

# Top Ten *Lead By Example* Moments of 2011-2012

Pacific Peer Exchange

March 7, 2012

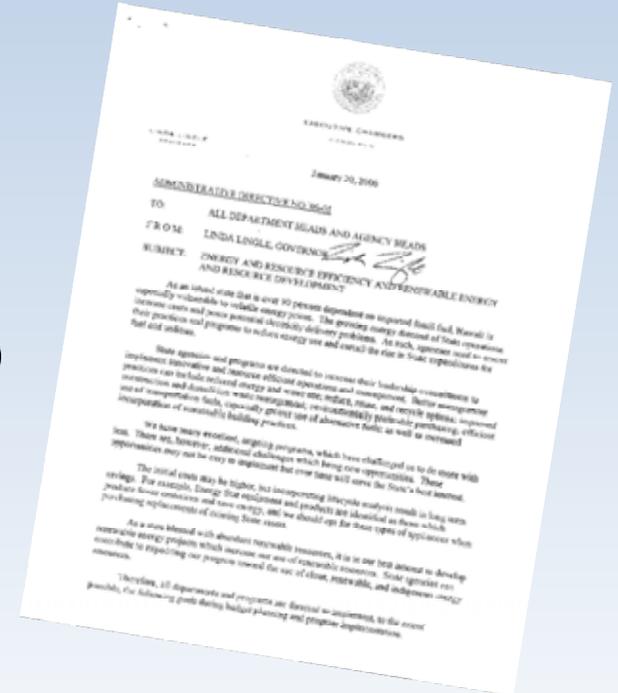
Jon Chin



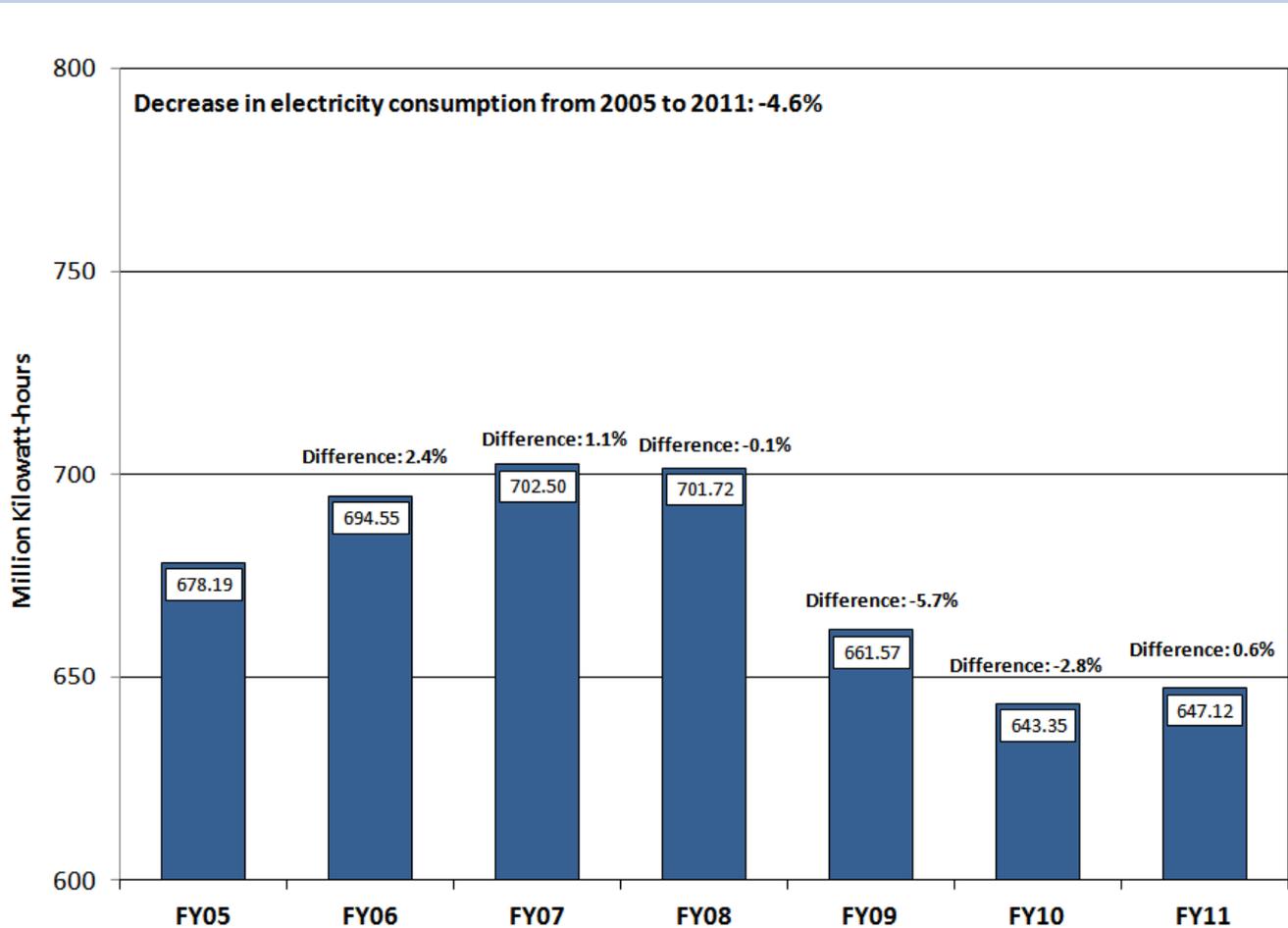
# LEAD BY EXAMPLE (LBE)

