

**Energy Informational Briefing**  
**Before the House Committee on Energy & Environmental Protection**  
**and the**  
**Senate Committee on Energy and Environment**  
**Hawaii State Capitol, Room 329**  
**Thursday January 17, 2008**  
**1:00 p.m. – 4:00 p.m.**

**Agenda**

- 1:00 pm Introduction** Rep. Hermina Morita, Chair, House Committee on Energy & Environmental Protection and Sen. Ron Menor, Chair, Senate Committee on Energy and Environment
- 1:05 pm Hawaii Energy Policy Forum (5 minutes each)**
- ❖ Overview of the Hawaii Energy Policy Forum & Energy Progress on the Ten Point Plan -- Sharon Miyashiro, Co-Chair, Hawaii Energy Policy Forum
  - ❖ Status, Progress & Legislative Proposals
    - Renewable Energy -- Warren Bollmeier & Rick Reed, Working Group Co-Chairs
    - Energy Efficiency -- Darren Kimura & Stephen Meder, Working Group Co-Chairs
    - Regulatory Reform -- Carl Freedman, Working Group Chair
    - Greenhouse Gas Emissions -- Mike Hamnett & Carl Freedman, Working Group Co-Chairs
    - Social & Cultural Impacts -- Mark Glick & Paula Helfrich, Working Group Co-Chairs
    - Hydrocarbon Futures -- Steve Golden & Lance Tanaka, Working Group Co-Chairs
    - Communication & Outreach -- Peter Rosegg, William Kaneko & Mitch Ewan, Working Group Co-Chairs
  - ❖ Questions and Answers
- 1:55 pm Hawaii State Agencies – Updates on Priorities, Plans and Programs (15 minutes each)**
- ❖ Department of Business, Economic Development & Tourism -- Maurice Kaya, Administrator, Strategic Industries Division
  - ❖ Public Utilities Commission -- Carlito Caliboso, Chairman
  - ❖ Division of Consumer Advocacy -- Catherine Awakuni, Executive Director
  - ❖ Questions and Answers
- 2:50 pm Report from the Congressional Delegation (30 minutes)**
- ❖ U.S. Senate:
    - Office of Senator Daniel K. Inouye
    - Office of Senator Daniel K. Akaka
  - ❖ U.S. House:
    - Office of Representative Neil Abercrombie
    - Office of Representative Mazie Hirono
  - ❖ Questions and Answers
- 3:20 pm Report from the Utilities (10 minutes each)**
- ❖ Update on Hawaiian Electric Company Programs -- Robbie Alm, Sr. VP of Public Affairs
  - ❖ Update on Kauai Island Utility Coop Programs -- Steve Rymsha, Renewable Energy Staff Engineer
  - ❖ Questions and Answers
- 3:50 pm Closing/Next Steps** -- Committee Chairs Morita and Menor
- 4:00 pm Adjourn**



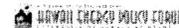


## Hawaii Energy Policy Forum

### Update on Activities and Initiatives 2007

## Why the Forum?

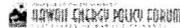
- Adversarial Climate
- Policy gaps
- No coordinated effort
- “Business as Usual” attitudes
- Failure to identify the “Hidden Crisis”
- University of Hawaii is a neutral party
  - ❑ No vested interest
  - ❑ Fact-based studies
  - ❑ Leverages the state's investment in UH



## Forum Mission

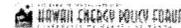
We are a collaborative forum for:

- Sharing ideas and information,
- Recommending and advocating policies and initiatives, and
- Promoting civic action to achieve Hawaii's preferred energy future



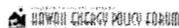
## Forum Vision

“Smart energy solutions to sustain a healthy, secure and prosperous Hawaii”



## 10-Point Plan

- 1 Expand Renewable Energy Opportunities - REWG
- 2 Promote Conservation and Energy Efficiency - EEWG
- 3 Reduce Greenhouse Gas Emissions in Hawaii - GHG Emissions WG
- 4 Foster Civic Action and Participation - Comm/Outreach WG
- 5 Enhance Regulatory Goals and Protections - RRWG
- 6 Encourage Culturally Appropriate and Sustainable Energy Planning - Social & Cultural Impacts WG
- 7 Improve Energy Efficiency and Options in Transportation - EEWG
- 8 Support Research and Development of Alternative Energy Sources - REWG
- 9 Support Sustainable Development and Use of Biofuels - REWG
- 10 Ensure the Security and Reliability of Energy Supply and Distribution - Hydrocarbon WG



## Highlights of 2007 Achievements

- Study of Biofuel crop development in response to HCR 195 (2006) led to Hawaii Bioenergy Master Plan (2007)
- Study of opportunities and barriers for RE and EE development (Regulatory Reform Action Plan)
- Study of EE transportation strategies in response to Act 254
- Study of natural gas import options for Hawaii in response to USDOE contract to address Section 355, National Energy Policy Act
- Assessment of EE in four buildings through “Energy by Example” initiative



## Outreach Activities to Share Ideas & Information

- Briefed Congressional Delegation staff on RE developments (March 2007)
- Briefing on federal opportunities in "ag-energy" by U.S. House Agriculture Committee Chairman Colin Peterson (April 2007)
- Briefing on work by BlueEarth Biofuels (June 2007)
- Facilitated WG that created guidelines for ocean energy development (July 2007)
- Briefing on commercializing new RE technologies by U.S. Departments of Commerce & Energy and local representatives of High Technology Development Corporation, Sopogy & ClearFuels Technology (August 2007)
- Briefing on work of the Hawaii Natural Energy Institute, University of Hawaii (September 2007)
- Briefing on greenhouse gas emissions (GHG) by the Technical Working Group of the State GHG Emissions Task Force & the Voluntary GHG Reporting Program of the Climate Registry (November 2007)
- Co-sponsored TV Documentary: "Hawaii's Climate Crisis" (January 2008)



## Forum Proposed Legislation

### ➤ Forum Funding

- ❑ In-kind donations valued at \$300,000 for 2007

### ❑ Legislative Proposal Requests Funding for:

- Administrative support
- Outreach Activities
- Implement Action Plans
- Assess Progress



## Developing & Implementing Action Plans: The Forum Working Groups

- **RENEWABLES WORKING GROUP**  
CO-CHAIRS: Warren Bollmeier & Rick Reed
- **ENERGY EFFICIENCY WORKING GROUP**  
CO-CHAIRS: Darren Kimura & Stephen Meder
- **REGULATORY REFORM WORKING GROUP**  
CHAIR: Carl Freedman
- **GREENHOUSE GAS EMISSIONS WORKING GROUP**  
CO-CHAIRS: Mike Hannett & Carl Freedman
- **SOCIAL & CULTURAL IMPACT WORKING GROUP**  
CO-CHAIRS: Mark Glick & Paula Heltrich
- **HYDROCARBON FUTURES/ENERGY SECURITY WORKING GROUP**  
CO-CHAIRS: Steven Golden & Lance Tanaka
- **COMMUNICATION/OUTREACH WORKING GROUP**  
CO-CHAIRS: Peter Rosegg, Mitch Ewan & Bill Kaneko





**Legislative Briefing  
 Renewable Energy  
 January 17, 2008**

**Renewable Energy Working Group**

Co-Chairs: **Warren Bollmeier, HREA**  
**Rick Reed, HSEA**

- **Status/Outlook** (Technologies/Projects)
- **Status/Outlook** (Legislative/Regulatory)

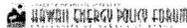
**Summary**

- RPS Performance is "on-track"
- Electrical Sector: Good growth seen in wind and solar – first wave of windfarms are up and operating; first large solar project is in development; and other projects are under consideration
- Transportation Sector: plans for first ethanol facility are proceeding on Kauai; and new biodiesel market opportunities are developing with existing (Pacific Biodiesel) and new market entrants (HECO companies and others)



**Summary - Continued**

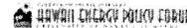
- Outlook – Electrical Sector: Overall policy for electrical sector has been put in place – implementation issues are under investigation by the Public Utility Commission
- Outlook – Transportation Sector: Forum will support DBEDT bioenergy master plan development and prepare white paper on biofuels for Hawaii
- Outlook – Legislative Activities: two solar bills, possible bills from 2007 session; and NEHO's



**HEPF 10-Point Plan**

➤ **The following actions from the 10-point plan are being addressed by the REWG:**

- TPP #1: Expand renewable energy opportunities;
- TPP #8: Support research and development of alternative energy sources; and
- TPP #9: Support sustainable development and use of biofuels.



**RPS Status – End of 2006**

- **RPS: HECO (13.8%); KIUC (13.92%)**
  - Existing wind (plus one new windfarm – Pakini Nui), solar, biomass, geothermal and hydro installations, including solar & net metered offsets;
  - Energy offsets from heat pumps, ice storage, and waste heat recovery portion of Combined Heat & Power systems; and
  - Energy offsets from utility Demand-Side Management Programs.



**Outlook – Electricity Sector**

➤ **Hawaiian Electric Company**

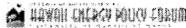
- **Wind** – Hawi (10.6 MW), Kaheawa Pastures (30 MW), Pakini Nui (21 MW) and others under investigation;
- **Solar** – boom in hot water system; PV expanding but prices are still high, as worldwide demand is high;
- **Biomass** – H-Power's waste-to-energy power plant (45 MW); new 2 MW facility on Hawaii (Tradewinds); alternative options for additional capacity are under investigation;
- **Geothermal** – expansion of Puna Geothermal Ventures 8 MW in near term – then to 60 MW; and
- **Hydro** – new run-of-stream system on Maui; pumped-storage under consideration.



## Outlook – Electricity Sector

### ➤ Other Renewable Energy Sources Being Developed/Investigated:

- Seawater Air Conditioning (SWAC) – Kakaako & Waikiki;
- Solar thermal electric – Sopogy is currently constructing a 1 megawatt concentrating solar power facility at NELHA and is developing additional concentrating solar power projects in Hawaii; and
- Ocean Thermal Energy Conversion (OTEC) and Wave energy systems – under consideration.



## Outlook – Electricity Sector

### ➤ Kauai Island Utility Cooperative:

- KIUC is working with industry partners to:
  - projects selected from their competitive bidding process initiated in 2005 for "As-Available" Renewables; and
  - promote solar hot water and net metered systems on their grid.
- KIUC will discuss the status of these activities in their presentation.



## Status – Transportation Sector

### Ethanol mandate is in the implementation phase:

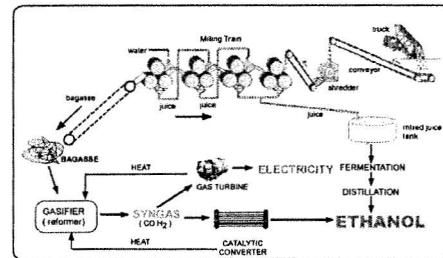
- E-10 in 85% of fleets/gasoline stations - Initial ethanol is being imported; and
- Development of local ethanol sources continues on Kauai:
  - Gay & Robinson Inc. and Pacific West Energy LLC have formed a partnership to develop the first fuel ethanol plant in America to create renewable power and clean-burning ethanol fuel from sugarcane;
  - The 12 Mg/yr facility will use sugar juice and molasses as feedstocks; and
  - The facility will help preserve 230 jobs, protect the island's agricultural heritage and further the state's renewable energy goals.

### Biodiesel – market is growing:

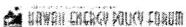
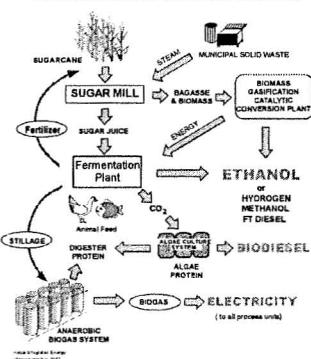
- Pacific Biodiesel and other market entrants – moving beyond waste cooling oil/grease to growing local energy crops; and
- In parallel, HECO has proposed local biodiesel production (for generating electricity) using both local and imported energy crops.



### Integrated Sugar Crop Ethanol Production Business

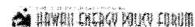


## KAUAI HAWAII INTEGRATED SUGAR ENERGY PRODUCTS



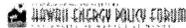
## Outlook – Transportation Sector

- **Bioenergy Master Plan:** DBEDT to discuss status in their presentation of the Bioenergy Master Plan that was funded (\$300K) in 2007 session;
- **Industry:** Anticipate that ethanol and biodiesel market will continue to develop with existing and new market entrants; and
- **HEPF:**
  - Will support DBEDT's efforts on the master plan, and
  - Will prepare a "white paper" on Biofuels for Hawaii – initial draft will focus on biodiesel.



## Status – Hawaii Renewable Hydrogen Program

- Section 6 of Act 240 passed by 2006 Legislature established "Hawaii Renewable Energy Program" within DBEDT:
  - Strategic partnerships for R&D, testing, and deployment of renewable hydrogen technologies;
  - Evaluation of Hawaii's potential for hydrogen use & near-term project opportunities;
  - Hydrogen demonstration projects including infrastructure for the production, storage, and refueling of hydrogen vehicles; and
  - State-wide hydrogen economy public education.
- Section 7 of Act 240 established the "Hydrogen Investment Capital Special Fund" with \$10 million in initial capitalization.
  - A RFP was issued for management of fund; and
  - Selection of fund manager is pending.



## Status/Outlook – Legislative Issues

### RPS Implementation

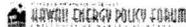
- Act 162 (2006 Session) revised our RPS law – the Public Utility Commission subsequently opened two dockets to investigate issues relating to Act 162:
  - Docket No. 2007-0008 (Renewable Energy Portfolio Standard), and
  - Docket No. 2007-0484 (Public Benefits Fund and Administrator).
- The Commission will discuss the status of these and other relevant dockets in their presentation.



## Status/Outlook – Legislative Issues

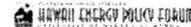
### Renewable Energy Technologies

- Market Activity - 2007 compared to 2006:
  - There were increases in customer participation in the utilities' solar water heating and net energy metering programs;
  - Both utilities initiated their "Pay As You Save" programs; and
  - The utilities will provide the details in their presentation.
- Potential Issues for 2008 Legislation:
  - Re-definition of the technologies qualifying under the Renewable Energy Technologies Income Tax Credit;
  - Permitting of solar projects on agricultural lands; and
  - NEHO's (Never Ever Heard Of's)



## Status/Outlook – Regulatory Issues

- **A Number of Renewable Issues have been Delegated to the Commission:** a short list of the relevant dockets to be discussed by the Commission in their presentation):
  - Net Energy Metering (No. 2006-0084)
  - Pay As You Save Program (No. 2006-0425)
  - HECO DG Tariffs (No. 2006-0497)
  - KIUC DG Tariffs (No. 2006-0498)
  - RPS Implementation (No. 2007-0008)
  - Public Benefits Fund and Administrator (No. 2007-0084)
  - Intragovernmental Wheeling of Renewables (No. 2007-0176)
  - Renewable Energy Infrastructure Program (No. 2007-0416)







**ENERGY EFFICIENCY WORKING GROUP**

**Update on  
Projects and Initiatives  
2007-2008**

Darren Kimura, Stephen Meder

**ENERGY EFFICIENCY WORKING GROUP**

Working group members continue to coordinate efforts with DBEDT

- Disseminate information among State agencies
- Particular focus on UH energy reduction
- Advance energy conservation, energy efficiency and renewable energy efforts in public and private sectors



**UH Commitment and Initiatives**

Chancellor's Energy Conservation Goals

- Reduce energy consumption 30% by 2012
- Reduce energy consumption 50% by 2015
- Have 25% of campus energy supplied by renewable resources by 2020



**UH Commitment and Initiatives**

Creating the Infrastructure for Change

- Hired new UHM Assistant Vice Chancellor for Facilities
- New Energy Manager to be hired by Feb. 1
- Establishing new procedures for Commissioning, Retrocommissioning, high performance laboratories (coordination with DBEDT)
- Exploring innovative financing options



**UH Commitment and Initiatives**

HECO/UHM Partnership

- Technical assistance
- Sub-metering program
  - HECO's PowerTrax system: on-line in real time readings
  - CAMPUS CENTER
  - SAUNDERS HALL
  - HAWAII INSTITUTE OF GEOPHYSICS
  - LAW SCHOOL (upcoming)
  - CAMPUS-WIDE SUB METERING PROGRAM
- Load Control program



**UH Commitment and Initiatives**

➤ LEED Projects (Planning, design or under construction)

- Frear Hall Dorms(construction)
- ITS Building(planning)
- College of Education(preliminary planning no funding)
- HIMB lab (design)
- KCC Culinary Institute(design)
- MCC Science Building(design)



### UH Commitment and Initiatives

➤ **LEED Projects** (Planning, design or under construction)

- UH-Leeward Community College – Social Science and Teacher Education (design)
- UH-Hilo - Science and Technology Building (design)
- UH-Hilo – Hawaiian Language Building (planning and design)
- UH-M – Kennedy Performance Arts Facilities (design)
- UH West Oahu – New campus (design)

\* Information provided by Carlyn Shan at DBEDT



### UH Commitment and Initiatives

**UHM Retrofits** – Attention to large cooling efficiency improvements

- HVAC upgrades = reduction in energy usage from prior years by 6.45% saving and estimated \$1.3M annually at current rates

➤ **Additional retrofitting**

- Relamping program
- Comprehensive and coordinated Energy Management System Implementation
- Sustainable Saunders- Metering, Energy Conservation, Water Conservation, Wind turbine, behavioral changes



### Future Actions

- Continue to work with DBEDT - increase coordination among state agencies and accelerate advances in private sector
- Continue to identify and overcome procedural barriers
- Continue to explore viable financing options
- Work to establish more renewable energy opportunities such as Power Purchasing Agreements
- Track Progress
- Update Lawmakers
- Refine Policies





## Energy Efficiency Working Group

**TEN POINT PLAN POINT #2**  
 Promote Conservation and Energy Efficiency  
**TEN POINT PLAN POINT #7**  
 Improve Energy Efficiencies and Options in Transportation



## Energy Efficiency

### ➤ Energy by Example

- August 2006
- \$120,000 energy studies donated to Hawaii Energy Policy Forum
- 4 benchmark Energy Assessments conducted
  - State Capitol
  - Farrington High School
  - United Laundry
  - Saunders Hall at UH Manoa



## Energy by Example Findings

- Capitol
  - Potential savings - \$262k
  - Action – DAGS additional study
- Farrington High School
  - Potential savings - \$75k
  - Action – None reported to forum yet
- Saunders Hall
  - Potential savings - \$153k
  - Action – Budget request to do measures submitted
- United Laundry Service
  - Potential savings - \$128k
  - Action – Planning implementation
- Total Savings
  - 3,084,596 kWh
  - 368 kW demand



## Energy Efficiency Transportation

- Act 254 of 2007 by the Hawaii Energy Policy Forum and the University of Hawaii at Manoa conducted a study on EE transportation to reduced demand for fuel in Hawaii's transportation sector.
- EE Transportation Strategies Working Group
  - Voluntary participation by 24 individuals representing 18 organizations
    - County of Hawaii
    - Department of Transportation
    - Office of Hawaiian Affairs
    - County of Maui
    - UH College of Social Sciences
    - Hawaii State AFL-CIO
    - Hawaii Automobile Dealers Association
    - Department of Health
    - DBEDT
    - Hawaii Natural Energy Institute
    - Research Corporation of the University of Hawaii
    - Energy Industries
    - Oahu Metropolitan Planning Organization
    - Honolulu Clean Cities
    - Hawaii Center for Advanced Technologies / HTDC
    - County of Kauai
    - Tesoro Hawaii Corporation
    - County of Honolulu
  - Procured and contracted with Parsons Brinckerhoff Quade and Douglass, Inc.
- Group met formally 4 times



## Energy Efficiency Transportation

- Findings:
  - Lack of consistent, reliable and detailed data
  - Data is fragmented and scattered through state and county departments
- Suggestions:
  - Gather and evaluate fragmented data
  - Identify gaps in data
  - Develop and test models
  - Develop statewide transportation energy information and monitoring system
- Requests:
  - \$175,000 legislative appropriation to continue efforts.







COLLEGE OF SOCIAL SCIENCES

**HAWAII ENERGY POLICY FORUM**

UNIVERSITY OF HAWAII AT MĀNOA

## **Regulatory Reform Work Group**

Carl Freedman, Chair

## **Regulatory Reform Work Group**

- **Revitalization of Regulatory Agencies**
  - ❑ PUC and DCA
- **Reviewing and Improving Hawai'i Laws**
  - ❑ Report on Obstacles in Hawai'i Laws
  - ❑ Development of Recommendations
- **Support for Existing Energy Programs**
  - ❑ Adequate Budget and Staff Positions
  - ❑ Reexamination of Role, Form and Organization of Hawai'i's Energy Agency



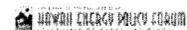


## Greenhouse Gas Emissions Reduction Working Group

Legislative Briefing  
January 17, 2008  
Co-Chairs  
Carl Freedman and Michael Hamnett

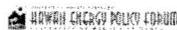
## Concern about Greenhouse Gas Emissions and Climate Change

- Now very widespread
  - Inconvenient Truth (Jan 2006)
  - 4<sup>th</sup> IPCC Report (Feb 2007)
- Climate change legislation and regional initiatives—US Congress, California, RGGI
- 2007 Hawaii State Legislature established state policy and GHG Emissions Reduction Task Force
- HEPF established working group



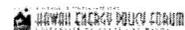
## Act 234

- Established policy: GHG emissions to be reduced to 1990 levels by 2020
- Update GHG emissions inventory
- Established Task Force
  - Develop work and regulatory scheme (December 2009)
    - maximum practically and technically feasible and cost-effective reductions in greenhouse gas emissions



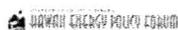
## UH Analysis Group

- UH faculty from UHERO and HNEI convened to support policy analysis and modeling for Task Force
- Faculty and staff donating time
- Will Work with HEPF
- Initial funding from HECO
- Working with DBEDT to dovetail efforts
- Seeking additional support



## UH Analysis Group

- Identify and evaluate policy options
  - Assess what other states and feds are doing
  - Assess feasibility and impact of
    - alternative compliance mechanisms,
    - carbon tax
    - cap and trade
    - other incentives
  - Model the social and economic impact of options
  - Support updating of GHG Emissions Inventory



## EPF Working Group

- Includes UH analytical group participants and other Forum members
- Will vet results of analysis to other stakeholders
- Working with UH group to assess the impact of GHG emission reduction options on other energy priorities



### Initial Conclusions

- Funding and time available only sufficient to conduct high level qualitative analysis of policy options for reducing GHG emissions
- DBEDT needs additional staff if they are going to adequately support Task Force and policy
- Legislature needs to establish mechanisms to develop "adaptation" or "hazard mitigation" measures to address impacts of climate change



**SOCIAL & CULTURAL IMPACT  
WORKING GROUP ACTION PLAN**

TEN POINT PLAN #6: ENCOURAGE  
CULTURALLY APPROPRIATE &  
SUSTAINABLE ENERGY PLANNING & #9:  
ENCOURAGE DEVELOPMENT,  
PRODUCTION & USE OF BIOFUELS

**GOALS**

- AVOID CONSTRUCTION OF NEW ENERGY PRODUCTION PLANTS ON SPECIALLY-IDENTIFIED CULTURAL SITES
- ADVOCATE FOR ESTABLISHMENT OF PROVEN BIOFUEL PRODUCTION MODEL
- IDENTIFY PROVEN MODELS FOR ENERGY PRODUCTION/USE EMANATING FROM INDIGENOUS COMMUNITIES

**GOALS**

- PROVIDE INCENTIVES/OPPORTUNITIES FOR NATIVE HAWAIIANS TO BE STAKEHOLDERS IN ENERGY PRODUCTION
- ADDRESS ENERGY REQUIREMENTS TO BUILD SUSTAINABLE COMMUNITIES IN HAWAII
- IDENTIFY AREAS IN WHICH ENERGY POLICY PLANNING SHOULD BE INFLUENCED BY CULTURE/ CULTURAL PRACTICES

**REASONS TO ACT**

- ENERGY PRODUCTION FACILITIES OFTEN HAVE SITE-SPECIFIC DETRIMENTAL COMMUNITY IMPACTS
- ENERGY INEFFICIENCY IS INCONSISTENT WITH HAWAIIAN CONCEPT OF SUSTAINABILITY
- FACILITY SITING OFTEN PITS AFFLUENT URBAN/SUBURBAN COMMUNITIES AGAINST POOR RURAL COMMUNITIES

**DESIRED OUTCOMES**

- CULTURAL SITES ARE NOT DISTURBED WHEN POWER GENERATION PLANTS ARE BUILT
- SOCIAL & CULTURAL ISSUES ARE IDENTIFIED & ADDRESSED IN ENERGY PLANS & POLICIES
- NATIVE HAWAIIAN COMMUNITY BECOMES STAKEHOLDERS IN CULTURALLY APPROPRIATE ENERGY PRODUCTION & DISTRIBUTION

**INDICATORS/METRICS**

- AREAS IN WHICH ENERGY PRODUCTION FACILITIES SHOULD NOT BE PLACED ARE CHARTED
- COMMUNITY OUTREACH PLAN IS DEVELOPED
- A CITER MODEL OR SIMILAR TOOL IS ACCEPTED BY INDUSTRY & POLICY MAKERS
- A DEMONSTRATION SITE IS SELECTED FOR DEVELOPMENT OF A CULTURALLY APPROPRIATE ENERGY POLICY

**ACTIONS TAKEN OR UNDERWAY**

- "WHITE PAPER" ON ENERGY CONSERVATION/PRODUCTION USING INDIGENOUS SUSTAINABILITY MODELS
- "WHITE PAPER" ON INDIGENOUS COMMUNITIES AS STAKEHOLDERS IN EFFICIENT ENERGY USE/PRODUCTION
- FORMULATE POLICIES & PROCEDURAL FRAMEWORKS TO INCLUDE EVALUATION OF SOCIAL & CULTURAL IMPACTS ON ENERGY PLANNING/DEVELOPMENT



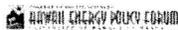
**ACTIONS TAKEN OR UNDERWAY**

- ESTABLISH COMMUNITY BENEFITS PROCESS TO ADDRESS CONCERNS OF BURDENED COMMUNITIES
- ENGAGE HAWAIIAN & BROADER COMMUNITY IN SELECTION OF CULTURAL APPROPRIATE SITES FOR ENERGY PRODUCTION & DISTRIBUTION
- CREATE PROCESS TO PROTECT NATIVE RIGHTS & PRACTICES WHEN ENERGY PROJECTS ARE DEVELOPED



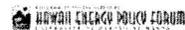
**ACTIONS TAKEN OR UNDERWAY**

- CREATE DEMONSTRATION PROJECT TO EMPOWER COMMUNITIES AS STAKEHOLDERS IN NEW TECHNOLOGIES & ENERGY SELF-SUFFICIENCY
- DEVELOP STRATEGIC ALLIANCE WITH OFFICE OF HAWAIIAN AFFAIRS ON ENERGY POLICY & CULTURAL SITE ID
- CONVENE OHA-HEPF WORKING GROUP ON ENERGY POLICY PLANNING & CULTURAL SITE ANALYSIS



**ACTIONS TAKEN OR UNDERWAY**

- CONVENE LOCAL UTILITIES, OHA, SHPD & HAWAIIAN ORGS & PRIVATE SECTOR PARTNERS
- ACTION TAKEN: FACTS INC. (ON BEHALF OF HEPF, HNEI & OHA) PREPARED LNG/CNG STUDY





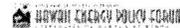
## Hydrocarbon Working Group January 17, 2008 Legislative Briefing

Steve Golden, Co-Chair  
Lance Tanaka, Co-Chair

## Hydrocarbon Working Group-Goals

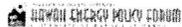
### Ensure the security and reliability of energy supply and distribution

- Develop systems that have endurance and can overcome vulnerabilities to potential acts of terrorism and natural disasters.
- Promote policies to support appropriate cost recovery for utility companies for prudent investments in energy generation, supply and distribution systems.
- Support policies and laws that facilitate the integration of biofuels into the energy infrastructure that don't compromise security & reliability of the state's overall energy supply and distribution system.



## Hydrocarbon Working Group-Actions

- Assisted HNEI with Section 355 requirements of the 2005 National Energy Policy Act
  - ❑ Partial funding for FACTS to update their previous study on the feasibility of importing liquefied natural gas (LNG) or compressed natural gas (CNG.)
  - ❑ Analysis of the impact on the local refinery industry of displacing petroleum with renewable energy or LNG needs further analysis if additional funds are available.
- Supported the development of the 2006 Hawaii Energy Strategy being conducted by DBEDT & RMI, now scheduled to be completed in 2008.



## Hydrocarbon Working Group-Actions

- Monitor the implementation of recently adopted energy utility related laws
  - ❑ Petroleum Industry Monitoring, Analysis and Reporting (PIMAR) law
- Support preparedness for energy shortage emergencies due to oil market disruptions or natural or manmade disasters
  - ❑ Secure delivery of electric and gas services
  - ❑ Protect production and storage of fuel and fuel feedstocks for utility and transportation uses



## Hydrocarbon Working Group-Actions

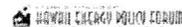
### 2008 Legislature

- No legislation proposed
- Monitor and consider support of legislation to improve energy security and reliability
- Keep abreast of Hawaii Harbors User Group and State Harbors Harbor Modernization Plan initiative to upgrade harbor infrastructure to avoid disruption in the delivery of hydrocarbon and biofuels as well as other cargos



## Hydrocarbon Working Group

Questions?





## Status Report—DBEDT's Energy Program

Maurice Kaya  
Strategic Industries Division

January 17, 2008

## Clean Energy Must Remain a Priority for the State

- Energy Security
- Energy Costs at \$100/bbl oil
- Implications of Carbon Regulation
- Continue Investment in Energy Efficiency
- Achieving Full Potential of Renewable Energy
- Sending Right Signals to Markets

2

## Strong, Robust Energy Program Needed

- State Policies Require Proper Execution
- Need Appropriate Organizational Structure
- Need Reliable Source of Funding
- Necessary Authority for Success
- Ability to Attract and Retain Qualified Personnel

3

## Expectations are Increasing

- Execution of Energy for Tomorrow
- Lead by Example
- Interagency Wheeling Docket/PUC intervention
- Senior Staff on NGA Task Force
- Consultations with Renewable Energy Developers
- Biofuels Program Coordination
- Greenhouse Gas Policies

4

## Success Story: Lead by Example

- Energy Star Bldgs—5 certified
- LEED Bldgs—3 completed, many under design, architect/engr trained
- DAGS developing statewide performance contract RFP using DBEDT info
- DOT/FTZ issued a RFP for solar PV, as much as 34 MW
- State Capitol assessment
- Institutional Commitment by agencies

5

## Status Report: Biofuels

- Act 240, 2006—Biofuels Assessment Proj.
  - Contractor: Black and Veatch, UH, Stillwater Assoc.
  - Feedstock assessment by Jan 2008
  - Technology and crop assessment by Jul 2008
  - Stakeholder engagement, integration, overall completion through Jul 2009
- Act 253, 2007—Bioenergy Master Plan
  - Funding released
  - RFP drafted, to be issued early 2008
- Act 130, 2007—Non-Ethanol Gasoline
  - Formal Report Submitted to Legislature
  - Non-blended gasoline available on all islands except Maui

6

## Status Report: GHG Task Force

- Task Force Appointed (Act 234)
- Staffed jointly by DBEDT and DOH
- 3 Meetings of the TF to date
- Assessment Stage—Testimony of Experts
- Seeking Release of Funds
- Preliminary work plan developed
- Will seek contract support for inventory, policy analysis, and program management

7

## Current Challenges for DBEDT's Energy Program

- Personnel
- Finances
- Keeping Up with Expectations
- Institutionalizing and Sustaining Program

8

## Personnel Issues

- Level of existing staffing inadequate to address workload, assignments and expectations—see Table 1 staff analysis, new starts
- Expect staffing issues to be exacerbated by staff retirements
- Historically energy staff have been cutback, with positions recently frozen and reallocated to other functions within DBEDT

9

Table 1 Staff Analysis—New Starts

| Legis Session                          | Fiscal Year | Fiscal Year - New Requirement   | FTE Estimate/Request | FTE Authorized | Additional FTE Needed |
|--|-------------|---------------------------------|----------------------|----------------|-----------------------|
| 2006                                   | 2007        | Biofuels Study                  | 0                    | 0              | 0.3                   |
|  |             | Renewable Hydrogen              | 3                    | 0              | 2                     |
|  |             | LBE Efficiency                  | 2                    | 2              | 0                     |
|  |             | <b>FY 2007 Total FTEs</b>       | <b>5</b>             | <b>2</b>       | <b>2.3</b>            |
| 2007                                   | 2008        | Greenhouse Gas Reduction Limits | 2                    | 0              | 2                     |
|  |             | Biofuels Master Plan            | 1                    | 0              | 1                     |
|  |             | One-Stop Renewables Permitting  | 0                    | 0              | 0.2                   |
|  |             | Certify Sustainable Palm Oil    | 0                    | 0              | 0.2                   |
|  |             | Report No Ethanol Gas           | 0                    | 0              | 0.1                   |
|  |             | <b>FY 2008 Total FTEs</b>       | <b>3</b>             | <b>0</b>       | <b>3.5</b>            |
| <b>FY 2007, and FY 2008 TOTAL FTEs</b> |             |                                 | <b>8</b>             | <b>2</b>       | <b>5.8</b>            |

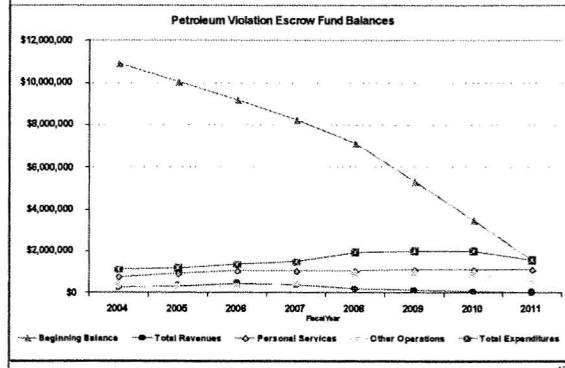
10

## Finances

- Rapidly diminishing PVE ("oil overcharge") funds—see Figure 1
  - 4 years remaining at current expenditure rate
  - Of SID's FY08 budget, 66.6% and 14 filled Energy Program positions out of 20 total are supported by PVE funds.
- Just to maintain current services would require converting \$1.94mm of MOF to general funds within 4 years
- Impacts besides \$—e.g. state ethanol/biofuels, energy emergency preparedness, utility policy, renewable hydrogen programs implemented using PVE funded staff

11

Figure 1 Federal PVE Depletion Chart



12

### SID Strategic Objective—Supplemental Funding through Grants

- “Stretch” PVE dollars
- Leverage appropriated federal funds from formula grants
- High early success rate of competitive awards
- Support from Congressional delegation
- Federal special project award now gone
- Increased competition among states

13

### Trend Comparisons of Annual (FY) Funding Levels from Awards of Competitive Federal Grant Funds to Hawaii State Energy Program

Note: Both five-year and three-year moving averages are based on the grant funding awards over the 13 fiscal years, 1993 through 2007.

14

### DBEDT SID Annual Operating Budget – Federal (USDOE), and State GF Funds – Budgeted, and “Non-Budgeted”<sup>\*\*</sup> Appropriations

Fiscal Years 2001 through 2008

Annual Non-Budgeted GF<sup>\*\*</sup>

Annual Budgeted GF

Annual Federal (USDOE)

#### New Requirements New Funding

**2007 – Energy for Tomorrow**

- Biofuels Study
- Renewable Hydrogen
- LBE Efficiency

**2008**

- Greenhouse Gas Limits
- Biofuels Master Plan
- 1-Stop Renewables Permitting (30 - Unfunded Mandate)
- Certify Sustainable Palm Oils (30 - Unfunded Mandate)
- Report No Ethanol Gas (30 - Unfunded Mandate)

**Staff Resources:**  
Net LOSS 1 position...

\*Non-Budgeted GF, i.e., Legislative appropriations via separate bills; e.g., Act 234, SLM 2007 – Greenhouse Gas Reduction Bill, etc.

15

### Additional FTE Are Essential To Implement Priority Energy Initiatives – Restoration of Previously Authorized Levels Minimum to Meet New Requirements

Annual Federal (USDOE)    □ Annual Budgeted GF    □ Annual Non-Budgeted GF<sup>\*\*</sup>

\*Non-Budgeted GF, i.e., Legislative appropriations via separate bills; e.g., Act 234, SLM 2007 – Greenhouse Gas Reduction Bill, etc.

16

### What Do We Need?

- Personnel—6 additional FTEs
  - Biofuels Program Manager
  - Renewable Hydrogen Prog. Mgr.
  - Energy Economist/PUC lead
  - Energy Research Statistician
  - Greenhouse Gas TF Program Manager
  - Project Assistant/Researcher

17

### What is in DBEDT’s Budget Request (MOF)

- Biofuels Program Manager (U)
- Renewable Hydrogen Prog Mgr (B)
- Energy Economist/PUC Lead (U)
- Energy Research Statistician (U)
  
- Energy Permit Facilitator (U)
  - Ref: Report on SCR 164, Streamlining Permitting

18

## What Do We Need?

- Funding
  - \$1.2 MM to complete Biofuels Master Plan
  - \$ 0.7 MM to complete GHG program effort
  - \$ 0.3 MM for contract support, PUC dockets
  - \$ 0.3 MM for technical contractor for LBE—Perf. Contracts, Commissioning, LEED studies
  - \$0.1 MM for technical support for sustainable bio-oils

19

## Funds in DBEDT Budget Request

- \$0.7 MM for Bioenergy (U)
- \$0.3 MM for PUC Docket support (U)
- \$0.2 MM for LBE (U)

Note: (1)U funds represent transfer from Environmental Response Revolving Fund.  
(2) Positions and funding for GHG not in admin budget.

20

## Conclusions

- SID energy staff has been "stretched" for several years
- Need to address staffing, or
  - Division performance expectations will not be met
  - Quality and timeliness of outputs will deteriorate
- Must address near-term depletion of PVE funds
- Timely to address appropriate organizational questions as well
- Transition being given the support and attention it needs

21

PRESENTATION OF  
 CARLITO P. CALIBOSO  
 CHAIRMAN, PUBLIC UTILITIES COMMISSION  
 DEPARTMENT OF BUDGET AND FINANCE  
 STATE OF HAWAII  
 TO THE  
 HOUSE COMMITTEE ON  
 ENERGY AND ENVIRONMENTAL PROTECTION  
 AND  
 SENATE COMMITTEE ON ENERGY AND ENVIRONMENT

January 17, 2008

UPDATES ON PRIORITIES, PLANS AND PROGRAMS OF THE PUBLIC UTILITIES COMMISSION

| <u>Reference</u>       | <u>Docket</u>                 | <u>Description</u>   | <u>Status and Update</u>   |
|------------------------|-------------------------------|--|--|
| 1. Chapter 269,<br>HRS | 03-0371<br>06-0497<br>06-0498 | Investigation re<br>Distributed Generation<br>("DG") to establish<br>policies and principles for<br>DG deployment and<br>generation, and<br>guidelines and<br>requirements for DG. | <ul style="list-style-type: none"> <li>• Completed with Decision and Order No. 22248, January 2006, setting forth various DG policy and procedural matters, and with further details to be established by tariff.</li> <li>• After concerns and comments were generated by proposed standby service tariffs; the commission opened two new dockets: HECO (2006-0497) and KIUC (2006-0498).</li> <li>• Statewide public hearings were held in February 2007 for HECO (2006-0497) and KIUC (2006-0498).</li> <li>• Docket 2006-0497: Stipulating Parties' proposed Interconnection Tariff filed, September 2007. Hawaii Renewable Energy Alliance's (i.e., the Non-Stipulating Party) Statement of Position, September 2007. HECO Companies' Reply, October 2007. Comments to the Environmental Protection Agency's Observations, November 2007. Commission's decision and order pending.</li> <li>• Docket 2006-0497: Parties continuing their negotiations and discussions on the possible settlement on a Standby Service Tariff. Status conference, January 2008. Evidentiary hearing scheduled for February 2008.</li> <li>• Docket 2006-0498: Stipulating Parties' proposed Interconnection Tariff filed August 2007. HREA's Statement of Position, September 2007. KIUC's Reply, September 2007. Comments to the EPA's Observations,</li> </ul> |

| <u>Reference</u> | <u>Docket</u>        | <u>Description</u>            | <u>Status and Update</u>  |
|------------------|----------------------|-------------------------------|---|
|                  |                      |                               | <p>November 2007. Commission's decision pending.</p> <ul style="list-style-type: none"> <li>• Docket 2007-0498: Procedural Order proposed by the Stipulating Parties, November 2007. Further briefing due. Oral argument, February 2008.</li> </ul>   |
| 2.               | Chapter 269,<br>HRS  | 03-0372<br>07-0331<br>07-0403 | <p>Investigation into Competitive Bidding as a mechanism for acquiring or building new generation projects in effort to ensure new generation at least cost.</p> <ul style="list-style-type: none"> <li>• Completed with establishment of Competitive Bidding Framework in Decision and Order No. 23121, December 2006.</li> <li>• Commission approved: 1) list of Independent Observers for Competitive Bidding on June 22, 2007 (decision and Order 23503); 2) Code of Conduct on August 28, 2007 (decision and Order 23614); and 3) interconnection and upgrade tariffs on November 5, 2007 (Decision and Order 23799).</li> <li>• New docket opened (2007-0331) to receive filings, review approval requests and resolve disputes related to HECO's proposal to proceed with a competitive bidding process to acquire 100MW of non-firm renewable energy on Oahu.</li> <li>• New docket opened (2007-0403) to receive filings, review approval requests and resolve disputes related to MECO's proposal to proceed with a competitive bidding process to acquire two increments of 25MW of firm generating capacity on Maui.</li> </ul> |
| 3.               | Act 104, SLH<br>2005 | 06-0084                       | <p>Net Energy Metering Investigation: whether to increase: (1) max capacity of customer-generators to more than 50 kW; and (2) total capacity produced by customer-generators above 0.5% of utility's peak demand</p> <ul style="list-style-type: none"> <li>• Procedural Schedule adopted; discovery and technical meetings scheduled through August 2007, Evidentiary Hearing scheduled for September 2007.</li> <li>• HECO and KIUC reached separate settlements, filed in September 2007, with the Consumer Advocate, HREA, and HSEA</li> <li>• Parties waived evidentiary hearing and commission canceled hearing</li> <li>• HECO settlement contemplates increasing the cap for eligible customer generators from 50 kW to 100 kW, and increasing the overall system cap from 0.5% to 1.0% of system peak demand</li> </ul>   |

| <u>Reference</u> | <u>Docket</u>                                   | <u>Description</u> | <u>Status and Update</u>   |   |
|------------------|---|--------------------|--|---|
| 4.               | Act 162, SLH<br>2006                            | 05-0069            | Energy Efficiency Docket to review HECO proposed Demand-Side Management ("DSM") Programs and to consider use of Public Benefits Fund to administer DSM programs. | <ul style="list-style-type: none"> <li>• KIUC settlement contemplates keeping the cap for eligible customer generators at 50 kW, and increasing the overall system cap from 0.5% to 1.0 %</li> <li>• Decision and Order on Parties' settlements target completion February 2008</li> <li>• Decision and Order No. 23258, February 13, 2007; Order No. 23448, May 21, 2007 (Order granting in part HECO Motion for Clarification and/or for Partial Reconsideration). <ul style="list-style-type: none"> <li>○ Approved most of HECO's proposed DSM programs.</li> <li>○ Ordered transfer of DSM and energy efficiency programs to third-party administrator by January 2009. Direct load control programs to remain with HECO.</li> </ul> </li> <li>• Opened dockets: (1) to develop RFP for third party administrator (Docket 2007-0341); and (2) for HECO to file for review Accomplishments and Surcharge reports, and Monitoring and Evaluation Reports, and to review any implementation flexibility requests (Docket 2007-0323).</li> <li>• Legislative Proposal: to make it explicitly clear that public benefits fees shall not be considered state or public moneys subject to legislative appropriation and shall not be required to be deposited into the state treasury.</li> </ul> |
| 5.               | Act 95, SLH<br>2004<br><br>Act 162, SLH<br>2006 | 07-0008<br>07-0416 | Renewable Portfolio Standards ("RPS") Investigative Docket to implement RPS and incentive mechanism and structure.   | <ul style="list-style-type: none"> <li>• Held informal workshops to receive range of comments and recommendations.</li> <li>• Opened formal Investigative Docket to complete investigation with changes made by Act 162, which allows for penalties if RPS not achieved.</li> <li>• Electric Utilities have exceeded RPS standards of 8%, as of December 2006 (HECO 10.3% (13.8% consolidated); MECO 19.3%; HELCO 31.3%; KIUC 13.9%).</li> <li>• Decision and Order No. 23912, filed in December 2007, adopted in part and denied in part a Stipulation and Joint RPS Framework filed by all Parties except Life of the Land; Commission</li> </ul>   |

| <u>Reference</u> | <u>Docket</u>                                  | <u>Description</u> | <u>Status and Update</u>   |
|------------------|--|--------------------|--|
|                  |  |                    | <p>ordered supplemental briefing (due on January 31, 2008 and February 15, 2008) on 3 issues relating to penalties</p> <ul style="list-style-type: none"> <li>• Contemporaneously with Decision and Order No. 23912, the commission, by Order No. 23913, opened Docket No. 2007-0416 to examine HECO Companies' proposal for a Renewable Energy Infrastructure Program; No parties moved to intervene; Parties' stipulated procedural schedule due on February 4, 2008</li> </ul>  |
| 6.               | Act 162, SLH 2006                              | 05-0315            | <p>Act 162 requires examination of certain factors before an automatic fuel rate adjustment clause may be approved by Commission, to be applied in HELCO Rate Case.</p> <ul style="list-style-type: none"> <li>• Review includes consideration of whether clause provides sufficient incentive to encourage greater use of renewable energy, among other considerations.</li> <li>• Proposed adjustment clause will be reviewed under the standards established by Act 162.</li> <li>• 05-0315: Final Settlement Letter signed by HELCO and CA filed May 15, 2007. Opening Briefs filed June 4, 2007; pending Commission determination.</li> <li>• 06-0386: Final Settlement Letter signed by HECO and CA filed on September 6, 2007. Pending Commission determination.</li> <li>• 06-0387: Final Settlement Letter signed by MECO and CA filed on December 12, 2007. Pending Commission determination.</li> </ul> |
| 7.               | Act 240, SLH 2006                              | 06-0425            | <p>Solar Water Heating Pay As You Save Program - Investigation to establish parameters of program.</p> <ul style="list-style-type: none"> <li>• Decision and Order No. 23531, June 29, 2007, approved HECO and KIUC proposed tariffs for pilot programs with modifications.</li> <li>• HECO tariffs filed July 9; KIUC tariffs filed July 11, 2007.</li> </ul>   |
| 8.               | Chapter 269, HRS, Par. 2.3.g.2 Gen. Ord. No. 7 | 05-0145            | <p>Application of HECO for Approval of Campbell Industrial Park generation plant; involves renewable energy and biofuels issues.</p> <ul style="list-style-type: none"> <li>• Decision and Order No. 23457, May 23, 2007, approved generation plant with use of 100% biofuels, along with a new 138kV transmission line.</li> <li>• Related HECO Community Benefits application Docket No. 05-0146, Decision and Order No. 23514, June 27, 2007, approved reverse osmosis water pipeline, environmental quality monitoring program, but denied request</li> </ul>  |

| <u>Reference</u> | <u>Docket</u>                                     | <u>Description</u>  | <u>Status and Update</u>   |
|------------------|---|---|--|
|                  |   |   | for residential rate reduction program for residential ratepayers in the 96707 zip code area.  |
| 9.               | Federal Energy Policy Act of 2005, amending PURPA | Various:<br>04-0046<br>04-0077<br>06-0084<br>06-0165<br>06-0497<br>06-0498<br>07-0084   | Commission required to consider and make a determination on five (5) standards described in Energy Policy Act: <ul style="list-style-type: none"> <li>• Net Metering (by August 2008)</li> <li>• Fuel Diversity (by August 2008)</li> <li>• Fossil Fuel Generation Efficiency (by August 2008)</li> <li>• Time-Based Metering and Communications (by August 2007)</li> <li>• Interconnection (by August 2007)</li> </ul>   |
|                  |   |   | <ul style="list-style-type: none"> <li>• Net Metering: To be reviewed in Commission's Net Energy Metering Investigation (06-0084)</li> <li>• Fuel Diversity and Fossil Fuel Generation Efficiency: To be reviewed in Integrated Resource Planning ("IRP") dockets. HELCO (04-0046), MECO (04-0077), HECO (07-0084), KIUC (06-0165).</li> <li>• Time-Based Metering and Communications: declined to adopt standards for HELCO since, among other things, HELCO's time-of-use rates are generally consistent with federal standards (see Order No. 23586 issued August 2007 in Docket 05-0315).</li> <li>• Interconnection: declined to adopt the federal interconnection standards (Decision and Order No. 23562, July 2007, in Docket 2006-0497; Decision and Order No. 23563, July 2007, Docket 2006-0498)</li> </ul> |
| 10.              | Act 143, SLH 2006; Act 177 (SLH 2007)             | Regulatory Reform: Report from Commission on re-structuring and resource needs; to enable it to more efficiently and effectively address day-to-day regulatory responsibilities and important policy issues.  | <ul style="list-style-type: none"> <li>• Act 177 (SLH 2007) (HB1005 HD2 SD1 CD1), Relating to Public Utilities Commission, restructures Commission as recommended by PUC Act 143 Report. Currently processing required changes administratively.</li> <li>• Received strong Forum, Legislative, and Administrative support for measure.</li> </ul>   |
| 11.              | Act 177 (SLH 2007)                                | To improve energy security, and to reduce dependence on foreign oil and benefit the environment, the Commission should be expressly allowed to consider the need for renewable energy in exercising its authority to regulate public utility companies. | <ul style="list-style-type: none"> <li>• Proposed new language: "§269-A Consideration of renewable energy. The public utilities commission may consider the need for increased renewable energy use in exercising its authority and duties under this chapter."</li> <li>• Requested provision was included in Section 2 of Act 177.</li> </ul>  |
| 12.              | Chapter 269, HRS, Integrated Resource             | 04-0046 HELCO<br>04-0077 MECO<br>07-0084 HECO   | <ul style="list-style-type: none"> <li>• IRP Dockets are ongoing for each of the utilities.</li> <li>• MECO completed advisory group process and filed preferred IRP plan for</li> </ul>   |

| <u>Reference</u>   | <u>Docket</u> | <u>Description</u>  | <u>Status and Update</u>  |
|--|---------------|---|---|
| Planning ("IRP") Framework   | 06-0165       | KIUC  | <p>Commission consideration, April 2007. Stipulation between MECO and Consumer Advocate filed September 2007. Evidentiary hearing waived; Decision and Order for MECO IRP target filing January/February 2008.</p> <ul style="list-style-type: none"> <li>• HELCO completed advisory group process and filed preferred IRP plan for Commission consideration, May 2007. Stipulation between HELCO and Consumer Advocate filed November 2007. Evidentiary hearing held November 2007; Decision and Order for HELCO IRP target filing January 2008</li> <li>• KIUC is scheduled to file plan by December 2008.</li> <li>• HECO currently proceeding with advisory group process and scheduled to file its plan by June 2008.</li> </ul> |
| 13. Act 177, § 2 S.C.R. 180 Chapter 269, HRS                       | 07-0176       | Investigation re Intra-governmental Wheeling of Electricity               | <ul style="list-style-type: none"> <li>• Investigation opened with Order No. 23530, June 2007. Fourteen parties and three participants are participating in this proceeding.</li> <li>• Proposed procedural schedules filed in January 2008.</li> </ul>   |
| 14. Chapter 486H, HRS, Act 182 (SLH 2007)                          |               | Petroleum Industry Monitoring, Analysis and Reporting ("PIMAR")           | <ul style="list-style-type: none"> <li>• Weekly PIMAR reporting forms completed after consultation with industry and other state agencies; first revised weekly reports were due August 2007.</li> <li>• Weekly Reports being published, improvements planned and ongoing.</li> <li>• Commission submitted PIMAR Program Report by ICF Consulting, dated November 7, 2008.</li> </ul>   |
| 15. Climate Change – Green House Gas Emissions; Act 234 (SLH 2007) |               | Establishes policy goal of reducing GHG emissions to 1990 levels by 2020. | <ul style="list-style-type: none"> <li>• No particular proceeding opened; but will need to consider how to implement and achieve policy established by Act 234 in all relevant matters.</li> </ul>  |



