

LEGISLATIVE REPORT

- SUBJECT:** Relating to the State Budget
- REFERENCE:** Act 213, Session Laws of Hawaii 2007 (HB500, HD1, SD1, CD1, Section 80)
- ACTION REQUESTED:** Report on various energy efficiency projects and change in energy usage.
- DOE REPORT:** The Department of Education has filled the Energy Conservation Coordinator position as of January 2007. More planning and implementation of energy conservation programs, goals, and practices will be achieved with the filled position that includes:
- 1) Design all new schools and some new buildings for the Leadership in Energy and Environmental Design (LEED) Silver standards.
 - a. The following new schools are planned to meet LEED Silver:
 - i. Ewa Makai Middle
 - ii. Lahaina III Elementary
 - iii. Wailuku Elementary II
 - b. The following schools will have buildings that meet LEED Silver:
 - i. Naalehu Elementary – six classroom building
 - ii. Kapaa Elementary – library
 - c. The following facilities are designed to meet LEED Silver however will not be formally certified as LEED Silver due to cost constraints:
 - i. Baldwin High School – library
 - ii. Lanai High and Elementary School – six classroom building
 - iii. Keaau Middle School – eight classroom building
 - iv. Pahoa High School – gymnasium
 - v. Nanakuli High School – eight classroom building
 - vi. Campbell High School - eight classroom building
 - 2) Existing and on-going programs to achieve energy conservation goals as required by Act 96 include:

- a. Seek and appropriate funds for service providers (consultants, contractors) capable and willing to design and plan for LEED Silver facilities. Hold periodic meetings with supporting service providers.
 - b. Capture and consolidate separate line-item costs for design and construction estimates for new and/or substantially renovated facilities in meeting LEED Silver ratings.
 - c. Train in-house employees holding key positions to effect energy conservation design, planning, and construction.
 - d. Pilot studies for occupancy sensors for lighting controls.
 - e. Finalize the energy conservation school program that benchmarks school energy use for a baseline using a three year average. Schools with usage higher than the three year baseline will have to pay half the excess energy cost. Schools saving energy will be reimbursed for half of their energy cost.
 - f. Extension of the school energy audit pilot program that allows a school an on-site visit by the energy conservation coordinator. The energy audit will identify and quantify various equipments and generate an assessment of energy savings in a report.
 - g. Formation of a committee chaired by the energy conservation coordinator that will align energy conservation effort for the Department of Education. This will include review of new energy conservation technology, existing operations in school curriculum that effect energy use, and review of existing operations in design, planning, procurement, and maintenance for ways to reduce energy consumed.
- 3) Future programs for FY 2007-2008 and 2009-2010 are:
- a. Installation of photovoltaic systems in FY 2007-2008 with \$5 million appropriated by the 2006 Legislature.
 - b. Replace existing inefficient lighting with the newest and proven efficient lighting technology available.
 - c. Use solar water heating when feasible to replace gas and/or electric water heating.

- d. Limit school purchases to energy efficient equipment for office and school use – Energy Star rated.
 - e. Continue with Phase 1 Energy Audits for requesting schools. Up-grade Phase 1 Energy Audits to Phase 2 that will track and benchmark individual school loads and buildings energy performance implementing measurements for ambient ventilation, temperature, electricity and gas.
 - f. Completion of Life Cycle Cost Analysis (LCCA) for identified equipment replacement.
 - g. Enter into Energy Savings Company Contracts (ESCO) with municipal lease funding for equipment installation demonstrating positive LCCA.
 - h. Initiate pilot studies for various available technologies or combination of technologies towards meeting energy conservation goals and a match for DOE Facilities and Maintenance and Planning operations.
 - i. Continue to utilize consultant studies for strategic alignment of resources towards energy conservation.
- 4) Energy Usage Change
- a. Electric and Gas consumption is tracked annually. An internal system has been developed that will track individual school electric energy usage with comparison to a three year average.
 - b. Most recent and available information to date indicates school enrollment is near level with moderate increases in energy use resulting from the impact of technology use for educational purposes, expansion of facilities, and mandated use of air conditioning for noise and heat abatement.
 - c. Energy conservation may lower energy use but will continue to be offset by increases in energy use as the result of more buildings and more computers and other technology equipment thus impossible to predict. The impact of energy conservation can most accurately be measured by individual performance of energy conservation measures. To date, DOE has reduced electric

energy consumption by 308,443 kwh as measured by utility rebates in 2006.

- d. Future measures that reduce energy consumption will be tracked and reported as they come into fruition.