## Working Groups:

- Leadership (Cabinet Level or designated rep)
  - Building Energy Use (efficiency and renewable)
  - Environmentally Preferable Purchasing
  - Transportation
- 
- ACEEE named the LBE program one of the “Top Five State-Led Energy Efficiency Programs” in 2010

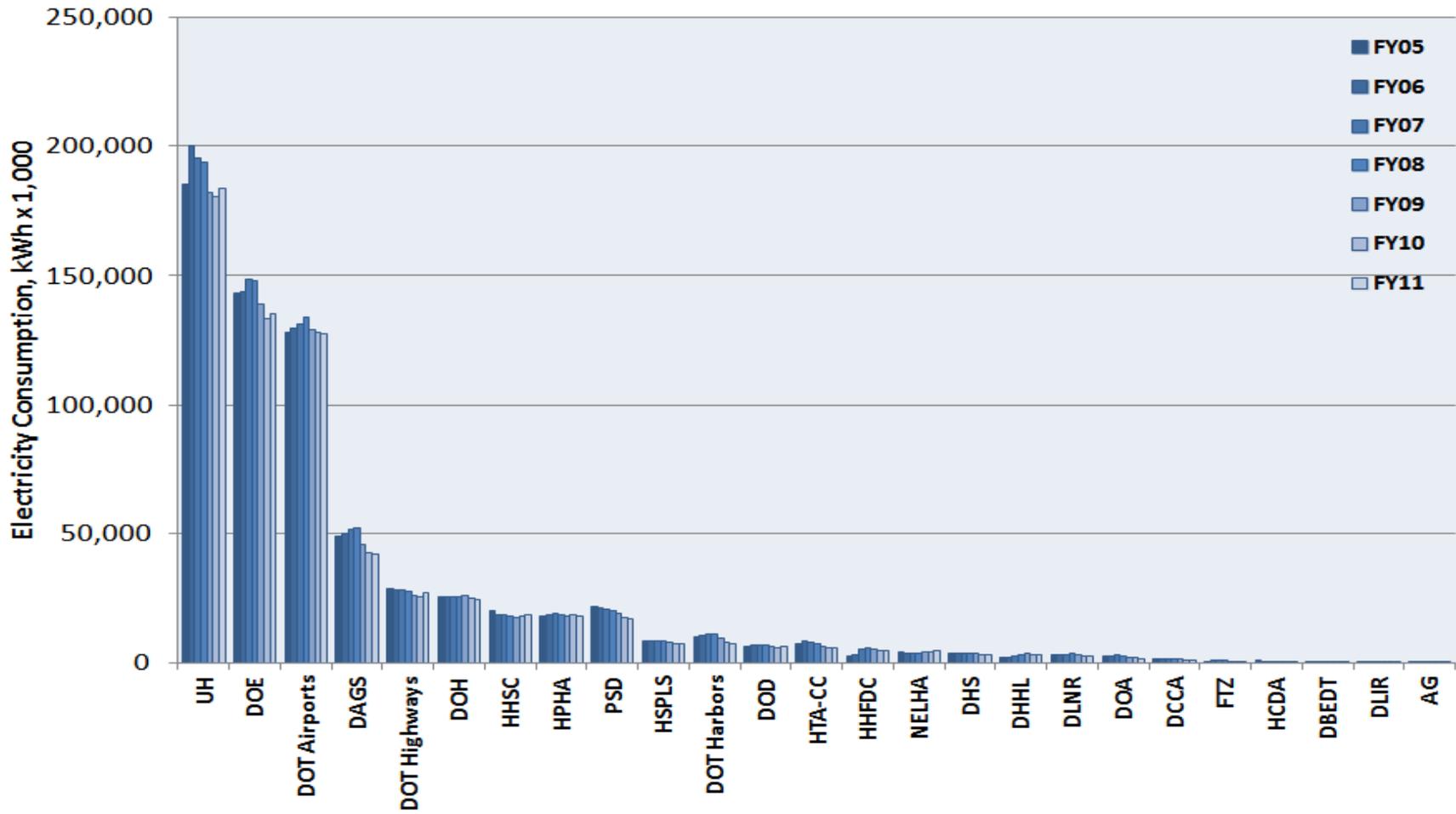


# Annual State Agency Electricity Consumption from FY05 – FY11

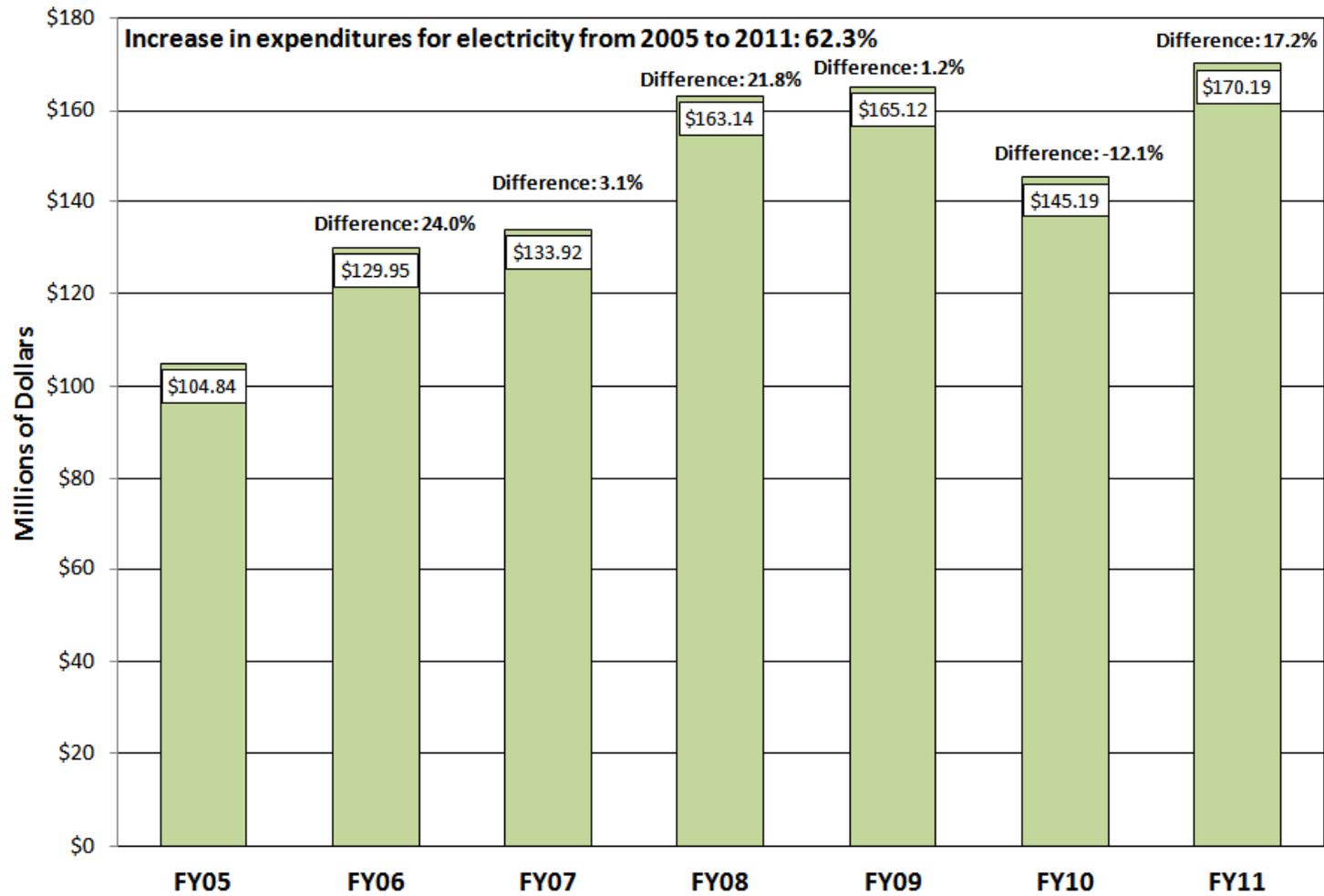


In FY11 electricity consumption increased by 0.6% over FY10. Half of the increased consumption was a result of new facilities coming on-line. New meters