



COLLEGE OF SOCIAL SCIENCES
HAWAII ENERGY POLICY FORUM
UNIVERSITY OF HAWAI'I AT MANOA

Final Report On

Opportunities for Improving Access to Energy Efficiency

Prepared by

**Hawai'i Energy Policy Project
Energy Efficiency Working Group**

for the Hawaii Energy Policy Project University of Hawai'i at Manoa
October 2003

TABLE OF CONTENTS

- I. Executive Summary
- II. Introduction
- III. Barriers and Challenges for Energy Efficiency
- IV. Successes in Energy Efficiency Programs
- V. Recommendations

Appendices

- A: Working Group Members
- B: Poverty Status and Income Guidelines
- C: Low Income Solar Projects Summary
- D: Example Legislation
- E: Low Income Home Energy Assistance Program (LIHEAP)

Executive Summary

As part of the Hawaii Energy Policy Project, a working group was formed to address the issue of Improving Access to Energy Efficiency. The working group consisted of representatives from federal, state and local governments, the building industry, Honolulu Community Action Group (HCAP) and utility personnel. The primary focus of the working group was low-to-moderate-income families in the residential sector. As the group explored the issues related to energy efficiency, it became apparent that the majority of residential energy users in Hawaii also faced many of the same challenges encountered by lower income families.

The group explored the challenges with the adoption of energy efficiency, and several barriers were identified. One of the major issues identified was the higher initial costs of energy efficiency measures such as solar water heating and high efficiency refrigerators. This initial cost challenge is even more significant for lower income households. For renters, this barrier is amplified because the landlord lacks incentive to make an investment that will result in savings for a tenant.

Awareness and understanding of energy issues, knowledge of newer energy savings devices and the full impact of energy use created barriers for change. In some cases, engineers and architects are reticent to specify new technology due to perceived risk if something goes wrong. The group concluded with better information consumers and designers could make better decision.

Despite the challenges, many successes were noted. Utility Demand Side Management (DSM) programs and tax incentives have resulted in more solar water heating per capita being used in Hawaii than any other state. Adoption of the model energy codes has meant that new construction and renovation are more efficient. More and more architects and engineers are learning about energy efficient designs and sustainable practices. Recently, the City and County of Honolulu has initiated a program for low interest loans for qualifying low-income homeowners and landlords who rent to qualifying tenants.

The working group developed a number of opportunities for the Hawaii Energy Policy Project to consider:

Opportunity 1 – Implement Energy Awareness and Education Program

Opportunity 2 – Encourage Revisions to LIHEAP

Opportunity 3 – Continue Current DSM Programs Offered by Utilities

Opportunity 4 – Consider New Utility DSM Programs

Opportunity 5 - Seek Additional Sources of Federal Funding

Opportunity 6 - Enhance Current and Develop New Public-Private Partnerships to Encourage Energy Efficiency and Conservation

Opportunity 7 – Reduce the Tax Burden of Hawai'i Residents by Make Energy Cost Reduction a Priority for State and County Governments

Opportunity 8 – Create Additional Low-income Loan Programs

Opportunity 9 – Expand the Scope of the Model Energy Code

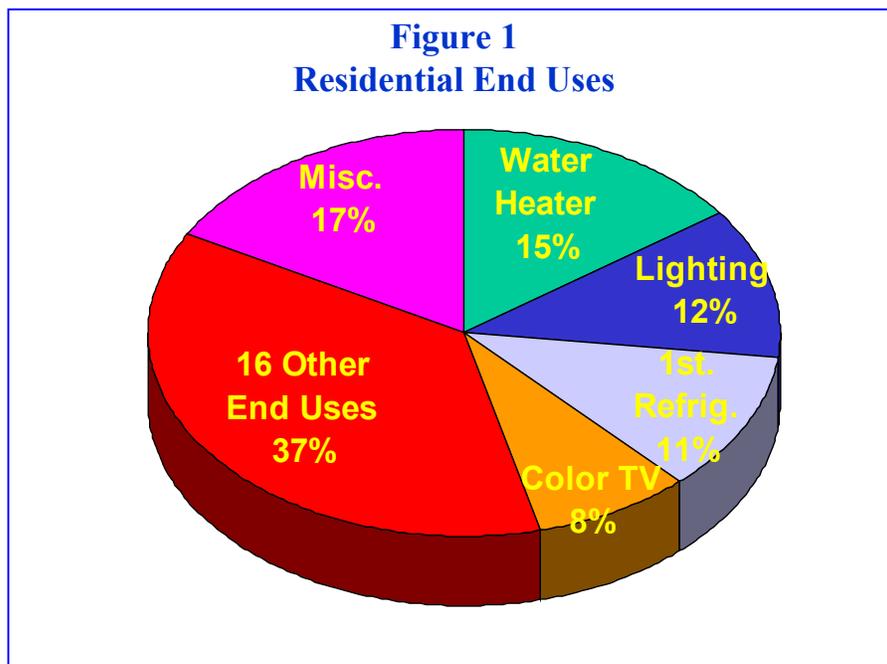
Opportunity 10 – Multi-family Housing Unit Design