## 2008 HEPF House & Senate Energy Committee Briefing

Steven Rymsha  
srymsha@kiuc.coop  
246-8287

## KIUC 2008-2023 Strategic Plan

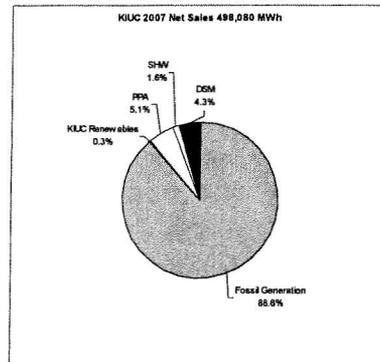
Seven strategies within the plan include:

- Deliver power safely
- Improve reliability
- Increase sustainable power supply
- Ensure fair and competitive rates
- Improve Member satisfaction
- Improve Employee satisfaction
- Cultivate a strong and effective Board /Staff team

## Increase Sustainable Power Supply

- \* Reduce electrical power generation greenhouse gas emissions to 1990 levels, which will result in over 50% of generation from renewable sources
- \* Diversify energy sources
- \* Increase conservation and demand-side management

## KIUC 2007



## Net Energy Metering

- \* 35 systems installed in 2007 with a generation capacity of 239kW
- \* 76 systems installed since 2001 with a total generation capacity of 377kW

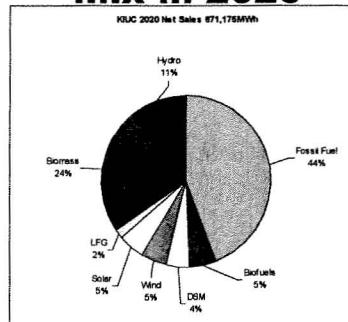
## Solar Hot Water Programs

- \* KIUC Rebate Program installed 66 systems
- \* KIUC Zero Interest Loan Program installed 50 systems
- \* KIUC Solar Water Heating Savings Program installed 0 systems

## Renewable Project

- PUC approved PPA for the 6.4MW Green Energy Biomass Project
  - Project awaiting County permits
  - Construction projected to start in April and targeted to be online no earlier than Dec 31, 2008, and no later than Dec 31, 2010
- 10-12.5MW wind project has reached agreement with land owner and site assessment is underway
  - System feasibility study to begin shortly
  - Will likely include energy storage system
- In discussions with Gay & Robinson to purchase electricity from their proposed biomass to energy project
- 130kW hydro unit scheduled to be online in 2008
- Conducted initial biodiesel testing. Working towards future testing, integration and storage plan.

## Possible Generation mix in 2020





## HAWAII ENERGY POLICY FORUM

January 17, 2008

The Honorable Hermina Morita, Chair  
and Members  
Hawaii Committee on Energy and Environmental Protection  
State Capitol, Room 314  
Honolulu, HI 96813

Dear Representative Morita and Members:

Enclosed please find a report titled, "State of Hawaii Energy Efficient Transportation Strategies Study – Phase I"

The Hawaii Energy Policy Forum ("Forum") at the University of Hawaii at Manoa commissioned the report in response to Act 254, 2007 Session Laws of Hawaii. Act 254 required that a study be conducted on energy efficient transportation strategies to reduce the demand for fuel in Hawaii's transportation sector. The Forum prepared the study with assistance from the consulting firm of PB Consult/Parsons, Brinckerhoff, Quade & Douglas, Inc.

The Forum will be asking that legislation be introduced during the 2008 Session as a follow-up to the findings of the report. If you have any questions or need further clarification or information, please do not hesitate to contact us. We thank you for your continuing support of the Forum's vision of developing smart energy solutions to sustain a healthy, prosperous, and secure Hawaii.

Mike Hamnett  
Co-Chair

Sincerely,

Sharon Miyashiro  
Co-Chair

Enclosure





# State of Hawaii Energy Efficiency in Transportation Strategies Study- Phase I

January 15, 2008

---



COLLEGE OF SOCIAL SCIENCES

**HAWAII ENERGY POLICY FORUM**

UNIVERSITY OF HAWAII AT MĀNOA

# State of Hawaii Energy Efficiency in Transportation Strategies Study - Phase I

By  
Hawaii Energy Policy Forum

With assistance of PB Consult, and Parsons Brinckerhoff Quade & Douglas

## Energy Efficiency in Transportation Strategies Working Group

**Bob Arrigoni**

Research and Development, County of Hawaii

**James Burke**

Department of Transportation Services, City & County of Honolulu

**Mark Glick**

Office of Hawaiian Affairs

**Francis Keeno**

Department of Transportation

**Kal Kobayashi**

Energy Office, County of Maui

**Sharon Miyashiro**

College of Social Sciences Public Policy Center,  
University of Hawaii

**Randy Perreira**

Hawaii State AFL-CIO

**David Rolf**

Hawaii Automobile Dealers Association

**Peter Rosegg**

Hawaiian Electric Company

**Gary Slovin**

Alliance of Automobile Manufacturers

**Robert Tam**

Department of Health

**Maria Tome**

Strategic Industries Division, Department of Business,  
Economic Development and Tourism

**Tom Brown**

Mass Transit, County of Hawaii

**Mitch Ewan**

Hawaii Natural Energy Institute, University of Hawaii

**Mike Hamnett**

Research Corporation of the University of Hawaii

**Darren Kimura**

Energy Industries

**Gordon Lum**

Oahu Metropolitan Planning Organization

**Clyde Omija**

Honolulu Clean Cities

**Tom Quinn**

Hawaii Center for Advanced Transportation  
Technologies, HTDC

**Janine Rapozo**

Transportation Agency, County of Kauai

**Gareth Sakakida**

Hawaii Transportation Association

**Glenn Soma**

Department of Transportation

**Lance Tanaka**

Tesoro Hawaii Corp.

**Richard Torres**

Department of Transportation Services, City and  
County of Honolulu

# Table of Contents

|   |    |
|---|----|
| EXECUTIVE SUMMARY .....   | 1  |
| 1.0 INTRODUCTION AND BACKGROUND .....   | 3  |
| 1.1 Act 254 Directives .....  | 3  |
| 1.2 Energy Efficiency in Transportation Strategies Working Group.....   | 4  |
| 1.3 Overview of Report.....   | 6  |
| 2.0 ENERGY CONSUMPTION IN THE TRANSPORTATION SECTOR.....  | 6  |
| 2.1 Energy and Transportation in Hawaii.....  | 6  |
| 2.2 Gasoline and Diesel Demand .....  | 7  |
| 2.3 Population and Vehicles.....  | 8  |
| 2.4 Historical and Projected Gasoline Demand .....  | 9  |
| 3.0 OVERVIEW OF STATE, REGIONAL, AND LOCAL PLANS.....   | 9  |
| 3.1 Overview.....   | 9  |
| 3.2 Plans and Documents Reviewed.....   | 10 |
| 3.3 Energy Efficiency-Related Goals and Policies.....   | 10 |
| 4.0 ENERGY EFFICIENCY STRATEGIES FROM OTHER JURISDICTIONS.....  | 11 |
| 5.0 ENERGY EFFICIENCY IN TRANSPORTATION: GOALS AND BENCHMARKS.....  | 12 |
| 5.1 Current/Existing State Goals.....   | 12 |
| 5.2 Preliminary List of Goals and Strategies .....  | 12 |
| 5.3 Examples of Potential Benchmarks.....   | 14 |
| 6.0 NEXT STEPS AND RECOMMENDED ACTIONS.....   | 15 |
| 6.1 Determine Goals and Benchmarks.....   | 15 |
| 6.2 Identify Data Needed to Measure Performance.....  | 15 |
| 6.3 Develop Energy Efficiency Information and Monitoring System .....   | 17 |
| 6.4 Near-Term Legislative Proposal: Statewide Transportation Sector Energy<br>Efficiency Information and Monitoring System..... | 18 |
| 6.5 Future Strategies and Legislation.....  | 18 |

7.0 APPENDICES

|      |   |       |
|------|---|-------|
| I    | Act 254 (SLH 2007), Making an Appropriation for Energy Efficient Transportation Strategies..... | i     |
| II   | List of Working Group Members.....  | iv    |
| III  | Related Data on Energy Consumption .....  | v     |
| IV   | Plans and Documents Reviewed.....   | xii   |
| V    | Strategies from Other Jurisdictions: Modes of Travel.....                                       | xxii  |
| VI   | Strategies from Other Jurisdictions: Fuel Efficient Vehicles.....                               | xxvii |
| VII  | Strategies from Other Jurisdictions: Alternative Fuels.....                                     | xxx   |
| VIII | Draft Legislative Proposal and Budget for the 2008 Legislature.....                             | xxxii |
| IX   | Legislative Initiatives from Other Jurisdictions.....   | xl    |

# State of Hawaii Energy Efficiency in Transportation Strategies Study Phase I

---

## Executive Summary

In response to Act 254, 2007 Session Laws of Hawaii, the Hawaii Energy Policy Forum (“Forum”) at the University of Hawaii at Manoa conducted a study on energy-efficient transportation strategies to reduce the demand for fuel in Hawaii’s transportation sector and, in so doing, reduce Hawaii’s dependence on imported fossil fuel. The study, conducted in conjunction with the State Department of Business, Economic Development & Tourism (“DBEDT”) included consideration of the following:

- (1) Developing tangible goals, objectives, desired outcomes, and actions to implement an energy-efficient transportation strategy;
- (2) Developing implementation benchmarks for measuring outcomes of energy-efficient transportation strategies; and
- (3) Conducting a cost-benefit analysis of each energy-efficient transportation strategy.

The Forum convened a steering committee to plan the scope of the work and identify the major stakeholders that should be participants in this challenging yet significant undertaking. Invited representatives from business, labor, academia, and government included state, county and Metropolitan Planning Organization transportation planners, state energy and Native Hawaiian agency officials, utility and petroleum company executives, and automobile dealer and manufacturer industry advocates. These members comprise the Energy Efficiency in Transportation Strategies Working Group (“Working Group”).

After much discussion, the Working Group decided to initially focus on energy efficiency in ground transportation and developed the following consensual vision of “an energy efficient transportation system”:

“Hawaii’s energy efficient transportation integrates effective community input and planning (demand), and offers people of all ages and walks of life flexible options (supply) including mass transit, private and public vehicles and self-powered conveyance in alternative combinations that provide mobility at acceptable cost”.

With a short time frame and ambitious scope of work outlined in Act 254, the Working Group has met monthly since its inception. During this period the Working Group established three goals on which the study would focus its efforts:

- (1) Increase choices for modes of travel
- (2) Increase fuel efficiency of vehicle population
- (3) Diversify energy sources available to meet transportation energy needs

One of the major findings of the Working Group is that there is a lack of data upon which to establish goals and to track progress in meeting those goals. In their review of their existing data, Working Group members found significant gaps in the types of data needed to assess energy efficiency in transportation, and the lack of coordination among agencies in the collection and use of energy-related data. Thus, while there is a vast storehouse of data being collected throughout the State, these are fragmented, scattered, and not in usable format. Additionally, there is no systematic means for bringing energy-relevant data together. As a consequence, the potential impact of current or future energy-efficient initiatives or practices in meeting goals or benchmarks cannot be fully evaluated.

Because of the importance of developing energy-efficiency policies and practices in transportation and the potential cost of these actions, it is imperative that the State invest in collecting and analyzing the necessary data to make sound policy decisions.

More specifically, in order to agree upon specific transportation energy efficiency benchmarks and goals for the State, as required in Act 254, additional information such as transportation demand and fuel consumption data from the State and county jurisdictions and their respective government agency sources must be obtained. Specific data on transportation energy demand and supply from business and commercial sources should also be integrated. Finally, in order to develop realistic and achievable performance improvement goals and benchmarks, the data should be analyzed to develop (1) a historical trend, (2) a baseline forecast, and (3) a set of scenarios for potential future patterns of transportation energy consumption.

The State will more likely meet its goals and make progress toward meeting long-term benchmarks if current information on transportation system energy efficiency is regularly available and changes in energy efficiency of the transportation sector are regularly monitored. Regular monitoring can enable the State and counties to have confidence that implemented strategies are proving effective. If the information and monitoring indicates that additional progress is needed, the State and counties can adjust infrastructure investment and other strategies as appropriate.

Finally, the Working Group agreed that in order to regularly monitor progress toward meeting the benchmarks that would be recommended, a statewide

*transportation sector energy efficiency information and monitoring system* should be established and maintained. The information and monitoring system would be designed to provide consistent and scientifically reliable information on transportation energy consumption and supply trends and provide feedback on progress in meeting the goals and benchmarks that the State agrees upon. The transportation energy information and monitoring system would provide a more reliable means to compare the cost-effectiveness of alternative strategies.

While the Working Group has made significant progress in terms of bringing together a broad cross-section of energy and transportation stakeholders and in identifying major gaps in data and coordination needed to achieve an energy-efficient transportation system for the State, it requires the necessary data and commitment for coordinated data gathering and analysis.

Due in large measure to the enthusiasm and commitment of its diverse members, the Working Group is unified in its dedication to develop a comprehensive energy-efficient transportation strategy for the State, and therefore recommends that the 2008 Legislature appropriate funds in the amount of \$175,000 to continue its efforts, more specifically: (1) to determine data available among government and business sources; (2) identify gaps in critical data; and (3) develop and test models leading to the establishment of a reasonable and workable plan for a statewide transportation energy information and monitoring system.

---

## 1.0 Introduction and Background

---

### 1.1 Act 254 Directives

Act 254, Session Laws of Hawaii (SLH) 2007, directed the Hawaii Energy Policy Forum at the University of Hawaii at Manoa (“Forum”) to conduct a study on energy-efficient transportation strategies to reduce the demand for fuel in Hawaii’s transportation sector. The Act tasked the Forum in conjunction with the State Department of Business, Economic Development, and Tourism (DBEDT) to conduct the study. Requirements of the study include the following:

- (1) Developing tangible goals, objectives, desired outcomes, and actions to implement an energy-efficient transportation strategy;
- (2) Developing implementation benchmarks for measuring outcomes of energy-efficient transportation strategies; and
- (3) Conducting a cost-benefit analysis of each energy-efficient transportation strategy.

---

## 1.2 Energy Efficiency in Transportation Strategies Working Group

The Forum convened a steering committee to plan the scope of work and identify the major stakeholders that should be participants in this challenging yet significant undertaking.

The Forum then established a working group comprised of state and county government, academia, business, labor, and community leaders to assist in preparing the study. It invited representatives from the State Department of Transportation (DOT), each county's transportation division, labor organizations, transportation planning organizations, petroleum companies, and from the automobile dealers and manufacturers industries. These members comprise the Energy Efficiency in Transportation Strategy Working Group ("Working Group"); see Appendix II for a list of Working Group members. From its first meeting in August 2007 through the writing of this report, the Working Group met four times and worked with the consultant<sup>1</sup> and the Forum during this period.

At the first Working Group meeting, DBEDT gave a presentation on the background of energy use in Hawaii. The presentation included information on Hawaii's petroleum consumption by various sectors, the fuel demand for Hawaii's ground transportation sector, the annual average gallons of fuel used per registered vehicle, the relationship between crude oil prices and gasoline prices, and transportation use projections.

The presentation highlighted that:

- 1) Transportation fuel is a necessary resource for the State of Hawaii;
- 2) Global factors affect transportation fuel supply and price;
- 3) Transportation system and vehicle efficiency could promote energy efficiency and moderate the growth in transportation fuel demand; and
- 4) There is a need to identify types of data and to quantify the energy consumption impacts of transportation alternatives.

After carefully reviewing DBEDT's presentation, the Working Group decided to first focus its efforts on energy efficiency in ground transportation for the State of Hawaii.

The Working Group consensually developed a vision of "an energy efficient transportation system" as follows:

"Hawaii's energy efficient transportation integrates effective community input and planning (demand), and offers people of all ages and walks of life flexible options (supply), including mass transit, private and public vehicles,

---

<sup>1</sup> The Forum contracted with Dr. Lewison Lem and Kathleen Leotta of PB Consult, Parson Brinckerhoff, Quade & Douglas, Inc. to assist in developing preliminary strategies to develop goals and benchmarks for an energy efficient transportation system.

and self-powered conveyance in alternative combinations that provide mobility at acceptable cost.”

The Working Group also discussed the timeless intention to act upon the vision. A number of the driving forces to support the work on the vision and resulting goals were suggested as provided below:

- Create more sustainable transportation systems.
- Improve the energy efficiency of the transportation system while still protecting mobility and choice.
- Increase fuel security.
- Reduce carbon emissions.
- Transform Hawaii into an energy transportation paradise.

The Working Group also unanimously agreed upon the following preliminary goals to advance energy efficient strategies and reduce the intensity and waste in energy of our transportation systems:

1. Increase choices for modes of travel

Multiple modes of travel permit greater public choice for efficient and flexible trip planning.

2. Increase fuel efficiency of vehicle population

Incentives to improve the fuel efficiency of Hawaii’s vehicle population will influence consumer behavior in favor of buying and using more efficient vehicles.

3. Diversify energy sources available to meet transportation energy needs

Greater diversity of energy sources provides additional flexibility in meeting the energy needs of the transportation sector.

Any strategies to meet the above goals must also consider and evaluate socially acceptable economic consequences and cost-effectiveness.

Most of the Working Group’s attention focused on the first two goals, since they were seen as having a direct impact upon the energy efficiency of the transportation system. The third goal was being addressed by other activities of DBEDT.

As a result, the Working Group agreed that the most promising and important means for the State of Hawaii to improve the energy efficiency of its transportation system was through increases in transportation choices and increases in the fuel efficiency of the motor vehicle fleet within the state. The Working Group began

deliberations on a number of different strategies to meet the above goals. The discussion to date is provided in section 5.2.

The Working Group agreed that it was premature to develop specific goals, objectives and benchmarks without first identifying baseline performance. Members sought energy-related data from their respective agencies but found that data were not available yet crucial to this effort. The consultant sought and shared information from other jurisdictions (see Section 5.3), but the need for baseline information and a coordinated data collection and analytical system was the focus of the remaining meetings. The discussion and recommendations are detailed in Section 6.

---

### **1.3 Overview of Report**

This report summarizes the findings of the Working Group's study, and is organized into the following sections:

1. Introduction and Background
2. Energy Consumption in the Transportation Sector
3. Overview of State, Regional, and Local Plans
4. Overview of Transportation Energy Efficiency Strategies from Other Jurisdictions
5. Energy Efficiency in Transportation: Goals and Benchmarks
6. Next Steps and Recommended Actions

---

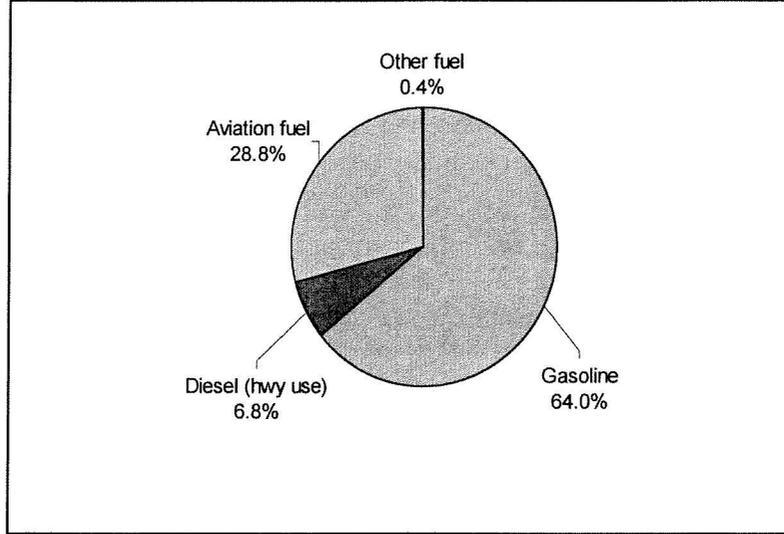
## **2.0 Energy Consumption in the Transportation Sector**

---

### **2.1 Energy and Transportation in Hawaii**

Hawaii's ground transportation sector is responsible for the consumption of about 71 percent of Hawaii's transportation fuel use (see Figure 1). It also is most subject to influence by public policy at the State level. The Working Group therefore agreed to focus on ground transportation.

**Figure 1. Hawaii In-State Use of Transportation Fuels, 2007**

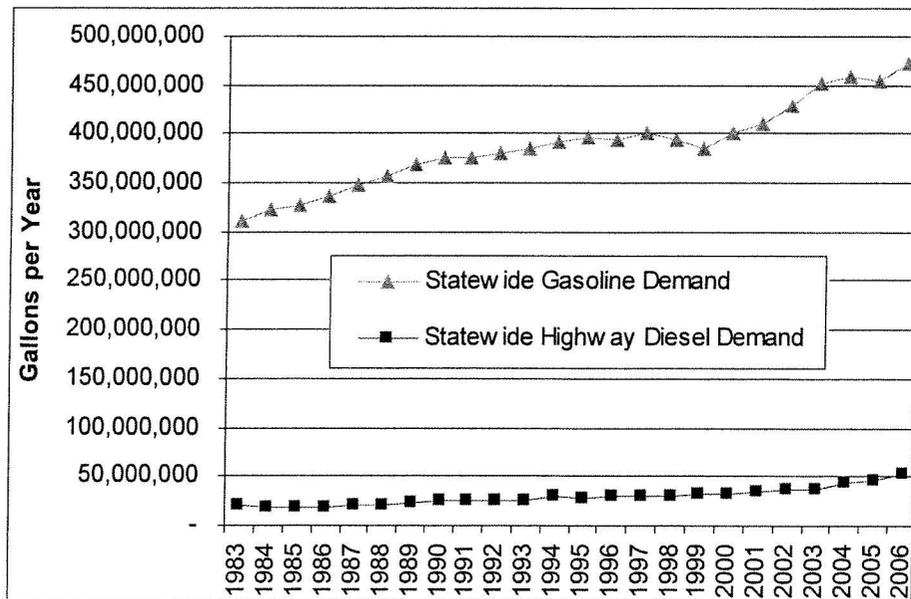


Source: Fuel Tax Records, Department of Taxation, State of Hawaii

## 2.2 Gasoline and Diesel Demand

Gasoline and diesel consumption in the state has, for the most part, steadily increased since the early 1980s (see Figure 2). Figure 2 also shows the relative consumption of gasoline versus diesel, with the consumption of gasoline, unsurprisingly, much higher than diesel.

**Figure 2. Statewide Trend in Gasoline and Diesel Demand**



Source: Strategic Industries Division, DBEDT, based on Department of Taxation Data, State of Hawaii

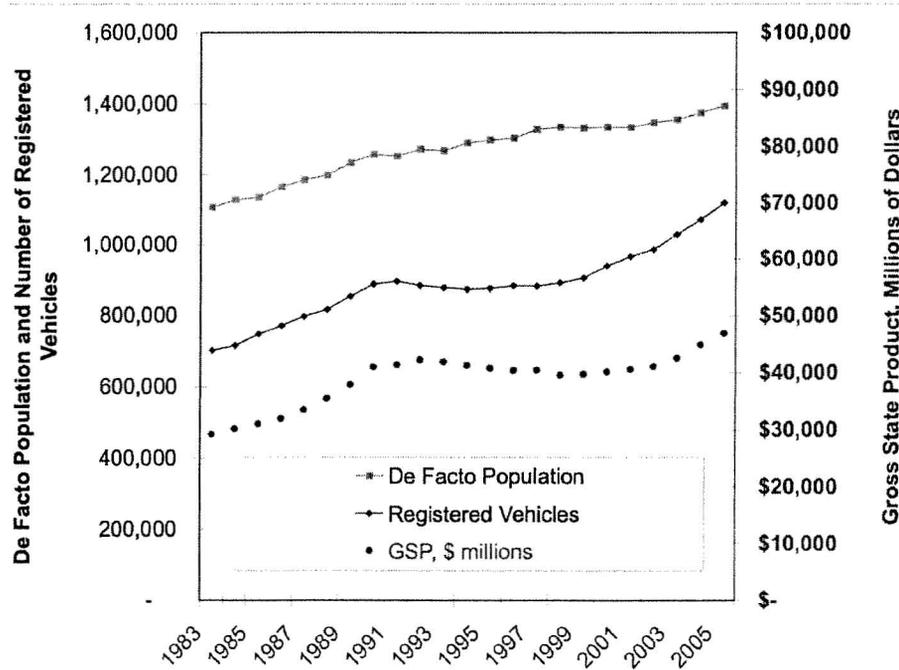
The annual change in gasoline has ranged from -3 percent to +5 percent between 1983 and 2006, with an average annual change of +1.8 percent. With gasoline now selling for about \$3.40 a gallon, this level of consumption now represents a cost of about \$1.6 billion a year.

The annual change in diesel demand fluctuates much more than gasoline, ranging from -17 percent to +19 percent, with an average annual change of +4.23 percent. In total, Hawaii consumed about 525 million gallons of gasoline and diesel in 2006 for ground transportation. For more detail on energy consumption and transportation, see Appendix III.

### 2.3 Population and Vehicles

Hawaii's de facto population and the number of registered vehicles in Hawaii are both increasing, as shown in Figure 3. Between 1983 and 2005, the number of registered vehicles increased 59%, significantly more than the 26% increase in population over the same period. Also shown in Figure 3 is the change in gross state product (61%) over the same period, including the economic downturn in the 1990s and recovery beginning in 1999.

**Figure 3. De Facto Population, Registered Vehicles, and Gross State Product, Hawaii, 1983-2005**



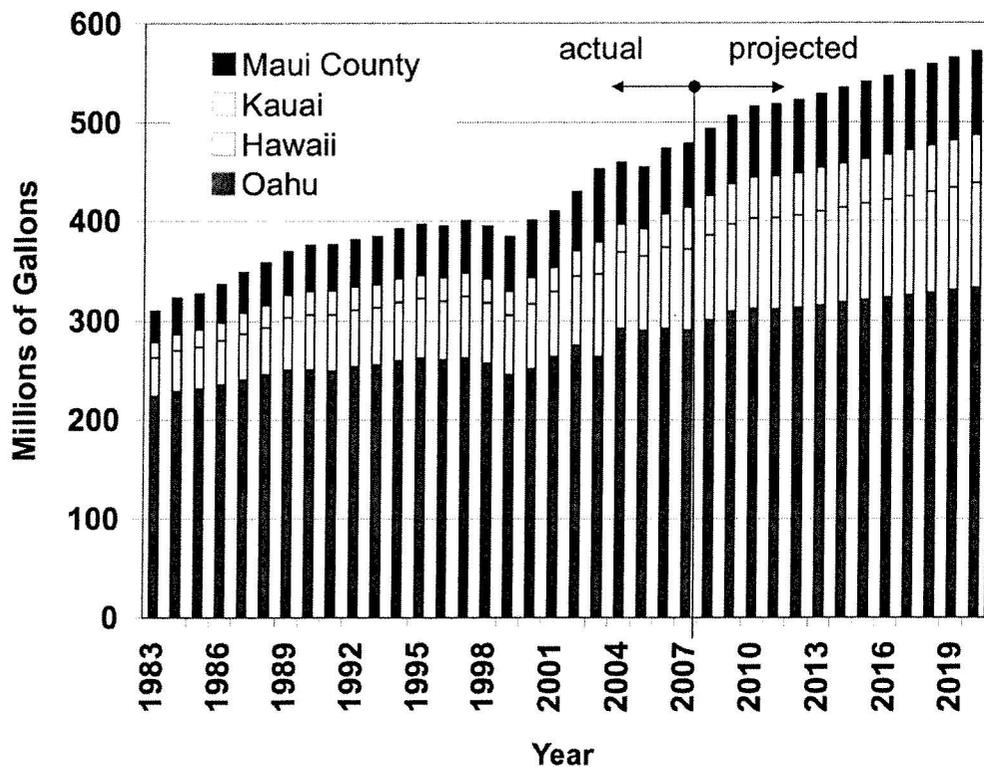
Source: Strategic Industries Division, DBEDT. Based on data from the Hawaii State Data Book, Tables 1.09, 18.07, and 13.02.

---

## 2.4 Historical and Projected Gasoline Demand

The historical and projected gasoline demand in the State of Hawaii from 1983 to 2020 can be found in Figure 4. According to the State Energy Office, the gasoline and diesel forecast is based on historical trends, and does not include potential changes due to vehicle efficiency changes, fuel price changes, or changes in transportation and land use plans. Forecasts tied more closely to local, regional, or state transportation and land use plans have not been developed. As shown, the forecast, based on historical trends, indicates gasoline demand increasing by an annual average of 1.4 percent between 2007 and 2020.

Figure 4. Historical and Projected Gasoline Demand in Hawaii, 1983 - 2020



Source: Strategic Industries Division, DBEDT, State of Hawaii

---

## 3.0 Overview of State, Regional, and Local Plans

### 3.1 Overview

A review of Hawaii's state, regional and local transportation plans indicated that, in general, the plans do not explicitly consider energy consumption or energy efficiency. However, the transportation plans in general have some elements that, if implemented, are likely to improve the energy efficiency of the transportation sector.

On the other hand, some elements in the plans, if implemented, would not support the goal of improving the energy efficiency of the transportation systems.

---

### **3.2 Plans and Documents Reviewed**

The Working Group examined state, local, and regional plans to identify goals or policies relating to energy efficiency in the transportation sector; and, whether they addressed the major goals adopted by the working group.

See Appendix IV for a list of the plans and documents reviewed by the Working Group.

---

### **3.3 Energy Efficiency-Related Goals and Policies**

The plans were reviewed to assess the degree to which energy efficiency is a key component or included in existing plans.

In general, state and local transportation plans do not focus on improving the energy efficiency of the transportation system. However, the Working Group found a number of goals and policies that have potential for impacting energy efficiency in transportation. These include:

#### **Statewide**

- Increase the efficiency of air, land, and water transportation systems (Hawaii Statewide Transportation Plan).
- Encourage production and use of locally produced biofuels (Hawaii 2050 Sustainability Plan).

#### **County of Hawaii (County of Hawaii General Plan)**

- Strive towards energy self-sufficiency (goal).
- Encourage the development of alternate energy resources (policy).
- Encourage the development and use of agricultural products and by-products as sources of alternate fuel (policy).
- Provide incentives that will encourage the use of new energy sources and promote energy conservation (policy).
- Strive to diversify energy supplies and minimize the environmental impacts from energy usage (policy).

#### **County of Maui (Maui Countywide Policy Plan)**

- Support the development of efficient, economical, and environmentally sensitive means of moving goods and people throughout the County and between islands (objective).

### **City and County of Honolulu**

- Develop and maintain Oahu's island-wide transportation system to ensure efficient, safe, convenient, and economical movement of people and goods (goal). (Oahu Regional Transportation Plan 2030)
- Use building setback regulations to make room for a dedicated transit lane on Farrington Highway (major transit corridor), and encourage development of medium-density development near stations (Central Oahu Sustainability Communities Plan).

### **County of Kauai**

- Consider transportation alternatives to increasing the size and capacity of roadways. Alternatives include increased utilization of public transit (policy). (Kauai General Plan)

For more detailed description of these items in relationship to energy efficiency, see Appendix IV.

---

## **4.0 Energy Efficiency Strategies from Other Jurisdictions**

The transportation sector accounts for a significant portion of energy consumption, particularly liquid fuels, in both the US and abroad. In the US, transportation accounts for about 28 percent of domestic energy consumption, and in OECD Europe, about 23 percent. To reduce dependence on fossil fuels and improve energy efficiency, countries and regions across the world have undertaken various strategies. The consultant researched strategies used or proposed in other jurisdictions:

### **Strategies Related to Modes of Travel**

A number of strategies may induce a shift towards more efficient modes and discourage unnecessary driving. Strategies may include: Transit, Pay-As-You-Drive (PAYD) insurance, national car registration quota, transportation system management, increased bike and pedestrian infrastructure, and commuter choice programs.

In addition, through dense, mixed-use, and transit-oriented development, appropriate land use strategies can also reduce overall vehicle-miles traveled by facilitating the shift to non-motorized transport and transit. Smart growth initiatives, "fix it first" funding, and some parking management schemes fall under this category. See Appendix V.

### **Strategies Related to Fuel Efficient Vehicles**

Other strategies may result in more fuel efficient vehicles by improving combustion technologies, using more efficient fuel sources, or enacting policies that encourage the purchase of more efficient vehicles (thereby improving fleet efficiency). The strategies in this category include: "Clean Car Programs," the "Green Tax Program,"

feebate programs, diesel retrofits, and fuel efficient replacement tires. In addition, operational efficiency strategies reduce the amount of fuel consumed by vehicles per mile traveled by improving driver behavior. See Appendix VI.

### **Strategies Related to Diversifying Energy Sources**

A number of strategies result in more choices in alternative fuels, typically through increased reliance on alternative and renewable fuels, such as bio-diesel; or electric or plug-in hybrid vehicles (PHEV) that are recharged from power generating facilities (that could increasingly rely on wind power, solar power, geothermal, or other renewable energy sources). See Appendix VII.

---

## **5.0 Energy Efficiency in Transportation: Goals and Benchmarks**

---

### **5.1 Current/Existing State Goals**

The following are some of the current goals Hawaii has established with respect to energy efficiency:

- Hawaii's energy objectives as described in Chapter 226-18, Hawaii Revised Statutes (HRS):
  - Dependable, efficient, and economical statewide energy systems capable of supporting the needs of the people.
  - Increased energy self-sufficiency where the ratio of indigenous to imported energy use is increased.
  - Greater energy security in the face of threats to Hawaii's energy supplies and systems.
  - Reduction, avoidance, or sequestration of greenhouse gas emissions from energy supply and use.
- Hawaii's Renewable Portfolio Standard (RPS), as described in Chapters 269-91 through 269-95, HRS: The electric utilities are to provide 10% of their electricity from renewable sources and energy efficiency by 2010, 15% by 2015, and 20% by 2020.
- Gasoline must contain 10% ethanol by volume (HRS 486J-10; Hawaii Administrative Rules 15-35).
- Act 234, SLH 2007, states that by January 1, 2020, the State of Hawaii shall reduce statewide greenhouse gas emissions to levels at or below the best estimations of the inventory of greenhouse gas emissions estimates for 1990.

---

### **5.2 Preliminary List of Goals and Strategies**

The Working Group made significant progress in responding to the directives of Act 254, due in large measure to the enthusiasm and commitment of its members. Although a very diverse group, all members are unified in their dedication to developing a comprehensive energy-efficient transportation strategy for the state that will be a workable solution to meet everyone's needs and situations. They have even

been so bold as to envision Hawaii becoming an energy-efficient transportation paradise.

To meet that vision, the Working Group developed a preliminary list of goals and objectives as the driving force and incentive for developing comprehensive strategies and actions. While not finalized, they provide the guiding goals for an energy efficient transportation system for Hawaii.

### **5.2.1 Preliminary Goals and Objectives**

- Create more sustainable transportation systems.
- Advance more energy efficient transportation strategies.
- Reduce energy intensity of the transportation system, and wasted energy.
- Improve the energy efficiency of the transportation system while still protecting mobility and choice.
- Increase fuel security.
- Reduce carbon emissions.
- Transform Hawaii into an energy transportation paradise.
- Create more choices in modes of travel.
- Increase the fuel efficiency of vehicles.
- Diversify energy sources available to meet transportation energy needs.

### **5.2.2 Preliminary Strategy Ideas**

The Working Group identified a number of strategies to meet the State's goals and benchmarks. Members **agreed that more information and data are required before goals, objectives, strategies/initiatives, and benchmarks can be adopted.** The strategies listed below, while not accepted by the Working Group as a whole as the preferred strategies, are offered as ideas suggested for further examination:

#### ***Strategies Supporting More Choices in Modes of Travel***

- Government incentives/subsidies.
- Car-sharing to reduce fleet (e.g., zipcar)
- Big island bus service innovations (free ridership)
- Increase transit ridership
- Increase use of shared ride modes of travel (carpools, vanpools, etc.) through innovative marketing strategies (for example, carpool sweepstakes, etc.)
- Telecommuting
- Build more bike lanes and establish requirement for more bicycle friendly programs
- Build HOV lane on all new highway segments
- Bikes on boats
- Bus and bike parking/lockers

- HOT-lane type elevated highways to increase vehicle throughput and manage traffic congestion

#### *Strategies Supporting More Choices in Fuel Efficiency of Vehicles*

- Government incentives/subsidies
- Incentives for fuel efficient cars (e.g. free parking) – Single Occupancy Vehicles (SOV) in ‘zipper’ lanes (like electric vehicles)

#### *Strategies Supporting Energy Source Diversity*

- Incentives to encourage development of alternative fuels

#### *Other Strategies (Big Picture or How to Get There)*

- Include energy assessment in transportation plans (including project fuel demand)
- Collect additional data i.e., ‘user satisfaction surveys’ on a regular basis (e.g. every other year)
- More and better data on how are we doing, and mine the data we are collecting on a regular basis
- Hawaii energy/transport model/scenario analysis

---

### **5.3 Examples of Potential Benchmarks**

While the Working Group agreed that specific benchmarks for improving the energy efficiency of Hawaii’s transportation system must be established to monitor changes and adjust the course as necessary, it declined to develop benchmarks without additional data collection and analysis. It did however identify benchmarks used in other jurisdictions, which may be applicable for Hawaii. These require further assessment as to their appropriateness. They include the following:

- State of California: Reduce demand for on-road gasoline and diesel to 15 percent below the 2003 demand level by 2020, and maintain that level for the foreseeable future.
- State of California: Increase use of non-petroleum fuels to 20 percent of on-road fuel consumption by 2020, and 30 percent by 2030.
- City of Portland, Oregon: Reduce oil consumption by 50% in 25 years.
- Iceland: Power all cars and boats with hydrogen made from electricity drawn from renewable resources by 2050.
- Brazil: Power 80% of the transport fleet with ethanol derived mainly from sugar cane within 5 years.
- Sweden: Reduce consumption of oil in transport sector by 40 to 50 percent by 2020.
- U.S. January 23, 2007 State of the Union Address by President Bush: Reduce gasoline usage in the United States by 20 percent in the next 10 years.

---

## 6.0 Next Steps and Recommended Actions

---

### 6.1 Determine Goals and Benchmarks

The State should adopt specific goals and strategies for improving the energy efficiency of Hawaii's transportation system. Although the Working Group has developed preliminary goals and objectives (see Section 5.2.1), these constitute a starting point which require further analysis before specific strategies and benchmarks can be adopted.

---

### 6.2 Identify Data Needed to Measure Performance

The Working Group considered a range of ideas to improve the energy efficiency of Hawaii's transportation system. Many of these ideas for programs and activities were already being undertaken through ongoing transportation system planning. The Working Group considered the contents of state, county, and city transportation plans and other relevant documents to determine what strategies have already been developed and/or implemented in the state. The Working Group made the following additional findings during the course of its meetings:

- There are already activities, programs, and projects in the State of Hawaii that would improve the energy efficiency of the transportation sector.
- Many of the existing activities, programs, and projects fit into the categories of goals the working group had agreed upon.
- Transportation plans generally do not explicitly consider energy consumption or estimate the impacts of changes on energy consumption or energy efficiency.
- Transportation plans in general have some elements that, if implemented, are likely to improve the energy efficiency of the transportation sector.

While the Working Group concluded that many ongoing and planned activities and programs in the State of Hawaii would have a positive impact upon the energy efficiency of the transportation system, it found that it was difficult to estimate or quantify the impact of these ongoing and planned activities and programs using the information and data currently available to them.

One of the major findings of the Working Group is that there is a lack of data upon which to establish goals and to track progress in meeting those goals. In their review of their existing data, Working Group members found significant gaps in the types of data needed to assess energy efficiency in transportation, and the lack of coordination among agencies in the collection and use of energy-related data. Thus, while there is a vast storehouse of data being collected throughout the State, these are fragmented, scattered, and not in usable format. Additionally, there is no

systematic means for bringing energy-relevant data together. As a consequence, the potential impact of current or future energy-efficient initiatives or practices in meeting goals or benchmarks cannot be fully evaluated.

Because of the importance of developing energy-efficiency policies and practices in transportation and the potential cost of these actions, it is imperative that the State invest in collecting and analyzing the necessary data to make sound policy decisions. Therefore the Working Group unanimously agreed that effort must first be devoted to obtaining the necessary data before transportation energy efficiency goals and benchmarks for the State can be determined.

