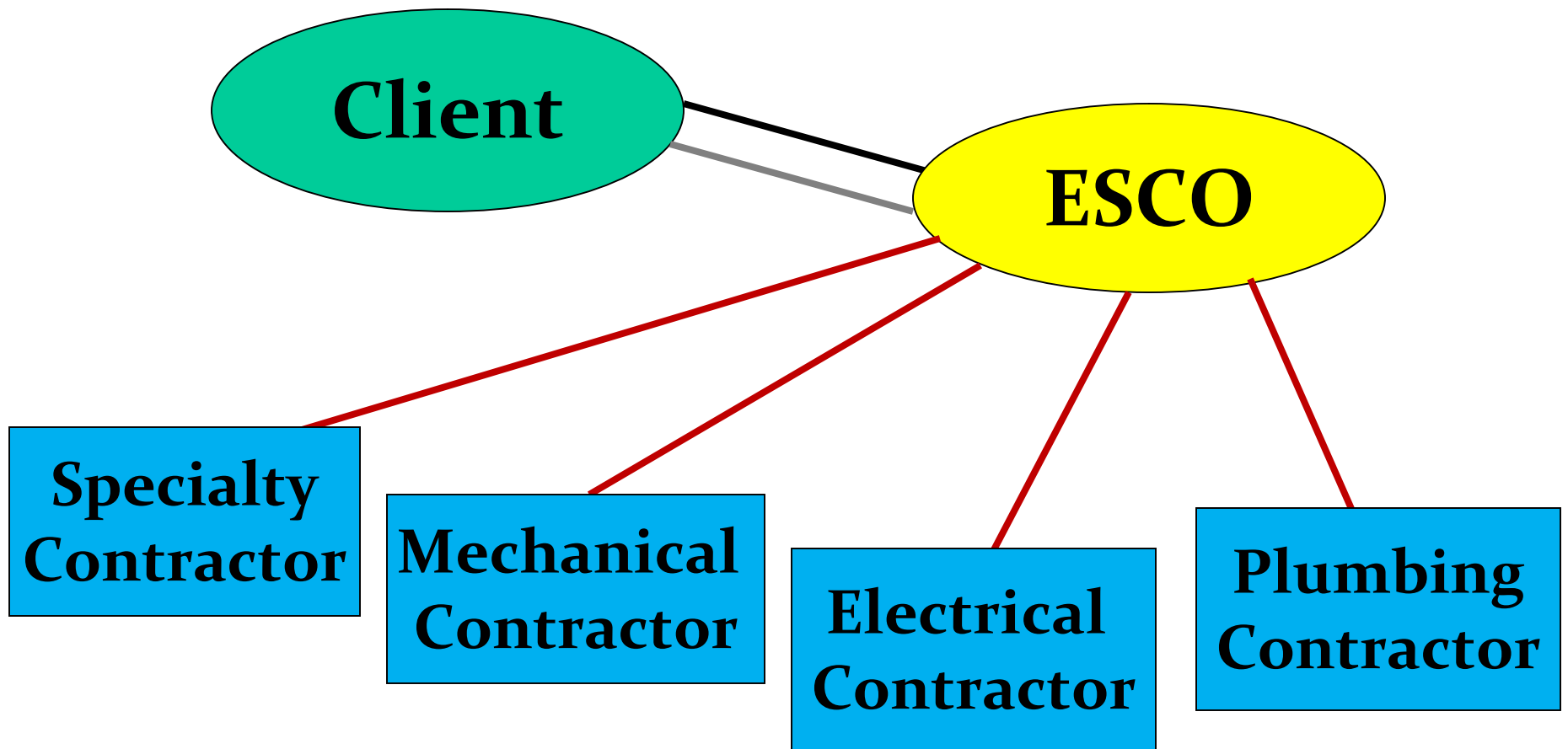
Typical ESPC Sources of Funding

- ➔ **Tax Exempt Lease Purchase Agreement**
- ➔ **Power Purchase Agreement**
- ➔ **General Obligation Bonds**
- ➔ **Capital Improvement Funds**
- ➔ **Utility Rebates**
- ➔ **Government Subsidized Funding (ARRA, QECCB, ?)**