I. Introduction

A working group was convened to provide recommendations to the Hawaii Energy Policy Project that would improve access of low- and moderate-income households to energy efficiency. The working group identified barriers to energy efficiency and success factors, then listed recommendations. The working group consisted of city, state and federal government personnel, community groups involved in providing services to low income families, representatives from the building industry and utility personnel. Utility personnel moderated the working group sessions. Appendix A lists the working group members and those invited to attend.

To understand the challenges of low- and moderate-income households, information from the State Department of Business, Economic Development and Tourism (DBEDT) and Hawaiian Electric Company, Inc. (HECO) was used to identify the number of these households. As shown in Appendix B, approximately eight percent of households and eleven percent of the residential population in Hawaii live below the poverty level

Uses of electricity in the residential setting are diverse, with electric water heating being the largest single component of household electrical use (Figure 1). However, research conducted by HECO's Energy Services Department does not show any significant differences between the average energy user and lower income user.



More detail about how energy is used in the home is provided in the following table.

TABLE I
Residential End Uses
Source: 2002 HECO Residential Appliance Saturation Survey
and 1996 Weather-Normalized Conditional Demand Analysis

End Use	Single Family	Multi-Family	Total
Water Heater – Conventional	15%	16%	15%
Lighting	12%	12%	12%
First Refrigerator	10%	14%	11%
Color Televisions	7%	9%	8%
Room Air Conditioning	7%	6%	7%
Second Refrigerator	8%	3%	6%
Freezers	5%	3%	4%
Electric Clothes Dryer	4%	4%	4%
Electric Cooking	3%	4%	4%
Water Heater - Solar	3%	0%	2%
Spas	1%	3%	2%
Pool Pump	2%	0%	2%
Personal Computers	1%	2%	2%
Microwave ovens	1%	1%	1%
Clothes Washer	1%	1%	1%
Central Air Conditioning	1%	1%	1%
Water Heater - Heat Pump	1%	2%	1%
Fans	1%	1%	1%
Pool Heater	0%	0%	0%
Dishwashers	0%	0%	0%
Miscellaneous	16%	18%	17%

While local utility companies have aggressively addressed water heating with solar incentive programs, the cost associated with the installation of a solar water heating system is a challenge for many in the low- to moderate-income groups. The cost of a new energy efficient refrigerator can also be a deterrent for lower income families. While solar water heating and refrigeration present obvious opportunities for energy efficiency, other more accessible measures must be promoted as well. For example, household lighting accounts for 12% of total residential energy use and offers a relatively low cost option for lower income families. In just a few years, the cost of compact fluorescent lamps (CFLs) has decreased from nearly \$20 a lamp to often less than \$5 per lamp. The increasing availability of CFLs in local retail stores has made this energy efficient option more accessible to all households than ever before.

II. Barriers

The working group identified barriers, success factors, and opportunities available to facilitate access to energy efficiency programs. Barriers identified included:

