

# HECO CONNECTS WITH THE COMMUNITY



## Buildings for the 21st Century

Buildings that are more energy efficient, comfortable, and affordable...that's the goal of DOE's Office of Building Technology, State and Community Programs (BTS). To accelerate the development and wide application of energy-efficiency measures, BTS:

- Conducts R&D on technologies and concepts for energy efficiency, working closely with the building industry and with manufacturers of materials, equipment and appliances
- Promotes energy/money saving opportunities to both builders and buyers of homes and commercial buildings
- Works with State and local regulatory groups to improve building codes, appliance standards and guidelines for efficient energy use
- Provides support and grants to States and communities for deployment of energy-efficient technologies and practices



For more information, contact:

**Energy Efficiency and Renewable Energy Clearinghouse (EREC)**

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efficiency and renewable energy and what that means in making Hawaii a more desirable visitor destination," says University of Hawaii-Manoa's Steve Meder, a professor of architecture who has been studying Hawaii's tourism industry for quite some time.

HECO and the Consortium are actively looking for support and facilities to demonstrate the project and teach other visitor destination facilities on the islands of Hawaii about energy and resource conservation. Lessons learned about more efficient energy and resource use in the hospitality sector in Hawaii are very transferable. Hawaii's climatic conditions are similar to many U.S. Territories, including American Samoa, Guam, Puerto Rico and the Virgin Islands. Climate-based concepts and techniques developed in this proposal will also be applicable to the warm, humid areas of the southern United States. Looking beyond the U.S., these programs can also be transferred to the Federated States of Micronesia, South Pacific Island nations and the Caribbean area. The potential to have Hawaii serve as a model of green hotels to the contiguous United States is enormous: there are 49,000 visitor destination facilities in the U.S. with a total of 3.8 million rooms, which generate 74 percent of the hotels' income. The industry spends more than \$1.41 per sq. ft. on energy annually, with an average of \$771 per available room for electricity, or 58 percent of total utility costs.

## SUCCESS RECOGNIZED

HECO has been successful in developing programs and projects to address the energy-efficiency needs of their unique customer base. As a result, this forward-

thinking utility was awarded the 1999 Rebuild America Award for Energy Excellence in Commercial Buildings at the Rebuild America Forum held in Las Vegas, Nevada.

Working with award-winning State Representatives such as DBEDT's Liz Raman, programs such as Energy Solutions for Small Business, and utility companies such as HECO, the residents of Hawaii are saving energy while enjoying the modern conveniences of electricity and lighting.

King Kalakaua and Thomas Edison would be proud of the way their illuminating innovations are being used responsibly on these islands of azure and gold.

## A ROYAL VISION

Hawaii may have the only utility company in the United States – perhaps the world – inspired by the vision and enthusiasm of a king.

His name was King David Kalakaua. As a 19th century monarch of the then Hawaiian Kingdom, he was a ruler with a technical and scientific bent and an insatiable curiosity for modern devices. Kalakaua was shrewd enough to recognize the potential of "electricity" and helped pioneer its introduction in the Hawaiian kingdom. Not satisfied to just hear and read about this revolutionary new form of energy, the king traveled to New York in 1881 to meet with none other than the inventor of the incandescent bulb, Thomas Edison. Five years later Iolani Palace became the world's first royal residence to be lit by electricity. King Kalakaua laid the foundation for what we know today as the Hawaiian Electric Company, Inc., or HECO.

For more than 100 years, HECO has provided the energy that has fueled the islands' development through its colorful history – first as a kingdom and now as a modern state. HECO continues that leadership role as a member of the Rebuild Hawaii Consortium, formed in 1998 to leverage resources of all the Rebuild America partnerships in Hawaii, and bring in utilities and community and private sector entities to make it a comprehensive statewide organization. Today, HECO and its subsidiaries, Maui Electric Company (MECO), and Hawaii Electric Light Company (HELCO) provide electricity to 95

percent of the state's 1.2 million residents spread out over the islands of Oahu, Maui, Hawaii, Lanai and Molokai. Acting as responsible energy providers, nationwide utilities like HECO leverage their influence to help Rebuild America partnerships maximize energy efficiency and energy savings.