Some examples of the types of data and information identified by the Working Group that would be useful in energy-related planning include the following:

Hawaii petroleum use by category

1. Amount of petroleum products (gasoline / diesel) used by passenger vehicles in Hawaii.
2. Amount of jet fuel used by aircraft serving Hawaii travelers.
3. Amount of petroleum products used by marine-borne transportation serving Hawaii.
4. Amount of petroleum used for generation of electricity (to be used for electric vehicles).
5. Amount of ethanol needed to replace one gallon of gasoline

Energy efficiency per mode of travel

1. BTU's per passenger mile / gasoline / diesel for passenger vehicles
2. BTU's per passenger mile for bus
3. BTU's per passenger mile for proposed Oahu rail
4. BTU's per ton / mile for cargo hauling vehicles
5. BTU's per passenger mile for air travel
6. BTU's per passenger mile for marine commute travel
7. Per passenger load counts on average passenger vehicle commutes
8. Load counts on average express bus commute
9. Projected load counts for proposed rail line on Oahu
10. Actual vehicle miles traveled (VMT)
11. Energy efficiency of vehicle fleet

Sensitivity Analysis

1. Change in fuel efficiency of vehicles purchased based on fuel prices
2. Change in VMT based on fuel prices

Motor Vehicle Fleet Projections

1. Estimated penetration of 35-mpg vehicles (city/highway) by 2012, 2015, 2020, 2030.

2. Estimated penetration of hydrogen fuel cell 35 mpg-equivalent (city/highway) vehicles by 2012, 2015, 2020, 2030.
3. Estimated penetration of all-electric passenger vehicles by 2012, 2015, 2020, 2030.

#### Energy Impacts of Roadway Congestion

1. Estimated amount of energy (petroleum based or electric or hydrogen fuel-cell) wasted by Hawaii roadway congestion
2. Estimated amount of energy (fuel), which would be saved by introduction of additional lanes (for commutes in Leeward, East Oahu, and congested Neighbor Island corridors).

---

### **6.3 Develop Energy Efficiency Information and Monitoring System**

The Working Group unanimously agreed that there is a need for data and information to be collected statewide in a more consistent and coordinated manner to be useful in planning energy-efficient transportation strategies and initiatives. It therefore recommends that Hawaii should develop an *energy efficiency information and monitoring system* to provide a foundation for the on-going monitoring of improvements to the energy efficiency of the transportation system. Such a system would address the following:

- Data necessary to establish goals and benchmarks. In order to agree upon specific transportation energy efficiency goals and benchmarks for the State of Hawaii as required in Act 254 (SLH 2007), additional collection and review of relevant data is needed. The data that should be considered include transportation demand and fuel consumption data from the State, county, and regional jurisdictions and their respective government agency sources. In addition, specific data should be integrated on transportation energy demand and supply as may be available from business and commercial sources. Finally, in order to develop realistic and achievable performance improvement goals and benchmarks, the data should be analyzed in a manner to develop (1) a historical trend, (2) a baseline forecast, and (3) a set of scenarios for potential future patterns of transportation energy consumption. These potential future scenarios should be reviewed by the Working Group and compared against options for future goals and with respect to selected benchmarks.
- Regular monitoring of progress in meeting goals. The State will be more likely to meet its goals and make progress toward meeting long-term benchmarks if current information on transportation system energy efficiency is regularly available; and changes in energy efficiency of the transportation sector are regularly monitored. Regular monitoring can enable the State and counties to be confident that implemented strategies are proving effective. If the information and monitoring indicate that additional

work is needed, the State and counties can adjust infrastructure investment and other strategies as appropriate.

- Ongoing feedback on and assessment of strategies and initiatives in meeting goals and benchmarks. In order to regularly monitor progress toward meeting the recommended benchmarks, a statewide transportation energy efficiency information and monitoring system should not only be established but also maintained on an ongoing basis. The information and monitoring system would be designed to provide consistent and scientifically reliable information on transportation energy consumption and supply trends and provide feedback on progress in meeting the goals and benchmarks that the state agrees upon. The transportation energy information and monitoring system would provide a more reliable means to organize and present data on the transportation sector's energy consumption and, potentially in the future, on greenhouse gas emissions. The information system would also provide the data and mechanisms by which the state and counties can assess the impact to the state and local economy of alternative strategies, and to compare the cost-effectiveness of alternative strategies.

---

#### **6.4 Near-Term Legislative Proposal: Statewide Transportation Sector Energy Efficiency Information and Monitoring System**

To begin the process of obtaining the necessary data and developing a statewide system for data collection and analysis, the Working Group therefore recommends that a legislative proposal be submitted to the 2008 Legislature requesting funding in the amount of \$175,000 to determine the energy-relevant data available among government and business sources; identify gaps in critical data; and develop and test models leading to the establishment of a reasonable and workable plan for a statewide transportation energy information and monitoring system. See Appendix VIII for draft proposed legislation and budget.

---

#### **6.5 Future Strategies and Legislation**

Once goals and benchmarks have been established, the Working Group should continue to define strategies and future legislation, including determination of a permanent responsible agency to coordinate efforts to achieve the goals and benchmarks.

A few examples of potential future legislative strategies were presented by the consultant but were considered premature at this time. See Appendix IX for a copy of the legislative strategies presented by the consultant.

---

---

**A BILL FOR AN ACT**

MAKING AN APPROPRIATION FOR A STUDY ON ENERGY EFFICIENT  
TRANSPORTATION STRATEGIES.

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

1           SECTION 1. The legislature finds that transportation is  
2 responsible for an inordinate amount of fuel consumption,  
3 including fuel used in motor vehicles, buses, and jet planes.  
4 The legislature further finds that reducing the demand for fuel  
5 in transportation modalities would greatly reduce our dependence  
6 on oil.

7           The Hawaii energy policy forum, a part of the social  
8 sciences public policy center at the University of Hawaii at  
9 Manoa, proposes to conduct a study on energy-efficient  
10 transportation strategies in conjunction with the department of  
11 business, economic development, and tourism.

12           The purpose of this Act is to appropriate funds for the  
13 University of Hawaii to conduct a study on energy-efficient  
14 transportation strategies.

15           SECTION 2. (a) The Hawaii energy policy forum at the  
16 University of Hawaii at Manoa shall conduct a study on energy-



1 efficient transportation strategies in conjunction with the  
2 department of business, economic development, and tourism.

3 (b) The energy-efficient transportation strategies study  
4 under subsection (a) shall include but not be limited to:

5 (1) Developing tangible goals, objectives, desired  
6 outcomes, and actions to implement an energy-efficient  
7 transportation strategy;

8 (2) Developing implementation benchmarks for measuring  
9 outcomes of energy-efficient transportation  
10 strategies; and

11 (3) A cost-benefit analysis of each energy-efficient  
12 transportation strategy.

13 (c) The social sciences public policy center shall engage  
14 and integrate Hawaii's business, government, labor, and  
15 community leaders into the study on energy-efficient  
16 transportation strategies.

17 (d) The department of business, economic development, and  
18 tourism shall consult with and otherwise assist the social  
19 sciences public policy center at the University of Hawaii at  
20 Manoa on the energy-efficient transportation strategies study.



1 (e) The Hawaii energy policy forum shall submit a report  
2 on its findings and recommendations to the legislature no later  
3 than twenty days prior to the convening of the regular session  
4 of 2008.

5 SECTION 3. There is appropriated out of the general  
6 revenues of the State of Hawaii the sum of \$50,000 or so much  
7 thereof as may be necessary for fiscal year 2007-2008 for a  
8 study on energy-efficient transportation strategies.

9 The sum appropriated shall be expended by the University of  
10 Hawaii social sciences public policy center for the purpose of  
11 this Act.

12 SECTION 4. This Act shall take effect on July 1, 2007.

APPROVED this 5 day of JUL , 2007



GOVERNOR OF THE STATE OF HAWAII



## Appendix II - List of Working Group Members

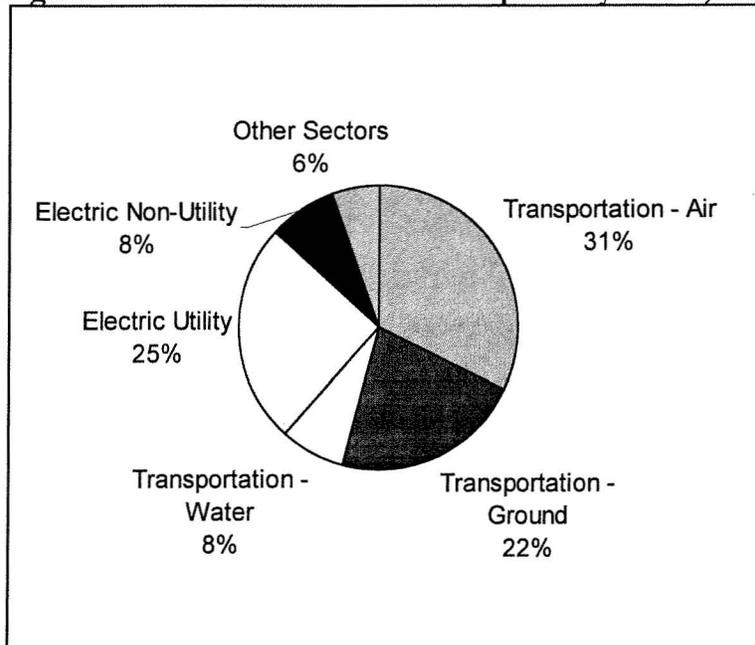
| <b>Act 254 Working Group</b> |              |                                     |  |   |                          |              |              |                              |
|------------------------------|--------------|-------------------------------------|--|---|--------------------------|--------------|--------------|------------------------------|
| <b>Name</b>                  | <b>Title</b> | <b>Organization</b>                 | <b>Address</b>   | <b>Telephone</b>                                      | <b>Fax</b>               | <b>Email</b> |              |                              |
| Bob                          | Arrigoni     | Energy Coordinator                  | County of Hawaii,<br>Dept. of Research<br>and Development    | 75-5591 Palani Rd.,<br>Suite 2001                     | Kailua-Kona, HI<br>96740 | 808-327-3664 | 808-327-3667 | rarrigoni@co.hawaii.hi.us    |
| Tom                          | Brown        | Transit Administrator               | Hawaii County  | 630 E. Lanikaula St.<br>650 S. King Street 3rd<br>Flr | Hilo, HI 96720           | 808-961-8343 | 808-961-8745 | tbrown@co.hawaii.hi.us       |
| James                        | Burke        | Public Transit Chief                | DTS  | 1680 East-West Road,<br>POST 109                      | Hon., HI 96813           | 768-8364     |              | jburke@honolulu.gov          |
| Mitch                        | Ewan         | Hydrogen Systems<br>Program Manager | HNEI   | 869 Punchbowl Street,<br>Room 509                     | Honolulu, HI<br>96822    | 956-2337     | 956-2336     | ewan@hawaii.edu              |
| Barry                        | Fukunaga     | Director                            | Dept of Transportation                                       | 711 Kapiolani Blvd-Ste<br>1430                        | Hon HI 96813             | 587-2150     | 587-2167     | dotpao@hawaii.gov            |
| Mark                         | Glick        | Dir., Econ.Dev.                     | OHA  | 2800 Woodlawn Dr.<br>Suite 200                        | Honolulu, HI<br>96822    | 988-8311     | 988-8319     | markg@oha.org                |
| Mike                         | Hamnett      | Executive Director                  | RCUH   | 869 Punchbowl Street,<br>Room 509                     | Honolulu, HI<br>96813    | 587-2154     |              | mhamnett@rcuh.com            |
| Francis                      | Keeno        | Deputy Director                     | Dept of Transportation                                       | 2660 Waiwai Loop                                      | Hon, HI 96819            | 839-7300     | 839-7400     | Francis.Keeno@hawaii.gov     |
| Darren                       | Kimura       | President & CEO                     | Energy Industries  | 200 South High St.,<br>Room 604                       | Wailuku, HI<br>96793     | 808-270-7832 | 808-270-7141 | energy.office@mauicounty.gov |
| Kal                          | Kobayashi    | Energy Coordinator                  | County of Maui<br>Managing Director's                        | 707 Richards Street,<br>Suite 200                     | Honolulu, HI<br>96813    | 587-2015     | 587-2018     | glumompo@hawaii.rr.com       |
| Gordon                       | Lum          | Executive Director                  | Oahu Metropolitan<br>Planning Organization                   | 2424 Maile Way,<br>Saunders 723A                      | Honolulu, HI<br>96822    | 956-7070     | 956-0950     | sharonmi@hawaii.edu          |
| Sharon                       | Miyashiro    | Interim Assistant<br>Director       | UH Public Policy<br>Center                                   | C & C of Honolulu,<br>1000 Uluohia Street             | Kapolei, HI<br>96707     | 484-7500     | 484-7506     | comija@honolulu.gov          |
| Clyde                        | Omija        |                                     | Honolulu Clean Cities  | 888 Mililani St., Ste.<br>601                         | Honolulu, HI<br>96813    | 543-0003     | 528-0922     | rperreir@hgea.org            |
| Randy                        | Perreira     | President                           | Hawaii State AFL-CIO   | 531 Cooke Street                                      | Honolulu, HI<br>96813    | 594-0100     | 594-0102     | tquinn@htdc.org              |
| Tom                          | Quinn        | Director                            | Hi Ctr for Advanced<br>Transportation<br>Techonogies (HCATT) | 1100 Alakea St. #2601                                 | Honolulu, HI<br>96813    | 593-0031     | 593-0569     | drolf@hawaiidealer.com       |
| David                        | Rolf         | Executive Director                  | Hi Automobile Dealers<br>Assn                                | 4396 Rice Street, Suite<br>103                        | Lihue, HI 96766          | 241-6419     |              | jrapozo@kauai.gov            |
| Janine                       | Rapozo       | Transportation Manager              | County of Kauai  | P.O. Box 2750   | Honolulu, HI<br>96840    | 543-7780     | 543-7790     | peter.rosegg@heco.com        |
| Peter                        | Rosegg       | Sr. Communications<br>Consultant    | HECO   | P.O. Box 30166  | Honolulu, HI<br>96820    | 833-6628     | 833-8486     | gareth@htahawaii.org         |
| Gareth                       | Sakakida     | Managing Director                   | Hi Transportation<br>Assn                                    |   |                          | 547-5746     |              | gslovin@goodsill.com         |
| Gary                         | Slovin       |                                     | Alliance of Automobile<br>Manufacturers                      |   |                          |              |              | glenn.soma@hawaii.gov        |
| Glenn                        | Soma         |                                     | Department of<br>Transportation                              |   |                          |              |              | robert.tam@doh.hawaii.gov    |
| Robert                       | Tam          |                                     |  |   |                          |              |              | lance@tsocorp.com            |
| Lance                        | Tanaka       | Mgr., Governmental<br>Relations     | Tesoro Hawaii Corp.  | 91-325 Komohana St.                                   | Kapolei, HI<br>96707     | 547-3920     | 262-9967     | ltanaka@tsocorp.com          |
| Maria                        | Tome         | Alternate Energy<br>Engineer        | DBEDT - SID  | P.O. Box 2359   | Hon, HI 96804            | 587-3809     | 587-3820     | Mtome@dbedt.hawaii.gov       |
| Richard                      | Torres       | Deputy Director                     | DTS  | 650 S. King Street 3rd<br>Flr                         | Hon., HI 96813           | 768-8304     |              | rtorres1@honolulu.gov        |

## Appendix III - Related Data on Energy Consumption

The following charts provide additional data on energy consumption and on the growth in the transportation sector.

I. **Hawaii's Energy Consumption.** Figure 1 shows the large share of Hawaii's petroleum consumption by the transportation sector. In 2005, 61% of the petroleum used was for transportation.

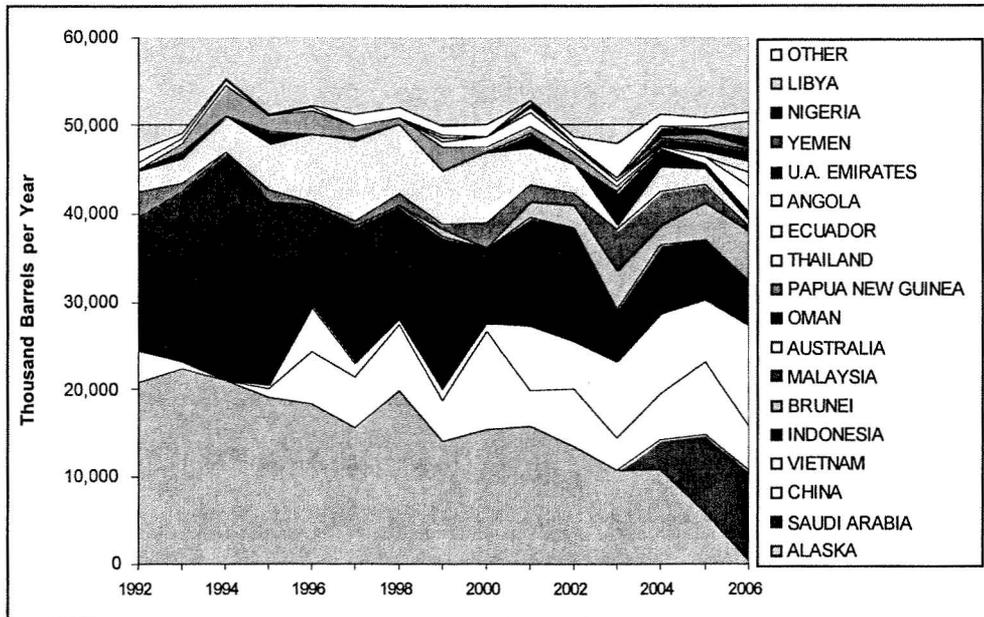
Figure 1. Hawaii Petroleum Consumption By Sector, 2005



Source: Strategic Industries Division, DBEDT, State of Hawaii

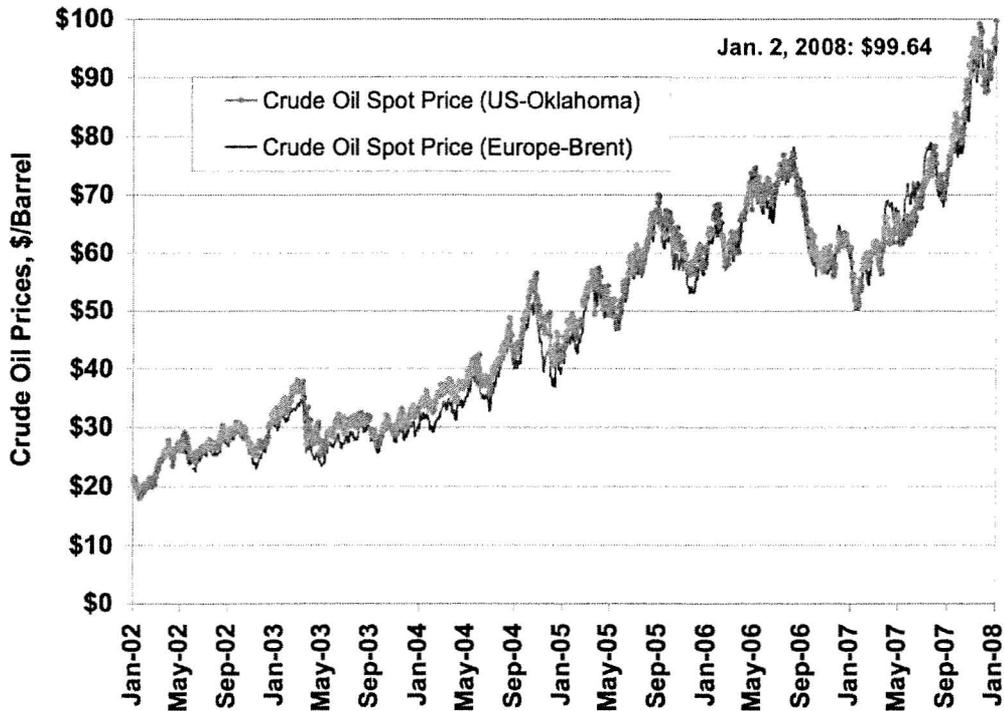
II. **Hawaii's Dependence on Foreign Oil.** One of the reasons for focusing on energy efficiency of its transportation system is Hawaii's increasing dependence on imported oil. As shown in Figure 2, Hawaii received a large portion of its crude oil from Alaska in 1992, but due to an increase in the demand for oil and the declining production of oil in Alaska, Hawaii must now import nearly all of its oil from foreign countries. This dependence on foreign oil could render Hawaii susceptible to supply shocks or continuing price increases. Also of concern is the increasing cost of crude oil, which was increased steadily from a low of less than \$20/barrel in January 2002 to a high of \$99.64/barrel in January 2008, as is shown in Figure 3.

Figure 2. Hawaii's Crude Oil Sources, 1992 to 2006



Sources: State of Hawaii Strategic Industries Division and U.S. Energy Information Administration, 2007

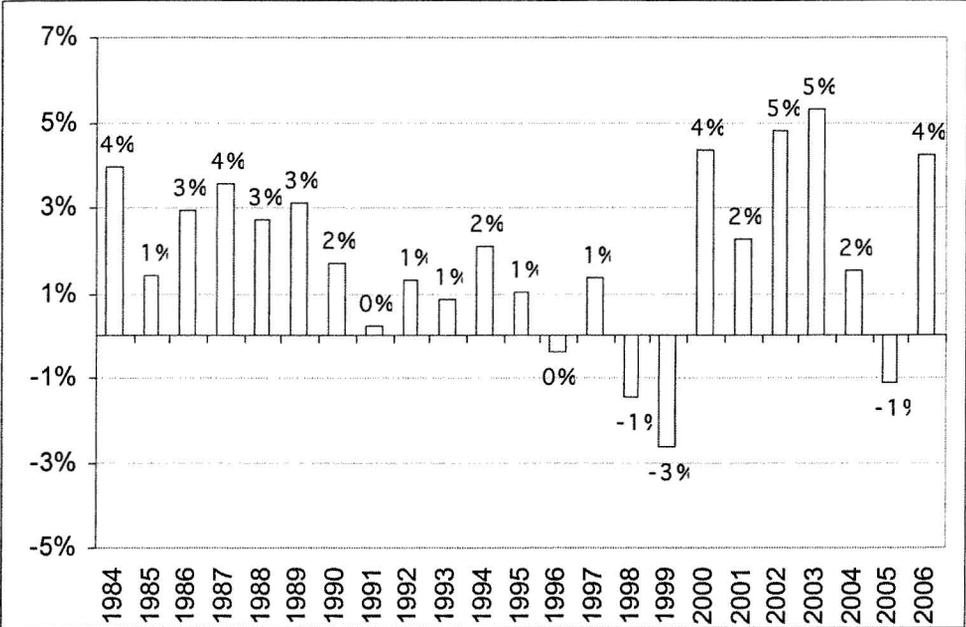
Figure 3. Crude Oil Prices 2002-2008



Source: US Energy Information Administration, Table pet\_pri\_spt\_s1\_d.xls

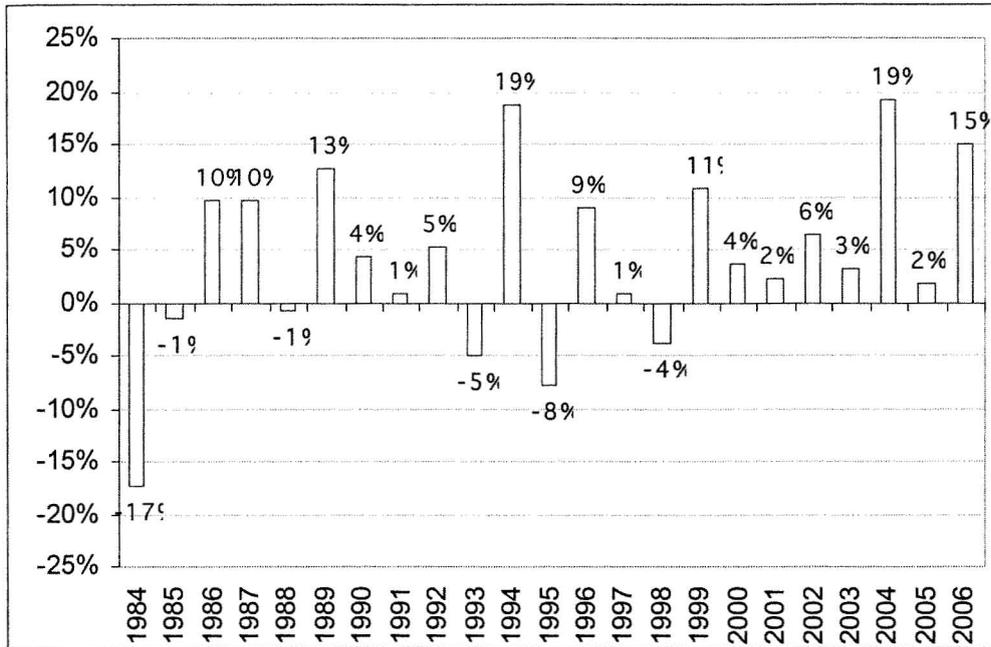
**III. Highway Gasoline and Diesel Demand.** In 2006 Hawaii consumed 525 million gallons of gasoline and diesel for ground transportation. Figure 4 presents the annual changes in gasoline demand from 1984 to 2006. The average annual change is +1.8 percent, ranging from -3 percent to +5 percent. Figure 5 presents the annual changes in diesel demand for the same period, showing the average change fluctuated more than gasoline, ranging from -17 percent to +19 percent, with an average increase of 4.23 percent.

**Figure 4. Annual Change in Gasoline Demand 1984 to 2006**



Source: Department of Business, Economic Development, and Tourism, State of Hawaii

**Figure 5. Annual Change in Highway Diesel Demand 1984 to 2006**

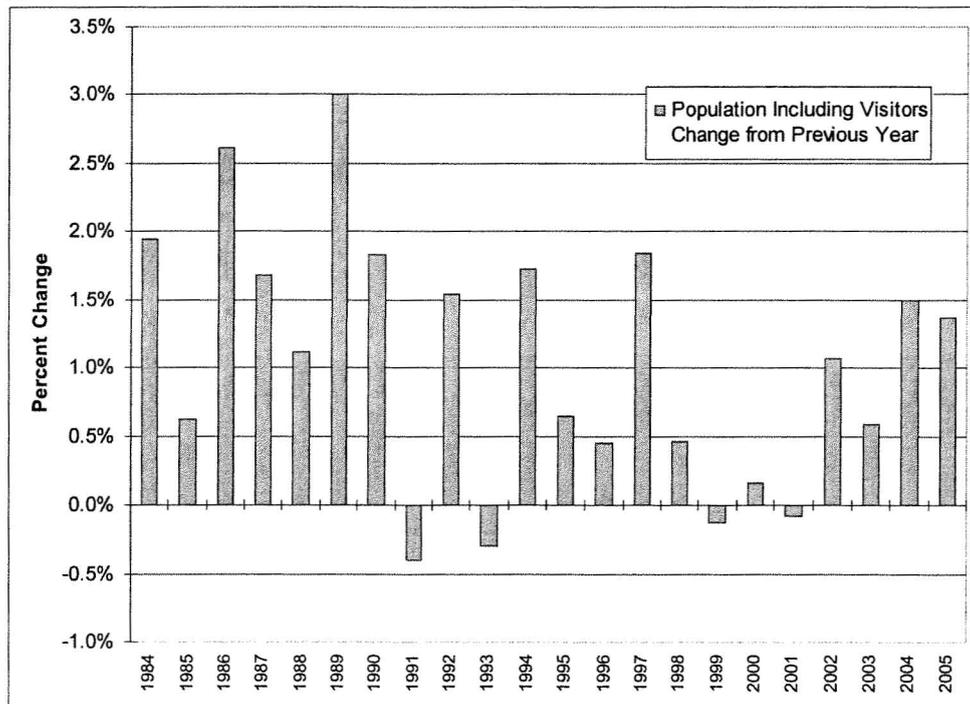


Source: Department of Business, Economic Development, and Tourism, State of Hawaii

**IV. Population and Vehicle Registration and Energy Consumption**

Looking at a somewhat longer timeframe for population changes, as shown in Figure 6, the population has increased at a somewhat faster rate of 1.1 percent per year on average since 1984, with annual changes varying from about -0.5 percent to +3 percent.

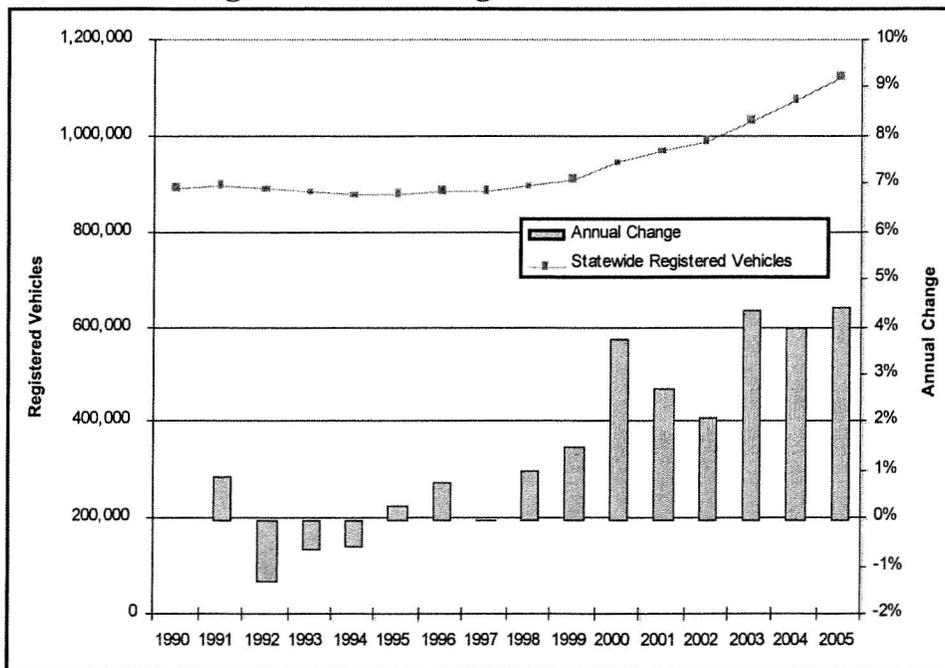
**Figure 6. Annual Percent Change in Population Including Visitors 1984-2005**



Source: Department of Business, Economic Development, and Tourism, State of Hawaii

Figure 7 presents statewide vehicle registrations from 1990 to 2005, and the annual change. During this time period, the average annual increase in vehicle registrations was +1.5 percent. However, as shown below, vehicle registration has increased more quickly since the year 2000 (an average annual increase of 3.6 percent during the most recent years). In either case, vehicle registration has increased faster than the increase in population. Note that no annual change is indicated for 1990 since that was the first year for which data were available. In 1992, 1993, 1994, and 1997 there were decreases in registered vehicles, perhaps due to a slowdown in the Hawaiian economy during that period.

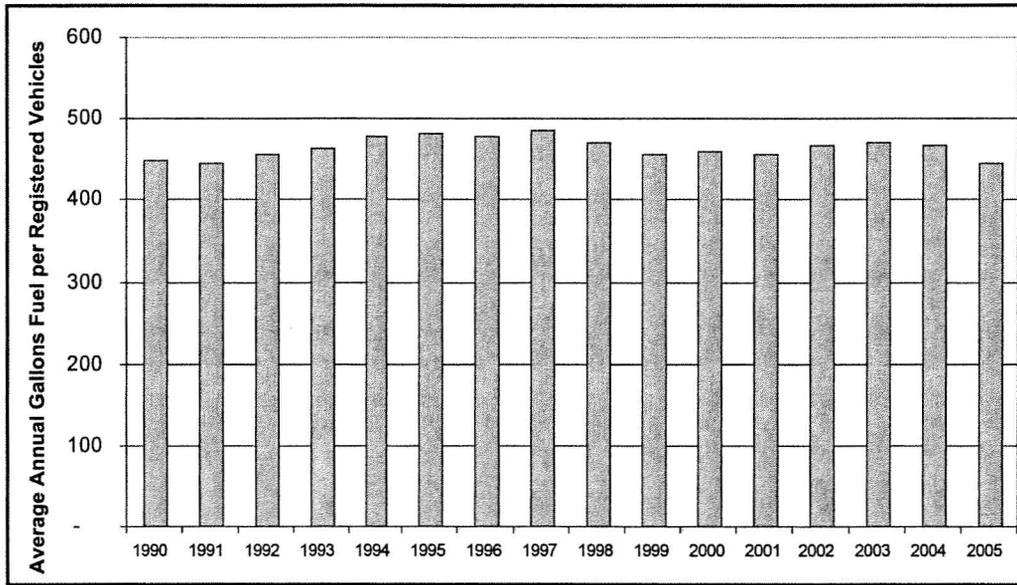
**Figure 7. Vehicle Registrations 1990 to 2005**



Source: Department of Business, Economic Development, and Tourism, State of Hawaii

Figure 8 presents average annual gasoline consumption per registered vehicle from 1990 to 2005. As shown in Figure 8, gasoline consumption per vehicle has remained fairly constant over this time period, although fluctuating very slightly from year to year. Although there was a slight decrease in average vehicle gasoline consumption in the year 2005, according to DBEDT (based on State of Hawaii report of fuel tax collections), fuel consumption in 2006 and 2007 has been on the increase again.

**Figure 8. Average Annual Fuel Consumption Per Registered Vehicle  
1990 to 2005**



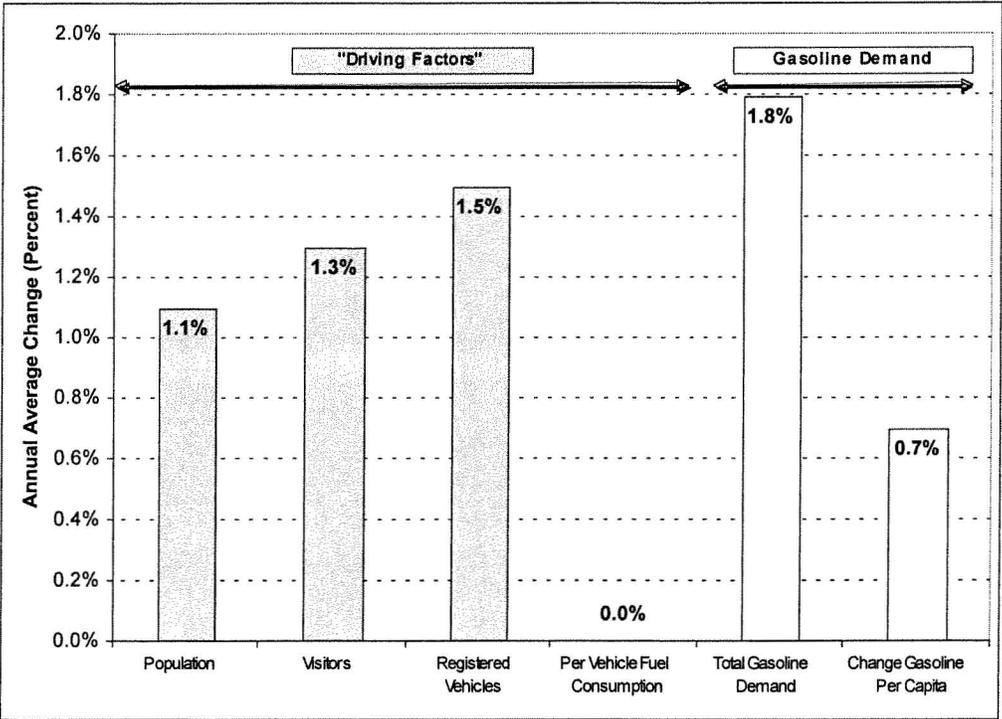
Source: Department of Business, Economic Development, and Tourism, State of Hawaii

## **V. Summary of Hawaii Transportation and Energy Trends**

The following is a summary of gasoline demand as it relates to population and vehicles. As shown in Figure 9, gasoline consumption is rising to a greater degree as a result of more vehicles in the fleet, and to a lesser extent because of population increases, as opposed to average vehicle fuel consumption:

- Since 1984, the population (including visitors) has increased by about 1.1 percent annually, while daily visitor count has increased by about 1.3 percent annually.
- Since 1990, the number of registered vehicles has increased by about 1.5 percent a year, with most of the increase in registered vehicles occurring since the year 2000.
- Since 1990, gasoline consumption per vehicle has fluctuated only slightly from year to year, but on average has remained about the same.
- Since 1984, the demand for gasoline has increased by an average of 1.8 percent a year, while gasoline consumption *per capita* has increased by about 0.7 percent a year.

**Figure 9. Summary Chart: Average Annual Changes in Population, Registered Vehicles, and Gasoline Demand (1984/1990 to 2005/2006)**



Source: Parsons Brinckerhoff, based on data from DBEDT

# Appendix IV - Plans and Documents Reviewed

## State and Local Plans and Documents Reviewed

The following plans and documents were reviewed to determine the goals and policies relevant to achieving energy efficient transportation:

### Statewide

- Hawaii Statewide Transportation Plan (HDOT; Counties of Hawaii, Kauai, and Maui, Oahu MPO; 2002)
- Bike Plan Hawaii (HDOT, 2003)
- Hawaii 2050 Sustainability Plan (Hawaii 2050 Sustainability Task Force, In Process)

### County of Maui

- County of Maui General Plan 2030 (in progress), includes:
  - Countywide Policy Plan (County of Maui, 2007)
  - Proposed Roadway Development Program (County of Maui, 2007)
  - Maui Island Plan 2030 (County of Maui, 2007)
  - Short-Range Transit Plan (County of Maui, 2005)
- 1997 Long Range Transportation Plan (HDOT and County of Maui, 1997)

### County of Hawaii

- County of Hawaii General Plan (County of Hawaii, 2005)
- 1998 Long Range Transportation Plan (HDOT and County of Hawaii, 1998)
- Hawaii County Energy Sustainability Plan (County of Hawaii Council, 2007)

### County of Kauai

- Kauai General Plan (County of Kauai, 2000)
- 1997 Long Range Land Transportation Plan (HDOT and County of Kauai, 1997)

### County of Oahu

- Oahu Regional Transportation Plan 2030 (Oahu MPO, 2006)
- Mayor's Energy and Sustainability Task Force (Mayor Hannemann, 2007)
- Sustainable Communities Plans (City and County of Honolulu, In Process)

### Other Local Publications

- Publications from the Hawaii Automobile Dealers Association
- Hawaii at the Crossroads: A Long-Term Energy Strategy (Hawaii Energy Policy Forum, 2004)

## Summary of Energy Relevant Goals and Policies in State & Local Transportation Plans

Energy-relevant goals and policies in the various plans and documents reviewed are as follows:

### *Hawaii Statewide Transportation Plan (2002)*

Summary of policies related to energy efficiency or mode share/land use changes:

- Most relevant goal:
  - Achieve an integrated multi-modal transportation system that provides mobility and accessibility for people and goods.
- Most relevant objectives:
  - To increase the efficiency of the air, land, and water transportation systems' operations.
  - To promote alternative air, land, and water transportation mode choices.

### *Hawaii 2050 Sustainability Plan (2007)*

- Encourage “smart growth” concepts in land use and community planning.
- Encourage production and use of locally produced biofuels.

### *Bike Plan Hawaii (2003)*

Proposes to increase bike lanes statewide from 331 existing to 1,722 miles by (not a 2020 constrained network, but the complete network), most built on existing roadways, and some of which may be beyond 20 years out.

### *County of Kauai General Plan (2000)*

Summary of projects (or categories of projects) that would impact the systems energy efficiency

A number of new roadways or expansion of existing roadways, just a few of which are:

- A new two-lane connector road between Port Allen and Poipu.
- Widening of Koloa By-Pass/Maluhia Road to 4 lanes.
- Construct a new 2-lane Lihue-Hanamaulu By-Pass Road.
- Widen Kapule Highway to a 4-lane divided roadway.
- Construct a new 4-lane Kapaa By-Pass Road.

Transit service/facilities:

- Increased bus service in Koloa/Poipu;
- Increased paratransit service in various regions of the island;
- Improvements to pullover areas along roadways in order to create safe and accessible bus stops; and
- Designated areas at housing projects (particularly those with elderly and disabled residents) that provide safe and accessible paratransit stops.

Bike and pedestrian facilities:

- A number of new bike lanes as identified in the master plan *Bikeplan Hawaii 2003*.

### *County of Hawaii General Plan (2005)*

Energy Goal: strive towards energy self-sufficiency.

Most Relevant Policies:

- Encourage the development of alternate energy resources.
- Encourage the development and use of agricultural products and by-products as sources of alternate fuel.
- Provide incentives that will encourage the use of new energy sources and promote energy conservation.
- Strive to diversify the energy supply and minimize the environmental impacts associated with energy usage.

Transportation System Goals:

- Provide a transportation system whereby people and goods can move efficiently, safely, comfortably and economically.
- Make available a variety of modes of transportation that best meets the needs of the County.

Most Relevant Policies:

- The agencies concerned with transportation systems shall provide for present traffic and future demands, including the programmed development of mass transit programs for high growth areas by both the private and public sectors.
- Develop a comprehensive, island wide multi-modal transportation plan that identifies the location and operation of automobile, mass transit, bicycle and pedestrian systems, in coordination with appropriate Federal and State agencies.
- Improve the integration of transportation and land use planning in order to optimize the use, efficiency, and accessibility of existing and proposed mass transportation systems.
- Support and encourage the development of alternative modes of transportation, such as enhanced bus services and bicycle paths.

### Summary of projects (or categories of projects) that would impact the systems energy efficiency

- The general plan identifies potential transportation improvements for each district. Various state and county roadway systems located throughout the island were identified for improvement, including the reconstruction of Saddle Road (Highway 200) and the widening of Queen Kaahumanu Highway (Highway 19) to four lanes between Waikoloa Road and Kona International Airport at Keahole.
- The Hawaii Long-Range Land Transportation Master Plan recommends that additional routes be provided to link Waimea town and the towns in North Kohala with Kailua-Kona and the resorts located along the South Kohala coast.
- Bike/pedestrian: A number of new bike lanes as identified in the master plan *Bikeplan Hawaii 2003*.

*County of Maui General Plan 2030 (In Progress) – Includes Countwide Policy Plan (2007), Maui Proposed Roadway Development Program (2007), Short-Range Transit Plan (2005)*

From Countywide Policy Plan:

Goal: Diversify Transportation Options

Objectives:

- (1) Build capacity in today's roadway system through multi-modal transportation facilities (with five supporting policies).
- (2) Require high quality and attractive design in all transportation infrastructure (with five supporting policies).
- (3) Support the development of efficient, economical, and environmentally sensitive means of moving goods and people throughout the County and between islands (with four supporting policies).

Goal: Promote Sustainable Land Use Planning and Development

Objective: utilize public transit, pedestrian, bicycle, and public right-of-ways as design elements to make neighborhoods and community plan areas attractive and unique (with four supporting policies).

From Maui Island Plan:

Goal: Maui Island will have a uniquely Maui transit service that addresses the mobility needs of all local residents and contributes to sustainable land use planning by proactively coordinating future growth and transit planning.

Relevant objectives include:

- 1) Provide transit services, facilities, and roadway infrastructure, which meet the needs of all Maui's people (with six supporting policies).
- 2) A transit system and planning process that effectively promotes sustainable development and reduces traffic congestion (with seven supporting policies).
- 3) Increased ridership through the establishment of a transit service that accommodates and celebrates island lifestyle (with four supporting policies).
- 4) A robust transportation planning program capable of providing public transit service at levels sufficient to accommodate projected population growth (with four supporting policies).

Summary of projects (or categories of projects) that would impact the systems energy efficiency

From County of Maui Proposed Roadway Development Plan:

Planned or proposed long-range roadway improvements include improvements to a number of roadways including: Haleakala; Kihei Corridor, realignment of Honoapiilani, Keawe Street extension, Mill Street extension, Paia bypass, Mokulele widening, Kihei North-South collector road; Waiale Extension, Honoapiilani widening, Waiale/Kuihelani Highway Connector; Lono Avenue extension; Imi Kala/Piihana extension; Imi Kala/Waiale – Mill Street extension; Paniolo

connector; Kehekili Highway widening; Maui Lani parkway; Kuikahi Drive extension; Kehalani collector road; and Kehalani Loop Road.

From Maui Island Plan:

Examples of proposed actions/strategies include:

- Relocate rental car facilities to West and South Maui and provide transit from airport to new facilities.
- Conduct a study to identify future rail corridors and transit stations.
- Prepare a system-wide Transit Master Plan.
- Amend the County Subdivision Code to include requirements for transit supportive roadway infrastructure.
- Require private transit services for large residential developments.
- Conduct ongoing community surveys to assess successes and deficiencies of transit service.
- Enhance bus stop amenities system-wide.
- Establish HOV lanes within major arterials.
- Implement Guaranteed Ride Home Program.
- Establish additional park-n-ride facilities in key locations.

From County of Maui Short Range Transit Plan:

- In short-term (within next five years), phasing in of enhancements to fixed route service (fixed route circulator service; islander service; and villager services) and paratransit service.

Bike/pedestrian:

- A number of new bike lanes as identified in the master plan *Bikeplan Hawaii 2003*.

***Oahu Regional Transportation Plan 2030 (City and County of Honolulu) (2006)***

Summary of policies related to energy efficiency or mode share/land use changes

Three overarching goals:

1. Transportation Services System: Develop and maintain Oahu's island-wide transportation system to ensure efficient, safe, convenient, and economical movement of people and goods.
2. Environment and Quality of Life: Develop and maintain Oahu's transportation system in a manner that maintains environmental quality and community cohesiveness.
3. Land Use and Transportation Integration System Goal: Develop and maintain Oahu's transportation system in a manner that integrates land uses and transportation.

Policies that encourage greater use of transit and nonmotorized modes of transportation are forecast to result in an increase in the percentage of trips by transit and a decrease in the percentage of people making trips by auto (from 83.6% in 2005 to 81.4% in the ORTP 2030). However, there is still projected to be over 540,000 additional auto trips. The added population growth in the ORTP 2030 will generate more travel during the day, resulting in a 22% increase in both vehicle miles traveled (VMT) and vehicles hours traveled (VHT).