accounted for 1.8 million kWh, or approximately 49% of the 3.7 million kWh increase in FY11. Even with the slight increase, agency consumption remains 4.6% below the 2005 baseline year.

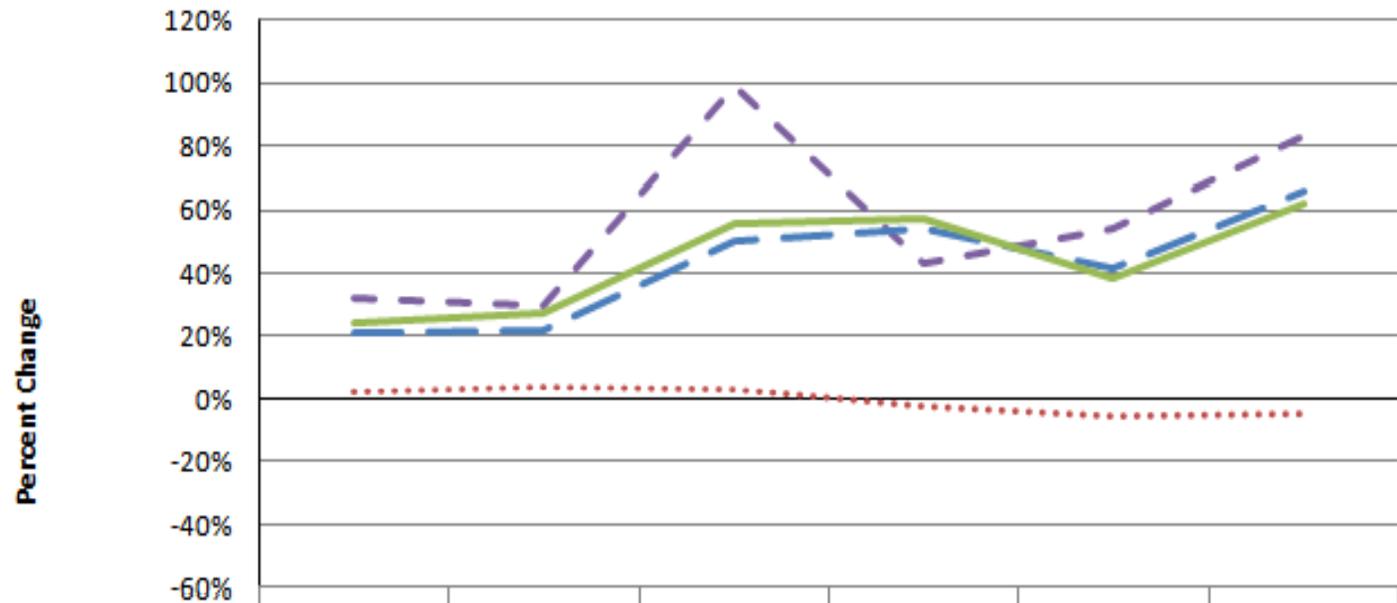
# Comparison of Electricity Consumption by Agency by Year