- Developers may be averse to the higher cost of energy efficient equipment. In addition to first costs, developers of new homes may be reluctant to include new and different products in their homes due to concerns about failure, liability, and additional paperwork. Consumer demand for energy efficient homes will give rise to the willingness of developers to provide them. This demand could be created through consumer education.
- Buyers can also be averse to new and different products and may be reluctant to pay higher prices for more energy efficient homes or appliances. In addition, any increases in the cost of a residential home brought about by code changes or increases in energy efficiency in the home make it more difficult for low-income families to qualify to purchase the home.
- While there is general consensus about the importance and the benefits of energy efficiency, many organizations, both in the public and private sectors, lack a “champion” with the responsibility or authority necessary to push for the changes in policies and procedures that are needed.
- Accountability can also be a problem within an organization. It was pointed out that large organizations with central purchasing may reduce the accountability by component element for the purchasing and budgeting of energy. Conversely, central purchasing increases the ability of these large organizations to pursue performance-contracting solutions and target capital investment. Large organizations should monitor usage to crease their ability to manage energy consumption.
- Renters and landlords are not motivated to improve the energy efficiency of their rental units and need incentives to adopt energy efficient retrofits/upgrades in their buildings. Because many lower- and moderate-income families live in rental units, this is a major barrier to bringing energy efficient appliances and practices to this segment of the population.
- Energy efficient mortgages do not always provide the best rates for homeowners. Lenders in Hawaii tend to be more liberal in their qualification of buyers, which result in some lenders offering better rates on conventional mortgages than those available for an energy efficient mortgage.
- Education regarding energy and energy efficiency is not available on an on-going basis. There appears to be no one agency or organization directing or encouraging energy awareness in our public schools or providing information to lower-income families. The group discussed the idea that consumers need to be educated on the benefits of energy efficiency and how it works for them. It was pointed out that this also applies to electrical/mechanical engineering and other consultants and that this group should also have access to educational programs. This would help ensure that when new codes require energy efficiency, the codes can be monitored and understood.

- Changes to building codes can be difficult to monitor/understand. There should be training for plan checkers, inspectors and the design community in building code changes and new requirements when they occur.
- Governmental directives without funding for implementation often result in a lack of direction and purpose with little improvement being made in the effective use of energy.
- Federal Low Income Home Energy Assistance Program (LIHEAP) funds for Hawaii are limited as a result of the formula used to allocate funds among the states. (See Appendix E) This limits the state's ability to expand its low-income programs.¹
- Although there is progress being made, political will is needed to improve the existing approach to energy and energy efficiency.
- State law does not allow the use of common area maintenance fees to promote energy efficient and water saving measures in individual residential units.
- Adoption of Model Energy Codes has been uniform across all counties in the State. For example, Maui County has not adopted the Model Energy Code.

III. Success Factors and Stories

There were several success stories and positive changes identified by the group:

- The recent upgrades to the Model Energy Code for commercial buildings and the passage of a Model Energy Code for residential buildings was a success in bringing more efficient technology and equipment into the new construction market.
- The approval of an extension of the State Renewable Energy Tax Credit helped to insure the continuation of Hawaii's successful residential solar water heating efforts. Recently, a new partnership between the City & County of Honolulu, Hawaii Solar Energy Association and Hawaiian Electric Company now makes low or no interest loans for solar water heating systems available to eligible low and moderate income citizens. The loans are also available to property owners who rent to low and moderate-income families.
- The continued existence of HECO's and its subsidiaries' Residential DSM programs since 1996 was seen as a success story with the utilities combining to surpass a significant milestone of over 20,000 solar water heaters installed in Hawaii since its inception. Appendix C lists low income solar projects that have received DSM rebates.
- Recent attendance by engineers and architects at energy efficiency seminars and training sessions such as the recent LEEDS training session indicates a growing awareness and

¹ LIHEAP (Low Income Home Energy Assistance Program) is a federal block grant that has provided between \$1.4 million and \$1.7 million to Hawaii. The allocation of funding to a state is based on "heating days" (which does not favor Hawai'i). The target population is people at or below 150% of poverty level, especially households with children or the elderly. In the most recent year, approximately 6,500 households received credits averaging \$255/household.

support of energy efficiency by the design community. It is hoped that these efforts can be expanded in the future.

- The recent construction of Hawaii's first *BuiltGreen* home on the Leeward side of Oahu through a partnership between members of the building industry, U.S. Department of Energy (DOE), DBEDT and HECO was seen as a big success. The home was valuable in demonstrating useful conservation measures such as house orientation to maximize cross ventilation, radiant barriers in the attic, roof ridge and soffit vents, wall insulation, ceiling fans, solar water heating and CFLs. But more important than the measures showcased by the project, was the public/private partnership that came together to make it a reality.
- There are signs that a market transformation is taking place. Local retailers are stocking CFLs and other energy efficiency products, and the prices for these technologies are beginning to drop. High efficiency products bearing the "Energy Star" label are now more available at local retail outlets than in the past.
- Hawaii has been successful in using joint Federal and State funding to provide training and other services to its residents. These efforts will be expanded in the future along with public/private partnerships. The U.S. Department of Agriculture grant to fund solar water heating systems on Molokai is an excellent example of federal funding being used to encourage energy efficiency.