Summary of projects (or categories of projects) that would impact the systems energy efficiency

- New fixed guideway providing transit service between East Kapolei and Ala Moana.
- An additional 280 lane miles on Oahu's roadways, including increasing the capacity of H-1 with new interchanges, additional High Occupancy Vehicle (HOV) lanes, freeway widening, and operational improvements at key locations; expansion of the North-South Road and Kapolei Parkway; widening of Farrington Highway, Fort Barrette Road, and Kunia Road; and expansion of Kamehameha Highway.
- Intra-island commuter ferry from Ewa to downtown Honolulu and the Nimitz flyover HOV facility.
- Bikeway plan to provide an integrated network of on-road bike lanes and off-road shared-use paths. Many specific bike lanes identified in the master plan *Bikeplan Hawaii 2003*.
- Development of pedestrian plan for Oahu.
- Bus system expansion.

*City of Honolulu Sustainability Plan – Mayor's Energy & Sustainability Task Force (2007)*

Current transportation/energy related efforts and on-going projects:

- Install a tire pressure monitoring system on all City fleet vehicles as part of standard equipment by 2009.
- Establish Vehicle Usage Guidelines to minimize the amount of fuel consumed by City operations by December 2007.

Guidelines include:

- Assign smallest vehicle appropriate to the task.
- Purchase fuel-efficient vehicles.
- Increase driver awareness of fuel-efficient driving techniques.
- Reduce trips.
- Reduce fleet size.
- Use alternatives to driving.
  - Implement a vehicle "Greening" 5-year program that sets the paradigm for use of alternate fuels and alternate fueled vehicles within the City's fleet.
  - Promote and support strategic development of alternate fuels and emerging technologies that allow for an efficient fleet mix of efficient, low emission vehicles that lower use of petroleum fuels as well as reduce emission of air pollutants and greenhouse gasses through a combination of regulatory compliance, purchasing policies and proven product demonstrations.
  - Encourage bus use as an alternative to the single occupant Automobile (e.g. employer-centered BONUS commuter program; University UPASS program).
  - Make transit operations "cleaner".
  - Plan a fixed guideway transit system.
  - Make Honolulu a pedestrian-and-bicycle-friendly city.

Future city actions:

- Plan, design and construct multi-modal transportation to include pedestrian and bicycle friendly options to improve the quality of life for the communities of Oahu.

- Fixed guideway transit system
- Continue to pursue alternative fuel vehicles for the City's bus fleet.
- Encourage employers to provide incentives to employees who use alternative methods of transportation.
- Encourage use of alternative fuel vehicles including hybrids and biodiesel-fueled vehicles.

*Sustainable Communities Plans*, City and County of Honolulu (Ongoing):

**Central Oahu Policies:**

Reduction in Automobile Use.

Reliance on the private passenger vehicle should be reduced by:

- Provision of circulation systems with separated pedestrian and bicycle paths and convenient routes for public transit service;
- Design of street systems in new development areas with layouts to facilitate bus routes and encourage pedestrian travel;
- Provision of supporting facilities and amenities for pedestrian, bicycle, and public transit use (bicycle racks at commercial centers, bicycle storage facilities at employment centers, and bus shelters at bus stops will be encouraged);
- Preservation of existing right-of-way and establishment of setback areas sufficient to permit future development of a dedicated transit right-of-way on Farrington Highway; and
- Support for medium-density and high-traffic land uses along the Farrington Highway transit corridor, especially within a quarter-mile of the transit nodes.

Transportation Development Priorities. Projected demand for peak-hour transportation in Central Oahu should be met by:

- Increased use of transit; and
- Transportation demand management through:
  - HOV facilities, including HOV lane on length of H-2.
  - Park-and-ride facilities, including the transit center at Mililani Mauka, which has 176-stalls, and the 50-stall Wahiawa park-and-ride lot, across from Wheeler A.F.B.
  - Other programs, which encourage reduced use of the private automobile.

Relying on adding private automobile commuting capacity to meet the projected growth in demand from Oahu's Leeward areas would be prohibitively expensive and have undesirable results. To increase commuting capacity from Central Oahu to Honolulu would require widening or double-decking the freeways in the Aiea/Pearl City area, between the H-201 (Moanalua Freeway) and H-2 junctions of H-1, and other major works. Even if this extra capacity was added in the Aiea/Pearl City area, destructive, divisive, and expensive street widening would have to be done in Central Honolulu to create sufficient capacity to absorb the extra cars that the expanded freeways could bring to the central city.

Planning Principles:

- Increased Arterial Capacity for Transit.
- Land Use Anticipating Dedicated Transit Lanes on Farrington Highway.
- Transit-Oriented Community Street Systems.

### Summary of Projects that would impact systems energy efficiency

- Widening of several roadways (including Kamehameha Highway, Kunia Road, Waipahu Street, and various interchanges).
- Expansion of transit service, including construction of new transit centers. Four significant transit facilities currently exist:
  - Mililani Mauka, 95-1101 Ukuwai St. Covered waiting area, 176 parking stalls.
  - Mililani Town Center, Meheula Parkway. Covered waiting area, restrooms. Adjacent to major shopping center (opened August 2007).
  - Royal Kunia park-and-ride lot. 149 stalls. This has also become a site for a regular “farmer’s market” and a recyclable collection center.
  - Wahiawa park and ride. A shared-use facility with the Hawaii National Guard, on Leilehua Road, located across from Wheeler A.F.B.
- An additional transit center has been proposed for a location at Wahiawa to be designated in the future.
- Expansion of bike facilities.
- Land development decisions, including:
  - Future development of Mililani Mauka lands east of H-2.
  - Possible development of former Dole pineapple lands along Kunia Road. (Dole suddenly closed operations in November 2006)
  - Redevelopment of Wahiawa, a depressed small urban area.

### ***East Honolulu (Ongoing)***

*East Honolulu is an area in which, due to geography, relatively little change in land use or transportation is expected over the next several decades. Little additional land is available for residential use, other than areas presently dedicated for parkland, including Ka Iwi State Scenic Shoreline. Also, as neither a controlled-access highway or fixed-guideway transit line is proposed for the area, nor any major employment centers, substantially increasing the population is not feasible. The most substantial change is expected to be a steady shift out of older residents by a replacing population of younger households with some children.*

General policies and guidelines.

General policy:

- Commuter travel.
  - Reduce reliance on private passenger vehicles by promoting transportation system management (e.g., the HOV lane from the west end of Hawaii Kai to H-1) and travel demand management (e.g., mass transit, carpool, and vanpool programs).
  - Provide more frequent, larger capacity, and more comfortable vehicles and expansion of improved park-and-ride facilities.
- Local trips.
  - Modify residential neighborhood street design, where appropriate, to provide more safe, accessible, convenient and comfortable pedestrian routes, bus stops, and bike routes, even if this requires somewhat slower travel speeds or less direct routes, and

fewer on-street parking spaces for automobiles. This may require review and revision of city street standards.

- Provide more convenient pedestrian paths within commercial and other high-activity areas (e.g., from the park and ride facility to the Hawaii Kai Town Center) to encourage people to walk between buildings instead of moving their car. Construct paved paths around the Hawaii Kai Marina to improve accessibility to various waterfront locations.
- Implement traffic calming measures in residential areas to reduce average motor vehicle speeds, thereby increasing safety and enjoyment for pedestrians and bicyclists.

#### Planned roadways:

- Extend Hawaii Kai Drive to Kamilonui Place, and thence on to Lunalio Home Road, to create a more direct and safe bicycle route from Lunalio Home Road and the Kalama Valley to points west.

#### Neighborhood commercial centers, resorts, and institutions:

- Provide street frontage improvements for bus stops, including a bus shelter and a dedicated pull-out area, along all bus routes.
- Provide clearly marked paths from bus stops to commercial center entrances. Pathway should be clearly indicated with special paving or markings and covered to provide weather protection, if not incorporated into commercial center buildings.
- Develop a pedestrian route along the Hawaii Kai marina, especially between Hawaii Kai Towne Center and the Hawaii Kai Shopping Center. This route should incorporate a pedestrian bridge across the Hawaii Kai lagoon to provide convenient access between the two centers, and enhance the recreational value of the marina.
- Provide bicycle racks that securely protect bicycles and are visible from streets outside commercial centers.

#### Summary of projects (or categories of projects) that would impact the systems energy efficiency

- Expansion of transit service.
  - One significant transit facility currently exists: Hawaii Kai Park and Ride, 240 Keahole Street. Covered waiting area, 134 parking stalls.
  - In May 2007, the City and County of Honolulu announced that East Honolulu bus service would be revamped to speed travel between East Honolulu and the principal urban region. A new Route 1L bus will provide peak-hour express service between Kahala Mall, along the western edge of the East Honolulu district, and Chinatown, running local thence to Hawaii Kai. The existing Route 1 will be terminated at Kahala Mall when Route 1L is operating.
  - Route 1 and 1L will cease diverting into Aina Haina, and this area will be served by the new Route 233 circulator.
  - Two circulators in Hawaii Kai, Routes 231 and 232 will eliminate much local running in Hawaii Kai by Route 1.
  - Circulators Route 234 and 235, will replace Route 21 in Waialae Iki.

- Route 58, running half-hourly from Waikiki and Kahala to Sea Life Park, just north of Makapuu Point, will be replaced by an hourly Route 23 and coordinated better with Route 22 service between Waikiki, Kahala, Hawaii Kai, and Hanauma Bay.
- Expansion of bicycle facilities, including new bicycle lanes in Aina Haina, Niu Valley, and throughout Hawaii Kai, and a separate bicycle route through the new Ka Iwi State Scenic Shoreline park between Hawaii Kai and Makapuu Point.
- Land development decisions, including:
  - Development of Ka Iwi State Scenic Shoreline Park, which may convert Kalaniana'ole Highway to a scenic parkway.
  - Expiration of long-term leases committing lands, mostly east of Hawaii Kai, to agricultural use.
  - A proposal, active since 2003, to convert the last 87 acres of Kamilonui Valley on the north side of Hawaii from nurseries and other agriculture to housing.

## Appendix V - Strategies from Other Jurisdictions: Modes of Travel

### Overview

#### United States

In the United States, the implementation of vehicle efficiency measures have proven to be some of the most effective strategies to improve energy efficiency in the transportation sector. State improvements in vehicle energy efficiency have been shown to reduce energy consumption from 9 to 15 percent. These improvements are achieved through strategies that target total vehicle miles traveled, and the amount of fuel consumed per mile of travel.<sup>1</sup> In some regions, the formation of strategic partnerships has also been key to enhancing or enforcing state energy efficiency goals. Some of these regional partnerships include the Conference of the New England Governors and Eastern Canadian Premiers (NEG-ECP), Northeast States for Coordinated Air Use Management (NESCAUM), Western Climate Initiative (WCI), and Regional Greenhouse Gas Initiative (RGGI).

#### Northeastern United States

In the northeast region of the U.S., states are working together to reduce energy consumption through NESCAUM, NEG-ECP and RGGI. NESCAUM is an association of air quality agencies in the northeast with Air Board Directors from eight northeastern states (Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont). NESCAUM provides scientific, technical, analytical, and policy support to the air quality programs in each respective state.

The New England Governors' (NEG) Conference, on the other hand, is a forum for the Governors of Connecticut, Rhode Island, Massachusetts, Vermont, New Hampshire, and Maine to work together to respond to regional issues. The NEG Conference, in partnership with the Eastern Canadian Provinces, developed a region-wide action plan to reduce energy consumption. In 2001, the New England Governors' Conference and the Eastern Canadian Premiers (NEG-ECP) set a region-wide goal of reducing energy consumption by at least 10 percent below 1990 levels by 2020 for the whole economy, including the transportation sector. As part of the action plan to achieve this goal, the NEG-ECP developed a variety of programs and policies, including the Regional Greenhouse Gas Initiative (RGGI). RGGI is the first U.S. mandatory cap and trade program for carbon dioxide.

#### Western United States

In the western region of the U.S., states like Arizona, California, Colorado, Montana, New Mexico, Oregon, Utah and Washington have created state action plans to reduce their reliance on petroleum and increase energy efficiency in the transportation sector. A western regional partnership, similar to that of the RGGI in the northeastern states, has also been formed with the region-wide goal of reducing energy consumption by 15 percent below 2005 levels by 2020 across all sectors, including transportation. Members of this partnership, known as the Western Climate Initiative (WCI), have committed to vehicle efficiency measures such as the Clean Car Program, and plan to institute

---

<sup>1</sup> Source: PB using data analyzed from State Climate Action Plans of Arizona, California, Connecticut, New Mexico, New York, and Rhode Island.

regional market-based mechanisms to enhance the effectiveness of the states' individual action plans.

## **International**

### Asia Pacific

Since the Asia-Pacific region is home to both some of the poorest and wealthiest countries in the world, energy efficiency benchmarks and strategies are not yet coordinated among the different countries. That said there are a number of regional organizations and programs that have been established to encourage energy-efficiency through collaboration, education, grant funding, soft loans, and data provision. For example, the Asia-Pacific Economic Cooperation (APEC) is currently establishing guidelines for the development of bio-diesel standards for the APEC region, surveying transport efficiency policies in APEC economies, and developing alternative transport fuels implementation guidelines. Other multi-lateral efforts include the Asian Environmental Compliance and Enforcement Network (ASCEN), which promotes improved compliance with environmental legal requirements in Asia; the World Bank Asia Alternative Energy Program (ASTAE), which provides financing for alternative energy projects; and the Clean Air Initiative Asia (CAI Asia), which promotes and demonstrates innovative ways to improve air quality throughout Asia.

In recent years, two countries in the Asia-Pacific region have been particularly active in promoting energy-efficiency: Singapore and Japan.

Like Hawaii, Singapore is an environmentally-conscious island economy, with limited space to grow and relatively high fuel costs. Since the mid-nineties, the Singaporeans have initiated a series of programs and regulations intended to integrate land use and transport planning, encourage transit use, improve fleet efficiency, and reduce car ownership.

Japan has virtually no domestic oil or natural gas reserves, and in 2005, Japan was the second largest net importer of crude oil in the world. In the past few decades, Japan has significantly improved energy conservation and is widely considered a global leader in the development and implementation of energy efficiency innovations. Between 1995 and 2004, average vehicle fuel efficiency in Japan has improved by 22%.

### European Union

The European Community, together with its Member States, is working to improve energy efficiency in all sectors, while increasing use of renewable energies. While there is no formal, mandatory target for energy consumption reduction across the Union, the European Commission-endorsed Green Paper on Energy Efficiency states the European Union (EU) could, by 2010, reduce its present energy consumption by 20 percent in a cost-effective manner, equivalent to EUR 60 billion per year, or the present combined energy consumption of Germany and Finland.

There are at least two EU-wide schemes that induce better energy efficiency in road transport, namely fuel economy standards (which, unlike other countries, are voluntary and are based on CO2 emissions) and emissions-based toll-charging. The EU directive for tolling schemes requires that fees are scaled both according to the duration of the use made of the infrastructure and to vehicles' emission classes (Non-EURO, EURO I, EURO II, etc.). Although the application of tolls and user

charges is not mandatory for member states, any state wishing to implement tolls is expected to follow the directive.

In October 2003, the EU Parliament and Council issued Directive 2003/87/EC, establishing an emissions trading scheme which became operational in January 2005. Although mobile (e.g., transport) emissions are not currently included in the scheme, proposals have been made for inclusion after 2012.

Most of the following examples, which are illustrative of the European Union's innovation and leadership in energy efficiency strategies, have been drawn from the United Kingdom.

The UK is the largest producer of oil and natural gas in the EU. However, after years of being a net exporter of both fuels, the UK became a net importer of natural gas in 2004, and may now be (or soon will be) a net importer of oil. In response, the government has begun a multi-pronged strategy to address predicted domestic shortfalls, including a series of programs and regulations targeted at the transportation sector. Working closely with the UK Department for Transportation to design, promote, and implement these strategies is the Energy Saving Trust, which also provides free consultancy services to public and private sector parties.

## **Providing More Choices in Modes of Travel**

### **United States**

#### **Northeastern United States**

In the transportation sector, the Northeast is taking steps to increase transportation system efficiency through commuter trip reduction initiatives and VMT (vehicle miles traveled) reduction measures.

Rhode Island, in particular, is reducing vehicle use through a state-wide Commuting Trip Reduction Initiative. The Rhode Island Department of Administration set up a Committee on State Employee Transportation consisting of Directors of the Departments of Administration, Transportation, Environmental Management, Health, and Statewide Planning, the General Manager of the Rhode Island Public Transit Authority (RIPTA)<sup>2</sup>, or their designees, and a representative from a state employee union. The Committee was charged to develop, publicize, and implement a plan giving incentives to state employees to reduce vehicle miles in commuting to work. The Committee investigated employee incentives offered by other public entities around the country, such as practices developed by EPA's Best Workplaces for Commuters Program. The Committee also considered the implementation of carpool, flex time, telecommuting, guaranteed-ride-home, bike-to-work and walk-to-work programs. Additionally, the plan will offer a RIPTA transit pass to employees in lieu of parking privileges.

Land use is another factor that is important in changing mode choice. The Northeast region's transportation and land use strategies can best be depicted through transit-oriented development and improved bicycle and pedestrian infrastructure. New York is a good example for smart growth planning and reduced VMT growth. For New York, slowing VMT growth through efficient land

---

<sup>2</sup> Rhode Island Greenhouse Gas Process.

<http://righg.raabassociates.org/events.asp?type=grp&event=Stakeholder%20Committee>.

use planning involves targeted infrastructure investments (invest in more energy efficient alternatives and less in energy inefficient modes), enforcing integration of land use development and efficient transportation modes (by requiring reporting pursuant to the State Environmental Quality Review Act (SEQRA), Transportation Improvement Programs and Long Range Transportation Plans)<sup>3</sup>, and initiating an annual competitive grant solicitation for local governments and private companies to propose energy saving ideas. Implementing a number of these “smart growth” strategies has the potential to reduce transportation energy consumption up to 11 percent.

### Western United States

Many states in the Northeast and Western regions of the US are focusing on land and location-efficient growth strategies. Some of these strategies used in the West include infill and urban brownfield redevelopment; transit-oriented development, including multi-modal transit proposals; targeted open space protection; and smart growth planning and tools that allow and support location efficient growth in communities that are proximate to household amenities (i.e., jobs, shopping, school, services, entertainment) as opposed to growth in areas that require greater travel distance and have less mode choice. These strategies allow for mixed land uses with a range of housing opportunities and multiple transportation options including increased pedestrian and bicycle access. Western states that have adopted these measures have seen increases in energy efficiency in the range of 3 to 11 percent.

Another strategy that could encourage the use of alternative modes is Pay-As-You-Drive (PAYD) insurance. PAYD is a form of variable priced insurance whereby a portion of vehicle insurance payments are assessed on a per mile basis. PAYD has been promoted by a variety of groups for reasons that include emissions reductions, safety (through decreased driving), and fairness (by changing insurance costs to more closely track the portion of individuals' risk that is created by miles driven). PAYD insurance is available through GMAC for GM car owners in at least 34 states and pilot programs have or are currently being run by other insurance companies in Arizona, Oregon, Washington and a few other Midwest states. Progressive Insurance, for example, has seen reductions in driving of about 20 percent as a result of an initial 5,000 car pilot project.

### **International**

#### Asia Pacific

Singapore has led the region for many years with its innovative strategies for reducing vehicle miles traveled. The two most well-known schemes are the national car registration quota, which both restricts the number of cars that may be purchased each year and substantially increases the cost of ownership, and electronic, dynamic congestion charging, which discourages car travel in central parts of the city during select times of the day. In addition to these, Singapore has also initiated smaller schemes to reduce driving, such as a park and ride program, which includes the sale of convenient combined parking and transit monthly passes, and personalized RFID (Radio Frequency ID) fare cards that can be used for all transit and taxi fares, as well as downloading coupons and making store purchases. There are also private sector-led initiatives that reduce overall vehicle miles

---

<sup>3</sup> Recommendations to Governor Pataki for Reducing New York State Greenhouse Gas Emissions, 2003. [http://www.ccap.org/pdf/04-2003\\_NYGHG\\_Recommendations.pdf](http://www.ccap.org/pdf/04-2003_NYGHG_Recommendations.pdf).

traveled, e.g., a competitive car sharing program and a new, high-tech bicycle sharing scheme, similar to the program recently initiated in Paris.

In Japan, the private sector has created efficiencies in the transport system, through promotion of transit use. For example, strict government control of fares have led private transit operators in Tokyo and Osaka to diversify their businesses by introducing services linked to their train operations and entering other sectors, including road-based transit services, suburban residential development near stations, and retail services and “leisure centers” near train stations – all of which promote transit-oriented development and additional ridership.

In an attempt to better integrate land use and transportation planning, in 1995, the Singaporean government created the Land Transport Authority (LTA) by merging four separate public entities: Registry of Vehicles, Mass Rapid Transit Corporation, Roads and Transportation Division of the Public Works Department, and Land Transport Division of the then-Ministry of Communications. With the ultimate goal of encouraging transit use, the LTA oversees both private surface transport and public transport, and is permitted to manage real estate / urban development activities in areas adjacent to transit hubs and stations.

### European Union

In general, transit ridership and non-motorized trip rates tend to be much higher in the EU than in the US. While there are many historical, cultural, and geographical reasons for this difference, there are also a myriad of policies that favor non-motorized and transit travel rather than automobile ridership – e.g., charging relatively high fuel taxes, dedicating fuel taxes to transit capital expenditures, developing universal fare card systems for transit, charging high parking fees, and investing in extensive bicycle lane networks.

While most European cities tend to feature the dense development and mixed uses that are conducive to transit ridership as well as targeted transit-oriented plans, Denmark and Sweden are often credited for having the most visible, successful transit-oriented development strategies, which focus pedestrian-friendly town and neighborhood development around light and heavy rail stations.

One of the most internationally visible examples of strategies that can encourage the use of alternative modes and VMT reduction in Europe is London’s successful Congestion Charge, which discourages automobile travel to the urban center and designates a portion of collected congestion fees toward transit improvements. Similar schemes have been established in Stockholm, Oslo, and Trondheim (Norway).

Less visible but also effective are the Pay-as-You-Drive (PAYD) Insurance schemes, where a portion of auto insurance premiums are linked to miles driven (while the remaining portion is a “fixed cost” as under current practice). Active schemes may be found in the UK, Italy, and the Netherlands. PAYD schemes are advantageous from an energy efficiency standpoint in that they provide a financial incentive to both commercial and non-commercial drivers to drive less. Also, management and costs are typically borne by the private sector.

## Appendix VI – Strategies from Other Jurisdictions: Fuel Efficient Vehicles

### United States

#### Northeastern United States

A variety of vehicle efficiency measures have been implemented in this part of the country, including the Clean Car Standards, California Low Emission Vehicle (LEV) II Emissions Standards, feebates, incentives for advanced technology vehicles, and congestion pricing. A common vehicle efficiency strategy considered among the northeastern states of Rhode Island, Connecticut and New York, was a statewide feebate program. Feebate programs are applicable to the purchase of new vehicles and institute a schedule of fees and rebates to the consumer based on a vehicle's fuel economy.

Although feebate programs work best under multi-state participation, the program also acts as a backstop to programs and policies like the Clean Car Program, which has the potential to reduce energy consumption within the range of 12-19 percent, based upon the changeover of the entire fleet.

In addition, region-wide, many states are improving operational efficiency by adopting anti-idling laws for heavy-duty trucks and buses and implementing truck stop electrification/plug-in areas for heavy-duty vehicles and hybrids. In addition, states such as New York and Connecticut are educating the public about energy efficient driving practices through public education programs and driver education courses.<sup>4</sup> Energy efficient driving behavior involves practices like eliminating “jack rabbit” starts, coolest temperature fueling, speed limit observation, proper vehicle maintenance, including proper tire inflation, fuel efficient tires, and regular tune ups.

#### Western United States

Over the past decade, some of the more stringent vehicle efficiency standards have come from California legislation. In 2002, AB 1493, the “Pavley Standards,” introduced by Assemblywoman Fran Pavley, was signed by the Governor. The Pavley Standards, also known as the Clean Car Program and the CA GHG Tailpipe Standards, will require a 30 percent reduction in emissions from all new passenger vehicles. This reduction is a result of improved technology design in new vehicles that also result in greater fuel economy, with a reduction in fuel consumption of about 15 percent. If approved by the US EPA, the stronger standards will be phased in from 2009 to 2016. New cars and light trucks in all states must comply with federal emission standards, and, generally speaking, states have the choice of adopting a stronger set of standards applicable in California. Thus far, seventeen states have already adopted the California Clean Car Program Standards including:

---

<sup>4</sup> Recommendations to Governor Pataki for Reducing New York State Greenhouse Gas Emissions, 2003.

[http://www.ccap.org/pdf/04-2003\\_NYGHG\\_Recommendations.pdf](http://www.ccap.org/pdf/04-2003_NYGHG_Recommendations.pdf).

Connecticut Climate Change Action Plan, 2005: Transportation and Land Use Sector.

[http://www.ctclimatechange.com/documents/TransportationSector\\_CCCAP\\_2005.pdf](http://www.ctclimatechange.com/documents/TransportationSector_CCCAP_2005.pdf).

Arizona, California, Colorado, Connecticut, Florida, Maine, Maryland, Massachusetts, New Jersey, New Mexico, New York, Oregon, Pennsylvania, Rhode Island, Utah, Vermont and Washington.<sup>5</sup>

This part of the country is also adopting the Low Rolling Resistance (LRR) Replacement Tire Program in some areas. Currently, vehicle manufacturers use LRR tires on new vehicles, but they are not easily available to consumers as replacement tires. When installing original equipment tires, carmakers use LRR tires to meet federal corporate automobile fuel economy (CAFE) standards. When replacing the original equipment tires, consumers often purchase less fuel-efficient tires and potentially, more costly tires (depending on annual vehicle miles traveled). At present, tire manufacturers and retailers are not required to provide information about the fuel efficiency of replacement tires. The LRR Replacement Tire Program sets minimum energy efficiency standards for replacement tires and requires that greater information about LRR replacement tires, including the availability of all season/all weather LRR tires, be made available to consumers at the point of sale. The goal of this strategy is to improve the fuel economy of the light duty vehicle (LDV) fleet by setting minimum energy efficiency standards, which can result in up to 4.5 percent fuel savings.

Like many others, those in the western region are also adopting operational standards for heavy-duty and passenger vehicle fleets. Anti-idling measures and slower speed limits have been enforced for heavy-duty vehicles, particularly commercial trucks. These measures have been implemented to conserve energy during operations as much as possible and enforcing slower speed limits for commercial trucks can reduce energy consumption up to 13 percent. In efforts to lead by example, state government agencies have also set stronger standards for their own fleet vehicles.

## **International**

### Asia Pacific

To improve the vehicle efficiency of the nation's passenger fleet, the Singapore National Environment Agency sponsors a Fuel Economy Labeling Scheme for passenger vehicles, which helps consumers easily recognize and compare the fuel economy of different vehicles.

In 1999, Japan introduced the "Top Runner" program, which applies to multiple goods, including passenger and freight vehicles. The scheme sets future fuel efficiency standards higher than the performance of the best product among those currently commercially available in the same product category. Manufacturers who have not achieved the standards by the set deadline are given technical advice, publicly announced, and/or fined a sum less than or equal to US\$8,700.<sup>6</sup>

In 2002, Japan initiated a "Green Tax" program, which includes a combination of tax incentives and penalties for fuel and energy efficient passenger and commercial vehicles. Sales tax reductions for hybrid passenger cars are about 2.2%, and reductions for electric, CNG, and hybrid trucks are about 2.7%. Tax penalties for Diesel, gasoline, and LPG vehicles older than 10 years are about 10%.<sup>7</sup> As of

---

<sup>5</sup> States Poised to Adopt California Vehicle GHG Standards.

[http://www.pewclimate.org/what\\_s\\_being\\_done/in\\_the\\_states/vehicle\\_ghg\\_standard.cfm](http://www.pewclimate.org/what_s_being_done/in_the_states/vehicle_ghg_standard.cfm).

<sup>6</sup> Japan Ministry of Economy, Trade, and Industry; Energy Conservation and Renewable Energy Department. 6 December 2006. "Energy Efficiency and Conservation Policy in Japan."

<sup>7</sup> Japan National Institute for Environmental Studies. May 2006. Global Carbon Project. "Japanese Efforts to Reduce CO2 from the Transportation." Power Point Presentation given at Regional Workshop on Climate Change Mitigation in the Transport Sector.

2006, hybrids, such as the Toyota Prius, accounted for almost 11 million, or 21 percent, of all autos on Japanese roads.<sup>8</sup>

Average vehicle fuel efficiency in Japan has improved by 22% between 1995 and 2004.<sup>9</sup>

To improve operational efficiency of vehicles, starting in 2003, Japan introduced the “Eco-Drive” program, which includes a public awareness campaign and partial government subsidies for purchasing cars equipped with a system for tracking fuel efficiency.

### European Union

Similar to the fuel economy labeling programs in Singapore and Japan, in the UK, new cars feature labels that highlight the fuel efficiency. In addition, labels also feature information on how much drivers can expect to pay in fuel bills in a typical year for a particular car, and whether the car qualifies for a reduction in Vehicle Excise Duty.

Fuel efficient and cleaner fuel vehicles are also promoted in the UK through a special “add-on” to the London Congestion Charge infrastructure. For example, Transport for London offers a 100 percent discount on the US\$16 charge for vehicles on the “PowerShift” Register. Register approval is based on the particular combination of vehicle (make, model and model year), equipment (LPG, NG or hybrid) and manufacturer or converter. Full electric vehicles are not included on the PowerShift register since they are already exempt from the congestion charge scheme.

The UK Department for Transport is introducing new vehicle excise duties and company car taxes that are graduated according to CO2 emissions – which would, by default, reduce dependence on fossil fuels and/or improve energy efficiency.<sup>10</sup>

Finally, the UK Energy Savings Trust, partially funded by the Department for Transport also offers free “green fleet reviews” to provide organizations with tailored fleet management advice to help lower running costs, reduce environmental impact and enhance corporate social responsibility.

The UK Department for Transport actively promotes an anti-idling (e.g., the “Switch it Off”) campaign, and other countries, such as Sweden and Germany, may enforce anti-idling in commercial vehicles.

---

<sup>8</sup> Faiola, Anthony. 16 February 2006. Washington Post. “Japanese Putting All Their Energy into Saving Fuel.” <http://www.washingtonpost.com/wp-dyn/content/article/2006/02/15/AR2006021502762.html>

<sup>9</sup> Japan Ministry of Economy, Trade, and Industry; Energy Conservation and Renewable Energy Department. 6 December 2006. “Energy Efficiency and Conservation Policy in Japan.”

<sup>10</sup> UK Department for Transport. Accessed 2007. “Delivering better transport: a summary of priorities 2004/05 .” <http://www.dft.gov.uk/about/publications/priorities/deliveringbettertransport200405?page=5>

## Appendix VII – Strategies from Other Jurisdictions: Diversifying Energy Sources

### United States

#### Northeastern United States

Some of the most innovative alternative energy production strategies have come from the northeast region of the United States. Alternative fuel incentive programs, state procurement of bio-diesel production, renewable fuel standards of 25 percent by 2025 (also known as the 25x25 program), and the development of infrastructure to handle low emission, alternative fuels are just a few of the strategies being implemented in the region. In Pennsylvania, for example, Governor Rendell created a public-private partnership to develop the East Coast's first state-of-the-art biofuels injection facility. The facility opened last fall and received \$219,908 in state aid. The plant will replace 3.2 million gallons of foreign oil with domestically produced biodiesel and keep \$6 million worth of energy dollars in the state by reducing the state's need to purchase imported fuels.

#### Western United States

Similar to the Northeastern United States region, the western region also has goals of decreasing petroleum dependency and increasing fuel diversity in the transportation sector. Like Pennsylvania's efforts to increase in-state alternative energy resources, western states are also setting goals to cut petroleum consumption and provide an increased diversity of alternative transportation fuels in the market. California, for example, created the Low Carbon Fuel Standard (LCFS) to address the growing need for petroleum independence. LCFS is a fuel neutral, market- and performance-based strategy to reach a 10% reduction in carbon intensity of motor fuels by year 2020<sup>11</sup>. Low carbon fuels include, but are not limited to, biodiesel, cellulosic ethanol, hydrogen, compressed natural gas, liquefied petroleum gas, electricity, and low carbon blends such as E10 or E85. Additionally, California is seeking to further reduce petroleum consumption by converting some of its rail lines from diesel to electric service (e.g. Caltrain) and considering a high speed rail line in which Californians will vote on next year.

Other parts of the western region have also adopted aggressive goals of cutting oil usage. Areas like Portland, Oregon just recently announced its goal to cut oil and natural gas use by 50 percent over the next 25 years. Commissioner Adams will offer an implementation plan regarding transportation-related issues responsive to the Peak Oil Task Force recommendation in 2008<sup>12</sup>.

---

<sup>11</sup> The Role of the Low Carbon Fuel Standard. <http://gov.ca.gov/index.php?/fact-sheet/5155/>. For other reports on LCFS, please visit: [http://www.energy.ca.gov/low\\_carbon\\_fuel\\_standard/](http://www.energy.ca.gov/low_carbon_fuel_standard/).

<sup>12</sup> Peak Oil Task Force. <http://www.portlandonline.com/osd/index.cfm?c=ecije>.

## **International**

### Asia Pacific

Both Japan and Singapore actively promote the use of alternatives fuels. In Singapore, since 2003, the National Environment Agency has sponsored a Green Vehicle Rebate scheme, which reimburses consumers for purchasing vehicles that use energy sources other than petroleum and diesel, such as compressed natural gas (CNG), electricity, methanol, hydrogen, or solar energy.<sup>13</sup> In Japan, the Green Tax program (mentioned previously) provides both tax incentives and penalties to encourage the use of alternative fuels and hybrid vehicles.

### European Union

The UK Energy Savings Trust has recently established “Alternative Fueling Station” grants to help organizations install refueling or recharging stations for alternative, cleaner fuels.

---

<sup>13</sup> Japan Ministry of Economy, Trade, and Industry, Energy Conservation and Renewable Energy Department. 6 December 2006. “Energy Efficiency and Conservation Policy in Japan.”

**Appendix VIII - Draft Legislative Proposal and Budget for the 2008  
Legislature**

TWENTY-THIRD LEGISLATURE  
REGULAR SESSION OF 2008  
STATE OF HAWAII

\_\_B. NO.

---

**A BILL FOR AN ACT**

**MAKING AN APPROPRIATION FOR A STUDY ON ENERGY EFFICIENT  
TRANSPORTATION STRATEGIES.**

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

SECTION 1. Act 254, 2007 Session Laws of Hawaii appropriated funds to the Hawaii energy policy forum at the University of Hawaii at Manoa to conduct a study on energy-efficient transportation strategies in conjunction with the department of business, economic development, and tourism. Act 254 required that the study include the following criteria in its analysis:

- (1) Developing tangible goals, objectives, desired outcomes, and actions to implement an energy-efficient transportation strategy;
- (2) Developing implementation benchmarks for measuring outcomes of energy-efficient transportation strategies; and
- (3) A cost-benefit analysis of each energy-efficient transportation strategy.

The Hawaii energy policy forum thus convened a working group in August 2007 to develop the parameters of the study. The energy-efficiency transportation strategies working group is a diverse group whose members include representatives from the state department of transportation, the department of business, economic development and tourism, each county's transportation division, labor organizations, transportation planning organizations, petroleum refineries, and from the automobile dealers and manufacturers industries.

The working group developed a vision of "an energy efficient transportation system that integrates effective community input and planning (demand), and offers people of all ages and walks of life flexible options (supply) including mass transit, private and public vehicles and self-powered conveyance in alternative combinations that provide mobility at acceptable cost".

The working group also established three goals on which the study should focus:

(1) Increase choices for modes of travel -- multiple modes of travel permit greater public choice for efficient and flexible trip planning;

(2) Increase fuel efficiency of vehicle population -- incentives to improve the fuel efficiency of Hawaii's vehicle

population will influence consumer behavior in favor of buying and using more efficient vehicles; and

(3) Diversify energy sources available to meet transportation energy needs -- greater diversity of energy sources provides additional flexibility in meeting the energy needs of the transportation sector.

The working group also agreed upon the following:

- (1) In order to agree upon specific transportation energy efficiency benchmarks and goals for the State of Hawaii as required in Act 254, additional review of relevant data is needed. The data that should be considered by the working group includes transportation demand and fuel consumption data from the State, county, and city jurisdictions and their respective government agency sources.
- (2) The State will be more likely to meet these goals and make progress toward meeting long-term benchmarks if current information on transportation system energy efficiency is regularly available and changes in energy efficiency of the transportation sector are regularly monitored; and
- (3) In order to regularly monitor progress toward meeting the benchmarks that would be recommended, a statewide transportation sector energy-efficiency information and monitoring system should be established and maintained.

The purpose of this Act is to appropriate funds for the Hawaii energy policy forum to continue its work with the energy-efficiency transportation strategies working group created by Act 254, 2007 Session Laws of Hawaii, to develop energy-efficient transportation strategies.

SECTION 2. (a) The Hawaii energy policy forum at the University of Hawaii at Manoa shall conduct a study on energy-

efficient transportation strategies in conjunction with the department of business, economic development, and tourism, the department of transportation, and members of the energy-efficient transportation strategies working group. The working group is comprised of representatives from the following:

- (1) Each of the counties;
- (2) Office of Hawaiian Affairs
- (3) research corporation of the University of Hawaii;
- (4) Hawaii Natural Energy Institute;
- (5) Oahu Metropolitan Planning Organization;
- (6) Honolulu Clean Cities;
- (7) Hawaii Center for Advanced Transportation Technologies;
- (8) Hawaii State AFL-CIO;
- (9) Hawaii Auto Dealers Association;
- (10) Hawaii Transportation Association;
- (11) Alliance of Automobile Manufacturers;
- (12) Energy Industries;
- (13) Tesoro Hawaii Corporation; and
- (14) Hawaiian Electric Company.

(b) The energy-efficient transportation strategies study under subsection (a) shall include but not be limited to:

- (1) Determining data available among government and business sources;
- (2) Identifying gaps in critical data; and

(3) Developing a reasonable and workable plan for developing, using, and maintaining a statewide transportation energy information and monitoring system.

(c) The social sciences public policy center shall continue to engage and integrate the energy-efficiency transportation strategies working group comprised of Hawaii's business, government, labor, and community leaders into the study on energy-efficient transportation strategies.

(d) The department of business, economic development, and tourism, the department of transportation and the members of the working group listed under Section 2(a) shall consult with and otherwise assist the social sciences public policy center at the University of Hawaii at Manoa on the energy-efficient transportation strategies study.

(e) The Hawaii energy policy forum shall submit a report on its findings and recommendations to the legislature no later than twenty days prior to the convening of the regular session of 2009.

SECTION 3. There is appropriated out of the general revenues of the State of Hawaii the sum of \$175,000 or so much thereof as may be necessary for fiscal year 2007-2008 to collect and analyze data and to develop a plan for developing, using,

and maintaining a statewide transportation energy information and monitoring system.

The sum appropriated shall be expended by the University of Hawaii social sciences public policy center for the purpose of this Act.

SECTION 4. This Act shall take effect on July 1, 2008.

INTRODUCED BY:

---

## 2008 Budget

|  | Person - Mo. | Salary | Fringe | Total   | cost share |
|--|--------------|--------|--------|---------|------------|
| <b>A1. Senior Personnel</b>            |              |        |        |         |            |
| Sharon Miyashiro                       | 1.5          | 14,250 | 5,452  | 0       | 19,702     |
| Susan Char                             | 9.00         | 45,000 | 17,217 | 62,217  |            |
| <hr/>                                  |              |        |        |         |            |
| Subtotal A1                            |              | 59,250 | 22,669 | 62,217  |            |
| <b>A2. Other Personnel</b>             |              |        |        |         |            |
| Junior faculty (overload + CBO)        |              |        |        | 15,000  |            |
| Grad Student                           |              |        |        | 17,000  |            |
| Admin Support                          |              |        |        | 10,000  |            |
|  |              |        |        | 0       |            |
| <hr/>                                  |              |        |        |         |            |
| Subtotal A2                            |              | 0      | 0      | 42,000  |            |
| <b>Total Salary, Wages, and Fringe</b> |              |        |        |         |            |
|  |              | 59,250 | 22,669 | 104,217 |            |
| <b>C. Travel</b>                       |              |        |        |         |            |
|  |              |        |        | 15,000  |            |
| 1. Domestic                            |              |        |        | 15,000  |            |
| 2. Foreign                             |              |        |        | 0       |            |
| <b>D. Permanent Equipment</b>          |              |        |        |         |            |
|  |              |        |        | 0       |            |
| <b>E. Materials and Supplies</b>       |              |        |        |         |            |
|  |              |        |        | 5,000   |            |
| Postage & Supplies                     |              |        |        | 5,000   |            |
| <b>F. Subcontracts</b>                 |              |        |        |         |            |
|  |              |        |        | 40,000  |            |
| Consultant                             |              |        |        | 40,000  |            |
| <b>H. Other Direct Costs</b>           |              |        |        |         |            |
|  |              |        |        | 10,000  |            |

|   |                |
|---|----------------|
| Stakeholder Meetings                      | 10,000         |
|   | 0              |
|   | 0              |
| <b>I. Total Direct Costs (A-G)</b>        | <b>174,217</b> |
| <b>J. Indirect Costs (0%)</b>             | <b>0</b>       |
| <b>K. Total Direct and Indirect Costs</b> | <b>174,217</b> |

## Appendix IX – Legislative Initiatives from Other Jurisdictions

### State Transportation Energy Efficiency Incentive Fund

- Modeled after federal Congestion Mitigation and Air Quality Improvement Program (CMAQ)<sup>14</sup> and California Carl Moyer programs
  - Model projects and programs are funded according to the following criteria:
  - Programs and projects result in documented shift in mode of travel from more energy intensive to less energy intensive mode.
  - Programs and projects result in documented trip reduction through telecommuting, electronic commerce, etc.
  - Programs and projects result in replacement of less fuel efficient fleet vehicles to more fuel efficient fleet vehicles
  - Programs and projects result in documented reduction in size of existing fleets through carsharing and other fleet economizing measures.
  - Incentive programs and projects result in documented replacement of less fuel-efficient vehicles with more fuel-efficient vehicles by individual households and consumers.
  - Other programs and projects to be determined by the Department to be consistent with the vision and goals stated in this legislation.

### Gold Star Program (“Top Runner”)

Based on Japan’s “Top Runner” program, the program would set future fuel efficiency standards higher than the performance of the best product among those vehicles that are currently commercially available in the same product category.<sup>15</sup> Manufacturers who have not achieved the standards by the set deadline are given technical advice, publicly announced, and/or fined.

---

<sup>14</sup> Intermodal Surface Transportation Efficiency Act of 1991. <http://ntl.bts.gov/DOCS/ste.html>. For guidance documents, visit: United States Department of Transportation, Federal Highway Administration “Congestion Mitigation and Air Quality Improvement Program.” <http://www.fhwa.dot.gov/environment/cmaqpgs/>.

<sup>15</sup> Japan Ministry of Economy, Trade, and Industry; Energy Conservation and Renewable Energy Department. 6 December 2006. “Energy Efficiency and Conservation Policy in Japan.”



## HAWAII ENERGY POLICY FORUM

January 17, 2008

The Honorable Hermina Morita, Chair  
and Members  
House Committee on Energy and Environmental Protection  
State Capitol, Room 314  
Honolulu, HI 96813

Dear Representative Morita and Members:

Enclosed please find a report titled, "Obstacles in Hawaii's Laws to Implementation of Energy Efficiency and Renewable Resources: A Review of Hawaii's State and County Laws".

The Hawaii Energy Policy Forum ("Forum") at the University of Hawaii at Manoa commissioned the report to determine if there are any state or county laws that impede the implementation of energy efficiency and/or renewable resources in Hawaii. Carl Freedman, of Haiku Design & Analysis, prepared the report.

We hope you find the report to be a useful resource in drafting future legislation that will increase the use of energy efficiency and renewable resources in our State. If you have any questions or need further clarification or information, please do not hesitate to contact us. We thank you for your continuing support of the Forum's vision of developing smart energy solutions to sustain a healthy, prosperous, and secure Hawaii.

Mike Hamnett  
Co-Chair

Sincerely,

Sharon Miyashiro  
Co-Chair

Enclosure





COLLEGE OF SOCIAL SCIENCES

**HAWAII ENERGY POLICY FORUM**

UNIVERSITY OF HAWAI'I AT MĀNOA

# **OBSTACLES IN HAWAI'I LAWS TO IMPLEMENTATION OF ENERGY EFFICIENCY AND RENEWABLE RESOURCES**

## **A Review of Hawai'i's State and County Laws**

**Prepared for the Hawai'i Energy Policy Forum**

**December 28, 2007**

Prepared by:

Carl Freedman  
Haiku Design & Analysis  
Haiku, Maui, Hawai'i

# OBSTACLES IN HAWAII LAWS TO IMPLEMENTATION OF ENERGY EFFICIENCY AND RENEWABLE RESOURCES

A Review of Hawai'i's State and County Laws

## TABLE OF CONTENTS

|  |        |
|--|--------|
| <b>INTRODUCTION</b> .....  | 1      |
| APPROACH .....   | 2      |
| GENERAL FINDINGS .....   | 3      |
| <b>SYNOPSIS OF FINDINGS</b> .....  | 5      |
| A. GOVERNMENT AS A CONSUMER OF ENERGY .....  | 5      |
| ACQUISITION OF ENERGY CONSUMING ASSETS .....   | 5      |
| BUDGETING .....  | 6      |
| SPECIFICATION .....  | 6      |
| PROCUREMENT .....  | 8      |
| VALUE ENGINEERING .....  | 9      |
| TRAINING OF PRACTITIONERS .....  | 10     |
| LIFE CYCLE AND INDIRECT COSTS GENERALLY .....  | 10     |
| B. GOVERNMENT AS A SOURCE OF FINANCING .....   | 12     |
| GOVERNMENT PROJECT FINANCING .....   | 12     |
| SPECIAL PURPOSE REVENUE BONDS .....  | 14     |
| SPRB'S FOR ENERGY EFFICIENCY FINANCING .....   | 14     |
| C. GOVERNMENT REGULATION .....   | 14     |
| REGULATION OF PUBLIC UTILITIES .....   | 16     |
| BUILDING CODES .....   | 15     |
| LAND USE PLANNING .....  | 16     |
| STREET LIGHTING REQUIREMENTS .....   | 18     |
| REGULATORY / PERMITTING REQUIREMENTS FOR RENEWABLE ENERGY<br>RESOURCES .....               | 19     |
| D. TAXATION .....  | 20     |
| MOTOR VEHICLE "FEEBATE" REGISTRATION FEES .....  | 20     |
| TAXING CARBON RATHER THAN REVENUES .....   | 21     |
| E. TRANSPORTATION .....  | 21     |
| <br><b>APPENDIX - Matrix Tabulation of Hawai'i Revised Statutes and County Codes</b> ..... | <br>23 |
| <br><b>ATTACHMENT - Abbreviated Matrix Tabulation of Hawai'i Revised Statutes</b> .....    | <br>23 |

# OBSTACLES IN HAWAII LAWS TO IMPLEMENTATION OF ENERGY EFFICIENCY AND RENEWABLE RESOURCES

## A Review of Hawaii's State and County Laws

### INTRODUCTION

This report was commissioned by the Hawaii Energy Forum (Forum) to determine what existing laws in Hawaii present obstacles to the implementation of energy efficiency and renewable energy resources. The report is a preliminary part of one of the Forum's efforts to ensure that Hawaii's laws promote sound energy policies. The report seeks to find opportunities to improve Hawaii's laws and practices by identifying barriers that could ultimately be removed.