# Annual State Agency Electricity Costs from FY05 – FY11



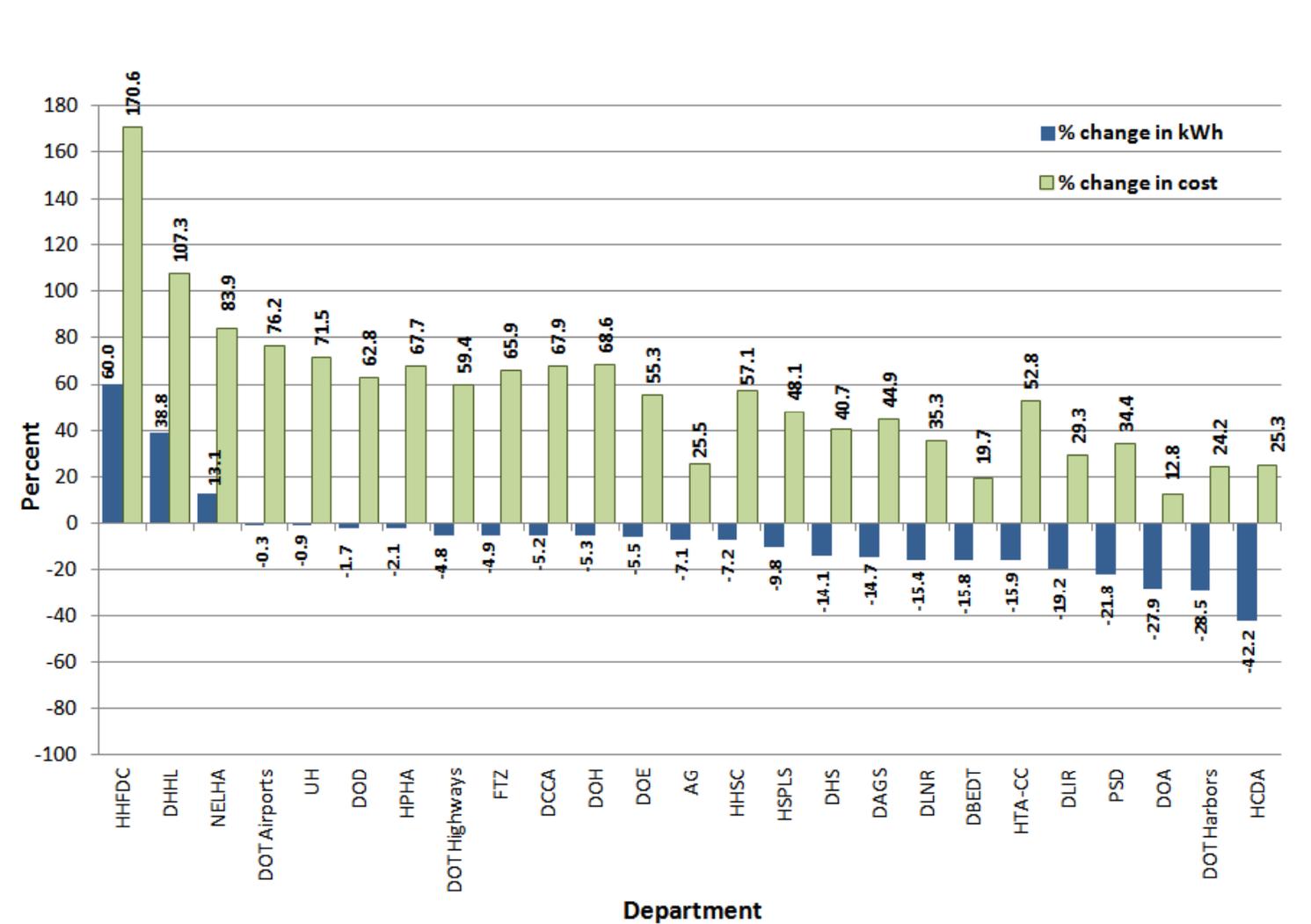
# Percent Change (over FY05) of Electricity Price, Cost, and Consumption