It is hoped these practices, along with increased customer awareness, will lead to all customers purchasing more efficient appliances and avoiding lower cost and less efficient products.

IV. Opportunities For Increasing Energy Efficiency

Opportunity 1 – Implement Energy Awareness and Education Program

Providing energy education and improving awareness will help residential households and other energy users reduce their use of energy, improve energy efficiency, and control their energy costs. Opportunities exist to encourage energy savings through low cost or no cost measures and changes in behavior and awareness of the implication of increase energy demands. Government, utilities, businesses, environmental groups and community organizations can all play a role.

Opportunity 2 – Encourage Revisions to LIHEAP

Encourage revisions to LIHEAP that better meet Hawaii's unique situation. As shown in the attached list of LIHEAP appropriations (See Appendix E), Hawaii receives the lowest appropriation of the 50 states. While this may reflect the low number of heating days in Hawaii, it may not consider the higher cost of energy in Hawaii. Low cost measures such as compact fluorescent lighting and low-flow showerheads may be well suited for LIHEAP recipients. This is an area that requires research with Hawaii's congressional delegation to determine if Hawaii's share of LIHEAP could be increased.

Opportunity 3 – Continue Current DSM programs Offered by Utilities

Demand side management programs have provided financial incentives and have resulted in substantial peak demand reduction and reduced energy use. These programs should continue in the future.

Opportunity 4 – Consider New Utility DSM Programs

Current utility DSM programs have focused on water heating. This is reasonable given that water heating is the largest single use of residential energy. Consideration should be given to adding other utility programs such as promotion of “Energy Star” refrigerators and compact fluorescent lighting. Consideration should be given to greater use of compact fluorescents for condominium hallway and hotel lighting.

Opportunity 5- Seek Additional Sources of Federal Funding

As the working group reviewed successes in energy efficiency, federal support was a recurring theme. The Department of Energy’s funding has consistently helped a wide variety of energy projects with DBEDT, electric utilities and other organizations. Currently, a U. S. Department of Agriculture grant is funding an energy efficiency project on Molokai. Given the potential for additional federal funding, formation of a community group or partnership to identify and pursue federal grants is worthy of consideration. Also, as previously noted, LIHEAP funding for Hawaii is very low on a per capita basis when compared to other states.

Opportunity 6- Enhance Current and Develop New Public-Private Partnerships to Encourage Energy Efficiency and Conservation

Public and private partnerships such as Rebuild Hawaii have resulted in information sharing and networking. The formation of additional partnerships to encourage energy conservation can be a powerful success factor. Potential participants include the utilities, the Board of Water Supply, federal, state and county agencies, retail stores, charitable foundations, Rebuild Hawaii, developers, architects and other parties.

Opportunity 7 – Reduce the Tax Burden of Hawai’i Residents by Making Energy Cost Reduction a Priority for State and County Governments

Make reduction of the Energy Budget a priority for government entities by periodic reporting of energy expenditures to the Department Director. Encourage funding and staff for monitoring and tracking of energy expenditures by department. Mandates and stronger codes may not be effective if staff and resources are not made available to track and enforce. Recognize and acknowledge individuals who champion energy efficiency in state and county agencies.

Opportunity 8 – Create Additional Low-income Loan Programs

A major barrier to increasing energy efficiency is financing for lower income households. Some progress has been made in addressing this barrier through the creation of no interest loans for solar water heating by Maui County and the partnership between the City & County of Honolulu, Hawaii Solar Energy Association and Hawaiian Electric Company which makes low or no interest loans for solar water heating systems available to eligible low and moderate income citizens. Consideration should be given to making this option available statewide.

Opportunity 9 – Expand the Scope of the Model Energy Code

Maui County could improve the efficiency of its commercial and industrial buildings by developing and implementing a Model Energy Code as the other three counties have. Hawaii, Kauai and Maui Counties could also improve the efficiency of residential buildings by following the lead of the City and County of Honolulu in adopting a Residential Model Energy Code.

Opportunity 10 – Multi-family Housing Unit Design

Many multi-family housing buildings are master-metered where residents pay a portion of the total energy bill. This creates a situation where no one is accountable for their unit’s energy use, reducing the incentive for individual efforts to improve efficiency. Conversion to individually or sub-metered units will create direct responsibility for energy cost and an incentive to improve

efficiency. Measures should be considered to encourage conversion to individual or sub-metered units.