The State of Hawaii has recently reasserted long standing policies to promote energy efficiency and renewable energy resources and has implemented several laws and programs to address energy related concerns. These include efficiency standards for state projects, implementation of renewable portfolio standards in the electrical utility sector and legislation to limit Hawaii's greenhouse gas emissions to 1990 levels by the year 2020. These and other state and county laws along with global scale trends in energy economics and concern for environmental impacts will ultimately require substantial changes in how energy will be used and produced.

The recent laws and programs that are part of Hawaii's reinvigorated efforts to implement progressive energy policy are not the primary focus of this report. This report is an overview of the larger body of laws, most of which are not explicitly intended to address energy policy but may present unintended barriers.

Hawaii's laws<sup>1</sup> serve a multitude of purposes. The vast majority of Hawaii's laws have nothing to do with how energy is consumed or produced. Of the 2255 sections of state statutes and county codes reviewed to prepare this report, only 291 were found on first review to possibly be related to energy use or production.<sup>2</sup> Only a fraction of these sections were found, on further examination, to significantly affect energy efficiency or renewable energy resource implementation.

Of the sections that do have some effect, some explicitly promote energy efficiency and renewable energy resources by way of statements of policy, regulations and budget. Other sections affect energy consumption directly or indirectly without explicitly addressing how energy is used or produced.

---

<sup>1</sup> Throughout this report the term "Hawaii's laws" refers collectively and inclusively to the Hawaii Revised Statutes and the revised county codes of Hawaii's four major counties.

<sup>2</sup> The term "sections" is used in this report to refer collectively to the chapters, articles, sections, parts and divisions of the Hawaii Revised Statutes and county codes as they were compiled for review in this report. The complete list of sections with accompanying notes and comments is provided in an appendix to this report.

## **APPROACH**

This project incorporated an overview of all of the Hawai`i Revised Statutes and County Codes. Detailed tables of contents of each of these bodies of law were compiled and reviewed to determine which sections might have direct or indirect effects on the use, production, taxation or regulation of energy. Each of the identified sections were examined to determine whether they posed obstacles to the implementation of energy efficiency or renewable energy resources. In those areas where administrative rules are applicable these were also examined.

Spreadsheets were developed that document each section of Hawai`i's laws, identify which sections were examined in some depth and provide brief comments regarding the findings for applicable sections.<sup>3</sup>

Because the project attempts to be an encyclopedic overview of Hawai`i's existing laws, the level of detail of the treatment of issues is necessarily limited. Certainly many specific matters of law could potentially be examined and argued in great depth. The approach in this project was to identify and characterize obstacles rather than to provide any exhaustive analysis of each.

In reviewing the extensive list of Hawai`i's laws, the scope and definition of what comprises an "obstacle" was a recurring question that provoked several necessary considerations. First is a question of magnitude: whether some aspect of the law is clearly prohibitive or whether it discourages implementation or perhaps poses some requirements that need to be met. Second is a question whether a requirement of law is reasonable or whether it is unwarranted.

Regarding these questions, the overview of Hawai`i's laws focused primarily upon substantial obstacles that are, at least in some way, unintended or unwarranted or could be constructively mitigated. It is clearly recognized, for example, that renewable energy projects may have environmental impacts. The environmental laws that apply to these projects may, in fact, pose "obstacles" that are warranted and proper. It is not a reasonable objective (and it is not an ultimate objective of the Forum) to promote efficiency or renewable resources by removing important legal protections. Indeed, some of the objectives underlying the Forum's support for energy efficiency and renewable energy resources spring generally from the same sort of environmental concerns that underpin Hawai`i's environmental regulations. This overview does not attempt to grapple with subjective distinctions regarding the merit of the intended purposes of laws and regulations. The focus is to identify barriers that are, at least in some way, unintended or unwarranted.

The scope of findings in this report was also broadened to some degree in light of the nature of its findings. The original intent was to identify opportunities to improve Hawai`i's laws by finding obstacles that could be removed. Since the number of outright obstacles found was so small, however, the scope of findings was broadened to include ways that Hawai`i's laws could more extensively promote energy efficiency and renewable energy resources, even in some cases where existing law presents no real barriers or provides no guidance at all. The extent to which these suggestions are offered is not comprehensive. Although the report attempts to be exhaustive in its overview of the existing laws to identify obstacles, the scope of possible improvements to Hawai`i's laws is limited to some of the more obvious missed opportunities.

---

<sup>3</sup> The spreadsheets are included as an appendix to this study. The County Code of the County of Kaua'i is not available in electronic format. Documentation of the review of Kaua'i's laws is not in spreadsheet format.

## **GENERAL FINDINGS**

(1) Hawai'i's state and county laws pose very few outright obstacles to the implementation of energy efficiency and renewable energy resources. Several laws do pose obstacles, such as (1) a county mandate requiring the selection of lowest cost bids in procurement of government assets regardless of associated long term operation costs and (2) mandates requiring street lighting in all new subdivisions regardless of circumstances.

(2) Although the list of outright obstacles formalized in law is remarkably short, the implementation of exemplary practices is substantially wanting. Many cost effective energy efficiency measures continue to be ignored by government agencies and private entities in favor of conventional practices that are more costly and wasteful. Although some momentum is shifting, fossil fuels (and oil in particular) remain the overwhelming mainstay of Hawai'i's energy portfolio.

(3) There is a distinction between what is **allowed** by the law and what is **encouraged** or **required**. Hawai'i's state and county laws, almost without exception, allow for the implementation of energy efficiency and renewable energy resources. Some of Hawai'i's laws also encourage and/or require some implementation of energy efficiency and renewable energy resources. On the other hand, Hawai'i's laws also allow and facilitate practices that methodically ignore the benefits and opportunities of efficiency and renewable resources. In practice, Hawai'i's laws allow government agencies and private entities to make some poor choices.<sup>4</sup>

(4) There is a distinction between what is required by law and what is actually implemented. Regulations are often not followed if they are not enforced. Programs are often not implemented if they are not funded and supported by government administration. Governments often do not even follow their own laws without administrative direction and programmatic support. For example, Hawai'i has had several progressive, mandatory laws on the books for many years that set noble goals, provide ambitious energy savings thresholds and require implementation of specific energy efficiency measures by state agencies.<sup>5</sup> Without the necessary staff, budget and programmatic support, however, these laws have had little effect.

The general findings above lead to two general conclusions that might serve as recommendations to Hawai'i's lawmakers:

First, laws need to be specific. In order for Hawai'i's laws to be effective, they must go beyond statements of policy and general objectives and provide specific requirements and/or incentives. The general guidance provided by Hawai'i's long standing goals and objectives has not proven to be effective of its own accord. Prescriptive requirements are more likely to be implemented than general directions. Where thresholds are specified as goals to be attained, these need to be supplemented by specific implementing procedures and corresponding assignments of duties.

Second, agencies need sufficient resources to implement laws. In order to effective, Hawai'i's laws must be supported by necessary programs and resources for implementation and enforcement. Unfunded mandates, however ambitiously worded, have proven largely ineffective.

Summarized very briefly, the general findings of this project are:

---

<sup>4</sup> It is not argued here that it is a duty of government to ensure that private entities avail themselves of opportunities to benefit from use of energy efficiency measures or renewable energy resources. Determining the proper scope of government's role in providing mandates to private entities (regulation) is an important and ongoing policy question. Government does mandate energy efficiency and renewable resources by regulation in some cases, such as the county building energy codes and the state renewable portfolio standards.

<sup>5</sup> See the discussion of the provisions in HRS § 196 (2002 through 2006) starting at page 7.

- Hawai`i's laws and rules pose few outright, unwarranted obstacles that are fixed in law.
- Hawai`i's laws could go further to promote or require implementation of energy efficiency and renewable energy resources.
- In order to be effective, laws must provide specific requirements and/or incentives.
- In order to be effective, laws must be supported by sufficient resources and programs to provide for implementation and enforcement.

These findings are described in more detail below.

# SYNOPSIS OF FINDINGS

The findings of this report are organized according to the general roles that government plays in Hawai'i's energy sector:

- Consumption: As large consumers of energy, governments affect how much energy is used, both by setting an example and by direct consumption.
- Financing: As financiers, governments provide funding for projects that use energy and/or produce energy by issuing, sponsoring or guaranteeing bonds, and/or by direct financing.
- Regulation: As regulators, governments control the actions of individuals and businesses by passing and enforcing laws, rules and plans.
- Taxation: As tax collectors, governments affect the costs of energy resources and provide incentives and disincentives that affect energy use.

A separate section addresses transportation issues since this sector represents such a large proportion of Hawai'i's energy consumption.

## A. GOVERNMENT AS A CONSUMER OF ENERGY

### ACQUISITION OF ENERGY CONSUMING ASSETS

The state and county governments are large consumers of energy. Energy costs are a substantial part of Hawai'i's state and county operating budgets. These ongoing energy costs are a direct consequence of past decisions made in the acquisition of capital assets that consume energy.

Many government assets, including buildings, lighted facilities, water and wastewater facilities and vehicle fleets consume substantial amounts of energy and incur other ongoing operating costs. These ongoing costs are not always fully considered when assets are specified or acquired. Decisions made in the acquisition of government assets tend to focus primarily on "up front" capital and implementation costs.

Energy efficiency measures are particularly capital intensive. Most of the costs of these measures are up front capital and installation costs. The benefits are realized in the longer term in the form of lower ongoing operational costs. The long term benefits of energy efficiency measures are often not sufficiently considered when capital assets are acquired. As a result, government agencies often acquire assets that have lower initial capital costs but consume more energy and are more expensive in the long run.

Decisions made regarding the acquisition of capital assets include budgeting, specification and the procurement of assets.

- Budgeting is the process of allocating government financial resources to specific programs and projects.
- Specification includes determination of the design and specific characteristics of the assets to be acquired.
- Procurement includes the process of soliciting, evaluating and selecting the supplier of the assets.

All of these phases of the acquisition process are important and can affect the long term energy consumption and operating costs.

## **BUDGETING**

The Hawai'i Revised Statutes provide requirements for the State's budgeting processes. Full capital costs and some operating costs must be identified. The county codes provide less emphasis on identification of operating costs in the budget process. Although these provisions fall short of requiring full life cycle cost analysis<sup>6</sup>, the budget provisions in Hawai'i's laws do not pose a substantial barrier to the implementation of energy efficiency or renewable energy resources. Requiring identification of the full life cycle costs of major capital expenditures in the budget process could improve the extent to which energy and other operating costs would be considered.

HRS § 37 - Budget, provides protocols and requirements for the preparation and submission of the State's executive budget. Section 37-64 requires the governor to prepare a six year budget and fiscal plan that identifies full costs including operation costs and the "full cost implications" of recommended programs. The requirement of a six year budget and fiscal plan that identifies operation costs is progressive but falls short of life cycle costing analysis.

HRS § 21F - Legislative Fiscal and Budget Analysis, establishes the office of the Legislative Analyst to provide the Legislature with information regarding fiscal and budget impacts. This chapter would allow but does not require the Legislative Analyst to utilize or present life cycle cost analysis to the Legislature.

## **SPECIFICATION**

Ideally, requirements for energy efficient project components should be explicitly specified in any requests for proposals. For larger projects that are designed and acquired in phases, specifications should be provided as early in the design process as possible. For example, when architects and engineers are commissioned to design government buildings, the energy consumption, operating costs and energy certification requirements<sup>7</sup> of the buildings should be identified as required design criteria.

The energy efficiency components of projects should be explicitly and sufficiently identified in the project bidding specifications and/or bid evaluation criteria. Specifications for energy efficiency can be provided in several forms.

- Analysis and evaluation can be required. Specifications can require that energy consumption and operating costs be evaluated, identified and minimized. For example: requirements that life cycle cost analysis must be used or that operating costs must be minimized.
- Threshold criteria can be provided. Specifications can require that energy consumption should be less than some standard or amount. For example: energy consumption less than "x" watts per square foot or less than "x" miles per gallon, etc.
- Prescriptive requirements can be specified. Specifications can require that particular technologies, equipment or measures be provided. For example: requirements for solar water heat, "daylighting" or energy efficient lighting, hybrid or biofuel powered vehicles, etc.

---

<sup>6</sup> "Life cycle costs" are defined in HRS § 196-11, as "the sum of the present values of investment costs, capital costs, installation costs, energy costs, operating costs, maintenance costs, and disposal costs, over the lifetime fo the project, product, or measure."

<sup>7</sup> As of 2006 government buildings are required to be built to the standards of Green Building Council LEED Silver, two golden globes or other equivalent certification. HRS § 196-9(b)(1).

Generally, requiring analysis and evaluation or specifying required thresholds are most appropriate for the project design and engineering phases of larger projects. Prescriptive requirements are more effective for construction contracts or procurement of capital assets.<sup>8</sup>

Past and existing laws do include some impressive requirements that energy efficiency provisions must be specified in government acquisition of capital assets. Most of these requirements, however, have not been effective where:

- requirements are too general;
- requirements are not mandatory;
- laws require expertise to apply;
- laws require extensive staff time and resources to apply; or
- funding and programmatic support are not provided for implementation.

For example, since 1999, HRS § 103D-410 has specified that “procurement practices of the State shall include energy efficient standards and policies, including life cycle costing.”<sup>9</sup> This section includes discretionary language providing that state and county agencies “shall be guided by energy efficiency standards and policies” and “shall consider purchasing via the life-cycle costing method.” In addition, this section includes a mandatory prescriptive requirement to use the “watt-saving variety of common-sized fluorescent lamps” unless standard wattage bulbs are specifically required.

Starting in 2002 and until repealed in 2006, HRS § 196 included several stronger mandates for state agencies to implement energy efficiency measures. These included mandatory goals for reduction of energy consumption by 20% by 2007 and 30% by 2012. State agencies were required to expand use of renewable energy, reduce use of petroleum generated energy, reduce resulting greenhouse gas emissions, reduce water consumption, provide funding in budget submissions to accomplish energy reductions, and develop and file annual implementation plans and reports regarding compliance. Each state agency was required to designate a senior official and form a technical support team to manage compliance and reporting. Each agency was required to use several management strategies to meet these goals including employee incentive programs, performance evaluations, training and education, designation of showcase facilities. State agencies were allowed to retain savings generated from compliance with the efficiency goals. Despite the mandatory language of the Chapter, however, these requirements were never substantially implemented.

Also starting in 2002 and remaining in effect are requirements for agencies to purchase Energy Star appliances when they are determined to be cost-effective on a life-cycle basis.

In 2006, the provisions of HRS § 196 cited above were substantially amended and replaced with requirements that are more prescriptive. These require each state agency to design and construct buildings that meet the “Leadership in Energy and Environmental Design (LEED) silver or two green globes rating system or another comparable state-approved, nationally recognized, and consensus-based guideline, standard or system.” Building envelope (insulation) standards are identified for low-rise residential state facilities. Installation of solar water heating in state facilities

---

<sup>8</sup> Generally, the design and engineering phase services should include identification of prescriptive specifications for construction contracts or the procurement of capital assets. Where analysis, evaluation or fulfillment of threshold criteria are to be provided in submissions for project bids, the merits of these submissions should be explicitly identified in the bid evaluation criteria.

<sup>9</sup> HRS § 103D applies generally to all Hawai‘i government agencies including county agencies.

is required based on a specified cost-benefit analysis. Purchase of Energy Star appliances for state facilities is required based on cost-benefit analysis. Agencies are encouraged to minimize pollution, use recycling and procure environmentally preferable products. Specific requirements are provided regarding the State's transportation vehicle fleet encouraging use of alternative fuels, ethanol blended gasoline and biofuels and requiring data collection and reporting on vehicle fleet cost and operating information. In addition to requirements pertaining to the state-owned vehicle fleet, a goal is established to facilitate the development of alternate fuels and support the attainment of a **statewide** alternate fuels standard to increase alternative fuel use in vehicles to ten percent by the year 2010, fifteen percent by 2015 and twenty percent by 2020.

The newer 2006 provisions of HRS § 196 have been supported by the State administration, the establishment of two new agency staff positions and are being implemented programmatically, referred to as the "Lead by Example" program. Due to the more prescriptive nature of the specification requirements and some funding for staff and programmatic support, it seems more likely that these more recent requirements will be effective.

Although there are some recent improvements, existing laws still present barriers and missed opportunities:

- The new more specific requirements for buildings apply only to state facilities.
- Requirements do not apply to all types of capital assets that consume significant amounts of energy.
- Only some requirements are supported by funding, staff and programs for implementation.
- Some requirements remain too general to be effectively implemented without programmatic support.
- Some provisions are not mandatory.
- Some recent requirements are not integrated into Hawai'i's procurement laws or supporting administrative rules.<sup>10</sup>

## PROCUREMENT

Procurement is the process by which government agencies determine the specific providers and proposals to provide services and assets. Government procurement laws are designed to ensure that public money is spent responsibly. A substantial focus of procurement laws is prevention of abuses in the spending of public money. Procurement laws can affect energy consumption and long range operating costs when:

- bid specifications do not explicitly require specific energy efficient components;
- bid specifications require evaluation of energy consumption with some aspects left to individual bidders to determine; or

---

<sup>10</sup> Some of the provisions in Act 240 of 2006 were incorporated into the procurement section of the statutes and have been incorporated into supporting administrative rules. However, many of the provisions of the Act that are codified in HRS § 196-9 are not incorporated or referenced in HRS § 103D nor are they supported by the specific provisions in HAR § 3-122.

The provisions in Act 96 of 2006 that pertain to energy efficient vehicles and biofuel preference were codified in HRS § 103D in subsections 412 and 1012 respectively. HAR 3-122-13 was amended to incorporate provisions for vehicles and further rules are being developed.

The provisions of Act 96 of 2006 codified in HRS § 196-9 that pertain to state building standards, specific required energy efficiency measures, use of life cycle costing methods, procurement of environmentally preferable products, etc. are not reflected in the procurement section of the statutes (HRS § 103D) and are not incorporated into the supporting administrative rules (HAR § 3-122).

- bid proposals differ with respect to energy consumption and/or ongoing energy costs.

In these cases energy consumption and operating costs should be explicitly included in bid evaluation criteria.

Hawai'i's procurement laws are provided in HRS § 103D. This chapter applies to state and county procurement procedures. This chapter provides for several types of bidding procurement procedures:

- Competitive sealed bidding (HRS § 103D-302 & 303)
- Procurement of professional services (HRS § 103D-304)
- Small purchases (HRS § 103D-305)
- Sole source procurement (HRS § 103D-306)
- Emergency procurements (HRS § 103D-307)

§ 103D and its corresponding administrative rules explicitly allow but do not require consideration of life cycle costs (which include energy and other operating costs) in sealed bidding procedures.

In some subsections and county recitations of § 103D the types of costs that can be considered are listed explicitly but exclude all operating or long term costs. In the worst case, the Maui County Code requires agencies to select the lowest cost option or bid based exclusively on capital and implementation costs.<sup>11</sup> Unless bid specifications address energy efficiency and operation cost characteristics of the project, this formula is a prescription for procurement of "cheaper" goods that ultimately may cost more over the full life cycle than more energy efficient goods.

## **VALUE ENGINEERING**

Value engineering is a provision in Hawai'i's procurement laws that provides incentives to contractors to implement cost-saving measures in the performance and fulfillment of contracts with state and county agencies. Savings resulting from implementation of value engineering changes are shared by the contractor and the contracting agency.

Value engineering is a potential cost saving provision but, unless carefully implemented, it can result in potentially expensive results. Contractors have a strong incentive to provide cheaper equipment or propose cost-saving design changes than what is originally specified in the contract. Provisions exist to prevent value engineering changes from incurring added energy or other operating costs but these are not clearly sufficient to ensure effective administration.

HRS § 103D-411- Value Engineering Clauses, provides that value engineering measures must be implemented "without impairing any of their essential functions and characteristics such as service life, reliability, substitutability, economy of operation, ease of maintenance, and necessary standardized features..." The supporting administrative rules specify procedures for implementing value engineering including a standard form to be filled out and provided by a contractor proposing

a value engineering change proposal.<sup>12</sup> The standard form includes a "yes or no" check box for the contractor to state whether the proposed change will "increase the maintenance or operation costs of original or proposed items". This is the entire and only information required to be supplied by the contractor to address concerns regarding impacts on long term operation costs that could

---

<sup>11</sup> The Maui County Code, Section 3.12 - Purchasing Procedures, includes several specific provisions regarding competitive bidding procedures including a requirement that the lowest cost bid be selected in competitive sealed bidding.

<sup>12</sup> Hawai'i Administrative Rules § 3-132.

result from delivering less expensive designs or equipment. There is no requirement that any of the operating costs of either the original specification or the proposed changes must be identified. There is no identified method of determining how operating costs are to be assessed, what components of operating costs should be included, whether indirect costs should be identified, etc. The protocols specified in HAR § 3-132 do not appear to be sufficient to ensure that value engineering changes will not sacrifice long term operating efficiencies for immediate capital or installation cost savings.

### **TRAINING OF PRACTITIONERS**

Energy analysis, specification of energy efficiency measures in large projects and life cycle costing all require some special expertise. Education and training are necessary for the agency staff and professional service providers who must employ and review these analyses.

- HRS § 103D-110 - Education and Training, provides for training for agency staff in procurement procedures but does not identify or require any training in energy analysis or life cycle costing.
- HRS § 464 - Professional Engineers, Architects, Surveyors and Landscape Architects, requires education and expertise in qualifying professional practitioners but does not require any education, experience or training in energy analysis, energy efficiency technologies or life cycle costing.

Several state agencies, including the State Procurement Office, DBEDT and the Department of Health, are taking commendable actions to train personnel in “green purchasing.” Requiring training broadly for agency staff engaged in project specification and procurement activities and requiring expertise in qualifications for professional architectural and engineering service practitioners could further improve the effectiveness of implementation of cost effective energy efficiency measures.

### **LIFE CYCLE AND INDIRECT COSTS GENERALLY**

Capital goods require upkeep and maintenance, generally require operating labor and eventually require decommissioning. Inevitably, there are also indirect costs that are not directly associated with the monetary costs of the project itself. Optimal decisions should be based on consideration of all associated costs, including both direct and indirect costs, not just initial capital and implementation costs.

Figure 1 shows the types of factors typically considered in several capital resource acquisition processes. The types of factors are listed in the column on the left. The extent to which each factor is considered is shown for each process. Three x's indicate that the factor is typically a primary consideration with thorough analysis. Fewer x's indicate that the factor is given less analysis and consideration.

Under classical acquisition, the process focuses exclusively on initial capital and implementation costs and the non-cost features of the asset. Operation costs, indirect costs, energy consumption, life span (replacement costs), disposal costs and indirect impacts are typically not primary considerations in project design, specification or procurement. This typifies most government specification and procurement practices in Hawai'i.

| <b>FACTORS CONSIDERED IN ASSET ACQUISITION</b> |                              |                             |                                    |                                 |
|--|------------------------------|-----------------------------|------------------------------------|---------------------------------|
|  | <b>Classical Acquisition</b> | <b>Improved Acquisition</b> | <b>Hawaii Utility IRP - Supply</b> | <b>Hawaii Utility IRP - DSM</b> |
| <b>Capital Costs</b>                           | XXX                          | XXX                         | XXX                                | XXX                             |
| <b>Operating Costs</b>                         |                              | XXX                         | XXX                                | XXX                             |
| <b>Energy / Fuel Use</b>                       |                              | XXX                         | XXX                                | XXX                             |
| <b>Operation Impacts</b>                       |                              |                             | XX                                 | XXX                             |
| <b>Manufacturing Impacts</b>                   |                              |                             | X                                  |                                 |
| <b>Life Span</b>                               |                              | X                           | XX                                 | XX                              |
| <b>Non-Cost Features</b>                       | XXX                          | XXX                         | XXX                                | XXX                             |
| <b>Disposal</b>                                |                              |                             | XX                                 |                                 |

**Figure 2** Factors typically considered in acquisition of capital assets

An improved acquisition process considers operation costs and energy consumption. If life cycle cost methods are used, life span and disposal costs may also be considered.<sup>13</sup> This process is consistent with what has been required by statute since 2002 but has not been implemented extensively. More recent legislation in 2006 provides more specific requirements for acquisition of state facilities with some programmatic support.<sup>14</sup>

An Integrated Resource Planning (IRP) process is used by Hawai'i's electric utilities in the planning and evaluation of future power plants, energy efficiency programs and load management programs. This is a full life cycle analysis process with rigorous characterization of capital costs, operating costs, direct energy and fuel use and features. Operation impacts are considered to a substantial extent. For supply (generation) resources limited consideration is made of some manufacturing impacts and disposal costs.

---

<sup>13</sup> "Life cycle costs" are defined in HRS § 196-11, as "the sum of the present values of investment costs, capital costs, installation costs, energy costs, operating costs, maintenance costs, and disposal costs, over the lifetime for the project, product, or measure."

<sup>14</sup> The "Lead-by-Example" program is administered (with several dedicated agency staff positions) by DBEDT to promote the 2006 requirements in HRS § 196-9, regarding measures to promote energy efficiency in the acquisition of state facilities.

In the future, greenhouse gas emissions will have to be considered if the State hopes to meet its reduction goals.<sup>15</sup> Greenhouse gas emissions have not been considered in any explicit way in Hawai'i's classic or improved asset acquisition processes. Some tabulation and consideration of greenhouse gas emissions are considered in the IRP process but additional refinements will probably be necessary.

Disposal of assets after their useful life is an important consideration that is not often addressed directly in resource acquisition. The need for special disposal methods could be explicitly considered along with development and funding of mitigation methods.<sup>16</sup>

## **B. GOVERNMENT AS A SOURCE OF FINANCING**

The state and county governments provide financing for private sector projects and projects implemented jointly by government and private entities. These projects include housing, commercial developments, infrastructure, urban renewal, agricultural improvements and public utility facilities. Governments can provide financing by several means: by issuing or guaranteeing bonds or loans, by directly financing projects, or by providing financial incentives.<sup>17</sup>

Hawai'i's laws concerning the financing of government and private sector projects do not provide outright barriers to the implementation of energy efficiency and renewable energy resources. There are, however, several ways that existing laws discourage, fail to provide for or could better encourage energy efficiency implementation in projects financed by the state and county governments.

The laws providing for public funding affect energy use and resource development in several ways. Government financing is provided according to conditions specified by law. The relevant laws specify requirements regarding what types of projects qualify for funding and for what types of uses funding can be applied. These conditions provide both potential obstacles and potential means by which government financing can be used to promote energy efficiency and renewable energy resources.

To the extent that provisions preclude the use of funds for energy efficiency improvements they can present an obstacle. This happens in some cases where the allowed uses of funds are explicitly listed but omit and therefore exclude energy efficiency or renewable resource components.

To the extent that conditions specifically allow or require consideration or implementation of energy efficiency or renewable technologies they present progressive opportunities.

### **GOVERNMENT PROJECT FINANCING**

Several chapters of the Hawai'i Revised Statutes that provide state and/or county financing of private and joint public and private projects are listed below:

---

<sup>15</sup> Act 234 adopted by the 2007 Legislature requires that Hawai'i reduce its greenhouse gas emissions to 1990 levels by the year 2020.

<sup>16</sup> This is true for energy efficiency technologies as well as large scale projects. For example, fluorescent light bulbs are energy efficient but contain small amounts of mercury which should require methods and protocols for proper disposal.

<sup>17</sup> The provision of tax credits could also be considered a method of government financing. Tax credits are discussed separately in the following section of this report.

- HRS § 46-80 Improvement by Assessment; Financing
- HRS § 53 Urban Renewal Law
- HRS § 155 Agricultural Loans
- HRS § 163D Agribusiness Development Corporations
- HRS § 201H Hawai'i Finance and Development Corporation
- HRS § 206E Hawai'i Community Development Authority
- HRS § 207 Mortgage Loans
- HRS § 356D Hawai'i Public Housing Authority

Each of these sections provides authority for the State and/or individual counties to provide or support financing for projects that consume energy.<sup>18</sup> Each section includes provisions that define conditions of project eligibility and the scope of the types of improvements for which financed funds may be used. Several of these laws present obstacles or miss obvious opportunities to promote energy efficiency measures:

- None of these sections provides guidelines or requirements to consider the long term energy consumption and other operating costs of the financed projects.
- None of these sections requires implementation of cost effective energy efficiency measures.
- HRS § 155 Agricultural Loans provides a list of specific allowed uses for loan funds. The list of permitted uses omits energy efficiency, water pumping efficiency or renewable energy generation improvements.
- HRS § 201H - Hawai'i Finance and Development Corporation and HRS § 206E - Hawai'i Community Development Authority both provide specific lists of desired housing amenities but do not provide guidance or requirements to consider energy costs, ongoing maintenance costs or energy efficiency measures in the financed housing buildings.

For the sections above that are intended to provide affordable housing for low income residents, it is an especially poignant omission to neglect any consideration of long term housing energy costs. As discussed above, there is a general tendency in project budgeting and design to focus primarily on capital and implementation costs at the expense of improvements that reduce long term energy use and operating costs.<sup>19</sup> For low income residents financing is especially important to provide access to capital to invest in energy efficiency improvements that will save money in the long run. Where government agencies or private sector developers are trying make projects affordable there is an exaggerated focus on minimizing up-front capital and installation costs. In these circumstances it is especially important to **require** consideration or implementation of energy and cost saving amenities in order to make the resulting housing truly affordable to its intended beneficiaries.<sup>20</sup>

---

<sup>18</sup> In some cases provisions in the county codes explicitly recite and implement the financing authority provided by these sections, particularly HRS § 46. The county codes do not provide any further guidance or requirements, beyond what is provided in the Hawai'i Revised Statutes, to consider energy costs, operating costs or energy efficiency measures.

<sup>19</sup> See discussion starting at page 5

<sup>20</sup> The existing provisions in Hawai'i's laws tend to exacerbate rather than mitigate this tendency. Hawai'i County Code Chapter 11, Article 1-Affordable Housing and Maui County Code Section 2.96 - Residential Workforce Housing Policy, for example, are two sections of law specifically intended to promote affordable housing. Both of these sections define affordability in terms of purchase price without any consideration of energy or other operating

The language of all of these sections of Hawai'i law (as well as the corresponding administrative rules and county recitations of the authority provided by these sections) could be amended to require consideration and/or implementation of cost effective energy efficiency measures. This would only further the purposes and effectiveness of these sections with little or no resulting compromises.

## **SPECIAL PURPOSE REVENUE BONDS**

Hawai'i provides financing for specific projects by issuing tax exempt Special Purpose Revenue Bonds (SPRB's). SPRB's can lower costs for projects by providing financing at lower interest rates than most conventional debt instruments. SPRB's have been used extensively by the State's electric energy utilities to finance construction of utility assets including construction of power plants.<sup>21</sup> SPRB's have been approved to finance private sector renewable energy projects.

### **SPRB'S FOR ENERGY EFFICIENCY FINANCING**

Energy efficiency improvements are particularly capital intensive. The cost and availability of financing is an important consideration in the cost, viability and extent of implementation of energy efficiency investments.

Financing is a particularly important component to make energy efficiency measures practical for several sectors of Hawai'i's residences and businesses. The Demand Side Management programs implemented by the electric utilities in Hawai'i for the last decade have relied primarily upon rebate programs. These programs provide monetary rebates to utility customers who implement specific energy efficiency measures. Since the rebates cover only part of the costs of the energy efficiency measures, participation in most of the utility programs requires a financial investment on the part of the potential program participant. For many low income customers and for the 45% of Hawai'i residents who live in rented housing the rebate programs are not commensurately effective in encouraging expenditures on energy efficiency investments.

HRS § 39A - Special Purpose Revenue Bonds provides a list of approved types of eligible projects. Energy efficiency investments are not included and do not fall within the scope of eligible projects. Extending the availability of SPRB's to include energy efficiency investments could provide a cost-effective means to provide financing for large scale implementation by Hawai'i government agencies, private enterprises or potentially for the Hawai'i Public Benefit Fund Administrator.<sup>22</sup>

## **C. GOVERNMENT REGULATION**

One fundamental role of government is the establishment of laws and regulations that to some degree limit what is allowed by individuals and corporate entities. In this broad role the state and county governments provide several types of regulations that affect the use and production of energy. These include the regulation of public utilities, permitting codes and requirements for buildings and power production facilities, and land use planning regulations.

---

costs. Neither section requires consideration of energy efficiency measures or solar water heating.

<sup>21</sup> An explicit provision of HRS § 39A-Special Purpose Revenue Bonds provides that SPRB's for fossil fueled power plant projects must be specifically approved by the Legislature.

<sup>22</sup> HRS § 269-121, et seq., provides authority to the Public Utilities Commission to establish a Public Benefits Fund (fund) and appoint a fund administrator. In Docket No. 05-0069 the Commission determined that it would establish a fund and appoint an administrator to implement the energy efficiency programs for the electric utilities on the Islands of O'ahu, Maui, Moloka'i, Lana'i and Hawai'i. On September 26, 2007 the Commission opened Docket No. 2007-0323 to establish the fund and select an administrator.

## **REGULATION OF PUBLIC UTILITIES**

Public energy utilities, including the electric and some gas utilities, are regulated by the Hawai'i Public Utilities Commission. The role of government in regulation of public energy utilities is the subject of a previous study by the Hawai'i Energy Policy Forum: *Hawai'i Energy Utility Regulation and Taxation*, July 2003. The substance of the previous study will not be repeated here.

## **BUILDING CODES**

One important way that government regulates how energy is used is through provisions in county building energy codes. Each county in Hawai'i implements energy codes.

There are several challenges in implementing effective energy building codes in Hawai'i but these are not obstacles and are addressed in the design and implementation of the building codes:

- Hawai'i's climate is different than most of the country. Many provisions of mainland building codes that address the efficiency of building space heating are not applicable in Hawai'i.
- Each of Hawai'i's islands has diverse microclimates. Windward, leeward, lowland and upland areas have different climates.
- Air conditioned buildings have different optimal building characteristics than buildings cooled by ventilation.

Figure 2 is a table showing the county energy codes that currently apply in Hawaii. Honolulu and Maui counties apply essentially the same energy codes. There are some differences in the codes applied by the Counties of Hawai'i and Kaua'i.

All of the counties have a code that applies to commercial buildings adopted from the codes published by the American Society of Space Heating, Refrigeration and Air Conditioning Engineers (ASHRAE). The counties have adopted the ASHRAE 90.1 code for commercial buildings. The County of Hawai'i has an older version of the ASHRAE 90.1 code that has less rigorous provisions for ventilation and cooling systems.

Honolulu and Maui counties require R-19 insulation in the roof for new construction of low-rise residential buildings. Hawai'i and Kaua'i counties require insulation only in buildings with air conditioning but also require R-11 insulation in the building "shell."

|                                 | County Energy Codes |                     |                            |                            |
|---------------------------------|---------------------|---------------------|----------------------------|----------------------------|
|                                 | Honolulu            | Maui                | Hawai'i                    | Kaua'i                     |
| <b>Commercial</b>               |                     |                     |                            |                            |
| <b>Buildings</b>                | ASHRAE 90.1<br>1999 | ASHRAE 90.1<br>1999 | ASHRAE 90.1<br>1989        | ASHRAE 90.1<br>1999        |
| <b>Manufacturing</b>            | None                | None                | None                       | None                       |
| <b>Low Rise Residential</b>     |                     |                     |                            |                            |
| <b>Applies Generally</b>        | R-19 in roof        | R-19 in roof        | None                       | None                       |
| <b>Applies W/Air Cond.</b>      | R-19 in roof        | R-19 in roof        | R-19 in roof<br>R-11 shell | R-19 in roof<br>R-11 shell |
| <b>Solar Hot Water Required</b> | No                  | No                  | No                         | No                         |

**Figure 3** County Energy Codes in Hawai'i

None of the counties currently require solar water heating as part of the energy code. Requirements for solar water heating were part of the recommendations in the Model Energy Code published by the Department of Business, Economic Development and Tourism in 1992.<sup>23</sup>

There may be merit in making the energy building codes of the counties uniform and consistent with one another. Uniformity could eliminate some confusion in applying different codes for each island and could simplify the administration of enforcement and supporting services. Updating the codes to the 2004 version of the ASHRAE standard would make the building codes consistent with baseline standards used in the LEED certification process and would increase the required efficiency for Hawaii buildings.<sup>24</sup>

An ongoing concern regarding the effectiveness of energy codes in Hawai'i is the adequacy of administration staff resources. In order for energy codes to be effective, sufficient county staff resources must be provided to review permit applications and enforce compliance. This remains an ongoing issue for all of the counties.

## **LAND USE PLANNING**

Land use patterns are an enormous factor in Hawai'i's transportation energy consumption. Where people work, where people live and the distances people need to travel to schools, commercial and recreational areas are the largest factors that drive ground transportation energy use. Ground transportation is a large component, comprising about one third of Hawai'i's total energy consumption.

It is not clear what level of priority the consideration of energy consumption should or will be applied to Hawai'i's land use planning processes. It is also not clear to what extent Hawai'i's land

<sup>23</sup> *Hawaii Model Energy Code, Energy Efficiency Standard for Buildings*, October 1992, prepared by Eley Associates.

<sup>24</sup> A DBEDT analysis estimates that a building built to the 2004 version of the ASHRAE standard would be about 9% more efficient than the 1999 and 1989 versions of the ASHRAE standard upon which the county building codes are currently based.

use processes will effectively control the powerful momentum of land use trends generally. It is clear, however, that if Hawai'i is going to meet its long range greenhouse gas emission reduction targets, addressing energy use in the ground transportation sector will have to play a significant part. Land use planning is one of several potential approaches to address ground transportation energy use.<sup>25</sup>

Land use planning is a form of regulation that supports the collective general public welfare by limiting what individual landowners are allowed to do. Land use planning could potentially affect energy use in several ways. These include preserving corridors for future mass transit options and by reducing future transportation needs by reducing sprawl and providing for efficient mixed use zoning.

Land use planning in Hawai'i includes both state and county regulation. Multiple layers of land use planning jurisdiction and regulations apply, including:<sup>26</sup>

- State Land Use Boundaries
- State Enterprise Zones
- County General Plans
- County Island, Regional and Community Plans
- County Zoning Ordinance
- County Subdivision Ordinances
- County Project Designations (public facilities and private developments)
- County Development Plans

Land use planning provisions are primarily implemented by the counties. There are substantial differences in the implementation and administration of land use planning between the counties. No attempt will be made here to sort out the various layers of planning jurisdiction or to describe differences in the implementations by the counties except to note that the primary venues for implementing the approaches listed below are the individual county land use planning processes.

#### MASS TRANSIT CORRIDORS

The primary existing ground transportation method is the passenger motor vehicle. Ubiquitous, inefficient and beloved, cars and pickup trucks are the preferred form of transportation for most Hawai'i residents and visitors.

Public transit systems offer a promising alternative. The cost of implementing effective public transit systems is a substantial obstacle that could be substantially reduced by planning and maintaining mass transit corridors to economically preserve the extensive required rights of way. The substantial costs of acquiring the land necessary to install a light rail system in Honolulu should be a lesson to planners on all of the islands regarding the value of establishing and preserving corridors as early as possible in long range plans.

---

<sup>25</sup> See the discussion of the ground transportation energy sector starting at page 21.

<sup>26</sup> The county plans and ordinances listed below are referred to with terminology that differs between counties.

## MIXED RESIDENTIAL AND COMMERCIAL ZONING

Providing efficient mixed residential and commercial zoning reduces the distance people need to travel. This has several benefits that are increasingly recognized by urban planners. One important benefit is reduced energy consumption used in ground transportation. Existing zoning ordinances do not explicitly provide for or encourage mixed residential and commercial zoning.

## URBAN GROWTH BOUNDARIES

Establishing urban growth boundaries is one approach to reducing the “sprawl” of ever-more distant suburbs which require ever-increasing commuting distances.

## **STREET LIGHTING REQUIREMENTS**

Street lighting provides important benefits by providing well lit streets and sidewalks for motorists and pedestrians. It also has some disadvantages. Street lighting consumes energy and is a cost to county taxpayers.<sup>27</sup> Street lighting also causes “light pollution” that is detrimental to the qualities of the night sky that make Hawai`i an important center for astronomical observation and poses a threat to Hawai`i’s endangered seabird species.

Low pressure sodium vapor lighting consumes less energy than other sources and produces monochrome light that is recognizable by its characteristic yellow-orange color. The monochrome nature of the light is an advantage to astronomers because, unlike broad spectrum “white” lighting, the specific frequencies of light produced can be effectively filtered from the night sky. Monochrome light does have the disadvantage of substantially poor color rendition.<sup>28</sup>

County laws require street lighting to be installed in new subdivisions and in some cases provide certain specifications regarding the type of light and fixtures that must be used. Hawai`i County has unique, more rigorous standards that limit the type and placement of all outdoor lighting and fixtures and prohibits most outdoor lighting after 11:00 PM.

Although street lighting has important advantages, it may not be necessary or desirable in all circumstances. In many rural areas, for example, street lighting is not necessarily needed.

The Revised Ordinances of Honolulu and Maui County Code require installation of street lights in all new subdivisions without exception.<sup>29</sup> These requirements could be considered obstacles to implementing energy efficient practices because they require installation of street lighting in all circumstances without consideration of the need in particular circumstances.

The Counties of Hawai`i and Kaua`i do not require street lighting in all new subdivisions.

Hawai`i County has several progressive provisions regarding outdoor lighting generally that apply to commercial outdoor lighting as well as municipal street lighting. These provisions prohibit

---

<sup>27</sup> Street lighting consumes about one half of one percent of the electrical energy produced in Hawai`i and costs Hawai`i’s counties (collectively) about ten million dollars per year.

<sup>28</sup> The poor color rendition of low pressure sodium light has been identified as problematic for law enforcement officers in identifying vehicles, suspects and blood at night.

<sup>29</sup> Revised Ordinances of Honolulu, Chapter 22. Subdivision of Land, Section 2. Street Lights and Maui County Code, Title 18. Subdivisions, Section 18.20. Improvements. The Revised Ordinances of Honolulu provide street light efficiency standards in a separate section and follow national criteria for roadway lighting (IESNA., Illuminating Engineering Society of North America).

mercury vapor lighting, require low pressure sodium fixtures for area lighting, require shielding of light fixtures and limit hours of operation.<sup>30</sup>

## **REGULATORY / PERMITTING REQUIREMENTS FOR RENEWABLE ENERGY RESOURCES**

Commercial scale renewable energy production projects are subject to a spectrum of environmental and land use regulatory and permitting requirements. These requirements are sometimes characterized as an obstacle to the development of renewable energy resources.

It is well recognized that renewable energy projects do have environmental and socioeconomic impacts. Although most renewable project developers can be heard to complain, at least occasionally, that the list of permitting and regulatory requirements is "burdensome," few seriously claim that the regulatory requirements are unwarranted. Most renewable energy project developers, like developers of other projects, are aware of and accept the need for regulation, permits and environmental protection generally.<sup>31</sup>

Typically, there are other hurdles that exist for most renewable energy projects in Hawai'i that are more formidable than those posed by governmental regulations. These include acquisition or leasing of land, obtaining sufficient project financing and negotiating necessary power purchase agreements. To the extent that government agencies are or could become involved in addressing each of these hurdles, these are potential opportunities for government to encourage renewable energy resource development.<sup>32</sup>

Although there are sound reasons for regulations and permitting, they nevertheless could pose obstacles to renewable energy project development to the extent that they include provisions that specifically preclude certain aspects of renewable technologies or, collectively, pose a regulatory burden that is prohibitive.

Simplifying the permitting process for renewable energy projects and/or giving renewable energy developers some expediting advantages are ways to encourage renewable energy projects. Existing Hawai'i law does provide a streamlined permitting process for geothermal resources.<sup>33</sup> Several further expediting measures were previously identified and discussed (but not necessarily recommended) in a previous report prepared for the Forum<sup>34</sup>:

- Creation of an Energy Facilities Siting Council
- Implementation of more explicit and substantial procedures to consider the advantages of renewable generation technologies in utility Integrated Resource Planning
- Establishment of Wind Resource Development Subzones

---

<sup>30</sup> Hawai'i County Code, Chapter 14. General Welfare, Article 9. Outdoor Lighting

<sup>31</sup> These conclusions are based on several discussions with renewable project developers and presentations made to the Forum by renewable project developers.

<sup>32</sup> The roles that government agencies play with respect to these hurdles are discussed elsewhere. See the discussion of government financing of non-government projects starting at page 12. Issues regarding negotiation of power purchase agreements are addressed in a previous study prepared for the Forum: *Hawai'i Energy Utility Regulation and Taxation*, July 2003.

<sup>33</sup> HRS § 196D - Geothermal and Cable System Development.

<sup>34</sup> *Hawai'i Energy Utility Regulation and Taxation*, July 2003.

## D. TAXATION

Taxes on energy and fuels create powerful incentives to Hawai'i's energy consumers and producers. Hawai'i's taxes and tax structure do not pose an obstacle to the implementation of energy efficiency or renewable energy resources. Indeed, Hawai'i's tax structure is fairly progressive in this regard:

- Most generally, taxes on any commodity make it more expensive and thus tend to discourage consumption. In this respect the taxes on energy and energy services function to discourage energy use and promote efficiency.
- The structure of taxes affects how taxes create incentives more specifically. For example, Hawai'i indexes its taxes on motor vehicles primarily on fuel use and vehicle weight. This is progressive in the sense that the tax structure tends to encourage lighter vehicles and discourage fuel use proportionately.
- Several tax credits are used to encourage specific energy efficiency and renewable energy resource measures. In this way, Hawai'i uses tax structure directly as an incentive to promote specific technologies.