	FY05-06	FY05-07	FY05-08	FY05-09	FY05-10	FY05-11
Price of Oil (\$/bbl)	31.8%	30.0%	99.1%	43.0%	54.2%	83.1%
Total State Avg Retail Price (All Sectors; \$/KWH)	20.9%	22.1%	50.5%	54.5%	41.8%	65.5%
Total SOH Building Electricity Cost (\$)	24.0%	27.7%	55.6%	57.5%	38.5%	62.3%
KWH	2.4%	3.6%	3.5%	-2.5%	-5.1%	-4.6%

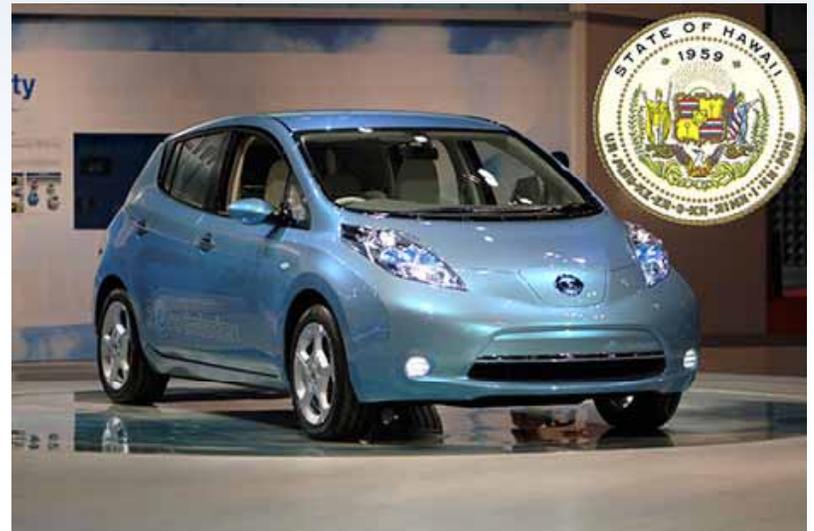
Sources: NYMEX WTI Future Price; EIA-826 ; Utility (HECO, MECO, HELCO, & KIUC) Billing data

# Consumption and Cost Percentage Change from FY05-FY11 by Agency



## #10: Adoption of Electric Vehicles

- Through the EV Ready Program, funds were allocated to DAGS for the purchase of six (6) EVs for the state motor pool and for charging stations. DBEDT and NELHA also have EVs.
- Under the EV Ready Program, three (3) private charging stations and two (2) public charging stations were installed.



## #9: Waste Reduction and Recycling

- UH Mānoa has an on-going campus-wide recycling and program that recycles cans, plastics, paper products, and green waste reducing the total waste-stream by 37%
- The FTZ recently began a cardboard recycling program where tenants and Zone users can place their cardboard boxes and shipping materials in a designated recycling area. This measure has effectively reduced the FTZ's solid waste refuse volume by forty (40) percent
- UH Hilo has a new and active MIXED recycling process where all types of paper, plastic #1, 2, 5, clean metal cans, and glass are all recycled, which should more than double the amount of recycled waste to an estimated 132,000 cubic feet diverted from the landfills



## #8: Grants

- The DOE, in partnership with the UH College of Tropical Agriculture and Human Resources, was awarded an EPA Grant that will focus on best practices for school landscape management as a pilot study for 3 DOE schools on O‘ahu. During the 18 month grant, irrigation water benchmarking will be included, along with a sample food waste audit
- UH, DOH, and DBEDT participated in the Rewarding Internships for Sustainable Employment (RISE) program and hired paid interns to work on projects ranging from Energy Audits, GHG accounting, Diesel Emissions Reduction, and Green Business.