Appendix A
Low Income Access to Energy Efficiency Working Group
List of Participants

State Agencies

University of Hawaii

- Dr. Sharon Miyashiro

Dept. of Business, Economic Development and Tourism (DBEDT)

- Steve Alber
- Carilyn Shon

Division of Consumer Advocacy

- Cheryl Kikuta
- Sharon Nishi

Housing & Community Development Corporation of Hawaii (HCDCH)

- Wayne Nakamura

Federal Agencies

Dept. of Energy

- Eileen Yoshinaka

City Agencies

Board of Water Supply

- Jonathan Suzuki

Office of the Managing Director

- Steve Holmes

Building Industry Association

- Karen Nakamura

Honolulu Community Action Program

- Tom Matsuda

Sierra Club

- Jeff Mikulina (invited)

Hawaiian Electric Company

- Norris Creveston
- Kendys Fukuda
- Dave Waller

Other Invited Agencies

Sierra Club

House of Representatives

- Rep. Brian Schatz

Dept. of Housing & Urban Development

Appendix B-1

Table 13.19-- POVERTY STATUS IN 1999, FOR THE STATE AND COUNTIES: 2000

[Based on nationwide poverty thresholds. Hawaii thresholds are approximately 15 percent higher than those in effect on the Mainland; these data accordingly understate the numbers of persons and families below the poverty level in Hawaii. Data refer to the poverty status in 1999 of families and persons surveyed in April 2000]

Subject	State total	City & County of Honolulu	Hawaii County	Kalawao County	Kauai County	Maui County
All families	22,101	14,477	4,084	-	1,224	2,316
Percent below poverty level	7.6	7.0	11.0	-	8.4	7.7
With related children under 18 years	17,182	11,108	3,334	-	995	1,745
Percent below poverty level	11.3	10.3	17.1	-	12.3	10.6
With related children under 5 years	8,470	5,476	1,556	-	434	1,004
Percent below poverty level	13.9	12.3	22.3	-	14.7	15.4
Female householder families	10,024	6,616	1,843	-	608	957
Percent below poverty level	20.6	19.2	28.1	-	24.5	18.9
With related children under 18 years	8,737	5,671	1,684	-	528	854
Percent below poverty level	29.5	28.3	37.0	-	30.5	25.6
With related children under 5 years	3,879	2,441	747	-	215	476
Percent below poverty level	37.4	34.2	49.7	-	38.7	40.9
All individuals	126,154	83,937	22,821	59	6,085	13,252
Percent below poverty level	10.7	9.9	15.7	40.1	10.5	10.5
18 years and over	85,612	57,782	14,619	59	3,985	9,167
Percent below poverty level	9.6	9.0	13.5	4.1	9.3	9.7
65 years and over	11,683	8,614	1,391	44	546	1,088
Percent below poverty level	7.4	7.4	7.2	60.3	6.8	7.5
With related children under 18 years	38,730	25,080	7,873	-	1,994	3,783
Percent below poverty level	13.5	12.4	21.0	-	13.2	12.0
With related children under 5 years	27,159	17,612	5,718	-	1,455	2,374
Percent below poverty level	12.9	12.0	19.8	-	12.6	10.1
Unrelated individuals 15 years and over	46,365	31,136	7,819	59	1,958	5,393
Percent below poverty level	24.4	23.8	30.4	50.0	22.0	22.1

Source: U.S. Census Bureau, Census 2000, Table DP-3. Profile of Selected Economic Characteristics: 2000

<<http://www.hawaii.gov/dbedt/census2k/profile-state/index.html>> accessed July 23, 2002.

Appendix B-2

Table 13.20-- POVERTY INCOME GUIDELINES: 1993 TO 2002

[In dollars. These family income levels are poverty thresholds established by the U.S. Department of Health and Human Services to determine eligibility for certain Federal programs for the poor]