Although Hawai'i's tax structure is fairly progressive, further changes to the tax structure could more aggressively promote energy efficiency and renewable energy resources.

- A higher proportion of state and county taxes could be shifted to taxes on energy and fuels.
- Taxes could be indexed more directly on aspects of energy use to provide stronger or more targeted incentives. (See discussion of motor vehicle taxes and public utility taxes below.)
- Further tax credits could be established promote energy efficiency and renewable energy resources.

Each of these tax structure strategies should be implemented only after careful consideration. Tax reforms generally are a sensitive subject politically, can have broad economic impacts and must address details regarding the logistics of implementation as well as ongoing administration.

Some tax measures could be implemented so as to be "revenue neutral" resulting in no substantial increase or decrease in total net taxes. Two specific potentially revenue-neutral measures that have been given some previous consideration for Hawai'i are outlined below.

### **MOTOR VEHICLE "FEEBATE" REGISTRATION FEES**

Vehicle registration fees could be structured to further encourage light weight fuel efficient motor vehicles. A "feebate" proposal has been considered for Hawai'i that would tax heavier vehicles to subsidize lighter vehicles. A feebate mechanism for Hawai'i was analyzed and presented in substantial detail in a study prepared for the Forum by Rocky Mountain Institute in 2003, *Reducing Hawai'i's Energy Demand Through Increased Efficiency*.<sup>35</sup> A feebate proposal was subsequently proposed to the Hawai'i Legislature but was not adopted.

---

<sup>35</sup> The RMI proposal included consideration of a portfolio of measures to promote adoption of hybrid vehicles including (1) feebates, (2) scrappage incentives (to encourage removing inefficient vehicles from Hawai'i's fleet), (3) tax credits and (4) allocation of insurance and other fees to "pay at the pump" fees (to reallocate fixed vehicle operation costs to be variable costs directly proportional to fuel use).

## TAXING CARBON RATHER THAN REVENUES

Taxes on electric utilities that are currently indexed on utility revenues could be indexed instead on the carbon content of source fuels or on carbon emissions. This change in tax structure could be implemented to be "revenue neutral" so that the total amount of tax collected would be approximately unchanged.

A discussion and analysis of a revenue neutral approach indexing existing electric utility revenue taxes on carbon emissions was presented in a previous study prepared for the Forum.<sup>36</sup> Implementation of this tax structure would provide an advantage to non-fossil fuel resources of approximately one cent per kilowatt-hour.

## E. TRANSPORTATION

Most of the energy consumed in the State of Hawai'i is for transportation.<sup>37</sup> If Hawai'i is going to successfully address its greenhouse gas reduction objectives, transportation energy use must be addressed.

State and county laws pertain primarily to ground transportation. Although air and marine transportation represents a substantial portion of Hawai'i's energy use, there are few options available to the State and counties to affect air transportation energy use.

Hawai'i's laws and practices affect and could potentially reduce energy consumption in the transportation sector in several ways:

- **MOTOR VEHICLE EFFICIENCY.**
  - **GOVERNMENT FLEET PROCUREMENT.** State and county governments operate fleets of vehicles. The efficiency and operating protocols for public vehicles are important factors in energy consumption. (See discussion on page 8.)
  - **USE OF ALTERNATIVE FUELS.** Use of ethanol, biodiesel or other renewable fuels could reduce petroleum use.
  - **MOTOR VEHICLE TAXES.** Taxes on vehicle fuels and fees for vehicle registration are used to allocate public transportation costs directly on transportation users. These taxes and fees are also an opportunity to provide incentives promoting the use of lighter weight (more efficient) vehicles. (See discussion starting at page 20.)
  - **TIRE INFLATION.** Proper inflation of tires on motor vehicles reduces fuel consumption. Maintaining proper inflation requires attention, however, due to normal inevitable leakage. Many motor vehicles typically operate with under-inflated tires. An increase of two percent mileage efficiency has been estimated with properly inflated tires.<sup>38</sup> Proper tire inflation could be encouraged by requiring

---

<sup>36</sup> *Hawai'i Energy Utility Regulation and Taxation*, July 2003.

<sup>37</sup> Hawai'i Energy Strategy 2007 Project: Ground, marine and air transportation energy use accounts for more than half of Hawai'i's current total energy use.

<sup>38</sup> Per study prepared for the Forum by Rocky Mountain Institute: *Reducing Hawai'i's Energy Demand Through Increased Efficiency*, November 2003.

gasoline stations to maintain tire inflation equipment and make the equipment and/or tire inflation services available to customers.<sup>39</sup>

- **TRAFFIC SIGNAL TIMING.** Effective coordinated timing of traffic signals can increase the efficiency of motor vehicle operation (in terms of both time and energy) in urban areas. There are no specific provisions in Hawai'i laws requiring analysis, consideration or installation of coordinated timing of traffic signals.<sup>40</sup> Although not required by law, some traffic signals are timed in Honolulu.
- **MOTOR VEHICLE RIDERSHIP**
  - **CAR AND VAN POOLING PROGRAMS.** Car and van pooling programs could encourage increased use of each passenger vehicle and reduce total vehicle use and fuel consumption.
  - **SUBSIDIZED DOWNTOWN PARKING.** Provision of subsidized downtown parking in Honolulu currently promotes inefficient use of automobile transportation and discourages the use of public transportation and/or car pooling. Access to subsidized downtown parking could be phased out or could be made contingent upon participation in car or van pooling programs.
- **GROUND TRANSPORTATION COMMUTING PATTERNS**
  - **SUPPORT FOR AND IMPLEMENTATION OF PUBLIC TRANSIT.** A predominant use of energy in Hawai'i is fuel for passenger motor vehicles that often carry single passengers. Providing effective public mass transit opportunities could significantly reduce vehicle operation and fuel use. Effective measures include support for existing bus systems, provision of additional bus services and light rail or other mass transit systems.
  - **ACCOMMODATIONS FOR BICYCLE USE.** Providing effective improved routes, lanes and parking racks for bicycles could encourage use of bicycles for personal transportation and reduce motor vehicle and fuel use.
  - **LAND USE PLANNING.** State and county land use planning affects the amount of transportation of people and goods that is necessary as well as the viability of public mass transit options. (See discussion starting at page 16.)
    - Planning for mass transit corridors could encourage efficient public transportation options by reducing the costs and optimizing the location of transit options.
    - Planning and zoning that allows for and encourages mixed residential and appropriate commercial uses could reduce transportation needs.
    - Establishing effective urban growth boundaries could reduce sprawl and reduce transportation needs.

---

<sup>39</sup> HRS § 486H - Gasoline Dealers provides regulations addressing retail motor vehicle fuel distribution but does not require maintenance or provision of tire inflation equipment.

<sup>40</sup> Provisions addressing traffic signals are included in state statutes and county codes: HRS § 291C - Statewide Traffic Code; Kaua'i Code Chapter 16 Article 4 - Traffic Control Devices; Maui Code Section 10.28 - Traffic Control Devices; Hawai'i County Code Chapter 24- Vehicles and Traffic; Honolulu County Code Chapter 15 Section 6 - Traffic Control Devices.

## **APPENDIX - Spreadsheet Matrix Tabulation of Hawai'i Revised Statutes and County Codes**

This project incorporated an overview of all of the Hawai'i Revised Statutes and County Codes. Detailed tables of contents of each of these bodies of law were compiled and reviewed to determine which sections might have direct or indirect effects on the use, production, taxation or regulation of energy. Each of the identified sections were examined to determine whether they posed obstacles to the implementation of energy efficiency or renewable energy resources. In those areas where administrative rules are applicable these were also examined.

Spreadsheets were developed that document each section of Hawai'i's laws, identify which sections were examined in some depth and provide brief comments regarding the findings for applicable sections. These spreadsheets are included as a separate appendix to the report.

The County Code of the County of Kaua'i is not available in electronic format. Documentation of the review of Kaua'i's laws at the end of this appendix is not in spreadsheet format.

## **ATTACHMENT - Abbreviated Matrix Tabulation of Hawai'i Revised Statutes**

A partial version of the spreadsheet tabulation of the Hawai'i Revised Statutes is attached. The full version is included in the Appendix.

| Hawaii Revised Statutes - Table of Contents |                |   | Energy Impacts | Review Notes  | Issues Opportunities  |
|---|----------------|---|----------------|---|---|
| <b>DIVISION 1.</b>                          | <b>Chapter</b> | <b>GOVERNMENT</b>   |                |   |   |
| TITLE 1.                                    |                | GENERAL PROVISIONS  |                |   |   |
| TITLE 2.                                    |                | ELECTIONS   |                |   |   |
| TITLE 3.                                    |                | LEGISLATURE   |                |   |   |
|   | 21F            | Legislative Fiscal and Budget Analysis                      | x              | Establishes agency: Office of the Legislative Analyst to provide legislature with information regarding fiscal and budget impacts. Defines purposes and required considerations for legislative analyst that would allow but do not require consideration of life cycle costing.      | There are no explicit requirements that would require analysis of energy efficiency or renewable energy impacts or opportunities.   |
| TITLE 4.                                    |                | STATE ORGANIZATION AND ADMINISTRATION, GENERALLY            |                |   |   |
| TITLE 5.                                    | 37             | STATE FINANCIAL ADMINISTRATION<br>Budget                    | x              | Section 37-64 requires the "full costs" including operating costs to be identified for all programs.  | Costs are required to be identified for the year of actual expenditure but there is no requirement for analysis of "life cycle costs or identification of operating costs over the life of the program.   |
|   | 37             | Budget  |                | Requires a six-year budget and fiscal plan that identifies full costs including operation costs and identifying "The full cost implications of the recommended programs, by cost categories and cost elements" for each program at the "lowest level of the state program structure." | "Full cost implications" identified in the six year plan do not explicitly include identification or consideration of life cycle costs or costs beyond the six year plan timeframe. The budget includes identification, consideration and approval of costs for a two year time frame. Life cycle costs are not identified for capital improvements.  |
|   | 39A            | Special Purpose Revenue Bonds                               | x              | Provides for tax exempt revenue bonds issued by the state for specific purposes in the public interest. Approved purposes include energy generation facilities but exclude fossil fueled generation facilities unless specific projects are approved by the Legislature.              | Approved purposes include renewable generation projects but do not include energy efficiency projects. Energy efficiency improvements are capital intensive and are promoted by state policy to meet the similar objectives as energy generation facilities (maintenance of a sufficient supply of reliable, economical energy to meet public needs). SPRB's could provide a source of economical funding for energy efficiency programs if these were identified as approved purposes. |
| TITLE 6.                                    | 53             | COUNTY ORGANIZATION AND ADMINISTRATION<br>Urban Renewal Law | x              | Provisions do not present significant obstacles.  | Provisions for capital investments in building reconstruction could require explicit consideration of energy efficient practices and life cycle cost assessment.  |
|   | 56             | Public Off-Street Parking Facilities                        | x              |   | Explicit provisions or incentives could be established to encourage use of carpools and/or public transportation rather than facilitating expanded use of automobiles for single passenger transportation.  |

## Hawaii Revised Statutes - Table of Contents

|           | Chapter |  | Energy Impacts | Review Notes   | Issues Opportunities  |
|-----------|---------|--|----------------|--|---|
| TITLE 7.  |         | PUBLIC OFFICERS AND EMPLOYEES                      |                |  |   |
| TITLE 8.  |         | PUBLIC PROCEEDINGS AND RECORDS                     |                |  |   |
| TITLE 9.  |         | PUBLIC PROPERTY, PURCHASING AND CONTRACTING        |                |  |   |
|           | 109     | Stadiums and Recreational Facilities               | x              |  | There are no provisions addressing energy management or efficiency.   |
| TITLE 10. |         | PUBLIC SAFETY AND INTERNAL SECURITY                |                |  |   |
| TITLE 11. |         | AGRICULTURE AND ANIMALS                            |                |  |   |
|           | 155     | Agricultural Loans                                 | x              | Provides for loans and loan guarantees for agricultural purposes. Specific purposes are listed for each of several loan classes.   | Energy efficiency improvement projects are not identified as an approved purpose for any class of loan.   |
|           | 163D    | Agribusiness Development Corporation               | x              | Creates a corporation to promote agricultural activities to most effectively utilize resources made available by transition from decreasing sugar cane and pineapple production. Biofuel crops are not explicitly listed in the definition of agricultural activities but could be included in general applications of the definition. Provides for an agriculture development plan and inventories of available agricultural resources. | Consideration of biofuel crops is not explicitly listed, encouraged or required.  |
| TITLE 12. |         | CONSERVATION AND RESOURCES                         |                |  |   |
|           |         |  |                | §196-19 Life-cycle cost analysis   | Provides a general requirement for agencies to use life cycle analysis in making decisions about procurement but does not provide specific standards or procedures and does not identify specific agency duties.                              |
| TITLE 13. |         | PLANNING AND ECONOMIC DEVELOPMENT                  |                |  |   |
|           | 201H    | Hawaii Housing Finance and Development Corporation | x              | Establishes a corporation to provide counseling, financial assistance and development of housing opportunities including programs for low income and first owners.   | Provides specific list of desired housing amenities but does not provide specific guidance or requirements to consider life cycle housing costs or investments in energy efficiency measures in housing buildings.                            |
|           | 206E    | Hawaii Community Development Authority             | x              | Establishes a community development authority to designate community development districts and develop public projects including residential housing projects.   | Provides specific list of desired housing amenities but does not provide specific guidance or requirements to consider life cycle housing costs or investments in energy efficiency measures in housing buildings.                            |
|           | 207     | Mortgage Loans                                     | x              | Provides for mortgage loans to very low income buyers.   | Provides no consideration of life cycle housing costs or investments in energy efficiency measures.   |
| TITLE 14. |         | TAXATION   |                |  |   |
|           | 239     | Public Service Company Tax Law                     | x              | Levies a public service company tax on public service companies and public utilities to be paid to the counties in lieu of real property taxes.  | Basis of the tax is a percentage of revenues. The tax could be based on fossil fuel carbon for energy utilities to provide an incentive to use non fossil fueled energy sources. This could be implemented to be revenue neutral (initially). |

| Hawaii Revised Statutes - Table of Contents |         | Energy   | Review | Issues   |  |
|---|---------|--|--------|--|--|
|   | Chapter | Impacts  | Notes  | Opportunities  |  |
|   | 249     | County Vehicular Taxes   | x      | Vehicle taxes are based on vehicle weight. Determination of specific rates delegated to counties within certain parameters | Vehicle taxes could provide further incentives based on vehicle weight (such as a "feebate") to encourage fuel efficient vehicles and discourage large inefficient vehicles.                 |
|   | 251     | Rental Motor Vehicle and Tour Vehicle Surcharge Tax                    | x      |  | Vehicle taxes could provide further incentives based on vehicle weight (such as a "feebate") to encourage fuel efficient vehicles and discourage large inefficient vehicles.                 |
| TITLE 15.                                   |         | TRANSPORTATION AND UTILITIES   |        |  |  |
|   | 269     | Public Utilities Commission  | x      | Provisions addressed in previous separate study.   | Provisions could be developed and expanded for collecting information and public education regarding energy costs, efficiency measures and options provided by registered service providers. |
| TITLE 16.                                   |         | INTOXICATING LIQUOR  |        |  |  |
| TITLE 17.                                   |         | MOTOR AND OTHER VEHICLES   |        |  |  |
|   | 291C    | Statewide Traffic Code   | x      |  | Provisions could be made to encourage energy efficient measures such as timing of traffic signals to provide for efficient traffic flow and proper tire inflation.                           |
| TITLE 18.                                   |         | EDUCATION  |        |  |  |
| TITLE 19.                                   |         | HEALTH   |        |  |  |
|   | 340A    | Solid Waste  | x      |  | Provisions could be established to encourage or require more effective recycling and separation of waste stream materials.   |
| TITLE 20.                                   |         | SOCIAL SERVICES  |        |  |  |
|   | 356D    | Hawaii Public Housing Authority  | x      |  | Provides no consideration of life cycle housing costs or investments in energy efficiency measures.  |
| TITLE 21.                                   |         | LABOR AND INDUSTRIAL RELATIONS   |        |  |  |
| <b>DIVISION 2.</b>                          |         | <b>BUSINESS</b>  |        |  |  |
| TITLE 22.                                   |         | BANKS AND FINANCIAL INSTITUTIONS                                       |        |  |  |
| TITLE 23.                                   |         | CORPORATIONS AND PARTNERSHIPS  |        |  |  |
| TITLE 23A.                                  |         | OTHER BUSINESS ENTITIES]   |        |  |  |
| TITLE 24.                                   |         | INSURANCE  |        |  |  |
| TITLE 25.                                   |         | PROFESSIONS AND OCCUPATIONS  |        |  |  |
|   | 448E    | Electricians and Plumbers  | x      |  | Allows emergency repairs to plumbing fixtures by housing occupants but does requires liscensed plumber to replace inefficient fixtures with water saving replacements.                       |
|   | 464     | Professional Engineers, Architects, Surveyors and Landscape Architects | x      |  | Requires professional expertise but does not require education or experience in life cycle costing, energy use analysis or energy efficiency technologies.                                   |
| TITLE 25A.                                  |         | GENERAL BUSINESS PROVISIONS]   |        |  |  |

| Hawaii Revised Statutes - Table of Contents |  | Energy Impacts | Review Notes | Issues Opportunities   |
|---|--|----------------|--------------|--|
| TITLE 26.                                   | <b>Chapter</b><br>TRADE REGULATION AND PRACTICE      |                |              |  |
|   | 481L Motor Vehicle Lease Disclosure Act              | x              |              | Does not require identification of operation costs.  |
|   | 481M Lease-Purchase Agreements for Personal Property | x              |              | Does not require identification of operation costs.  |
|   | 486H Gasoline Dealers                                | x              |              | Does not require gasoline dealers to maintain adequate tire inflation equipment.   |
|   | 487 Consumer Protection                              | x              |              | Provisions could be developed and expanded for collecting information and public education regarding energy costs, efficiency measures and options provided by registered service providers. |
| TITLE 27.                                   | UNIFORM COMMERCIAL CODE                              |                |              |  |
| <b>DIVISION 3.</b>                          | <b>PROPERTY; FAMILY</b>                              |                |              |  |
| TITLE 28.                                   | PROPERTY   |                |              |  |
|   | 521 Residential Landlord-Tenant Code                 | x              |              | Provisions could be made to require landlords to provide information to prospective tenants regarding operating costs of premises including energy utility costs.                            |
| TITLE 29.                                   | DECEDENTS' ESTATES                                   |                |              |  |
| TITLE 30.                                   | GUARDIANS AND TRUSTEES                               |                |              |  |
| TITLE 30A.                                  | UNIFORM PROBATE CODE                                 |                |              |  |
| TITLE 31.                                   | FAMILY   |                |              |  |
| <b>DIVISION 4.</b>                          | <b>COURTS AND JUDICIAL PROCEEDINGS</b>               |                |              |  |
| TITLE 32.                                   | COURTS AND COURT OFFICERS                            |                |              |  |
| TITLE 33.                                   | EVIDENCE   |                |              |  |
| TITLE 34.                                   | PLEADINGS AND PROCEDURE                              |                |              |  |
| TITLE 35.                                   | APPEAL AND ERROR                                     |                |              |  |
| TITLE 36.                                   | CIVIL REMEDIES AND DEFENSES AND SPECIAL PROCEEDINGS  |                |              |  |
| <b>DIVISION 5.</b>                          | <b>CRIMES AND CRIMINAL PROCEEDINGS</b>               |                |              |  |
| TITLE 37.                                   | HAWAII PENAL CODE                                    |                |              |  |
| TITLE 38.                                   | PROCEDURAL AND SUPPLEMENTARY PROVISIONS              |                |              |  |



**Hawaii Revised Statutes - Table of Contents**

**Energy  
Impacts**

**Review  
Notes**

**Issues  
Opportunities**

|             |   |
|-------------|---|
| DIVISION 1. | Government  |
| Title 1.    | General Provisions                                  |
| Title 2.    | Elections   |
| Title 3.    | Legislature   |
| Title 4.    | State Organization And Administration, Generally    |
| Title 5.    | State Financial Administration                      |
| Title 6.    | County Organization And Administration              |
| Title 7.    | Public Officers And Employees                       |
| Title 8.    | Public Proceedings And Records                      |
| Title 9.    | Public Property, Purchasing And Contracting         |
| Title 10.   | Public Safety And Internal Security                 |
| Title 11.   | Agriculture And Animals                             |
| Title 12.   | Conservation And Resources                          |
| Title 13.   | Planning And Economic Development                   |
| Title 14.   | Taxation  |
| Title 15.   | Transportation And Utilities                        |
| Title 16.   | Intoxicating Liquor                                 |
| Title 17.   | Motor And Other Vehicles                            |
| Title 18.   | Education   |
| Title 19.   | Health  |
| Title 20.   | Social Services                                     |
| Title 21.   | Labor And Industrial Relations                      |
| DIVISION 2. | Business  |
| Title 22.   | Banks And Financial Institutions                    |
| Title 23.   | Corporations And Partnerships                       |
| Title 23a.  | Other Business Entities                             |
| Title 24.   | Insurance   |
| Title 25.   | Professions And Occupations                         |
| Title 26.   | Trade Regulation And Practice                       |
| Title 27.   | Uniform Commercial Code                             |
| DIVISION 3. | Property; Family                                    |
| Title 28.   | Property  |
| Title 29.   | Decedents' Estates                                  |
| Title 30.   | Guardians And Trustees                              |
| Title 30a.  | Uniform Probate Code                                |
| Title 31.   | Family  |
| DIVISION 4. | Courts And Judicial Proceedings                     |
| Title 32.   | Courts And Court Officers                           |
| Title 33.   | Evidence  |
| Title 34.   | Pleadings And Procedure                             |
| Title 35.   | Appeal And Error                                    |
| Title 36.   | Civil Remedies And Defenses And Special Proceedings |
| DIVISION 5. | Crimes And Criminal Proceedings                     |
| Title 37.   | Hawaii Penal Code                                   |
| Title 38.   | Procedural And Supplementary Provisions             |

|             |   |
|-------------|---|
| DIVISION 1. | GOVERNMENT                                |
| TITLE 1.    | GENERAL PROVISIONS                        |
| 1           | Common Law; Construction of Laws          |
| 2           | Statute Revision and Publication—Repealed |
| 3           | Uniformity of Legislation                 |
| 4           | Boundaries                                |
| 4E          | State Board on Geographic Names           |
| 5           | Emblems and Symbols                       |

| Hawaii Revised Statutes - Table of Contents |   | Energy Impacts | Review Notes   | Issues Opportunities  |
|---|---|----------------|--|---|
| 6   | Memorials--Repealed   |                |  |   |
| 6D  | Protection of Caves   |                |  |   |
| 6E  | Historic Preservation   |                |  |   |
| 6F  | Judiciary History Center  |                |  |   |
| 6K  | Kaho`olawe Island Reserve   |                |  |   |
| 7   | Miscellaneous Rights of the People  |                |  |   |
| 8   | Holidays  |                |  |   |
| 9   | Foundation on Culture and the Arts  |                |  |   |
| 9C  | Ethnic Studies--Repealed  |                |  |   |
| 10  | Office of Hawaiian Affairs  |                |  |   |
| <b>TITLE 2.</b>                             | <b>ELECTIONS</b>  |                |  |   |
| 11  | Elections, Generally  |                |  |   |
| 12  | Primary Elections   |                |  |   |
| 13  | Board of Education  |                |  |   |
| 13D   | Board of Trustees, Office of Hawaiian Affairs                               |                |  |   |
| 14  | Presidential Elections  |                |  |   |
| 15  | Absentee Voting   |                |  |   |
| 15A   | Voting by Mailing Ballot--Repealed  |                |  |   |
| 16  | Voting Systems  |                |  |   |
| 16A   | Uniform Act for Voting by New Residents in Presidential Elections--Repealed |                |  |   |
| 17  | Vacancies   |                |  |   |
| 18  | Districting--Repealed   |                |  |   |
| 19  | Election Offense  |                |  |   |
| <b>TITLE 3.</b>                             | <b>LEGISLATURE</b>  |                |  |   |
| 21  | Legislative Hearings and Procedure  |                |  |   |
| 21D   | Access/Legislative Information Service                                      |                |  |   |
| 21E   | Joint Legislative Management Committee                                      |                |  |   |
| 21F   | Legislative Fiscal and Budget Analysis                                      | x              | Establishes agency: Office of the Legislative Analyst to provide legislature with information regarding fiscal and budget impacts. Defines purposes and required considerations for legislative analyst that would allow but do not require consideration of life cycle costing. | There are no explicit requirements that would require analysis of energy efficiency or renewable energy impacts or opportunities.   |
| 21G   | Public Access   |                |  |   |
| 22  | Presiding Officers, Clerks, and Staff                                       |                |  |   |
| 23  | Auditor   |                |  |   |
| 23G   | Office of the Legislative Reference Bureau                                  |                |  |   |
| 24  | Allowance and Salary for Legislators  | x              | No significant applicable provisions.  |   |
| 25  | Reapportionment   |                |  |   |
| <b>TITLE 4.</b>                             | <b>STATE ORGANIZATION AND ADMINISTRATION, GENERALLY</b>                     |                |  |   |
| 26  | Executive and Administrative Departments                                    |                |  |   |
| 26H   | Hawaii Regulatory Licensing Reform Act                                      |                |  |   |
| 27  | State Functions and Responsibilities  |                |  |   |
| 27C   | State Information Service   |                |  |   |
| 28  | Attorney General  |                |  |   |
| 29  | Federal Aid   |                |  |   |
| 30  | Gubernatorial Transition  |                |  |   |
| <b>TITLE 5.</b>                             | <b>STATE FINANCIAL ADMINISTRATION</b>                                       |                |  |   |
| 36  | Management of State Funds   | x              | Provides for accountable management of state funds. Section 36-41 provides for Energy retrofit and performance contracting for public facilities.  |   |
| 37  | Budget  | x              | Section 37-64 requires the "full costs" including operating costs to be identified for all programs.   | Costs are required to be identified for the year of actual expenditure but there is no requirement for analysis of "life cycle costs or identification of operating costs over the life of the program. |

Hawaii Revised Statutes - Table of Contents

|             |  | Energy<br>Impacts | Review<br>Notes   | Issues<br>Opportunities   |
|-------------|--|-------------------|---|---|
|             |  |                   | Requires a six-year budget and fiscal plan that identifies full costs including operation costs and identifying "The full cost implications of the recommended programs, by cost categories and cost elements" for each program at the "lowest level of the state program structure." | "Full cost implications" identified in the six year plan do not explicitly include identification or consideration of life cycle costs or costs beyond the six year plan timeframe. The budget includes identification, consideration and approval of costs for at two year time frame. Life cycle costs are not identified for capital improvements.   |
| 37D         | Management of Financing Agreements   | x                 | Provisions do not present significant obstacles.  |   |
| 38          | Deposits of Public Funds   |                   |   |   |
| 39          | State Bonds  |                   |   |   |
| 39A         | Special Purpose Revenue Bonds  | x                 | Provides for tax exempt revenue bonds issued by the state for specific purposes in the public interest. Approved purposes include energy generation facilities but exclude fossil fueled generation facilities unless specific projects are approved by the Legislature.              | Approved purposes include renewable generation projects but do not include energy efficiency projects. Energy efficiency improvements are capital intensive and are promoted by state policy to meet the similar objectives as energy generation facilities (maintenance of a sufficient supply of reliable, economical energy to meet public needs). SPRB's could provide a source of economical funding for energy efficiency programs if these were identified as approved purposes. |
| 39B         | Allocation of Private Activity Bonds   |                   |   |   |
| 40          | Audit and Accounting   |                   |   |   |
| 41          | State Insurance Administration--Repealed   |                   |   |   |
| 41D         | State Risk Management and Insurance Administration                                       |                   |   |   |
| 42          | Grants, Subsidies, and Purchases of Service--Repealed                                    |                   |   |   |
| 42D         | Grants, Subsidies, and Purchases of Service--Repealed                                    |                   |   |   |
| 42F         | Grants and Subsidies   |                   |   |   |
| TITLE 6.    | COUNTY ORGANIZATION AND ADMINISTRATION   |                   |   |   |
| Subtitle 1. | Provisions Common to All Counties  |                   |   |   |
| 46          | General Provisions   |                   |   |   |
| 47          | County Bonds   | x                 | Provides for tax exempt bonds issued by Counties. Uses are not restricted to specific purposes and can include county financed renewable generation projects and energy efficiency programs (including revolving loan funds).   |   |
| 47C         | Indebtedness of the Counties, Exclusions from the Funded Debt, and Certification Thereof |                   |   |   |
| 48          | Economic Development Bonds   | x                 | No significant applicable provisions.   |   |
| 48E         | Political Subdivision Pollution Control Special Purpose Revenue Bonds                    | x                 | No significant applicable provisions.   |   |
| 49          | Revenue Bonds  | x                 | Provisions do not present significant obstacles.  |   |
| 50          | Charter Commissions  |                   |   |   |
| 51          | Mass Transit   | x                 | Provisions do not present significant obstacles.  |   |
| 51D         | Transit Capital Development Fund--Repealed   |                   |   |   |
| 52          | Police Departments--Repealed   |                   |   |   |
| 52D         | Police Departments   |                   |   |   |
| 53          | Urban Renewal Law  | x                 | Provisions do not present significant obstacles.  | Provisions for capital investments in building reconstruction could require explicit consideration of energy efficient practices and life cycle cost assessment.  |
| 54          | Water Systems  | x                 | Provisions do not present significant obstacles.  |   |
| 56          | Public Off-Street Parking Facilities   | x                 |   | Explicit provisions or incentives could be established to encourage use of carpools and/or public transportation rather than facilitating expanded use of automobiles for single passenger transportation.  |
| 57          | Urban and Regional Design--Repealed  |                   |   |   |
| 58          | Exceptional Trees  | x                 | Provisions do not present significant obstacles.  |   |
| Subtitle 2. | Government of Hawaii, Kauai, Maui  |                   |   |   |
| 61          | General Organization and Powers--Repealed  |                   |   |   |
| 62          | County Officers--Repealed  |                   |   |   |
| 63          | Election of Officers--Repealed   |                   |   |   |
| 64          | Provisions Specific for Hawaii--Repealed   |                   |   |   |
| 65          | Provisions Specific for Kauai--Repealed  |                   |   |   |

| Hawaii Revised Statutes - Table of Contents |  | Energy<br>Impacts | Review<br>Notes   | Issues<br>Opportunities |
|---|--|-------------------|---|-------------------------|
| 66  | Provisions Specific for Maui--Repealed   |                   |   |                         |
| 67  | Improvement by Assessment--Repealed  |                   |   |                         |
| Subtitle 3. Honolulu Government             |  |                   |   |                         |
| 70  | General Provisions Relating to Honolulu--Repealed  |                   |   |                         |
| 71  | Artesian Well Control--Repealed  |                   |   |                         |
| TITLE 7.                                    | PUBLIC OFFICERS AND EMPLOYEES  |                   |   |                         |
| 76  | Civil Service Law  | x                 | Provisions do not present significant obstacles.  |                         |
| 77  | Compensation Law--Repealed   |                   |   |                         |
| 78  | Public Service   | x                 | Provisions do not present significant obstacles.  |                         |
| 79  | Leaves of Absence--Repealed  |                   |   |                         |
| 80  | Hours of Work--Repealed  |                   |   |                         |
| 81  | In-Service Training Programs--Repealed   |                   |   |                         |
| 82  | Incentive and Service Awards--Repealed   |                   |   |                         |
| 83  | Temporary Intergovernmental Assignment of Public Employees--Repealed                             |                   |   |                         |
| 84  | Standards of Conduct   |                   |   |                         |
| 85  | Loyalty--Repealed  |                   |   |                         |
| 86  | Strikes Against the Government--Repealed   |                   |   |                         |
| 87  | Public Employees Health Fund--Repealed   |                   |   |                         |
| 87A   | Hawaii Employer-Union Health Benefits Trust Fund   |                   |   |                         |
| 87D   | Voluntary Employees' Beneficiary Association Trusts  |                   |   |                         |
| 88  | Pension and Retirement Systems   |                   |   |                         |
| 88D   | Tax Deferred Compensation Plans for Public Employees   |                   |   |                         |
| 88E   | Deferred Compensation Plan   |                   |   |                         |
| 88F   | Deferred Compensation Retirement Plan for Part-Time, Temporary, and Seasonal or Casual Employees |                   |   |                         |
| 89  | Collective Bargaining in Public Employment   |                   |   |                         |
| 89A   | Office of Collective Bargaining  |                   |   |                         |
| 89C   | Public Officers and Employees Excluded from Collective Bargaining                                |                   |   |                         |
| 90  | State Policy Concerning the Utilization of Volunteer Services                                    |                   |   |                         |
| 90D   | Commission for National and Community Service  |                   |   |                         |
| TITLE 8.                                    | PUBLIC PROCEEDINGS AND RECORDS   |                   |   |                         |
| 91  | Administrative Procedure   |                   |   |                         |
| 92  | Public Agency Meetings and Records   | x                 | Provisions do not present significant obstacles.  |                         |
| 92E   | Fair Information Practice (Confidentiality of Personal Record)--Repealed                         |                   |   |                         |
| 92F   | Uniform Information Practices Act (Modified)   |                   |   |                         |
| 93  | Government Publications  |                   |   |                         |
| 94  | Public Archives; Disposal of Records   |                   |   |                         |
| 95  | Destroying or Defacing Official Notices--Repealed  |                   |   |                         |
| 96  | The Ombudsman  |                   |   |                         |
| 97  | Lobbyists  |                   |   |                         |
| TITLE 9.                                    | PUBLIC PROPERTY, PURCHASING AND CONTRACTING  |                   |   |                         |
| 101   | Eminent Domain   |                   |   |                         |
| 102   | Concessions on Public Property   |                   |   |                         |
| 103   | Expenditure of Public Money and Public Contracts   | x                 | Provisions do not present significant obstacles.  |                         |
| 103D  | Hawaii Public Procurement Code   | x                 | Establishes procedures for state procurement of goods and services.   |                         |
|   |  |                   | Section 103D-302 regarding competitive sealed bidding practices explicitly allows consideration of life cycle costs in bid evaluation criteria.                         |                         |
|   |  |                   | Section 103D-303 regarding competitive sealed proposals allows consideration of non-price factors identified in an RFP but does not explicitly identify life cycle cost |                         |
|   |  |                   | §103D-410 Energy efficiency through life-cycle costing.   |                         |

| Hawaii Revised Statutes - Table of Contents |  | Energy                              | Review   | Issues  |
|---|--|-------------------------------------|--|---|
|   |  | Impacts                             | Notes  | Opportunities   |
|   |  | §103D-412 Energy-efficient vehicles |  |   |
| 103F  | Purchases of Health and Human Services                                 |                                     |  |   |
| 104   | Wages and Hours of Employees on Public Works                           |                                     |  |   |
| 105   | Government Motor Vehicles  | x                                   | No significant applicable provisions.            |   |
| 106   | Inventory, Accounting, and Disposal of Government Assets--<br>Repealed |                                     |  |   |
| 107   | Public Improvements  | x                                   | Provisions do not present significant obstacles. |   |
| 109   | Stadiums and Recreational Facilities                                   | x                                   |  | There are no provisions addressing energy management or efficiency. |
| 110   | State-Owned Cemeteries   |                                     |  |   |
| 111   | Assistance to Displaced Persons  |                                     |  |   |
| 113   | Land Acquisition Policies for Federally Assisted Programs              |                                     |  |   |
| 115   | Public Access to Coastal and Inland Recreational Areas                 |                                     |  |   |
| TITLE 10.                                   | PUBLIC SAFETY AND INTERNAL SECURITY                                    |                                     |  |   |
| 121   | Militia; National Guard  |                                     |  |   |
| 122   | Hawaii State Guard--Repealed   |                                     |  |   |
| 122A  | Hawaii State Defense Force   |                                     |  |   |
| 123   | Naval Militia  |                                     |  |   |
| 124   | Military Courts-Martial--Repealed                                      |                                     |  |   |
| 124   | A Hawaii Code of Military Justice                                      |                                     |  |   |
| 125   | Procurement and Control of Distribution of Necessary<br>Commodities    | x                                   | No significant applicable provisions.            |   |
| 125C  | Procurement, Control, Distribution and Sale of Petroleum<br>Products   | x                                   | Provisions do not present significant obstacles. |   |
| 126   | Federal Flood Insurance  |                                     |  |   |
| 127   | Disaster Relief  |                                     |  |   |
| 128   | Civil Defense and Emergency Act  |                                     |  |   |
| 128D  | Environmental Response Law   |                                     |  |   |
| 128E  | Hawaii Emergency Planning and Community Right-to-Know<br>Act           | x                                   | No significant applicable provisions.            |   |
| 128F  | Emergency Management Assistance Compact                                |                                     |  |   |
| 129   | Blackouts and Illumination Control--Repealed                           |                                     |  |   |
| 130   | Emergency Seat of Government   |                                     |  |   |
| 131   | Commission on Subversive Activities--Repealed                          |                                     |  |   |
| 132   | Fire Protection  |                                     |  |   |
| 132D  | Fireworks  |                                     |  |   |
| 133   | Combustibles--Repealed   |                                     |  |   |
| 134   | Firearms, Ammunition and Dangerous Weapons                             |                                     |  |   |
| 135   | Emergency Use of Private Real Property                                 |                                     |  |   |
| 136   | Laser Pointing Devices   |                                     |  |   |
| 137   | Search and Rescue Reimbursement Act                                    |                                     |  |   |
| 138   | Enhanced 911 Services for Mobile Phones                                |                                     |  |   |
| TITLE 11.                                   | AGRICULTURE AND ANIMALS  |                                     |  |   |
| 141   | Department of Agriculture  | x                                   | No significant applicable provisions.            |   |
| 142   | Animals, Brands, and Fences  |                                     |  |   |
| 143   | Animals: Licenses and Regulations                                      |                                     |  |   |
| 144   | Feed   |                                     |  |   |
| 145   | Regulation of Farm Produce   |                                     |  |   |
| 145D  | Donation of Food   |                                     |  |   |
| 146   | Slaughtering Operations and Slaughterhouses                            |                                     |  |   |
| 147   | Grades and Standards   |                                     |  |   |
| 148   | Advertising and Marketing  |                                     |  |   |
| 148D  | Aquaculture Advisory Council--Repealed                                 |                                     |  |   |
| 149   | Economic Poisons--Repealed   |                                     |  |   |
| 149   | A Hawaii Pesticides Law  |                                     |  |   |
| 150   | Seeds  |                                     |  |   |

**Hawaii Revised Statutes - Table of Contents**

**Energy  
Impacts**

**Review  
Notes**

**Issues  
Opportunities**

|                  |   |   |   |   |
|------------------|---|---|---|---|
| 150              | A Plant and Non-Domestic Animal Quarantine and Microorganism Import         |   |   |   |
| 151              | Weed Control--Repealed  |   |   |   |
| 152              | Noxious Weed Control  |   |   |   |
| 153              | Agricultural Products Program--Repealed                                     |   |   |   |
| 154              | Fruit and Nut Orchards--Repealed  |   |   |   |
| 155              | Agricultural Loans  | x | Provides for loans and loan guarantees for agricultural purposes. Specific purposes are listed for each of several loan classes.  | Energy efficiency improvement projects are not identified as an approved purpose for any class of loan. |
| 156              | Farm Advisory Board--Repealed   |   |   |   |
| 157              | Milk Control Act  |   |   |   |
| 159              | Hawaii Meat Inspection Act  |   |   |   |
| 161              | Poultry Inspection  |   |   |   |
| 163              | Marketing Orders and Agreements--Repealed                                   |   |   |   |
| 163D             | Agribusiness Development Corporation  | x | Creates a corporation to promote agricultural activities to most effectively utilize resources made available by transition from decreasing sugar and pineapple production. Biofuel crops are not explicitly listed in the definition of agricultural activities but could be included in general applications of the definition. Provides for an agriculture development plan and inventories of available agricultural resources. | Consideration of biofuel crops is not explicitly listed, encouraged or required.                        |
| 164              | Agriculture Coordinating Committee--Repealed                                |   |   |   |
| 165              | Hawaii Right to Farm Act  |   |   |   |
| 166              | Agricultural Parks  | x | No significant applicable provisions.   |   |
| 166E             | Non-Agricultural Park Lands   |   |   |   |
| 167              | Irrigation Water Development  | x | No significant applicable provisions.   |   |
| 168              | Irrigation and Water Utilization Projects                                   | x | No significant applicable provisions.   |   |
| <b>TITLE 12.</b> | <b>CONSERVATION AND RESOURCES</b>   |   |   |   |
|                  | <b>Subtitle 1. Public Lands</b>   |   |   |   |
| 171              | Public Lands, Management and Disposition of                                 |   |   |   |
| 172              | Land Commission Awards; Surveys   |   |   |   |
| 173              | Reclamation of Lands  |   |   |   |
| 173A             | Acquisition of Resource Value Lands   |   |   |   |
|                  | <b>Subtitle 2. Water and Land Development; Flood Control</b>                |   |   |   |
| 174              | Water and Land Development  | x | Provides extensive powers for the BLNR to develop land and water projects. Biofuel production projects are not explicitly identified but would seem to fall within BLNR's broad general powers.   |   |
| 174C             | State Water Code  | x | Provisions do not present significant obstacles.  |   |
| 175              | Molokai Irrigation and Water Utilization Project--Repealed                  |   |   |   |
| 176              | Water Resources--Repealed   |   |   |   |
| 176D             | Protection of Instream Uses of Water--Repealed                              |   |   |   |
| 177              | Ground-Water Use--Repealed  |   |   |   |
| 178              | Wells, Generally--Repealed  |   |   |   |
| 179              | Flood Control and Flood Water Conservation                                  |   |   |   |
| 179D             | Dams and Reservoirs   | x | No significant applicable provisions.   |   |
| 180              | Soil and Water Conservation Districts                                       |   |   |   |
| 180C             | Soil Erosion and Sediment Control   |   |   |   |
|                  | <b>Subtitle 3. Mining and Minerals</b>                                      |   |   |   |
| 181              | Strip Mining  |   |   |   |
| 182              | Reservation and Disposition of Government Mineral Rights                    |   |   |   |
|                  | <b>Subtitle 4. Forestry and Wildlife; Recreation Areas; Fire Protection</b> |   |   |   |
| 183              | Forest Reserves, Water Development, Zoning                                  |   |   |   |
| 183B             | Hawaiian Fishponds  |   |   |   |
| 183C             | Conservation District   |   |   |   |
| 183D             | Wildlife  |   |   |   |
| 184              | State Parks and Recreation Areas  |   |   |   |
| 185              | Land Fire Protection Law  |   |   |   |

| Hawaii Revised Statutes - Table of Contents    |   | Energy Impacts | Review Notes   | Issues Opportunities   |
|--|---|----------------|--|--|
| 186  | Tree Farms  |                |  |  |
| Subtitle 5. Aquatic Resources and Wildlife     |   |                |  |  |
| 187  | General Provisions Relating to Aquatic Resources and Wildlife--Repealed |                |  |  |
| 187A   | Aquatic Resources   |                |  |  |
| 188  | Fishing Rights and Regulations  |                |  |  |
| 188E   | Hawaii Fisheries Coordinating Council--Repealed                         |                |  |  |
| 188F   | West Hawaii Regional Fishery Management Area                            |                |  |  |
| 189  | Commercial Fishing  |                |  |  |
| 189G   | Aquaculture Advisory Council--Repealed                                  |                |  |  |
| 190  | Marine Life Conservation Program  |                |  |  |
| 190D   | Ocean and Submerged Lands Leasing                                       |                |  |  |
| 191  | Birds and Mammals--Repealed   |                |  |  |
| 192  | Shooting Preserves and Game Bird Farming--Repealed                      |                |  |  |
| Subtitle 6. General and Miscellaneous Programs |   |                |  |  |
| 193  | Conservation: Employment Programs                                       | x              | No significant applicable provisions.  |  |
| 194  | Invasive Species Council  |                |  |  |
| 195  | Natural Area Reserves System  |                |  |  |
| 195D   | Conservation of Aquatic Life, Wildlife, and Land Plants                 |                |  |  |
| 195F   | Forest Stewardship  |                |  |  |
| 196  | Energy Resources  | x              | Provides for energy coordinator in the DBEDT.<br>§196-19 Life-cycle cost analysis  | Provides a general requirement for agencies to use life cycle analysis in making decisions about procurement but does not provide specific standards or procedures and does not identify specific agency duties.   |
| 196D   | Geothermal and Cable System Development                                 | x              | Provisions do not present significant obstacles.   |  |
| 197  | General Provisions Relating to Aquatic Resources and Wildlife           |                |  |  |
| 198  | Conservation Easements  | x              | No significant applicable provisions.  |  |
| 198D   | Hawaii Statewide Trail and Access System                                |                |  |  |
| Subtitle 7. Enforcement                        |   |                |  |  |
| 199  | Conservation and Resources Enforcement Program                          | x              | No significant applicable provisions.  |  |
| 199D   | Civil Natural Resource Violations Act                                   |                |  |  |
| Subtitle 8. Ocean Recreation and Coastal Areas |   |                |  |  |
| 200  | Ocean Recreation and Coastal Areas Programs                             |                |  |  |
| 200D   | Kaneohe Bay Regional Council  |                |  |  |
| TITLE 13. PLANNING AND ECONOMIC DEVELOPMENT    |   |                |  |  |
| 201  | Department of Business, Economic Development, and                       | x              | Provisions do not present significant obstacles.   |  |
| 201B   | Hawaii Tourism Authority  |                |  |  |
| 201C   | Financial Services Assistance Program                                   |                |  |  |
| 201D   | Business Action Center--Repealed  |                |  |  |
| 201E   | Housing Finance and Development Corporation--Repealed                   |                |  |  |
| 201F   | Rental Housing Trust Fund--Repealed                                     |                |  |  |
| 201G   | Housing and Community Development Corporation of Hawaii--Repealed       |                |  |  |
| 201H   | Hawaii Housing Finance and Development Corporation                      | x              | Establishes a corporation to provide counseling, financial assistance and development of housing opportunities including programs for low income and first owners. | Provides specific list of desired housing amenities but does not provide specific guidance or requirements to consider life cycle housing costs or investments in energy efficiency measures in housing buildings. |
| 201M   | Small Business Regulatory Flexibility Act                               |                |  |  |
| 202  | Hawaii Workforce Development Council                                    |                |  |  |
| 203  | Tourism Development--Repealed   |                |  |  |
| 204  | State Fairs--Repealed   |                |  |  |
| 205  | Land Use Commission   |                |  |  |
| 205  | A Coastal Zone Management   |                |  |  |
| 206  | Oahu Land Development   |                |  |  |