## #7: Environmentally Preferable Purchasing (EPP)

- The results of an annual survey show that state agency EPP in 2011 lead to greenhouse gas (GHG) savings equivalent to removing approximately 93 passenger vehicles from roadways for one year and energy savings equal to conserving about 17,188 gallons of gasoline in a year.
- UH Mānoa has an extensive dining and food service recycling and bio-based program, with over 80% of all paper goods used by UH Mānoa Buildings Services coming from recycle paper products.
- HHFDC requires that all appliances installed in residential apartments have the highest ENERGY STAR® rating possible. This stipulation also has been placed in laundry vendor contracts since all power used is a direct operating expense.
- DBEDT recently released the 2012 Environmental Product Guide to assist with EPP.



## #6: Capitalizing on EE Incentives

- State agencies have received more than \$6.05 million in efficiency rebates since 1996 from the Hawai‘ian Electric Company (HECO) and its subsidiaries and from Hawai‘i Energy. These rebates combined have resulted in estimated cumulative dollar savings of over \$128 million and electricity savings of 619 million kilowatt-hours. Over the life of the equipment, the savings will be equivalent to approximately 148,000 households’ annual electricity use. In FY11 state agencies received \$733,349 in rebates, the highest rebate total of any year.



# #5: EPA National Building Competition

- Hawaii State Capitol Building - made the final cut and saw kWh reductions.
- Field of 245 buildings across the country
- 13 Building Types represented
- May 2011 – November 2011
- Winner was a parking garage at University of Central Florida
- iConserve Rally at the Capitol
- iConserve Green Champions
- Training/Workshops
- Outreach/Education

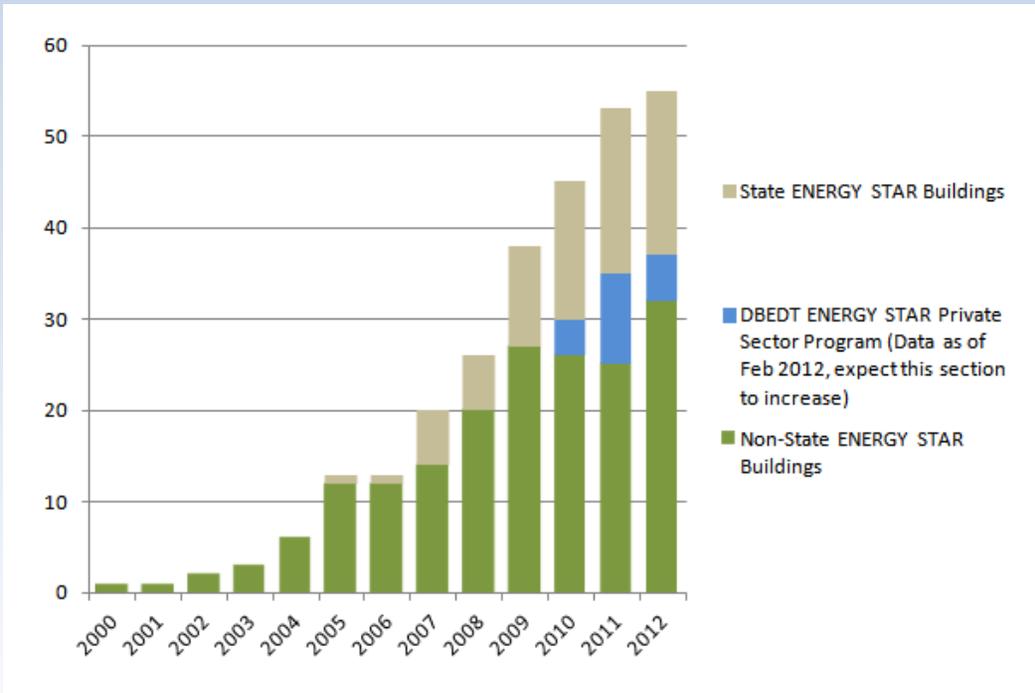


## #4: LEED and Green Buildings

- Six years ago, there was only one LEED Accredited Professional (AP) working for the state. Now, there are 30 LEED APs and the state requires all new construction and major renovation to meet LEED Silver standards.
- To date, ten state facilities have been certified as meeting LEED standards or have been completed and are awaiting certification by USGBC. An additional 55 projects are in the process toward certification.
- LEED Existing Buildings: Operations & Maintenance – State Office Tower
- DHHL: 403-unit Kanehili Subdivision, Kaupuni Net-zero Community, and Kumuhau (LEED Silver)