Procurement Considerations

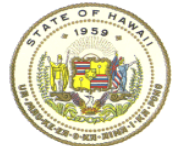
Design/Build – RFP \approx ESPC



Advantages of Performance Contracting

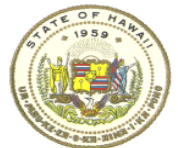
Comparison of Energy Services Performance Contracting To Bid and Specifications Procurement

Item:	Design-Build ESPC	Bid & Spec. Procurement
Source of project funding	O&M Savings	Capital Budget
Term of Lease Purchase Agreement	15-25 Years	?
Ability to negotiate with preferred suppliers vs. low bid	Preferred Supplier	Low Bid
Guaranteed Results: Savings Guarantee and Annual Reconciliation	Savings Guarantee	None
Guarantee Maximum Price (Turnkey Price)	Yes	No
Open Book Pricing Disclosure of Markups	Yes	No
Number of Years Savings Fund Improvements	15 to 25 Years	Typically 1 Year

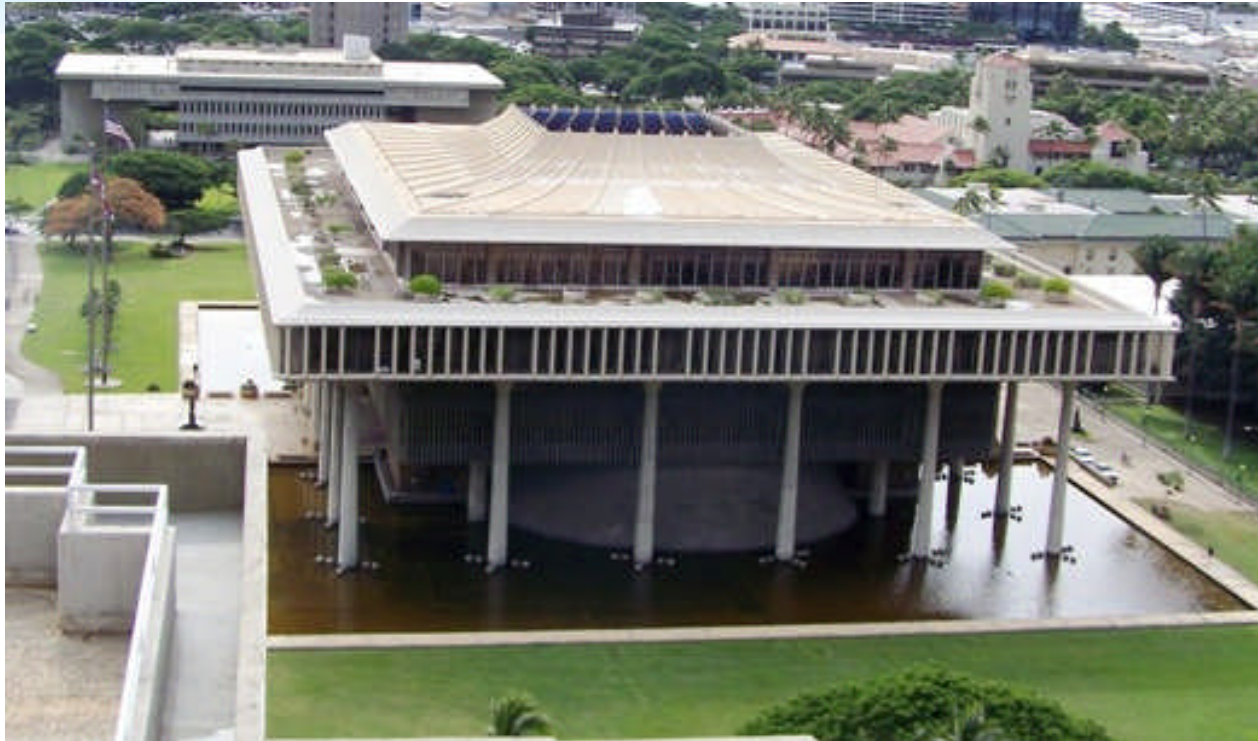


Advantages of Performance Contracting

- ➔ **Creates jobs (Electrical, mechanical, controls, management, maintenance, plumbing. etc.)**
- ➔ **Creates State and Local Government Tax Revenue in difficult economic times**
- ➔ **Improves working/learning environment for building occupants**
- ➔ **Guaranteed maximum price**
- ➔ **Guaranteed annual savings**



State Capital District Project, Honolulu



Facility Type: State Capitol Complex

Facility Size: 10 buildings, 1,393,965 sq. ft.