| Hawaii Revised Statutes - Table of Contents |  | Energy  | Review   | Issues   |
|---|--|---------|--|--|
|   |  | Impacts | Notes  | Opportunities  |
| 206E  | Hawaii Community Development Authority                             | x       | Establishes a community development authority to designate community development districts and develop public projects including residential housing projects. | Provides specific list of desired housing amenities but does not provide specific guidance or requirements to consider life cycle housing costs or investments in energy efficiency measures in housing buildings. |
| 206G  | Kalaeloa Community Development District--Repealed                  |         |  |  |
| 206J  | Aloha Tower Development Corporation                                | x       | Provisions do not present significant obstacles.   |  |
| 206M  | High Technology Development Corporation                            | x       | Provisions do not present significant obstacles.   |  |
| 206P  | Hawaii Telecommunications and Information Industries Act--Repealed |         |  |  |
| 206X  | Convention Center Authority--Repealed                              |         |  |  |
| 207   | Mortgage Loans   | x       | Provides for mortgage loans to very low income buyers.   | Provides no consideration of life cycle housing costs or investments in energy efficiency measures.  |
| 208   | Economic Redevelopment Program for Depressed Areas--Repealed       |         |  |  |
| 209   | Disaster Relief and Rehabilitation                                 |         |  |  |
| 209E  | State Enterprise Zones   | x       | Provisions do not present significant obstacles.   |  |
| 210   | Capital Loan Program   | x       | Provisions do not present significant obstacles.   |  |
| 210D  | Community-Based Development  |         |  |  |
| 211   | Guarantee of Commercial Loans--Repealed                            |         |  |  |
| 211D  | Capital Access Program   | x       | Provisions do not present significant obstacles.   |  |
| 211E  | Hawaii Innovation Development Program                              | x       | Provisions do not present significant obstacles.   |  |
| 211F  | Hawaii Strategic Development Corporation                           | x       | Provisions do not present significant obstacles.   |  |
| 211G  | State Private Investment Fund                                      |         |  |  |
| 212   | Foreign-Trade Zones  |         |  |  |
| 213   | Research and Development Industry Promotion Program                |         |  |  |
| 213E  | Employee Ownership and Participation Programs--                    |         |  |  |
| 214   | Grants-in-Aid for County Capital Improvement Projects              | x       | Provisions do not present significant obstacles.   |  |
| 218   | Marine Affairs Coordinator--Repealed                               |         |  |  |
| 219   | Aquaculture Loan Program   |         |  |  |
| 220   | Aquaculture Farms  |         |  |  |
| 221   | Commission on the Year 2000--Repealed                              |         |  |  |
| 222   | Hawaii Research Center for Futures Study--Repealed                 |         |  |  |
| 223   | Quality Growth Policy  |         |  |  |
| 224   | State Population and Planning--Repealed                            |         |  |  |
| 225   | Policy Planning--Repealed  |         |  |  |
| 225M  | State Planning   | x       | Provisions do not present significant obstacles.   |  |
| 226   | Hawaii State Planning Act  | x       | Provisions do not present significant obstacles.   |  |
| 227   | Natural Energy Laboratory of Hawaii--Repealed                      |         |  |  |
| 227D  | Natural Energy Laboratory of Hawaii Authority                      | x       | Provisions do not present significant obstacles.   |  |
| 228   | Ocean Resources Management--Repealed                               |         |  |  |
| 229   | Sister-State and Province Relationships                            |         |  |  |
| TITLE 14.                                   | TAXATION   |         |  |  |
| 231   | Administration of Taxes  | x       | Provisions do not present significant obstacles.   |  |
| 232   | Tax Appeals  |         |  |  |
| 232E  | Tax Review Commission  |         |  |  |
| 233   | Tax Classification of Certain Business Relationships               |         |  |  |
| 234   | Tax Relief for Natural Disaster Losses--Repealed                   |         |  |  |
| 235   | Income Tax Law   |         |  |  |
| 235D  | Qualified Improvement Tax Credit                                   | x       | Provisions do not present significant obstacles.   |  |
| 236   | Inheritance and Estate Taxes Law--Repealed                         |         |  |  |
| 236A  | Revised Uniform Estate Tax Apportionment Act--Repealed             |         |  |  |
| 236D  | Estate and Transfer Tax  |         |  |  |
| 237   | General Excise Tax Law   |         |  |  |
| 237D  | Transient Accommodations Tax                                       |         |  |  |
| 238   | Use Tax Law  |         |  |  |

| Hawaii Revised Statutes - Table of Contents |   | Energy  | Review  | Issues  |
|---|---|---------|---|---|
|   |   | Impacts | Notes   | Opportunities   |
| 239   | Public Service Company Tax Law  | x       | Levies a public service company tax on public service companies and public utilities to be paid to the counties in lieu of real property taxes. | Basis of the tax is a percentage of revenues. The tax could be based on fossil fuel carbon for energy utilities to provide an incentive to use non fossil fueled energy sources. This could be implemented to be revenue neutral (initially). |
| 240   | Public Utilities; Franchise Tax   | x       | Provisions do not present significant obstacles.  |   |
| 241   | Taxation of Banks and Other Financial Corporations  |         |   |   |
| 242   | Mortgage Loan Exemption--Repealed   |         |   |   |
| 243   | Fuel Tax Law  | x       | Provisions do not present significant obstacles.  |   |
| 244   | Liquor Tax Law--Repealed  |         |   |   |
| 244D  | Liquor Tax Law  |         |   |   |
| 245   | Cigarette Tax and Tobacco Tax Law   |         |   |   |
| 246   | Real Property Tax Law   |         |   |   |
| 246A  | Transfer of Real Property Taxation Functions  |         |   |   |
| 247   | Conveyance Tax  |         |   |   |
| 248   | County Budgets; Tax Funds   |         |   |   |
| 249   | County Vehicular Taxes  | x       | Vehicle taxes are based on vehicle weight. Determination of specific rates delegated to counties within certain parameters                      | Vehicle taxes could provide further incentives based on vehicle weight (such as a "feebate") to encourage fuel efficient vehicles and discourage large inefficient vehicles.  |
| 251   | Rental Motor Vehicle and Tour Vehicle Surcharge Tax   | x       |   | Vehicle taxes could provide further incentives based on vehicle weight (such as a "feebate") to encourage fuel efficient vehicles and discourage large inefficient vehicles.  |
| 255   | Multistate Tax Compact  |         |   |   |
| 255D  | Hawaii Simplified Sales and Use Tax Administration Act  |         |   |   |
| 256   | College Savings Program   |         |   |   |
| 257   | Individual Development Accounts   |         |   |   |
| TITLE 15.                                   | TRANSPORTATION AND UTILITIES  |         |   |   |
| 261   | Aeronautics   | x       | Provisions do not present significant obstacles.  |   |
| 261C  | Hawaii Air Carriers--Repealed   |         |   |   |
| 261D  | Transportation Use Special Fund   | x       | Provisions do not present significant obstacles.  |   |
| 262   | Airport Zoning Act  |         |   |   |
| 263   | Uniform Aeronautics Act (Modified)  |         |   |   |
| 263A  | Alcohol and Aviation Safety   |         |   |   |
| 264   | Highways  | x       | Provisions do not present significant obstacles.  |   |
| 265   | County Highways, Sidewalks, Wharves--Repealed   |         |   |   |
| 265A  | County Highways and Sidewalks   | x       | Provisions do not present significant obstacles.  |   |
| 266   | Harbors   |         |   |   |
| 267   | Boating Law--Repealed   |         |   |   |
| 267A  | Abandoned Vessels--Repealed   |         |   |   |
| 267B  | Trespass to Vessels--Repealed   |         |   |   |
| 267C  | Vessel Identification Numbers--Repealed   |         |   |   |
| 268   | Ferries   | x       | Provisions do not present significant obstacles.  |   |
| 269   | Public Utilities Commission   | x       | Provisions addressed in previous separate study.  | Provisions could be developed and expanded for collecting information and public education regarding energy costs, efficiency measures and options provided by registered service providers.  |
| 269E  | One Call Center; Advance Warning to Excavators  |         |   |   |
| 270   | Employees of Public Utilities--Repealed   |         |   |   |
| 271   | Motor Carrier Law   | x       | Provisions do not present significant obstacles.  |   |
| 271G  | Hawaii Water Carrier Act  | x       | Provisions do not present significant obstacles.  |   |
| 272   | Defrauding Carriers of Passengers--Repealed   |         |   |   |
| 273   | Railway Law   |         |   |   |
| 274   | Radio Control--Repealed   |         |   |   |
| 275   | Liabilities and Offenses Connected with Telephones, Wire Communications, and Cable Television Systems |         |   |   |
| 277   | Energy Corridors  | x       | Provisions do not present significant obstacles.  |   |
| 279   | Transportation Control--Repealed  |         |   |   |
| 279A  | Statewide Transportation Planning   |         |   |   |

| Hawaii Revised Statutes - Table of Contents |  | Energy<br>Impacts | Review<br>Notes | Issues<br>Opportunities  |
|---|--|-------------------|-----------------|--|
|   | 279E Metropolitan Planning Organization                                |                   |                 |  |
|   | 279G Ridesharing   |                   |                 |  |
| TITLE 16.                                   | INTOXICATING LIQUOR  |                   |                 |  |
|   | 281 Intoxicating Liquor  |                   |                 |  |
| TITLE 17.                                   | MOTOR AND OTHER VEHICLES   |                   |                 |  |
|   | 286 Highway Safety   |                   |                 |  |
|   | 286A Vehicle Equipment Safety Compact--Repealed                        |                   |                 |  |
|   | 286C Driver License Compact  |                   |                 |  |
|   | 286G Driver Education and Training Fund                                |                   |                 |  |
|   | 287 Motor Vehicle Safety Responsibility Act                            |                   |                 |  |
|   | 288 Common Carriers, Compulsory Insurance                              |                   |                 |  |
|   | 289 Used Motor Vehicle Parts and Accessories                           |                   |                 |  |
|   | 290 Abandoned Vehicles   |                   |                 |  |
|   | 291 Traffic Violations   |                   |                 |  |
|   | 291A Nonresident Violator Compact                                      |                   |                 |  |
|   | 291C Statewide Traffic Code  | x                 |                 | Provisions could be made to encourage energy efficient measures such as timing of traffic signals to provide for efficient traffic flow and proper tire inflation. |
|   | 291D Adjudication of Traffic Infractions                               |                   |                 |  |
|   | 291E Use of Intoxicants While Operating a Vehicle                      |                   |                 |  |
|   | 292 Odometer Accuracy and Record Maintenance--Repealed                 |                   |                 |  |
|   | 293 Bicycles   |                   |                 |  |
|   | 294 Motor Vehicle Accident Reparations--Repealed                       |                   |                 |  |
| TITLE 18.                                   | EDUCATION  |                   |                 |  |
|   | 296 Public Education--Repealed   |                   |                 |  |
|   | 296C School/Community-Based Management--Repealed                       |                   |                 |  |
|   | 296D School Priority Fund--Repealed                                    |                   |                 |  |
|   | 297 Personnel of Public Schools--Repealed                              |                   |                 |  |
|   | 297D Hawaii Teacher Standards Board--Repealed                          |                   |                 |  |
|   | 298 Schools and Attendance, Generally--Repealed                        |                   |                 |  |
|   | 299 Driver Education--Repealed   |                   |                 |  |
|   | 300 Technical and Vocational Training--Repealed                        |                   |                 |  |
|   | 301 Other Special Training--Repealed                                   |                   |                 |  |
|   | 302 Agents of Private Schools and Correspondence Schools--<br>Repealed |                   |                 |  |
|   | 302A Education   |                   |                 |  |
|   | 302B Public Charter Schools  |                   |                 |  |
|   | 302C Private Schools   |                   |                 |  |
|   | 302H Hawaiian Language Medium Education                                |                   |                 |  |
|   | 303 Employees' Annuity and Custodial Account Contracts                 |                   |                 |  |
|   | 304 University of Hawaii--Repealed                                     |                   |                 |  |
|   | 304A University of Hawaii System                                       |                   |                 |  |
|   | 304D Center for Nursing--Repealed                                      |                   |                 |  |
|   | 304E Nursing Scholars Program--Repealed                                |                   |                 |  |
|   | 305 Community Colleges--Repealed                                       |                   |                 |  |
|   | 305A Career and Technical Education Under Federal Aid--<br>Repealed    |                   |                 |  |
|   | 305E College-Credit Equivalency Program--Repealed                      |                   |                 |  |
|   | 305H State Post-Secondary Education Commission--Repealed               |                   |                 |  |
|   | 306 University Projects--Repealed                                      |                   |                 |  |
|   | 307 Research Corporation of the University of Hawaii--Repealed         |                   |                 |  |
|   | 308 University Parking--Repealed                                       |                   |                 |  |
|   | 309 Student Loan Funds   |                   |                 |  |
|   | 310 Western Regional Education Compact--Repealed                       |                   |                 |  |
|   | 311 Compact for Education  |                   |                 |  |
|   | 312 Libraries  |                   |                 |  |

| <b>Hawaii Revised Statutes - Table of Contents</b> |   | <b>Energy<br/>Impacts</b> | <b>Review<br/>Notes</b> | <b>Issues<br/>Opportunities</b> |
|--|---|---------------------------|-------------------------|---------------------------------|
| 314  | Hawaii Public Broadcasting Authority--Repealed  |                           |                         |                                 |
| 315  | Interstate Agreement on Qualifications of Educational Personnel                           |                           |                         |                                 |
| 317  | Secondary School Students Conference  |                           |                         |                                 |
| 318  | College and University Student Leaders Conference--<br>Repealed                           |                           |                         |                                 |
| 319  | Dental Education  |                           |                         |                                 |
| <b>TITLE 19.</b>                                   | <b>HEALTH</b>   |                           |                         |                                 |
| 321  | Department of Health  |                           |                         |                                 |
| 321D   | Interdepartmental Cluster for Services to Children  |                           |                         |                                 |
| 321E   | Dispersal Review Council--Repealed  |                           |                         |                                 |
| 321F   | Office of the Aloha Health Corps--Repealed  |                           |                         |                                 |
| 321G   | California-Hawaii Cooperative Commission--Repealed  |                           |                         |                                 |
| 321H   | Neurotrauma   |                           |                         |                                 |
| 322  | Nuisances; Sanitary Regulations   |                           |                         |                                 |
| 323  | Hospitals and Medical Facilities  |                           |                         |                                 |
| 323C   | Privacy of Health Care Information--Repealed  |                           |                         |                                 |
| 323D   | Health Planning and Resources Development and Health<br>Care Cost Control                 |                           |                         |                                 |
| 323F   | Hawaii Health Systems Corporation   |                           |                         |                                 |
| 324  | Medical Research; Morbidity and Mortality Information                                     |                           |                         |                                 |
| 325  | Infectious and Communicable Diseases  |                           |                         |                                 |
| 326  | Hansen's Disease  |                           |                         |                                 |
| 327  | Medical and Research Use of Bodies  |                           |                         |                                 |
| 327C   | Death   |                           |                         |                                 |
| 327D   | Medical Treatment Decisions--Repealed   |                           |                         |                                 |
| 327E   | Uniform Health-Care Decisions Act (Modified)  |                           |                         |                                 |
| 327F   | Medical Treatment Decisions for Psychotic Disorders--<br>Repealed                         |                           |                         |                                 |
| 327G   | Advance Mental Health Care Directives   |                           |                         |                                 |
| 327H   | Pain Patient's Bill of Rights   |                           |                         |                                 |
| 328  | Food, Drugs, and Cosmetics  |                           |                         |                                 |
| 328A   | Water, Furnishing Potable--Repealed   |                           |                         |                                 |
| 328B   | Return-for-Credit-and-Reuse of Prescription Drugs   |                           |                         |                                 |
| 328C   | Donation of Pharmaceuticals and Health Care Supplies                                      |                           |                         |                                 |
| 328D   | Bottled Water   |                           |                         |                                 |
| 328E   | Intoxicating Compounds  |                           |                         |                                 |
| 328J   | Smoking   |                           |                         |                                 |
| 328K   | Smoking--Repealed   |                           |                         |                                 |
| 328L   | Hawaii Tobacco Settlement Moneys  |                           |                         |                                 |
| 329  | Uniform Controlled Substances Act   |                           |                         |                                 |
| 329B   | Substance Abuse Testing   |                           |                         |                                 |
| 329C   | Imitation Controlled Substances Act   |                           |                         |                                 |
| 330  | Poisons, Sale of  |                           |                         |                                 |
| 330C   | Hawaii Poison Prevention Packaging Act  |                           |                         |                                 |
| 331  | Radium for Medical and Surgical Purposes--Repealed  |                           |                         |                                 |
| 332  | Mattresses, Manufacture, Etc., and Sale of  |                           |                         |                                 |
| 332D   | Polybrominated Diphenyl Ethers  |                           |                         |                                 |
| 333  | Mental Retardation--Repealed  |                           |                         |                                 |
| 333E   | Developmental Disabilities  |                           |                         |                                 |
| 333F   | Services for Persons with Developmental Disabilities or<br>Mental Retardation             |                           |                         |                                 |
| 334  | Mental Health, Mental Illness, Drug Addiction, and<br>Alcoholism                          |                           |                         |                                 |
| 334B   | Utilization Review and Managed Care of Mental Health,<br>Alcohol, or Drug Abuse Treatment |                           |                         |                                 |

**Hawaii Revised Statutes - Table of Contents**

|                  |   | <b>Energy<br/>Impacts</b> | <b>Review<br/>Notes</b>   | <b>Issues<br/>Opportunities</b>  |
|------------------|---|---------------------------|---|--|
| 334D             | Diversion Program for Chemically Dependent Nurses                           |                           |   |  |
| 334E             | Rights of Recipients of Mental Health Services                              |                           |   |  |
| 335              | Interstate Compact on Mental Health   |                           |   |  |
| 336              | Deportation and Transfer of Alien and Nonresident Public Charges            |                           |   |  |
| 337              | Uniform Act for the Extradition of Persons of Unsound Mind                  |                           |   |  |
| 338              | Vital Statistics  |                           |   |  |
| 339              | Litter Control  |                           |   |  |
| 339K             | Northwest Interstate Compact on Low-Level Radioactive Waste Management      |                           |   |  |
| 340              | Hawaii Waste Management--Repealed   |                           |   |  |
| 340A             | Solid Waste   | x                         |   | Provisions could be established to encourage or require more effective recycling and separation of waste stream materials. |
| 340B             | Wastewater Treatment Personnel  |                           |   |  |
| 340E             | Safe Drinking Water   |                           |   |  |
| 340F             | Hawaii Law for Mandatory Certification of Public Water System Operators     |                           |   |  |
| 341              | Environmental Quality Control   | x                         | Provisions represent a challenge to developers of renewable energy projects.                                  |  |
| 342              | Environmental Quality--Repealed   |                           |   |  |
| 342B             | Air Pollution Control   | x                         | Provisions represent a challenge to developers of fossil and renewable fuel-fired energy generation projects. |  |
| 342C             | Ozone Layer Protection  |                           |   |  |
| 342D             | Water Pollution   | x                         | Provisions represent a challenge to developers of renewable energy projects.                                  |  |
| 342E             | Nonpoint Source Pollution Management and Control                            | x                         | Provisions do not present significant obstacles.  |  |
| 342F             | Noise Pollution   |                           |   |  |
| 342G             | Integrated Solid Waste Management   | x                         | Provisions do not present significant obstacles.  |  |
| 342H             | Solid Waste Pollution   |                           |   |  |
| 342I             | Special Wastes Recycling  |                           |   |  |
| 342J             | Hazardous Waste   |                           |   |  |
| 342L             | Underground Storage Tanks   |                           |   |  |
| 342N             | Used Oil Transport, Recycling, and Disposal--Repealed                       |                           |   |  |
| 342P             | Asbestos and Lead   |                           |   |  |
| 343              | Environmental Impact Statements   | x                         | Provisions represent a challenge to developers of renewable energy projects.                                  |  |
| 343D             | Hawaii Environmental Disclosure Law--Repealed                               |                           |   |  |
| 344              | State Environmental Policy  | x                         | Provisions do not present significant obstacles.  |  |
| <b>TITLE 20.</b> | <b>SOCIAL SERVICES</b>  |                           |   |  |
| 346              | Department of Human Services  |                           |   |  |
| 346C             | Long-Term Care Financing Program  |                           |   |  |
| 346D             | Long-Term Care  |                           |   |  |
| 346E             | Nursing Facility Tax  |                           |   |  |
| 347              | Blind and Visually Handicapped Persons                                      |                           |   |  |
| 347D             | Hawaii State Coordinating Council on Deafness--Repealed                     |                           |   |  |
| 348              | Vocational Rehabilitation   |                           |   |  |
| 348E             | Commission on Persons with Disabilities--Repealed                           |                           |   |  |
| 348F             | Disability and Communication Access Board                                   |                           |   |  |
| 349              | Executive Office on Aging   |                           |   |  |
| 349C             | Elder Abuse or Neglect--Repealed  |                           |   |  |
| 350              | Child Abuse   |                           |   |  |
| 350B             | Hawaii Children's Trust Fund  |                           |   |  |
| 350C             | Adoption Assistance Compact and Procedures for Interstate Services Payments |                           |   |  |
| 350E             | Interstate Compact on Placement of Children                                 |                           |   |  |
| 351              | Crime Victim Compensation   |                           |   |  |
| 352              | Hawaii Youth Correctional Facilities  |                           |   |  |

| Hawaii Revised Statutes - Table of Contents |   | Energy  | Review | Issues  |
|---|---|---------|--------|---|
|   |   | Impacts | Notes  | Opportunities   |
| 352D  | Office of Youth Services  |         |        |   |
| 353   | Corrections   |         |        |   |
| 353B  | Interstate Compact for the Supervision of Adult Offenders       |         |        |   |
| 353C  | Public Safety   |         |        |   |
| 353D  | Offender Family Service Center Act                              |         |        |   |
| 353E  | Statewide Integrated Sex Offender Treatment Program             |         |        |   |
| 353F  | Corrections Population Management Commission                    |         |        |   |
| 353G  | Criminal Offender Treatment Act                                 |         |        |   |
| 354   | Correctional Industries--Repealed                               |         |        |   |
| 354D  | Hawaii Correctional Industries                                  |         |        |   |
| 355   | Western Interstate Corrections Compact                          |         |        |   |
| 355D  | Interstate Corrections Compact                                  |         |        |   |
| 356   | Hawaii Housing Authority; Low Income Housing--Repealed          |         |        |   |
| 356D  | Hawaii Public Housing Authority                                 | x       |        | Provides no consideration of life cycle housing costs or investments in energy efficiency measures. |
| 357   | Federal Housing Projects--Repealed                              |         |        |   |
| 358   | Government Aid for Housing Projects--Repealed                   |         |        |   |
| 358D  | Homeless Assistance Act--Repealed                               |         |        |   |
| 359   | State Housing Projects--Repealed                                |         |        |   |
| 359A  | Teachers Housing--Repealed                                      |         |        |   |
| 359G  | Hawaii Housing Authority--Housing Projects--Repealed            |         |        |   |
| 359L  | Factory Built Housing--Repealed                                 |         |        |   |
| 360   | Provisions Applicable to Public Housing Generally--<br>Repealed |         |        |   |
| 360E  | Advisory Council on Housing--Repealed                           |         |        |   |
| 361   | Community Home Mortgage Program--Repealed                       |         |        |   |
| 362   | Progressive Neighborhoods Program--Repealed                     |         |        |   |
| 363   | Veterans Rights and Benefits                                    |         |        |   |
| 364   | Veterans Loans--Repealed  |         |        |   |
| 367   | Status of Women   |         |        |   |
| 367D  | Parity for Female Offenders                                     |         |        |   |
| 368   | Civil Rights Commission   |         |        |   |
| TITLE 21.                                   | LABOR AND INDUSTRIAL RELATIONS                                  |         |        |   |
| 371   | Department of Labor and Industrial Relations                    |         |        |   |
| 371K  | Community Services  |         |        |   |
| 372   | Apprenticeship  |         |        |   |
| 373   | Commercial Employment Agencies                                  |         |        |   |
| 373C  | Occupational and Career Information                             |         |        |   |
| 373E  | Statewide Transition to Work System--Repealed                   |         |        |   |
| 373F  | Tourism Training Council--Repealed                              |         |        |   |
| 374   | Emigrant Agents--Repealed                                       |         |        |   |
| 375   | Garment Industry Homework--Repealed                             |         |        |   |
| 376   | Industrial Safety--Repealed                                     |         |        |   |
| 377   | Hawaii Employment Relations Act                                 |         |        |   |
| 378   | Employment Practices  |         |        |   |
| 379   | Recruiting and Hiring of Employees During Labor Disputes        |         |        |   |
| 379A  | Picketing of Residence or Dwelling Place                        |         |        |   |
| 380   | Labor Disputes; Jurisdiction of Courts                          |         |        |   |
| 381   | Labor Disputes; Public Utilities                                |         |        |   |
| 382   | Labor Disputes; Stevedoring Industry                            |         |        |   |
| 383   | Hawaii Employment Security Law                                  |         |        |   |
| 384   | Hawaii Agricultural Unemployment Compensation Law--<br>Repealed |         |        |   |
| 385   | Additional Unemployment Compensation Benefits Law               |         |        |   |
| 386   | Workers' Compensation Law                                       |         |        |   |
| 386   | A Hawaii State Compensation Mutual Insurance Fund               |         |        |   |

| Hawaii Revised Statutes - Table of Contents |  | Energy<br>Impacts | Review<br>Notes | Issues<br>Opportunities |
|---|--|-------------------|-----------------|-------------------------|
| 387   | Wage and Hour Law  |                   |                 |                         |
| 388   | Wages and Other Compensation, Payment of                               |                   |                 |                         |
| 390   | Child Labor Law  |                   |                 |                         |
| 392   | Temporary Disability Insurance   |                   |                 |                         |
| 393   | Prepaid Health Care Act  |                   |                 |                         |
| 394   | Manpower Development and Training                                      |                   |                 |                         |
| 394A  | Job Training--Repealed   |                   |                 |                         |
| 394B  | Dislocated Workers   |                   |                 |                         |
| 396   | Occupational Safety and Health   |                   |                 |                         |
| 397   | Boiler and Elevator Safety Law   |                   |                 |                         |
| 398   | Family Leave   |                   |                 |                         |
| DIVISION 2.                                 | BUSINESS   |                   |                 |                         |
| TITLE 22.                                   | BANKS AND FINANCIAL INSTITUTIONS                                       |                   |                 |                         |
| 401   | Commissioner of Financial Institutions--Repealed                       |                   |                 |                         |
| 402   | Fiduciaries and Investments--Repealed                                  |                   |                 |                         |
| 403   | Hawaii Bank Act--Repealed  |                   |                 |                         |
| 404   | Bank Mergers--Repealed   |                   |                 |                         |
| 405   | International and Foreign Banking by Hawaii Corporations--<br>Repealed |                   |                 |                         |
| 405A  | International Banking Facilities--Repealed                             |                   |                 |                         |
| 405D  | Foreign Banks--Repealed  |                   |                 |                         |
| 406   | Trust Companies--Repealed  |                   |                 |                         |
| 407   | Savings and Loan Associations--Repealed                                |                   |                 |                         |
| 408   | Financial Services Loan Companies--Repealed                            |                   |                 |                         |
| 408A  | Industrial Loan Company Guaranty Act--Repealed                         |                   |                 |                         |
| 409   | Small Loan Companies--Repealed   |                   |                 |                         |
| 410   | State Chartered Credit Unions--Repealed                                |                   |                 |                         |
| 411   | Emergency Acquisition of Financial Institutions--Repealed              |                   |                 |                         |
| 412   | Code of Financial Institutions   |                   |                 |                         |
| TITLE 23.                                   | CORPORATIONS AND PARTNERSHIPS  |                   |                 |                         |
| 414   | Hawaii Business Corporation Act  |                   |                 |                         |
| 414D  | Hawaii Nonprofit Corporations Act                                      |                   |                 |                         |
| 414E  | Control Share Acquisitions   |                   |                 |                         |
| 415   | Hawaii Business Corporation Act--Repealed                              |                   |                 |                         |
| 415A  | Professional Corporation Act   |                   |                 |                         |
| 415B  | Hawaii Nonprofit Corporation Act--Repealed                             |                   |                 |                         |
| 416   | Corporations, Generally--Repealed                                      |                   |                 |                         |
| 417   | Consolidation and Merger of Corporations--Repealed                     |                   |                 |                         |
| 417E  | Corporate Take-Overs   |                   |                 |                         |
| 418   | Foreign Corporations--Repealed   |                   |                 |                         |
| 419   | Corporations Sole for Ecclesiastical Purposes                          |                   |                 |                         |
| 420   | Business Development Corporations--Repealed                            |                   |                 |                         |
| 421   | Agricultural Cooperative Associations                                  |                   |                 |                         |
| 421C  | Consumer Cooperative Associations                                      |                   |                 |                         |
| 421G  | Limited-Equity Housing Cooperatives--Repealed                          |                   |                 |                         |
| 421H  | Limited-Equity Housing Cooperatives                                    |                   |                 |                         |
| 421I  | Cooperative Housing Corporations                                       |                   |                 |                         |
| 421J  | Planned Community Associations   |                   |                 |                         |
| 422   | Fish Marketing Associations--Repealed                                  |                   |                 |                         |
| 423   | Dental Service Corporations  |                   |                 |                         |
| 424   | Optometric Service Corporations  |                   |                 |                         |
| 425   | Partnerships   |                   |                 |                         |
| 425D  | Uniform Limited Partnership Act--Repealed                              |                   |                 |                         |
| 425E  | Uniform Limited Partnership Act[                                       |                   |                 |                         |
| TITLE 23A.                                  | OTHER BUSINESS ENTITIES]   |                   |                 |                         |
| 428   | Uniform Limited Liability Company Act                                  |                   |                 |                         |

| Hawaii Revised Statutes - Table of Contents |   | Energy  | Review   | Issues        |
|---|---|---------|--|---------------|
|   |   | Impacts | Notes  | Opportunities |
| 429   | Uniform Unincorporated Nonprofit Association Act                        |         |  |               |
| TITLE 24.                                   | INSURANCE   |         |  |               |
| 431   | Insurance Code  |         |  |               |
| 431A  | Readability of Insurance Contracts--Repealed                            |         |  |               |
| 431D  | Insurance Company Insolvency--Repealed                                  |         |  |               |
| 431F  | Hawaii Life and Disability Insurance Guaranty Association Act--Repealed |         |  |               |
| 431H  | Insurance Information Protection Act--Repealed                          |         |  |               |
| 431J  | Captive Insurance Companies--Repealed                                   |         |  |               |
| 431K  | Risk Retention  |         |  |               |
| 431L  | Medicaid-Related Mandates   |         |  |               |
| 431M  | Mental Health and Alcohol and Drug Abuse Treatment Insurance Benefits   |         |  |               |
| 431N  | State Health Insurance Program Act                                      |         |  |               |
| 431P  | Hawaii Hurricane Relief Fund  |         |  |               |
| 432   | Benefit Societies   |         |  |               |
| 432C  | Nonprofit Entities; Conversion of Assets                                |         |  |               |
| 432D  | Health Maintenance Organization Act                                     |         |  |               |
| 432E  | Patients' Bill of Rights and Responsibilities Act                       |         |  |               |
| 433   | Mutual and Fraternal Benefit Societies--Repealed                        |         |  |               |
| 434   | Insurance by Fraternal Benefit Societies--Repealed                      |         |  |               |
| 435   | Credit Life Insurance and Credit Disability Insurance--Repealed         |         |  |               |
| 435C  | Hawaii Medical Malpractice Underwriting Plan                            |         |  |               |
| 435E  | Physicians and Surgeons Cooperative Indemnity                           |         |  |               |
| TITLE 25.                                   | PROFESSIONS AND OCCUPATIONS   |         |  |               |
| 436   | Abstract Makers--Repealed   |         |  |               |
| 436B  | Uniform Professional and Vocational Licensing Act                       |         |  |               |
| 436C  | Licensing Sanctions for Student Loan Defaults                           |         |  |               |
| 436D  | Acupuncture Practitioners--Repealed                                     |         |  |               |
| 436E  | Acupuncture Practitioners   |         |  |               |
| 436M  | Alarm Businesses  |         |  |               |
| 437   | Motor Vehicle Industry Licensing Act                                    | x       | Provisions do not present significant obstacles. |               |
| 437B  | Regulation of Motor Vehicle Repairs                                     | x       | Provisions do not present significant obstacles. |               |
| 437D  | Motor Vehicle Rental Industry   | x       | Provisions do not present significant obstacles. |               |
| 438   | Barbering, Practice of  |         |  |               |
| 439   | Beauty Culture  |         |  |               |
| 440   | Boxing Contests   |         |  |               |
| 440D  | No Rules Combat or Similar Contests                                     |         |  |               |
| 440G  | Cable Television Systems  |         |  |               |
| 441   | Cemetery and Funeral Trusts   |         |  |               |
| 442   | Chiropractic  |         |  |               |
| 443   | Collection Agencies--Repealed   |         |  |               |
| 443A  | Debt Collection Practices--Repealed                                     |         |  |               |
| 443B  | Collection Agencies   |         |  |               |
| 444   | Contractors   |         |  |               |
| 445   | County Licenses   |         |  |               |
| 446   | Debt Adjusting  |         |  |               |
| 446D  | Degree Granting Institutions--Repealed                                  |         |  |               |
| 446E  | Unaccredited Degree Granting Institutions                               |         |  |               |
| 447   | Dental Hygienists   |         |  |               |
| 448   | Dentistry   |         |  |               |
| 448A  | Escort Agencies--Repealed   |         |  |               |
| 448B  | Dietitians  |         |  |               |
| 448D  | Dental Service Organizations  |         |  |               |

**Hawaii Revised Statutes - Table of Contents**

**Energy  
Impacts**

**Review  
Notes**

**Issues  
Opportunities**

448E Electricians and Plumbers

x

Allows emergency repairs to plumbing fixtures by housing occupants but does requires liscensed plumber to replace inefficient fixtures with water saving replacements.

448F Electrologists

448H Elevator Mechanics

449 Escrow Depositories

450 Fumigation--Repealed

451 Gasoline, Fuel, and Motor Oil--Repealed

451A Hearing Aid Dealers and Fitters

451D Health Care Professionals

451J Marriage and Family Therapists

452 Massage

453 Medicine and Surgery

453D Mental Health Counselors

454 Mortgage Brokers and Solicitors

454D Real Estate Collection Servicing Agents--Repealed

455 Naturopathy

456 Notaries Public

457 Nurses

457A Nurse Aides

457B Nursing Home Administrators Act

457G Occupational Therapy Practice

458 Opticians, Dispensing

459 Optometry

460 Osteopathy

460J Pest Control Operators

461 Pharmacists and Pharmacy

461J Physical Therapy Practice Act

462 Photography--Repealed

462A Pilotage

463 Private Investigators and Guards

463E Podiatrists

464 Professional Engineers, Architects, Surveyors and  
Landscape Architects

x

Requires professional expertise but does not require education or experience in life cycle costing, energy use analysis or energy efficiency technologies.

465 Psychologists

466 Public Accountancy

466J Radiologic Technology

466K Real Estate Appraisers

467 Real Estate Brokers and Salespersons

467A Rental Agencies--Repealed

467B Solicitation of Funds from the Public

467D Social Workers--Repealed

467E Social Workers

468 Solicitors; Business of Taking Orders--Repealed

468B Bonding of Solar Energy Device Dealers--Repealed

468E Speech Pathologists and Audiologists

468J Travel Agencies--Repealed

468K Travel Agencies--Repealed

468L Travel Agencies

468M Activity Providers and Activity Desks

469 Undertakers, Embalmers, Funeral Directors

470 Vendors, Itinerant--Repealed

471 Veterinary Medicine

TITLE 25A. GENERAL BUSINESS PROVISIONS]

474 Business Action Center

| Hawaii Revised Statutes - Table of Contents |   | Energy<br>Impacts | Review<br>Notes                                  | Issues<br>Opportunities  |
|---|---|-------------------|--|--|
| TITLE 26.                                   | TRADE REGULATION AND PRACTICE   |                   |  |  |
| 476   | Credit Sales  |                   |  |  |
| 477E  | Fair Credit Extension   |                   |  |  |
| 478   | Interest and Usury  |                   |  |  |
| 479   | Insurance Companies, Freedom of Choice of--Repealed                           |                   |  |  |
| 480   | Monopolies; Restraint of Trade  |                   |  |  |
| 480B  | Media Publications Disclosure Act   |                   |  |  |
| 480D  | Collection Practices  |                   |  |  |
| 480F  | Check Cashing   |                   |  |  |
| 481   | Fair Trade Regulations  |                   |  |  |
| 481A  | Uniform Deceptive Trade Practice Act  |                   |  |  |
| 481B  | Unfair and Deceptive Practices  |                   |  |  |
| 481C  | Door-to-Door Sale   |                   |  |  |
| 481D  | Going Out of Business Sales   |                   |  |  |
| 481F  | Sale of Prints  |                   |  |  |
| 481G  | Office Machine Products Dealerships   |                   |  |  |
| 481H  | Water Treatment Units   |                   |  |  |
| 481I  | Motor Vehicle Express Warranty Enforcement (Lemon Law)                        |                   |  |  |
| 481J  | Used Motor Vehicle Sales and Warranties                                       |                   |  |  |
| 481K  | Assistive Technology Warranty Act   |                   |  |  |
| 481L  | Motor Vehicle Lease Disclosure Act  | x                 |  | Does not require identification of operation costs.  |
| 481M  | Lease-Purchase Agreements for Personal Property                               | x                 |  | Does not require identification of operation costs.  |
| 481P  | Telemarketing Fraud Prevention Act  |                   |  |  |
| 481R  | Vehicle Protection Product Warrantors   |                   |  |  |
| 481X  | Service Contracts   |                   |  |  |
| 482   | Trademarks, Service Marks, and Trade Names,<br>Registration and Protection of |                   |  |  |
| 482B  | Trade Secrets   |                   |  |  |
| 482C  | Copyrights in Sound Recordings  |                   |  |  |
| 482D  | Gold and Silver Stamping  |                   |  |  |
| 482E  | Franchise Investment Law  |                   |  |  |
| 483   | Uniform Joint Obligations Act   |                   |  |  |
| 484   | Uniform Land Sales Practices Act  |                   |  |  |
| 485   | Uniform Securities Act (Modified)   |                   |  |  |
| 485A  | Uniform Securities Act  |                   |  |  |
| 486   | Measurement Standards   |                   |  |  |
| 486A  | Weight of Bread--Repealed   |                   |  |  |
| 486B  | Unfair Trade Practices by Petroleum Industry                                  |                   |  |  |
| 486D  | Petroleum Product Accounting Act--Repealed                                    |                   |  |  |
| 486E  | Fuel Distribution--Repealed   |                   |  |  |
| 486H  | Gasoline Dealers  | x                 |  | Does not require gasoline dealers to maintain adequate tire inflation equipment.   |
| 486I  | Petroleum Industry Information Reporting--Repealed                            |                   |  |  |
| 486J  | Petroleum Industry Information Reporting Act                                  | x                 | Provisions do not present significant obstacles. |  |
| 486K  | Hotels  |                   |  |  |
| 486M  | Pawnbrokers and Secondhand Dealers  |                   |  |  |
| 486N  | Health Clubs  |                   |  |  |
| 486P  | Tobacco Products Reporting  |                   |  |  |
| 487   | Consumer Protection   | x                 |  | Provisions could be developed and expanded for collecting information and public education regarding energy costs, efficiency measures and options provided by registered service providers. |
| 487A  | Language of Consumer Transactions   |                   |  |  |
| 487D  | Retail Merchant Club Cards  |                   |  |  |
| 487J  | Social Security Number Protection   |                   |  |  |
| 487N  | Security Breach of Personal Information                                       |                   |  |  |

| Hawaii Revised Statutes - Table of Contents |  | Energy  | Review   | Issues  |
|---|--|---------|--|---|
|   |  | Impacts | Notes  | Opportunities   |
| 487R  | Destruction of Personal Information Records                                    |         |  |   |
| 488   | Prepaid Legal Services   |         |  |   |
| 489   | Discrimination in Public Accommodations  |         |  |   |
| 489D  | Money Transmitters Act   |         |  |   |
| 489E  | Uniform Electronic Transactions Act  |         |  |   |
| 489N  | International Matchmaking Organizations  |         |  |   |
| 489P  | Consumer Credit Reporting Agencies   |         |  |   |
| 489X  | Adult Products   |         |  |   |
| TITLE 27.                                   | UNIFORM COMMERCIAL CODE  |         |  |   |
| DIVISION 3.                                 | PROPERTY; FAMILY   |         |  |   |
| TITLE 28.                                   | PROPERTY   |         |  |   |
| 501   | Land Court Registration  |         |  |   |
| 502   | Bureau of Conveyances; Recording   |         |  |   |
| 502C  | Family Child Care Homes  |         |  |   |
| 503   | Commissioners of Deeds--Repealed   |         |  |   |
| 504   | Federal Judgment Registration  |         |  |   |
| 505   | Uniform Federal Tax Lien Registration Act (Modified)                           |         |  |   |
| 506   | Mortgages of Real Property or Fixtures   |         |  |   |
| 507   | Liens  |         |  |   |
| 507D  | Nonconsensual Common Law Liens and Frivolous Financing Statements              |         |  |   |
| 508   | Uniform Vendor and Purchaser Risk Act  |         |  |   |
| 508C  | Uniform Environmental Covenants Act  | x       | Provisions do not present significant obstacles. |   |
| 508D  | Mandatory Seller Disclosures in Real Estate Transactions                       |         |  |   |
| 509   | Conveyances to Two or More   |         |  |   |
| 510   | Community Property   |         |  |   |
| 511   | War Emergency Agency--Repealed   |         |  |   |
| 512   | Release of Powers  |         |  |   |
| 513   | Property Rights--Labor Organizations   |         |  |   |
| 514   | Horizontal Property Regimes--Repealed  |         |  |   |
| 514A  | Condominium Property Regimes   |         |  |   |
| 514B  | Condominiums   |         |  |   |
| 514C  | Lease to Fee Conversions for Condominiums and Cooperative Housing Corporations |         |  |   |
| 514E  | Time Sharing Plans   |         |  |   |
| 515   | Discrimination in Real Property Transactions                                   |         |  |   |
| 516   | Residential Leaseholds   |         |  |   |
| 516D  | Residential Leasehold Condominiums and Cooperatives                            |         |  |   |
| 517   | Disposition of Trust Real Property   |         |  |   |
| 517D  | Uniform Management of Institutional Funds Act                                  |         |  |   |
| 518   | Covenants in Leases  |         |  |   |
| 519   | Real Property Leases   |         |  |   |
| 520   | Landowners' Liability  |         |  |   |
| 520A  | Landowner's Liability for Access to Control Invasive Species                   |         |  |   |
| 521   | Residential Landlord-Tenant Code   | x       |  | Provisions could be made to require landlords to provide information to prospective tenants regarding operating costs of premises including energy utility costs. |
| 522   | Uniform Disclaimer of Property Interests Act--Repealed                         |         |  |   |
| 523   | Revised Uniform Disposition of Unclaimed Property Act--Repealed                |         |  |   |
| 523A  | Unclaimed Property   |         |  |   |
| 524   | Facilities for Elders  |         |  |   |
| 525   | Uniform Statutory Rule Against Perpetuities                                    |         |  |   |
| 526   | Uniform Disclaimer of Property Interests Act                                   |         |  |   |
| TITLE 29.                                   | DECEDENTS' ESTATES   |         |  |   |
| 531   | Probate: Jurisdiction and Procedure  |         |  |   |

| Hawaii Revised Statutes - Table of Contents | Energy<br>Impacts  | Review<br>Notes | Issues<br>Opportunities |
|---|--|-----------------|-------------------------|
| 532   | Descent of Property  |                 |                         |
| 533   | Dower and Curtesy  |                 |                         |
| 534   | Uniform Simultaneous Death Act--Repealed                           |                 |                         |
| 534A  | Uniform Simultaneous Death Act--Repealed                           |                 |                         |
| 535   | Specific Performance of Decedent's Contracts to Convey Real Estate |                 |                         |
| 536   | Wills--Repealed  |                 |                         |
| 537   | Uniform Testamentary Additions to Trusts Act--Repealed             |                 |                         |
| 538   | Disclaimers--Repealed  |                 |                         |
| 539   | Uniform Transfer-on-Death (TOD) Security Registration Act          |                 |                         |
| TITLE 30.                                   | GUARDIANS AND TRUSTEES   |                 |                         |
| 551   | Guardians and Wards  |                 |                         |
| 551A  | Office of the Public Guardian                                      |                 |                         |
| 551D  | Uniform Durable Power of Attorney Act                              |                 |                         |
| 552   | Uniform Veteran's Guardianship Act--Repealed                       |                 |                         |
| 553   | Uniform Gifts to Minors Act--Repealed                              |                 |                         |
| 553A  | Uniform Transfers to Minors Act                                    |                 |                         |
| 554   | Trusts and Trustees; Accounts                                      |                 |                         |
| 554A  | Uniform Trustees' Powers Act                                       |                 |                         |
| 554B  | Uniform Custodial Trust Act  |                 |                         |
| 554C  | Uniform Prudent Investor Act                                       |                 |                         |
| 555   | Employees Trust  |                 |                         |
| 556   | Uniform Fiduciaries Act  |                 |                         |
| 557   | Revised Uniform Principal and Income Act--Repealed                 |                 |                         |
| 557A  | Uniform Principal and Income Act                                   |                 |                         |
| 558   | Land Trusts--Beneficiary Controlled                                |                 |                         |
| TITLE 30A.                                  | UNIFORM PROBATE CODE   |                 |                         |
| 560   | Uniform Probate Code   |                 |                         |
| TITLE 31.                                   | FAMILY   |                 |                         |
| 571   | Family Courts  |                 |                         |
| 571D J                                      | Juvenile Justice Interagency Board--Repealed                       |                 |                         |
| 572   | Marriage   |                 |                         |
| 572C  | Reciprocal Beneficiaries   |                 |                         |
| 572D  | Uniform Premarital Agreement Act                                   |                 |                         |
| 573   | Married Women--Repealed  |                 |                         |
| 574   | Names  |                 |                         |
| 575   | Uniform Desertion and Nonsupport Act (Modified)                    |                 |                         |
| 576   | Uniform Reciprocal Enforcement of Support Act--Repealed            |                 |                         |
| 576B  | Uniform Interstate Family Support Act                              |                 |                         |
| 576D  | Child Support Enforcement  |                 |                         |
| 576E  | Administrative Process for Child Support Enforcement               |                 |                         |
| 577   | Children   |                 |                         |
| 577A  | Legal Capacity of Minor Regarding Medical Care                     |                 |                         |
| 578   | Adoption   |                 |                         |
| 579   | Illegitimates: Paternity Proceedings--Repealed                     |                 |                         |
| 580   | Annulment, Divorce, and Separation                                 |                 |                         |
| 581   | Office of Children and Youth--Repealed                             |                 |                         |
| 582   | Interstate Compact on Juveniles                                    |                 |                         |
| 583   | Uniform Child Custody Jurisdiction Act--Repealed                   |                 |                         |
| 583A  | Uniform Child-Custody Jurisdiction and Enforcement Act             |                 |                         |
| 584   | Uniform Parentage Act  |                 |                         |
| 585   | Ex Parte Temporary Restraining Orders--Repealed                    |                 |                         |
| 586   | Domestic Abuse Protective Orders                                   |                 |                         |
| 587   | Child Protective Act   |                 |                         |
| 588   | Children's Justice Program   |                 |                         |
| DIVISION 4.                                 | COURTS AND JUDICIAL PROCEEDINGS                                    |                 |                         |