## GOOD NEWS, BAD NEWS, GOOD NEWS

Ironically, the good news is that Hawaii is already fairly energy efficient and Hawaii residents don't use as much energy as other American households. There is little need for heating and air-conditioning, driving distances are minimal, very few of the industries are energy intensive, and Hawaii residents are very environmentally aware of the need to protect the natural beauty of the islands.

Now for the bad news. Although they don't use as much energy as most Americans, Hawaii residents pay top dollar for what they do use. The state relies on imported oil and coal for more than 90 percent of its energy needs and, according to a recent poll, state energy prices in Hawaii are among the highest in the nation.

The outlook for Hawaii's energy future is bright. Additional efficiency improvements are possible and these efforts will improve the state's economy and environment. By reducing its high energy bills through energy efficiency, and diversifying its energy supply sources through renewable energy, the government of Hawaii is able to use its revenues more effectively. Private

businesses become more profitable and competitive in Hawaii and the international marketplace. In addition, energy-efficiency projects directly impact the local economy by providing quality jobs. Energy efficiency helps cut down on air pollution—and that is good for Hawaii and good for the environment.

These improvements can be as close as the nearest light switch. One of the most simple and cost-effective ways to save money on an electric bill is through energy-efficient lighting.

With HECO and four other utilities, four Cities and Counties, six State agencies, two Federal agencies, the University of Hawaii and its community college system, and three private sector representatives, the Consortium cooperatively promotes energy efficiency as a catalyst for economic development, especially in the underserved small business and low-income housing sectors, by helping its members to develop projects for delivery of energy savings, products, and practices and to locate financing for the projects.

The Rebuild Hawaii Consortium works with HECO on the following projects, each of which has an efficient lighting component:

- Energy Solutions for Small Business project of HECO works on new marketing approaches that break down barriers that are keeping small businesses from installing energy-efficiency devices.
- EnergySmart Schools, a student energy audit pilot project in two Oahu high schools, is spearheaded

by HECO. Students are auditing school facilities and small businesses. In the process, they will learn auditing, marketing, presentation and computer software skills.

- The Hawaii Green Hotel Campaign and Demonstration Project plans to help Hawaii's hospitality industry increase their energy-and resource-efficiency by promoting clean energy production, reducing pollution from the industry, enhancing its economic strength, and developing partnerships between the tourism industry and its secondary support industries.

### ENERGY SOLUTIONS FOR SMALL BUSINESS

Smaller businesses—defined as establishments with less than 200 lighting fixtures—account for a large portion of Hawaii's commercial customers. HECO estimates that its underserved small business customers—including small-to-medium hotels, fast food restaurants, convenience stores, small retail, small offices, specialty shops, condominiums, and churches—total more than 24,000.

HECO and the Hawaii State Department of Business, Economic Development and Tourism (DBEDT) developed a special program to reach this underserved small business sector. The "Energy Solutions for Small Business" program assists and motivates small businesses to become energy efficient, improve lighting and reduce their electric bill. HECO audits the customer's lighting system, identifies energy-efficiency retrofit opportunities, calculates

potential energy and cost savings, provides the customer with a not-to-exceed price for improvements, and offers a no-interest installment payment plan—and even rebates—to qualified businesses. In addition, the utility sponsors energy management workshops to help small business owners identify energy-efficiency opportunities, control their operating costs and compare bids.

According to business owners, several barriers had to be overcome before energy upgrades could become a realistic option. Barriers included insufficient time, knowledge and trust in the vendors. Small business owners perceived energy-efficiency efforts as absorbing excessive time, and some felt they were not educated enough to make a fair assessment of services, while others held a certain amount of distrust toward contractors.