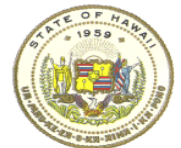
Type of Contract: State ESPC

Term of Contract: 20 years

Total Project Cost: \$33,902,962

Total Annual Utility Savings: \$2,447,155

Total Incentives: \$347,289



State Capital District Project, Honolulu

➔ Technologies:

➔ Lighting:

- High efficiency super T8 lamps & ballasts
- Occupancy sensors
- Bi-level stairwell fixtures

➔ Energy Management System: New DDC EMS

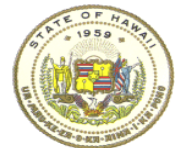
➔ Electrical Sub-metering: New meters connected to EMS

➔ HVAC (Air Side):

- AHU Infrastructure Modernization with new premium efficiency motors where VFDs are installed
- Convert constant volume HVAC systems to VAV
- Demand control ventilation

➔ Air Conditioning (Water Side):

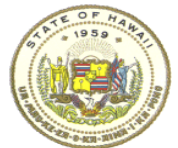
- New high efficiency chillers
- Variable speed cooling tower fans
- Variable speed CHW pumps
- Condenser water treatment system (chemical free)
- Cooling tower make-up Deduct meters



State Capital District Project, Honolulu

Technologies:

- ➔ Renewable Energy: Photovoltaic system
- ➔ Water Conservation:
 - Low consumption toilets
 - High efficiency urinals
 - Sensor-controlled lavatory faucets
 - Low consumptions showerheads
 - Weather based irrigation controls
- ➔ Building Envelope: Interior doors & entry doors
- ➔ Information Technology:
 - Desktop power management
 - Energy Conservation Through Behavior Change
- ➔ Miscellaneous:
 - Facility asset management tool
 - Energy Star performance rating
 - HVAC
 - EMS
 - Elevator
 - Emergency Generator Service
 - M&V



Department of Public Safety



Facility Type: State Correctional Facilities

Facility Size: 4 buildings, 565,430 sq. ft.

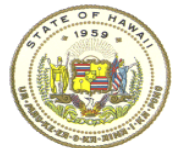
Type of Contract: Energy Performance

Term of Contract: 20 years

Total Project Cost: \$25,511,264

Total Annual Savings: \$2,316,486

Total Incentives/Rebates: \$184,364

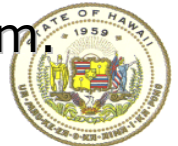


Department of Public Safety

Technologies:

Savings Drivers (SD):

- Lighting system improvements
- Induction lighting for exterior fixtures
- LED luminaries for parking lot lights
- Occupancy sensors and bi-level switching
- Energy management system (EMS)
- Variable air volume box replacements
- Variable speed chilled water pumping
- Low-flow domestic plumbing fixtures
- Low-flow pre-rinse sprayers
- Air-cooled ice machines with pre-cool heat exchangers
- Premium efficiency motors
- Power factor correction
- Diesel steam boilers
- High speed laundry washer-extractor with ozone system.

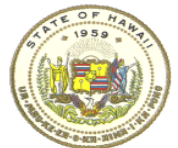


Department of Public Safety

Technologies:

Customer Requested (CR):

- Energy Star room air conditioner
- Fan-coil unit replacements
- Laundry wastewater recycling
- Energy efficient transformers
- High efficient chillers
- Roof repairs
- Replace gas fired domestic water heaters
- New switchboard/utility metering cabinet.
- Repair & Replacement:
 - laundry drying tumblers,
 - repair and replacement fund,
 - electrical infrastructure
 - (auto transfer switches, etc.).

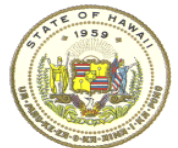


Department of Public Safety

Technologies:

O&M and Training (OM):

- HVAC maintenance
- EMS maintenance
- AC and refrigeration maintenance
- Boilers, emergency generator maintenance
- Laundry equipment maintenance
- Facility energy coordinator
- Supervisory training
- HVAC technician
- Computerized maintenance management system
- High mast security lighting.



Mahalo!

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