Size of family unit	1	2	3	4 1/	5	6	7	8	Add'n member
Feb. 12, 1993	8,040	10,860	13,680	16,500	19,320	22,140	24,960	27,780	2,820
Feb. 10, 1994	8,470	11,320	14,170	17,020	19,870	22,720	25,570	28,420	2,850
Feb. 9, 1995	8,610	11,550	14,490	17,430	20,370	23,310	26,250	29,190	2,940
Mar. 4, 1996	8,910	11,920	14,930	17,940	20,950	23,960	26,970	29,980	3,010
Mar. 10, 1997	9,070	12,200	15,330	18,460	21,590	24,720	27,850	30,980	3,130
Feb. 24, 1998	9,260	12,480	15,700	18,920	22,140	25,360	28,580	31,800	3,220
Mar. 19, 1999	9,490	12,730	15,970	19,210	22,450	25,690	28,930	32,170	3,240
Feb. 15, 2000	9,590	12,930	16,270	19,610	22,950	26,290	29,630	32,970	3,340
Feb. 16, 2001	9,890	13,360	16,830	20,300	23,700	27,240	30,710	34,180	3,470
Feb. 14, 2002	10,200	13,740	17,280	20,820	24,360	27,900	31,440	34,980	3,540

1/ For 2002, corresponding levels for four-person families elsewhere in the United States were \$18,100 on the Mainland and \$22,630 in Alaska. For 2001, levels were \$17,650 on the Mainland and \$22,070 in Alaska. For 2000, \$17,050 on the Mainland and \$21,320 in Alaska. For 1999, \$16,700 on the Mainland and \$20,880 in Alaska.

Source: U.S. Department of Health and Human Services, "Annual Update of the HHS Poverty Guidelines," *Federal Register*, February 12, 1993, February 10, 1994, February 9, 1995, March 4, 1996, March 10, 1997, February 24, 1998; March 18, 1999, February 15, 2000, February 16, 2001, and February 14, 2002. Also for 1994-1999 <http://www.access.gpo.gov/su_docs/aces/aces140.html>; for 2000, under Health and Human Services <http://www.access.gpo.gov/su_docs/fedreg/a000215c.html>; for 2001, under Health and Human Services <http://www.access.gpo.gov/su_docs/fedreg/a010216c.html>; for 2002, under Health and Human Services <http://www.access.gpo.gov/su_docs/fedreg/a020214c.html> accessed March 19, 2002.

Appendix C Low Income Solar Projects Summary

Agency	Project Name	No. of Systems	Systems Approved	Rebates Paid	Program Year
City & County of Honolulu	Renton Villages*	20	20	\$22,000	1997
	Tenney Villages*	50	50	\$62,000	1997
Consuelo Foundation	Ke Aka Ho'ona Increment VI*	9	9	\$13,500	1999
	Ke Aka Ho'ona Increment VII*	17	17	\$25,500	2000
	Ke Aka Ho'ona Increment VIII*	12	12	\$12,000	2001
Dept. of Hawaiian Homelands	Kalawahine Streamside	33	33	\$49,500	2000
	Na Pua Ko'olau - Waimanalo	10	10	\$15,000	1998
	Malu'ohai	46	46	\$46,000	2001
	Ho'olimalima (Mark Develop.)	70	70	\$70,000	2001
Honolulu Community Action Program	Ho'okipa Kahaluu	16	16	\$24,000	1998
	HCAP	9	9	\$4,500	2001
	HCAP	8	8	\$6,000	2002
	Haleiwa	1	1	\$500	2002
Housing & Community Development Corp.	Banyan St. Manor	54	54	\$43,200	1997
	Kalihi Valley Homes	45	45	\$45,000	2001
	Ma'ili II	24	24	\$36,000	1999
Office of Hawaiian Affairs	Waimanalo Self-Help Housing*	6	6	\$9,000	1998
Total		430	430	\$483,700	

* Self-Help Housing Projects

Appendix D
Example Legislation

Report Title:

Hawaii Residential Solar Hot Water Heater Loan Revolving Fund

Description:

Creates the Hawaii residential solar hot water heater loan revolving fund to make low interest loans to homeowners to finance the acquisition and installation of residential solar hot water heaters.

HOUSE OF REPRESENTATIVES

TWENTY-FIRST LEGISLATURE,
2002

STATE OF HAWAII

H.B. NO. 2186

A BILL FOR AN ACT

relating to RENEWABLE energy.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF HAWAII:

SECTION 1. (a) The legislature finds and declares that:

(1) The issuance of general obligation bonds under this Act is in the public interest and for the public health, safety, and general welfare of the State; and

(2) This Act is consistent with the State's objectives and policies for energy, as specified in section 226-18, Hawaii Revised Statutes.

(b) It is the intent of the legislature to capitalize the Hawaii residential solar hot water heater loan revolving fund created in section 2 of this Act over a period of fiscal years. This approach will allow the legislature to:

(1) Gauge public demand for these loans and respond to the exact requirements of the revolving fund; and

(2) Ensure the tax exempt status of the general obligation bonds used to capitalize the revolving fund.