Energy Solutions for Small Business used aggregation of many small customers into one bidding package as the primary solution for these barriers. Aggregation would save time for the customer and the vendor; remove distrust of vendors on the part of the customer; provide verifiable energy information; and allow for the verification of savings once the retrofit was completed.

As usual, though, money was the number one barrier. Lighting retrofits typically cost between \$1,000 and \$5,000, and most lighting contractors could not extend a payment plan. Many business owners felt this dollar amount was too small to seek a bank

loan. HECO stepped in and agreed to pay the lighting contractor once the retrofit was inspected and approved. HECO would divide the expense into four equal amounts and bill the customer over four consecutive months at zero percent interest.

An Energy Solutions for Small Business Pilot project was implemented that emphasized lighting in businesses with less than 200 T12 fixtures at their facilities. Switching out these relatively inefficient lamps and ballasts would not only be a cost-effective measure, but would also provide a work environment with brighter lighting, more attractive merchandise displays and more comfortable working conditions.

HECO conducted its first lighting retrofit pilot project on 21 Oahu businesses, including restaurants, retail stores, housing facilities, parking garages and a TV station. Initial audits identified \$140,000 in recommended retrofits, which would save 612,000 kWh per year. Completion of these retrofits would yield \$53,000 in annual energy savings and would earn \$18,000 in HECO rebates.

Of the 21 sites recommended for lighting retrofits, seven businesses actually installed lighting retrofits and have realized an aggregate of 249,000 kWh per year in energy savings. The businesses save \$23,000 per year and received an additional \$7,000 in rebates from HECO's energy conservation program.

### ENERGYSMART SCHOOLS PILOT

In 1999, several Waianae and Kalaheo High students showed small business owners how to save money on their electric bills; in the process, the students learned new skills that would serve them well post graduation.

"We are offering this program for two reasons," says Jackie Mahi Erickson, HECO's vice president for Customer Operations/General Counsel. "First, we want to let more people know that investing in energy-efficient equipment can help schools operate more efficiently and save money," Mahi Erickson explains. "Secondly, we're working with the schools to offer students practical experience in using what they learn in the classroom in the real world."

Jim Redmond, a physics teacher at Kalaheo High School who was involved in the project, says, "Our students learned ways to save energy and calculate energy costs at their homes and schools. After their classroom studies, the students offered free energy audit services to nearby businesses, then developed marketing proposals and learned to do business presentations."

An incentive to the students helped keep them motivated. "HECO and Rebuild America offered a real incentive to our students. The kids' class or group will get \$50 for each of the audits they complete," said Waianae High School's Michele Haushulz.

### HAWAII GREEN HOTEL CAMPAIGN AND DEMONSTRATION PROJECT

The land that King Kalakaua once ruled still reigns as a premier tourist destination. With the islands' miles of breathtaking beaches, acres of golf courses and fascinating history, Hawaii's economic health depends heavily on the tourist trade. In recent years, the hospitality sector in Hawaii has been seeing a downturn in visitor numbers—and resource conservation and energy-efficiency measures are becoming more necessary. The islands' tourism and hospitality industry is more dependent on the import of resources and dollars than other sectors of the state's economy. Virtually all materials used to build and operate visitor facilities are imported, and 93 percent of the revenue generated by tourism in Hawaii comes from overseas. On the Island of Oahu, hotels consume 6.5 percent of the total electricity consumption on the Island—unfortunately, much of this energy is wasted. Inefficient HVAC chillers and air handling systems, electric heating of domestic and process hot water, inefficient pumps and controls in swimming pools, golf course irrigation systems and waste water treatment plants, and outdated lighting systems provide ample opportunities for energy savings when upgraded with the latest technology.

"We believe that there are tremendous energy and resources to be saved in this sector, as well as an opportunity to educate visitors on energy