# #3: ENERGY STAR® Benchmarking and Certification



Note: 67% of ENERGY STAR® certified buildings in Hawaii are in the *Office* category with an additional 18% in the *Hotel* category. 61% of ENERGY STAR® certified buildings in Hawaii have been certified in more than one year.



- To date, 172 state facilities have been benchmarked using the ENERGY STAR® Portfolio Manager online tool.
- 18 state facilities have received ENERGY STAR® Certification in at least one year.
- There are a total of 54 ENERGY STAR® certified buildings in Hawaii.



## #2: Renewable Energy Development and Power Purchase Agreements

- University of Hawai'i (UH) campuses have installed solar PV projects with a combined capacity of 761 kW, and the UH Mānoa campus is currently in the design phase to install an additional 5 MW of PV in FY2012. UH Maui College has installed a 1.2 kW wind turbine system.
- DAGS installed a 236 kilowatt (kW) PV system for the Kalanimoku Building located in the Capitol District and is planning a 100 kW system at DAGS' Central Services Division baseyard.
- The Hawai'i State Public Library System (HSPLS), working with DAGS, is constructing or has completed construction of six photovoltaic system projects at six public libraries.
- DHHL will start construction soon on the largest Micro-scaled Concentrating Solar Power project in the State of Hawai'i. The Kalaeloa Solar One project will produce 5 MW of renewable energy for the island of O'ahu.
- DOT-Airports signed a 20-year power purchase agreement in 2009 for a total of seven (7) photovoltaic systems totaling 901 kW of capacity. Through a second round of power purchase agreements in 2011, DOT-Airports awarded development of photovoltaic renewable energy generation systems at 15 sites. Seven (7) power purchase agreements have been signed for a total capacity of 606 kW. The remaining eight (8) are pending, but are planned for an additional 2.69 MW



# #1: Energy Savings Performance Contracting

- The Energy Services Coalition, a national nonprofit organization dedicated to supporting performance contracting, recognized the State of Hawai'i as first in the nation in Energy Savings Performance Contracting (ESPC) for State Building Efficiency. To date, over \$159 million has been invested in both State and County ESPCs with cost savings expected to grow to more than \$328 million over the 20-year life of the contracts. DBEDT has provided technical assistance to agencies for projects dating back to 1996.



# State ESPC Projects Since 2009

Agency	Facilities	Investment Value	Annual Savings	Over 20-year Agreement
DAGS Phase I	10 Downtown Buildings	\$33-\$34M	\$3.2 M/yr.	\$64M
UHCC	4 Oahu campuses, Kauai CC	\$26M	\$2.9M	\$58M
Public Safety	Halawa high security and med security, OCCC, 1 jail	\$25+M	\$2.36M	\$47.2M
DAGS Phase II	33 buildings	estimated value unknown		
DOT	15 airports, harbors and highways facilities	estimated value unknown		

# DAGS ESPC

- State Capital District including **10 buildings** covering approximately **1.3 million square feet**.
- Buildings include: Kalanimoku, Keelikolani, Kekauluohi, Kekuanaoa, Keoni Ana, Kinau Hale, Liliuokalani, No. 1 Capitol District (Hemmeter), State Capitol, Leiopapa-A-Kamehameha.
- Project size: **\$34 million** constructed in FY2010 and FY2011.
- **FY2010-2011: Jobs & Taxes**
  - **401 local jobs**
  - **\$1.5 million in state tax revenue**
  - **Additional \$1.7 million tax revenue over the next 20 years**

**Thank You!**

Questions?

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