SECTION 2. The Hawaii Revised Statutes is amended by adding a new chapter to be appropriately designated and to read as follows:

"Chapter

HAWAII RESIDENTIAL SOLAR HOT WATER HEATER LOAN

REVOLVING FUND

§ -1 Definitions. As used in this chapter:

"Department" means the department of business, economic development, and tourism.

"Director" means the director of business, economic development, and tourism.

"Financial institution" means any organization authorized to do business under state or federal laws relating to financial institutions, including banks, savings banks, savings and loan companies or associations, financial services loan companies, and credit unions.

"Revolving fund" means the Hawaii residential solar hot water heater loan revolving fund.

§ -2 Hawaii residential solar hot water heater loan program. There is created a Hawaii residential solar hot water heater loan program that shall be administered by the director.

§ -3 Hawaii residential solar hot water heater loan revolving fund. There is established the Hawaii residential solar hot water heater loan revolving fund into which shall be deposited all moneys appropriated by the legislature pursuant to law and all moneys received as repayment of loans and interest payments as provided in this chapter. The department may utilize a portion of the moneys contained in the revolving fund for programs associated with administering the revolving fund and its mandated purpose.

§ -4 Functions, powers, and duties of director. In the performance of, and with respect to, the functions, powers, and duties vested in the director by this chapter, the director may:

- (1) Adopt rules under chapter 91 to carry out this chapter; and
- (2) Perform all functions necessary to effectuate the purposes of this chapter.

§ -5 Rules. The rules shall:

- (1) Prescribe the qualifications for eligibility of applicants for loans;
- (2) Establish preferences and priorities in determining eligibility for loans;

(3) Establish the conditions, consistent with the purposes of this chapter, for the granting or for the continuance of a grant of a loan; and

(4) Provide for inspection, at reasonable hours, of the premises of the homeowner who has applied for or has been granted a loan, and to require the submission of periodic reports.

§ -6 Direct loans, terms, and restrictions. (a) The department may make loans to homeowners to finance the acquisition and installation of residential solar hot water heaters. The loans may be made in conjunction with loans made by other financial institutions. Where the loans made by the department are secured, the security may be subordinated to the loans made by other financial institutions, when the subordination is required to obtain loans from these institutions. The director shall determine the necessity for and the extent of security required in any loan.

(b) The interest on loans made under this subsection shall bear simple interest at the rate of per cent below the prime rate or at a rate of per cent a year, whichever is lower. For purposes of this subsection, the prime rate shall be determined on January 1 and July 1 of each year, and shall be the rate charged by the two largest banks in the State of Hawaii identified by the department of commerce and consumer affairs. If there is a difference in rate charged by the institutions, the lower of the two rates shall be used. Payments required under loans made under this subsection may be deferred, but no loans made under this subsection shall be forgiven.

(c) Except as may be expressly provided otherwise for loans made under subsection (b), the foregoing powers shall be subject to the following restrictions and limitations:

(1) The amount of the loan or loans to any one applicant at any one time shall in no case exceed a total of \$;

(2) No loan shall be made for a term exceeding years;

(3) The commencement date for the repayment of the first installment on the principal of each loan may be deferred by the director, but in no event shall such initial payment be deferred in excess of years; and

(4) The payment of interest on the principal of a loan may be deferred by the director, but in no event shall interest payments be deferred in excess of years from the date of issuance of the loan.

(d) The department may contract with any financial institution for services including servicing or administering loans pursuant to this section.

§ -7 Reports. The department of business, economic development, and tourism shall make a report as of December 31 of each year of operations under this chapter to the governor, the president of the senate, and the speaker of the house of representatives, on the progress made under this chapter. These reports shall be submitted not later than February 1 immediately following the period covered by the report."

SECTION 3. The director of finance is authorized to issue general obligation bonds in the sum of \$5,000,000, or so much thereof as may be necessary, and the same sum, or so much thereof as may be necessary, is appropriated for fiscal year 2002-2003 to be paid into the Hawaii residential solar hot water heater loan revolving fund created in section 2 of this Act. The sum appropriated shall be expended by the department of business, economic development, and tourism for the purposes of the Hawaii residential solar hot water heater loan revolving fund.

SECTION 4. This Act shall take effect on July 1, 2002.

Appendix E

LOW INCOME HOME ENERGY ASSISTANCE PROGRAM (LIHEAP)
Federal Fiscal Year 2003 LIHEAP STATE NET BLOCK GRANT ALLOTMENTS
\$1,788,300,000 Appropriation (After Recission of 0.65% applied to \$1.8B)

Regular Block Grant Funds Only
OCS/ACF/DHHS (3/5/03)

State	Block Grant Allotment Percents	Gross Allotments at \$1,788,300,000	Tribal Set-Aside at \$1,788,300,000	Net Allotments at \$1,788,300,000
Alabama	0.86%	\$15,122,139	\$84,733	\$15,037,406
Alaska	0.55%	\$9,652,800	\$3,191,237	\$6,461,563
Arizona	0.42%	\$7,313,246	\$594,197	\$6,719,049
Arkansas	0.66%	\$11,538,907		\$11,538,907
California	4.61%	\$81,125,872	\$568,170	\$80,557,702
Colorado	1.61%	\$28,286,063	\$25,000	\$28,261,063
Connecticut	2.10%	\$36,900,168		\$36,900,168
Delaware	0.28%	\$4,897,787		\$4,897,787
Dist. of Col.	0.33%	\$5,730,657		\$5,730,657
Florida	1.36%	\$23,927,739	\$6,134	\$23,921,605
Georgia	1.08%	\$18,918,547		\$18,918,547
Hawaii	0.11%	\$1,905,202		\$1,905,202
Idaho	0.63%	\$11,033,450	\$180,948	\$10,852,502
Illinois	5.81%	\$102,133,292		\$102,133,292
Indiana	2.63%	\$46,243,086	\$6,664	\$46,236,422
Iowa	1.86%	\$32,773,095		\$32,773,095
Kansas	0.86%	\$15,050,875	\$10,175	\$15,040,700
Kentucky	1.37%	\$24,064,746		\$24,064,746
Louisiana	0.88%	\$15,460,066		\$15,460,066
Maine	1.36%	\$23,905,427	\$873,744	\$23,031,683
Maryland	1.61%	\$28,253,992		\$28,253,992
Massachusetts	4.20%	\$73,812,555	\$29,525	\$73,783,030
Michigan	5.51%	\$96,966,609	\$446,674	\$96,519,935
Minnesota	3.97%	\$69,858,956		\$69,858,956
Mississippi	0.74%	\$12,964,885	\$21,663	\$12,943,222
Missouri	2.32%	\$40,796,025		\$40,796,025
Montana	0.74%	\$12,941,535	\$1,959,440	\$10,982,095
Nebraska	0.92%	\$16,207,553	\$3,600	\$16,203,953
Nevada	0.20%	\$3,434,814		\$3,434,814
New Hampshire	0.79%	\$13,971,211		\$13,971,211
New Jersey	3.90%	\$68,523,477	\$171,318	\$68,352,159
New Mexico	0.52%	\$9,155,677	\$686,071	\$8,469,606
New York	12.72%	\$223,739,522	\$329,530	\$223,409,992
North Carolina	1.90%	\$33,343,978	\$535,930	\$32,808,048
North Dakota	0.80%	\$14,058,422	\$2,717,494	\$11,340,928
Ohio	5.14%	\$90,352,163		\$90,352,163
Oklahoma	0.79%	\$13,900,352	\$1,171,307	\$12,729,045
Oregon	1.25%	\$21,922,895	\$165,460	\$21,757,435
Pennsylvania	6.84%	\$120,181,131		\$120,181,131
Rhode Island	0.69%	\$12,149,968	\$34,426	\$12,115,542
South Carolina	0.68%	\$12,010,060		\$12,010,060
South Dakota	0.65%	\$11,417,901	\$2,030,102	\$9,387,799
Tennessee	1.39%	\$24,377,072		\$24,377,072
Texas	2.26%	\$39,807,774		\$39,807,774
Utah	0.75%	\$13,144,601	\$238,188	\$12,906,413
Vermont	0.60%	\$10,471,920		\$10,471,920
Virginia	1.96%	\$34,416,521		\$34,416,521
Washington	2.05%	\$36,060,142	\$1,463,067	\$34,597,075
West Virginia	0.91%	\$15,925,469		\$15,925,469
Wisconsin	3.58%	\$62,883,092		\$62,883,092
Wyoming	0.30%	\$5,262,808	\$76,837	\$5,185,971
TOTAL		\$1,758,296,244	\$17,621,634	\$1,740,674,610