| Hawaii Revised Statutes - Table of Contents |  | Energy<br>Impacts | Review<br>Notes | Issues<br>Opportunities |
|---|--|-------------------|-----------------|-------------------------|
| TITLE 32.                                   | COURTS AND COURT OFFICERS  |                   |                 |                         |
| 601   | Courts Generally   |                   |                 |                         |
| 602   | Courts of Appeal   |                   |                 |                         |
| 603   | Circuit Courts   |                   |                 |                         |
| 604   | District Courts  |                   |                 |                         |
| 605   | Attorneys  |                   |                 |                         |
| 606   | Clerks, Reporters, Interpreters, Etc.                                |                   |                 |                         |
| 607   | Costs and Fees   |                   |                 |                         |
| 608   | Expenses and Salaries  |                   |                 |                         |
| 609   | Jurors--Repealed   |                   |                 |                         |
| 610   | Retirement and Removal of Justices and Judges--Repealed              |                   |                 |                         |
| 611   | Counsel and Other Services For Indigent Defendants--<br>Repealed     |                   |                 |                         |
| 612   | Jurors   |                   |                 |                         |
| 613   | Center for Alternative Dispute Resolution                            |                   |                 |                         |
| TITLE 33.                                   | EVIDENCE   |                   |                 |                         |
| 621   | Evidence and witnesses, generally                                    |                   |                 |                         |
| 621C  | Witness immunity   |                   |                 |                         |
| 622   | Documentary evidence   |                   |                 |                         |
| 623   | Uniform judicial notice of foreign laws--Repealed                    |                   |                 |                         |
| 624   | Depositions and discovery  |                   |                 |                         |
| 625   | Notice to admit, inspection, and discovery--Repealed                 |                   |                 |                         |
| 626   | Hawaii rules of evidence   |                   |                 |                         |
| TITLE 34.                                   | PLEADINGS AND PROCEDURE  |                   |                 |                         |
| 631   | Agreed Facts, Submission on in Supreme Court--Repealed               |                   |                 |                         |
| 632   | Declaratory Judgments  |                   |                 |                         |
| 633   | Small Claims, District Courts  |                   |                 |                         |
| 634   | Civil Actions and Proceedings, Generally                             |                   |                 |                         |
| 634D  | Service of Process--Repealed   |                   |                 |                         |
| 634F  | Citizen Participation in Government                                  |                   |                 |                         |
| 634J  | Vexatious Litigants  |                   |                 |                         |
| 635   | Trials   |                   |                 |                         |
| 636   | Judgment   |                   |                 |                         |
| 636C  | Uniform Enforcement of Foreign Judgments Act                         |                   |                 |                         |
| 637   | Equity: Jurisdiction and Procedure--Repealed                         |                   |                 |                         |
| TITLE 35.                                   | APPEAL AND ERROR   |                   |                 |                         |
| 641   | Appeals  |                   |                 |                         |
| 642   | Reserved Questions--Repealed   |                   |                 |                         |
| TITLE 36.                                   | CIVIL REMEDIES AND DEFENSES AND SPECIAL<br>PROCEEDINGS               |                   |                 |                         |
| 651   | Attachment and Execution   |                   |                 |                         |
| 651C  | Uniform Fraudulent Transfer Act                                      |                   |                 |                         |
| 652   | Garnishment  |                   |                 |                         |
| 653   | Garnishment of Government Beneficiaries                              |                   |                 |                         |
| 654   | Special Proceedings for Immediate Possession of Personal<br>Property |                   |                 |                         |
| 655   | Deposit and Delivery   |                   |                 |                         |
| 656   | Frauds, Statute of   |                   |                 |                         |
| 657   | Limitation of Actions  |                   |                 |                         |
| 657D  | Civil Relief for State Military Forces                               |                   |                 |                         |
| 658   | Arbitration and Awards--Repealed                                     |                   |                 |                         |
| 658A  | Uniform Arbitration Act  |                   |                 |                         |
| 658B  | Uniform Foreign-Money Claims Act                                     |                   |                 |                         |
| 658C  | Uniform Foreign Money-Judgments Recognition Act                      |                   |                 |                         |
| 658D  | International Arbitration  |                   |                 |                         |
| 659   | Quo Warranto   |                   |                 |                         |

| Hawaii Revised Statutes - Table of Contents |  | Energy<br>Impacts | Review<br>Notes | Issues<br>Opportunities |
|---|--|-------------------|-----------------|-------------------------|
| 660   | Habeas Corpus  |                   |                 |                         |
| 661   | Actions By and Against the State                                       |                   |                 |                         |
| 662   | State Tort Liability Act   |                   |                 |                         |
| 662D  | Volunteer Service; Immunity  |                   |                 |                         |
| 662E  | Claims Against Government Arising Out of Year 2000<br>Errors--Repealed |                   |                 |                         |
| 663   | Tort Actions   |                   |                 |                         |
| 663A  | Civil Liability for Shoplifting  |                   |                 |                         |
| 663B  | Equine Activities  |                   |                 |                         |
| 663D  | Drug Dealer Liability--Repealed  |                   |                 |                         |
| 663E  | Drug Dealer Liability  |                   |                 |                         |
| 663J  | Liability for Coercion into Prostitution                               |                   |                 |                         |
| 663M  | Year 2000 Errors in Computer-Based Systems--Repealed                   |                   |                 |                         |
| 664   | Boundaries, Fences, Ways, Water Rights                                 |                   |                 |                         |
| 665   | Escheat  |                   |                 |                         |
| 666   | Landlord and Tenant  |                   |                 |                         |
| 667   | Mortgage Foreclosures  |                   |                 |                         |
| 668   | Partition of Real Estate   |                   |                 |                         |
| 669   | Quieting Title   |                   |                 |                         |
| 671   | Medical Torts  |                   |                 |                         |
| 671D  | Health Care Peer Review  |                   |                 |                         |
| 672   | Design Professional Conciliation Panel--Repealed                       |                   |                 |                         |
| 672E  | Contractor Repair Act  |                   |                 |                         |
| 673   | Native Hawaiian Trusts Judicial Relief Act                             |                   |                 |                         |
| 674   | Individual Claims Resolution Under the Hawaiian Home<br>Lands Trust    |                   |                 |                         |
| 675   | Tobacco Liability Act  |                   |                 |                         |
| 676   | Structured Settlement Protection Act                                   |                   |                 |                         |
| DIVISION 5.                                 |  |                   |                 |                         |
| TITLE 37.                                   |  |                   |                 |                         |
| 701   | Preliminary Provisions   |                   |                 |                         |
| 702   | General Principles of Penal Liability                                  |                   |                 |                         |
| 703   | General Principles of Justification                                    |                   |                 |                         |
| 704   | Penal Responsibility and Fitness to Proceed                            |                   |                 |                         |
| 705   | Inchoate Crimes  |                   |                 |                         |
| 706   | Disposition of Convicted Defendants                                    |                   |                 |                         |
| 707   | Offenses Against the Person  |                   |                 |                         |
| 708   | Offenses Against Property Rights                                       |                   |                 |                         |
| 708A  | Money Laundering   |                   |                 |                         |
| 709   | Offenses Against the Family and Against Incompetents                   |                   |                 |                         |
| 710   | Offenses Against Public Administration                                 |                   |                 |                         |
| 711   | Offenses Against Public Order  |                   |                 |                         |
| 712   | Offenses Against Public Health and Morals                              |                   |                 |                         |
| 712A  | Forfeiture   |                   |                 |                         |
| 713   | Repeal and Recodification Provisions                                   |                   |                 |                         |
| TITLE 38.                                   |  |                   |                 |                         |
| PROCEDURAL AND SUPPLEMENTARY PROVISIONS     |  |                   |                 |                         |
| 801   | Rights of Accused  |                   |                 |                         |
| 801D  | Rights of Victims and Witnesses in Criminal Proceedings                |                   |                 |                         |
| 802   | Counsel and Other Services for Indigent Criminal                       |                   |                 |                         |
| 802E  | Court Advisement of Aliens Entering Guilty Plea                        |                   |                 |                         |
| 803   | Arrests, Search Warrants   |                   |                 |                         |
| 804   | Bail; Bond to Keep the Peace   |                   |                 |                         |
| 805   | Criminal Procedure: District Courts                                    |                   |                 |                         |
| 806   | Criminal Procedure: Circuit Courts                                     |                   |                 |                         |
| 831   | Uniform Act on Status of Convicted Persons                             |                   |                 |                         |
| 832   | Uniform Criminal Extradition Act                                       |                   |                 |                         |

| <b>Hawaii Revised Statutes - Table of Contents</b> |  | <b>Energy<br/>Impacts</b> | <b>Review<br/>Notes</b> | <b>Issues<br/>Opportunities</b> |
|--|--|---------------------------|-------------------------|---------------------------------|
| 833  | Uniform Rendition of Accused Persons Act   |                           |                         |                                 |
| 834  | Agreement on Detainers   |                           |                         |                                 |
| 835  | Securing Attendance of Witness by Material Witness Order   |                           |                         |                                 |
| 836  | Uniform Act to Secure the Attendance of Witnesses from<br>without a State in Criminal Proceedings          |                           |                         |                                 |
| 841  | Inquests, Coroners   |                           |                         |                                 |
| 842  | Organized Crime  |                           |                         |                                 |
| 843  | Hawaii Criminal Justice Commission--Repealed   |                           |                         |                                 |
| 844  | State Law Enforcement Planning Agency--Repealed  |                           |                         |                                 |
| 844D   | Forensic Identification  |                           |                         |                                 |
| 845  | Career Criminals   |                           |                         |                                 |
| 846  | Hawaii Criminal Justice Data Center; Civil Identification  |                           |                         |                                 |
| 846C   | National Crime Prevention and Privacy Compact  |                           |                         |                                 |
| 846D   | Juvenile Justice Information System  |                           |                         |                                 |
| 846E   | Registration of Sex Offenders and Other Covered Offenders<br>and Public Access to Registration Information |                           |                         |                                 |
| 851  | Credit Card Offenses--Repealed   |                           |                         |                                 |
| 852  | Obstruction of Ingress or Egress   |                           |                         |                                 |
| 853  | Criminal Procedure: Deferred Acceptance of Guilty Plea,<br>Nolo Contendere Plea                            |                           |                         |                                 |

| HONOLULU COUNTY CODE  | Energy Impacts   | Review Notes | Issues Opportunities   |
|---|--|--------------|--|
| DETAILED TABLE OF CONTENTS  |  |              |  |
| <b>Volume I</b>   |  |              |  |
| <b>Chapter 1 GENERAL PROVISIONS</b>   |  |              |  |
| 1.  | Title of Volume  |              |  |
| 2.  | Construction of Ordinances   |              |  |
| 3.  | Penalties and Interest   |              |  |
| 4.  | Definitions  |              |  |
| 5.  | Repeal of Resolutions or Ordinances  |              |  |
| 6.  | Severability   |              |  |
| 7.  | Continuity in Government   |              |  |
| 8.  | Intergovernmental Relations  |              |  |
| 9.  | Authority of Executive Agency to Adopt Rules and Regulations   |              |  |
| 10.   | Limitation of Service on County Boards and Commissions   |              |  |
| 11.   | Nondiscrimination Policy   |              |  |
| 12.   | Purchase of Recycled Paper Products  |              |  |
| 13.   | Seal and Motto of the Department of the Prosecuting Attorney   |              |  |
| 14.   | Personal Names on Signs Relating to Public Projects and Governmental Activities                                |              |  |
| 15.   | (Reserved)   |              |  |
| 16.   | Codification of Ordinances   |              |  |
| 17.   | Sexual Harassment Policy for City Officer or Employee  |              |  |
| 18.   | Sexual Harassment Policy for Employer Having a Contract with the City  |              |  |
| 19.   | Addition of Unpaid Civil Fines to Taxes, Fees, or Charges Collected by the City                                |              |  |
| 20.   | Drug and Alcohol Abuse Training Program  |              |  |
| <b>Chapter 2 EXECUTIVE AGENCIES – ADDITIONAL POWERS, DUTIES AND FUNCTIONS</b> |  |              |  |
| 1.  | Mayor  |              |  |
| 2.  | Officers   |              |  |
| 3.  | Corporation Counsel  |              |  |
| 4.  | Department of Finance  | x            | Provisions do not present significant obstacles.   |
| 5.  | Risk Management  |              |  |
| 6.  | Department of Personnel  |              |  |
| 7.  | Department of Data Systems   |              |  |
| 8.  | Department of Public Works   |              |  |
| 9.  | Building Department  |              |  |
| 10.   | Department of Health   |              |  |
| 11.   | Fire Department  |              |  |
|   | Department of Transportation Services  | x            | Duties include promotion of ride sharing, van pool, bicycle and alternate work hours programs. Provisions require efficient street lighting and adoption of implementing administrative rules.       |
| 12.   |  |              |  |
| 13.   | Department of Auditoriums  |              |  |
| 14.   | Department of Land Utilization Central Coordinating Agency for Oahu  | x            | Provisions do not present significant obstacles.   |
| 15.   | Royal Hawaiian Band  |              |  |
| 16.   | Department of Parks and Recreation   |              |  |
| 17.   | Execution of Executive Operating Budget and Executive Capital Budget Ordinances                                | x            | Provisions do not present significant obstacles.   |
|   | Form of Executive Operating Budget and Executive Capital Budget Bills  | x            | Establishes form and contents of executive operating and capital budgets. Does not provide for or require identification of long term or full life-cycle costs associated with capital improvements. |
| 18.   |  |              |  |
| 19.   | (Reserved)   |              |  |
| 20.   | Acquisition of Property by Eminent Domain  |              |  |
| 21.   | Municipal Reference and Records Center   |              |  |
| 22.   | Annual Review of Fees and Charges  |              |  |
| 23.   | Department of Wastewater Management  | x            | Provisions do not present significant obstacles.   |
| 24.   | Planning Department  | x            | Provisions by administrative rules [Section 51 RCH]  |
| 25.   | Oahu Civil Defense Agency  |              |  |
| 26.   | Employment of Private Attorneys as Special Counsel to Represent the City, its Agencies, Officers and Employees |              |  |
| 27.   | Volunteer Services Program   |              |  |
| 28.   | Prohibition on Take-home Use of City Motor Vehicle by Executive Agency Head or Deputy                          |              |  |

**HONOLULU COUNTY CODE**

| DETAILED TABLE OF CONTENTS   |   | Energy<br>Impacts | Review<br>Notes                                  | Issues<br>Opportunities |
|--|---|-------------------|--|-------------------------|
| 29.  | Department of Housing and Community Development                                 | x                 | Provisions do not present significant obstacles. |                         |
| 30.  | Personal Services Contracts   |                   |  |                         |
| 31.  | Seals and Logotypes of Executive Agencies                                       |                   |  |                         |
| 32.  | City Video Monitoring of Public Activity  |                   |  |                         |
| 33.  | First Source Program  |                   |  |                         |
| 34.  | Biodiesel or Renewable Fuel Converted from Commercial FOG Waste or Commercial   | x                 | Provisions do not present significant obstacles. |                         |
| <b>Chapter 3 ADDITIONAL BOARDS, COMMISSIONS AND COMMITTEES</b>   |   |                   |  |                         |
| 1.   | Temporary Vacancies on Boards, Commissions and Committees                       |                   |  |                         |
| 2.   | Commission on Culture and the Arts  |                   |  |                         |
| 3.   | Oahu Committee on Children and Youth  |                   |  |                         |
| 4.   | Poundmasters  |                   |  |                         |
| 5.   | Animal Control  |                   |  |                         |
| 6.   | Ethics Commission   |                   |  |                         |
| 7.   | Salary Commission   |                   |  |                         |
| 8.   | Additional Standards of Conduct   |                   |  |                         |
| 9.   | Appointment on Boards, Commissions and Committees                               |                   |  |                         |
| 10.  | Oahu Historic Preservation Commission   |                   |  |                         |
| 11.  | Transportation Commission   | x                 | Provisions do not present significant obstacles. |                         |
| 12.  | Sunshine Law Training   |                   |  |                         |
| 13.  | Registration of Lobbyists   |                   |  |                         |
| <b>Chapter 4 ADDITIONAL POWERS AND DUTIES OF COUNCIL AND LEGISLATIVE AGENCIES</b>                                  |   |                   |  |                         |
| 1.   | (Reserved)  |                   |  |                         |
| 2.   | Oahu Metropolitan Planning Organization   |                   |  |                         |
| 3.   | Office of Council Services  |                   |  |                         |
| 4.   | Legislative Hearings and Procedures   |                   |  |                         |
| 5.   | Registration of Voters at Driver's Licensing Sites                              |                   |  |                         |
| 6.   | Services for Deaf and Hard-of-Hearing Persons Regarding Council and Committee   |                   |  |                         |
| 7.   | Report on Status of Anticipated or Ongoing Collective Bargaining                |                   |  |                         |
| 8.   | Public Infrastructure Maps  |                   |  |                         |
| 9.   | Office of the City Clerk  |                   |  |                         |
| 10.  | Office of the City Auditor  |                   |  |                         |
| <b>Chapter 5 SALARIES OF ELECTED OFFICIALS, NON-CIVIL SERVICE OFFICERS AND EMPLOYMENT AND BONDING REQUIREMENTS</b> |   |                   |  |                         |
| 1.   | Bonds of Elected Officials, Officers and Employees                              |                   |  |                         |
| 2.   | Pay Plan in the Offices of the Corporation Counsel and the Prosecuting Attorney |                   |  |                         |
| 3.   | Salaries of Various City Officers   |                   |  |                         |
| <b>Chapter 6 REVOLVING SPECIAL FUNDS, HOUSING MORTGAGE LOANS AND FEES</b>  |   |                   |  |                         |
| 1.   | Municipal Stores Revolving Fund   |                   |  |                         |
| 2.   | Payrolls Clearance Fund   |                   |  |                         |
| 3.   | Highway Fund  |                   |  |                         |
| 4.   | Treasury Trust Fund   |                   |  |                         |
| 5.   | General Trust Fund  |                   |  |                         |
| 6.   | Improvement District Bond and Interest Redemption Fund                          | x                 | Provisions do not present significant obstacles. |                         |
| 7.   | Housing and Community Development Revolving Fund                                | x                 | Provisions do not present significant obstacles. |                         |
| 8.   | General Obligation Bond and Interest Redemption Fund                            | x                 | Provisions do not present significant obstacles. |                         |
| 9.   | Community Renewal Program Fund  | x                 | Provisions do not present significant obstacles. |                         |
| 10.  | Service Fees for Disposition of Real Property                                   |                   |  |                         |
| 11.  | Fee Schedule for Public Records   |                   |  |                         |
| 12.  | Public Records  |                   |  |                         |
| 13.  | Federal Grants Fund   |                   |  |                         |
| 14.  | Special Projects Fund   |                   |  |                         |
| 15.  | Furnishing of Electronic Data Processing Services                               |                   |  |                         |
| 16.  | General Improvement Bond Fund   | x                 | Provisions do not present significant obstacles. |                         |
| 17.  | Highway Improvement Bond Fund   |                   |  |                         |
| 18.  | Bus Transportation Fund   | x                 | Provisions do not present significant obstacles. |                         |
| 19.  | Federal Revenue Sharing Fund  |                   |  |                         |
| 20.  | Highway Beautification and Disposal of Abandoned Vehicles Revolving Fund        |                   |  |                         |
| 21.  | Bikeway Fund  |                   |  |                         |

| HONOLULU COUNTY CODE       |  | Energy  | Review   | Issues        |
|----------------------------|--|---------|--|---------------|
| DETAILED TABLE OF CONTENTS |  | Impacts | Notes  | Opportunities |
| 22.                        | Community Development Fund   | x       | Provisions do not present significant obstacles.   |               |
| 23.                        | Housing and Community Development Section 8 Contract Fund                          | x       | Provisions do not present significant obstacles.   |               |
| 24.                        | Farmers Home Administration Loan Fund  |         |  |               |
| 25.                        | Parks and Playgrounds Fund   |         |  |               |
| 26.                        | Housing and Community Development Rehabilitation Loan Fund                         | x       | Provisions do not present significant obstacles.   |               |
| 27.                        | State Special Use Permit   |         |  |               |
| 28.                        | (Reserved)   |         |  |               |
| 29.                        | Standards for the Appropriation of Funds to Private Organizations                  |         |  |               |
| 30.                        | Liquor Commission Fund   |         |  |               |
| 31.                        | (Reserved)   |         |  |               |
| 32.                        | Establishing Maximum Interest Rate for Urban Renewal Project Notes                 |         |  |               |
| 33.                        | Establishing Maximum Interest for General Obligation Bonds                         |         |  |               |
| 34.                        | Housing Loan and Mortgage Programs   | x       | Provisions to established by rule consistent with HRS 46-15.2.<br>Provisions do not present significant obstacles. |               |
| 35.                        | Hotel and Boardinghouse Annual License Fee   |         |  |               |
| 36.                        | Capital Projects Fund  | x       | Provisions to established by rule.<br>Provisions do not present significant obstacles.                             |               |
| 37.                        | Federal Grants Capital Projects Fund   |         |  |               |
| 38.                        | Leisure Services Incentive Fund  |         |  |               |
| 39.                        | Landscaping and Beautification   | x       | Provisions do not present significant obstacles.   |               |
| 40.                        | Application Fees for General Plan, Development Plan, and Public Infrastructure Map |         |  |               |
| 41.                        | Fee Schedule for Land Use Ordinance Applications and Variances                     |         |  |               |
| 42.                        | Deferred Compensation Fund   |         |  |               |
| 43.                        | Charges by Municipal Reference and Records Center for Computer On-Line Service     |         |  |               |
| 44.                        | Fees and Charges for Services of the Honolulu Police Department                    |         |  |               |
| 45.                        | Rental Assistance Fund   | x       | Provisions do not present significant obstacles.   |               |
| 46.                        | Housing Development Special Fund   | x       | Provisions do not present significant obstacles.   |               |
| 47.                        | Wastewater System Facility Charge  |         |  |               |
| 48.                        | Solid Waste Improvement Bond Fund  |         |  |               |
| 49.                        | Solid Waste Special Fund   |         |  |               |
| 50.                        | Zoo Animal Purchase Fund   |         |  |               |
| 51.                        | Hanauma Bay Nature Preserve Fund   |         |  |               |
| 52.                        | Reserved   |         |  |               |
| 53.                        | Special Events Fund  |         |  |               |
| 54.                        | Sewer Revenue Bond Improvement Fund  |         |  |               |
| 55.                        | Reserved   |         |  |               |
| 56.                        | Reserve for Fiscal Stability Fund  |         |  |               |
| 57.                        | Golf Fund  |         |  |               |
| 58.                        | Contribution to the County   |         |  |               |
| 59.                        | Land Conservation Fund   |         |  |               |
| 60.                        | Transportation Surcharge Use of Funds  |         |  |               |
| 61.                        | Transit Fund   |         |  |               |
| .                          | Clean Water and Natural Lands Fund   |         |  |               |
| .                          | Affordable Housing Fund  | x       | Provisions do not present significant obstacles.   |               |
| .                          | Other Post-Employment Benefits Reserve Fund  |         |  |               |
| <b>Chapter 7</b>           | <b>ANIMALS AND FOWL</b>  |         |  |               |
| 1.                         | Cockfighting and Related Equipment   |         |  |               |
| 2.                         | Animal Nuisances   |         |  |               |
| 3.                         | Dog License  |         |  |               |
| 4.                         | Regulation of Dogs   |         |  |               |
| 5.                         | Public Spay and Neuter Clinic for Dogs and Cats                                    |         |  |               |
| 6.                         | Cat Identification Program   |         |  |               |
| 7.                         | Regulation of Dangerous Dogs   |         |  |               |
| <b>Chapter 8</b>           | <b>REAL PROPERTY TAX</b>   |         |  |               |
| 1.                         | Administration   |         |  |               |
| 2.                         | Notice of Assessments Assessment Lists   |         |  |               |
| 3.                         | Tax Bills, Payments and Penalties  |         |  |               |
| 4.                         | Remissions   |         |  |               |
| 5.                         | Liens--Foreclosures  |         |  |               |

| HONOLULU COUNTY CODE       |  | Energy  | Review   | Issues        |
|----------------------------|--|---------|--|---------------|
| DETAILED TABLE OF CONTENTS |  | Impacts | Notes  | Opportunities |
| 6.                         | Rate--Levy   |         |  |               |
| 7.                         | Valuations   |         |  |               |
| 8.                         | Wasteland Development  |         |  |               |
| 9.                         | Nontaxable Property--Assessment  |         |  |               |
| 10.                        | Exemptions   |         |  |               |
| 11.                        | Determination of Rates   |         |  |               |
| 12.                        | Appeals  |         |  |               |
| 13.                        | County Tax Credit  |         |  |               |
| 14.                        | (Reserved)   |         |  |               |
| 15.                        | Severability   |         |  |               |
| 16.                        | Tax Credit for Septic Tank to Replace Household Cesspool                               |         |  |               |
| <b>Chapter 9</b>           | <b>COLLECTION AND DISPOSAL OF REFUSE</b>   | x       | Provisions do not present significant obstacles. |               |
| 1.                         | General Provisions   | x       | Provisions do not present significant obstacles. |               |
| 2.                         | Collection License   |         |  |               |
| 3.                         | Regulations Applicable to Businesses, Private Dwellings and Government Facilities      |         |  |               |
| 4.                         | Collection and Disposal Charges  |         |  |               |
| 5.                         | Enforcement of Provisions  |         |  |               |
| 6.                         | Procedure on Arrest  |         |  |               |
| 7.                         | Recycling of Glass Containers  |         |  |               |
| 8.                         | Glasphalt Paving   |         |  |               |
| <b>Chapter 10</b>          | <b>RULES, REGULATIONS, CHARGES AND FEES FOR PUBLIC PARKS AND RECREATION FACILITIES</b> |         |  |               |
| 1.                         | Use of Public Parks, Playgrounds, Beaches and Other Public Areas                       |         |  |               |
| 2.                         | Fees and Charges for Use of Parks and Recreational Facilities                          |         |  |               |
| 3.                         | Fees for Use of Parks and Recreational Facilities for Commercial Activities            |         |  |               |
| 4.                         | Fees for Use of Municipal Golf Courses   |         |  |               |
| 5.                         | Commercial Windsurfing   |         |  |               |
| 6.                         | (Reserved)   |         |  |               |
| 7.                         | Policy on Fees for Organized Recreational Programs                                     |         |  |               |
| 8.                         | Summer Fun Activities  |         |  |               |
| 9.                         | Professional Sports Activity at Hans L'Orange Baseball Facility                        |         |  |               |
| 10.                        | Rental of Surfboard Lockers on Kuhio Beach   |         |  |               |
| <b>Chapter 10 A</b>        | <b>BOTANICAL GARDENS</b>   |         |  |               |
| 1.                         | General Provisions   |         |  |               |
| 2.                         | Use of Botanical Gardens   |         |  |               |
| 3.                         | Fees and Charges   |         |  |               |
| <b>Chapter 11</b>          | <b>CHILD CARE</b>  |         |  |               |
| 1.                         | Child Care   |         |  |               |
| <b>Chapter 12</b>          | <b>REGULATIONS OF COMMON CARRIERS AND THEIR FEES</b>                                   |         |  |               |
| 1.                         | Taxicabs   |         |  |               |
| 2.                         | U-Drive Motor Vehicles   |         |  |               |
| 3.                         | Tour Services  |         |  |               |
| 4.                         | General Provisions   |         |  |               |
| 5.                         | Pedicab  |         |  |               |
| <b>Chapter 13</b>          | <b>PUBLIC TRANSIT</b>  |         |  |               |
| 1.                         | Definitions  |         |  |               |
| 2.                         | Island-Wide Fare Structure   |         |  |               |
| 3.                         | Activities Prohibited on Public Conveyances  |         |  |               |
| 4.                         | Special Transit Service  |         |  |               |
| 5.                         | (Reserved)   |         |  |               |
| 6.                         | City Bus System  |         |  |               |
| 7.                         | Transit Voucher Program  |         |  |               |
| 8.                         | Transit Management Services Contractor   |         |  |               |
| 9.                         | Transit Stations   |         |  |               |
| 10.                        | City Ferry System  |         |  |               |
| <b>Chapter 14</b>          | <b>PUBLIC WORKS INFRASTRUCTURE REQUIREMENTS INCLUDING FEES AND SERVICES</b>            |         |  |               |
| 1.                         | General Provisions   |         |  |               |
| 2.                         | Sewer System for New Subdivision   |         |  |               |

| HONOLULU COUNTY CODE           |   | Energy  | Review   | Issues                                      |
|--------------------------------|---|---------|--|---|
| DETAILED TABLE OF CONTENTS     |   | Impacts | Notes  | Opportunities                               |
| 3.                             | Sewer System for Other Than in New Subdivisions   |         |  |   |
| 4.                             | Private Sewer System  |         |  |   |
| 5.                             | Industrial Wastewaters  |         |  |   |
| 5A.                            | Commercial FOG Waste and Commercial Cooking Oil Waste                                     |         |  |   |
| 6.                             | Sewer Service Charges   |         |  |   |
| 7.                             | Pumping or Treating of Cesspools  |         |  |   |
| 8.                             | Sewer Fund  |         |  |   |
| 9.                             | Termination of Water Service  |         |  |   |
| 10.                            | Wastewater System Facility Charges  |         |  |   |
| 11.                            | (Reserved)  |         |  |   |
| 12.                            | Drainage, Flood and Pollution Control   |         |  |   |
| 13.                            | General Provisions for Grading, Soil Erosion and Sediment Control                         |         |  |   |
| 14.                            | Permits, Bonds and Inspection for Grading, Soil Erosion and Sediment Control              |         |  |   |
| 15.                            | Grading, Grubbing and Stockpiling   |         |  |   |
| 16.                            | Violations, Penalties and Liabilities for Grading, Grubbing and Stockpiling               |         |  |   |
| 17.                            | Excavation and Repairs of Streets and Sidewalks   |         |  |   |
|                                | Regulations Governing the Construction of Sidewalk, Curb or Driveway Within the Right-of- |         |  |   |
| 18.                            | Way of Public Streets   |         |  |   |
| 19.                            | Public Utility Reserved Areas   | x       |  |   |
| 20.                            | Cleaning and Maintaining Sidewalks  |         |  |   |
| 21.                            | Construction of Improvements by Certain Property Owners                                   |         |  |   |
| 22.                            | Public Utility Facilities   | x       | Provisions do not present significant obstacles. |   |
| 23.                            | General Provisions for Assessments  |         |  |   |
| 24.                            | Costs for Assessments   |         |  |   |
| 25.                            | Procedure for Assessments   |         |  |   |
| 26.                            | Assessments   |         |  |   |
| 27.                            | Financing for Assessments   |         |  |   |
| 28.                            | Refunding   |         |  |   |
| 29.                            | Limitation on Time to Sue   |         |  |   |
| 30.                            | Severability  |         |  |   |
| 31.                            | General Provisions for Maintenance by Assessments   |         |  |   |
| 32.                            | Maintenance of Private Streets and Roads  |         |  |   |
|                                | Appendices  |         |  |   |
| A.                             | Improvement District Ordinances   |         |  |   |
| B.                             | Sewer Service Charge Schedules.   |         |  |   |
| C.                             | Cesspool Charge Schedules   |         |  |   |
| D.                             | Wastewater System Facility Charges  |         |  |   |
| <b>Chapter 15 TRAFFIC CODE</b> |   |         |  |   |
| 1.                             | Traffic Regulation  |         |  |   |
| 2.                             | Definitions   |         |  |   |
| 3.                             | Traffic Administration  |         |  |   |
| 4.                             | Enforcement and Obedience to Traffic Regulations  |         |  |   |
| 5.                             | Accident Reports  |         |  |   |
| 6.                             | Traffic Control Devices   | x       | Provisions do not present significant obstacles. | Does not mention timing of traffic signals. |
| 7.                             | Speed Restrictions  |         |  |   |
| 8.                             | Starting, Stopping and Turning--Signals   |         |  |   |
| 9.                             | Driving in No-Passing Zones and Divided Highways  |         |  |   |
| 10.                            | One-Way Streets   |         |  |   |
| 11.                            | Right-of-Way  |         |  |   |
| 12.                            | Special Stops   |         |  |   |
| 13.                            | Stopping, Standing and Parking  |         |  |   |
| 14.                            | Stopping, Standing or Parking Prohibited in Specified Places                              |         |  |   |
| 15.                            | Stopping for Loading or Unloading Only  |         |  |   |
| 16.                            | Stopping, Standing or Parking Restricted or Prohibited on Certain Streets                 |         |  |   |
| 17.                            | Pedestrians' Rights and Duties  |         |  |   |
| 18.                            | Operation of Bicycles and Play Vehicles   |         |  |   |
| 19.                            | Equipment   |         |  |   |
| 20.                            | Inspection of Motor Vehicles  |         |  |   |

| HONOLULU COUNTY CODE |  | Energy Impacts | Review Notes   | Issues Opportunities  |
|----------------------|--|----------------|--|---|
|                      | DETAILED TABLE OF CONTENTS   |                |  |   |
| 21.                  | Weight, Size and Load  |                |  |   |
| 22.                  | Parking Meter Zones  |                |  |   |
| 23.                  | Off-Street Parking   |                |  |   |
| 24.                  | Miscellaneous Provisions   |                |  |   |
| 25.                  | Pedestrian Malls   |                |  |   |
| 26.                  | Penalties and Procedure on Arrest  |                |  |   |
| 27.                  | Designation of Certain County Highways as Closed to Large Passenger Carrier Vehicles                             |                |  |   |
| <b>Chapter 16</b>    | <b>BUILDING CODE</b>   |                |  |   |
|                      | Adoption of the International Building Code and International Residential Code for One- and Two-Family Dwellings |                |  |   |
| 1.                   | Relocation of Buildings  |                |  |   |
| 2.                   | Factory-Built Buildings  |                |  |   |
| 3.                   | Thatched Material on Exterior of Building--Protection Against Exposure Fires                                     |                |  |   |
| 4.                   | Energy Conservation  | x              | Section applies to low-rise residential buildings. See Chapter 32 for Commercial provisions. |   |
| 5.                   | Swimming Pools   |                |  |   |
| 6.                   | Public Swimming Pools  |                |  |   |
| 7.                   | Termite-Infested Lumber  |                |  |   |
| 8.                   | (Reserved)   |                |  |   |
| 9.                   | Violations and Penalties   |                |  |   |
| 10.                  | Regulations Within Flood Hazard Districts and Developments Adjacent to Drainage                                  |                |  |   |
| 11.                  | Indigenous Hawaiian Architecture   |                |  |   |
| 12.                  |  |                |  |   |
| <b>Chapter 17</b>    | <b>ELECTRICAL CODE</b>   |                |  |   |
| 1.                   | General Provisions   |                |  |   |
| 2.                   | Definitions  |                |  |   |
| 3.                   | Administration and Enforcement   |                |  |   |
| 4.                   | Permits and Inspection Fees  |                |  |   |
| 5.                   | Standards  |                |  |   |
| 6.                   | Electrical Work Within Flood Hazard Districts and Developments Adjacent to Drainage                              |                |  |   |
| <b>Chapter 18</b>    | <b>FEES AND PERMITS FOR BUILDING, ELECTRICAL, PLUMBING AND SIDEWALK CODES</b>                                    |                |  |   |
| 1.                   | Purpose  |                |  |   |
| 2.                   | General Provisions   | x              | Provisions do not present significant obstacles.   |   |
| 3.                   | Permits  |                |  |   |
| 4.                   | Permit Application   |                |  |   |
| 5.                   | Permit Issuance  |                |  |   |
| 6.                   | Fees   |                |  |   |
| 7.                   | Violation and Penalty  |                |  |   |
| <b>Chapter 19</b>    | <b>PLUMBING CODE</b>   |                |  |   |
| 1.                   | General Provisions   |                |  |   |
| 2.                   | Administration and Enforcement   |                |  |   |
| 3.                   | Qualification of Performers of Work Under Plumbing Code  |                |  |   |
| 4.                   | Installation Requirements  |                |  |   |
| 5.                   | Plumbing Work Within Flood Hazard Districts and Developments Adjacent to Drainage                                |                |  |   |
| 6.                   | Violations and Penalties   |                |  |   |
| <b>Chapter 20</b>    | <b>FIRE CODE OF THE CITY AND COUNTY OF HONOLULU</b>  |                |  |   |
| 1.                   | Adoption of the State Fire Code  |                |  |   |
| 2.                   | Life Safety Requirements for Existing Hotel Buildings and Existing Business Buildings                            |                |  |   |
| 3.                   | Examination and Approval of Plans by Fire Chief  |                |  |   |
| 4.                   | Fireworks Control. Repealed by Ord. 02-47)   |                |  |   |
| 4.                   | (Reserved)   |                |  |   |
| 5.                   | Requirements for Smoke Detectors in Existing Highrise Residential Buildings                                      |                |  |   |
| <b>Volume II</b>     |  |                |  |   |
| <b>Chapter 21</b>    | <b>LAND USE ORDINANCE</b>  | x              |  | Zoning and land use policy could provide substantial energy efficiency by consideration of transportation requirements in determining where new development will occur and by providing for mass transit corridors. |
| 1.                   | General Provisions   | x              | Provisions do not present significant obstacles.   |   |
| 2.                   | Administration and Enforcement   |                |  |   |
| 3.                   | Establishment of Zoning Districts and Zoning District Regulations  |                |  |   |

| HONOLULU COUNTY CODE                  |  | Energy Impacts | Review Notes | Issues Opportunities  |
|---------------------------------------|--|----------------|--------------|---|
| DETAILED TABLE OF CONTENTS            |  |                |              |   |
| 4.                                    | General Development Standards  |                |              |   |
| 5.                                    | Specific Use Development Standards   |                |              |   |
| 6.                                    | Off-Street Parking and Loading   |                |              |   |
| 7.                                    | Sign Regulations   |                |              |   |
| 8.                                    | Optional Development Regulations   |                |              |   |
| 9.                                    | Special District Regulations   |                |              |   |
| 10.                                   | Definitions  |                |              |   |
| 21-A.                                 | (Reserved)   |                |              |   |
| 21-B.                                 | Zoning Ordinances  |                |              |   |
| 21-C.                                 | Zoning Maps  |                |              |   |
| 21-D.                                 | Resolutions—Plan Review Use Approvals  |                |              |   |
| 21-E.                                 | Interim Control Ordinances   |                |              |   |
| 21-F.                                 | Kakaako Special Design District  |                |              |   |
| 21-G.                                 | List of Figures  |                |              |   |
| 21-H.                                 | Amendments to Planned Development, Conditional Use Permit, and Cluster Approvals |                |              |   |
| 21-I.                                 | Key to Department Abbreviations  |                |              |   |
| <b>Chapter 22 SUBDIVISION OF LAND</b> |  |                |              |   |
| 1.                                    | Filing Fees  |                |              |   |
|                                       | Street Lights  | x              |              | Requires that street lights shall be constructed in all subdivisions. Does not allow exceptions. Separate Section provides for street light efficiency.   |
| 2.                                    |  |                |              |   |
| 3.                                    | Subdivision and Consolidation of Land  |                |              |   |
| 4.                                    | Sidewalks and Curbs in Residential Subdivisions                                  |                |              |   |
| 5.                                    | Utility Lines  |                |              |   |
| 6.                                    | Public Access to Shoreline and Mountain Areas                                    |                |              |   |
| 7.                                    | Parks and Playgrounds  |                |              |   |
| 8.                                    | Street Names   |                |              |   |
| 9.                                    | Memorials and Names for City Parks, Sites and Facilities                         |                |              |   |
| <b>Chapter 23 SHORELINE SETBACKS</b>  |  |                |              |   |
| 1.                                    | Shoreline Setbacks   |                |              |   |
|                                       |  | x              |              | Zoning and land use policy could provide substantial energy efficiency by consideration of transportation requirements in determining where new development will occur and by providing for mass transit corridors. |
| <b>Chapter 24 DEVELOPMENT PLANS</b>   |  |                |              |   |
|                                       | Development Plan Common Provisions   | x              |              | Specifically requires consideration of energy efficiency in developments [Section 24-1.4].  |
| 1.                                    |  |                |              |   |
| 2.                                    | Primary Urban Center   |                |              |   |
| 3.                                    | Ewa  |                |              |   |
| 24-1                                  | (Reserved)   |                |              |   |
| 24-2                                  | Primary Urban Center Development Plan  |                |              |   |
| 24-3                                  | Ewa Development Plan   |                |              |   |
| <b>Volume III</b>                     |  |                |              |   |
| <b>Chapter 24 DEVELOPMENT PLANS</b>   |  |                |              |   |
| 4.                                    | East Honolulu  |                |              |   |
| 5.                                    | Central Oahu   |                |              |   |
| 6.                                    | Koolaupoko   |                |              |   |
| 7.                                    | Ko'olau Loa  |                |              |   |
| 8.                                    | North Shore  |                |              |   |
| 9.                                    | Waiānae  |                |              |   |
| 10.                                   | Northwestern Hawaiian Islands  |                |              |   |
| 24-4                                  | East Honolulu Plan   |                |              |   |
| 24-5                                  | Central Oahu Maps  |                |              |   |
| 24-6                                  | Koolaupoko Plan  |                |              |   |
| 24-7                                  | Ko'olau Loa Plan   |                |              |   |
| 24-8                                  | North Shore Plan   |                |              |   |
| 24-9                                  | Waiānae Plan   |                |              |   |
| 24-10                                 | (Reserved)   |                |              |   |
| <b>Volume IV</b>                      |  |                |              |   |

**HONOLULU COUNTY CODE**

DETAILED TABLE OF CONTENTS

|  | Energy Impacts | Review Notes  | Issues Opportunities |
|--|----------------|---|----------------------|
| <b>Chapter 25 SPECIAL MANAGEMENT AREA</b>  |                |   |                      |
| 1. General Provisions  | x              | Provisions do not present significant obstacles.  |                      |
| 2. Special Management Area   |                |   |                      |
| 3. Objectives and Policies, Review and Procedural Guidelines   | x              | Provisions do not present significant obstacles.  |                      |
| 4. Significance Criteria and Procedures  |                |   |                      |
| 5. Permit Processing Procedures  |                |   |                      |
| 6. Prohibition   |                |   |                      |
| 7. Exemptions  |                |   |                      |
| 8. Penalties   |                |   |                      |
| 9. Enforcement   |                |   |                      |
| 10. Appeals  |                |   |                      |
| 11. Rules  |                |   |                      |
| 12. Severability   |                |   |                      |
| 25-1 Special Management Area Use Permit and Shoreline Variance Resolutions                                 |                |   |                      |
| 25-2 Special Management Area Maps  |                |   |                      |
| <b>Chapter 26 STATE LAND USE CLASSIFICATION</b>  |                |   |                      |
| 1. Boundary Adjustments Between Agricultural and Urban Districts   |                |   |                      |
| 26-A State Land Use District Boundary Amendments   |                |   |                      |
| <b>Chapter 27 HOUSING CODE</b>   |                |   |                      |
| 1. General Provisions  | x              | Provisions do not present significant obstacles.<br>Energy efficiency addressed in building code. |                      |
| 2. Definitions   |                |   |                      |
| 3. Inspections   |                |   |                      |
| 4. Space and Occupancy Standards   |                |   |                      |
| 5. Structural Requirements   |                |   |                      |
| 6. Mechanical Requirements   |                |   |                      |
| 7. Exits   |                |   |                      |
| 8. Fire Protection   |                |   |                      |
| 9. Substandard Buildings   |                |   |                      |
| 10. Notices and Orders of Building Official--Appeals. Repealed   |                |   |                      |
| 10. Enforcement  |                |   |                      |
| 11. Severability   |                |   |                      |
| <b>Chapter 28 LEASE AND RENTAL OF CITY REAL PROPERTY, INCLUDING FEES</b>                                   |                |   |                      |
| 1. General Provisions  |                |   |                      |
| 2. Bidding Requirements and Procedures   |                |   |                      |
| 3. Exceptions to Bidding Requirement   |                |   |                      |
| 4. Term of Agreements  |                |   |                      |
| 5. Penalty   |                |   |                      |
| 6. General Provisions for the Lease and Rental Policy for the Department of Enterprise                     |                |   |                      |
| 7. Rental Schedule   |                |   |                      |
| 8. Concessions   |                |   |                      |
| 9. Nonprofit Organizations   |                |   |                      |
| 10. Severability   |                |   |                      |
| 11. Lease and Permit Policy for the Grounds of City Hall and the Honolulu Municipal Building               |                |   |                      |
| 12. Telecommunications Facilities  |                |   |                      |
| <b>Chapter 29 STREETS, SIDEWALKS, MALLS AND OTHER PUBLIC PLACES</b>  |                |   |                      |
| 1. General Provisions  |                |   |                      |
| 2. Lei Selling   |                |   |                      |
| 3. (Reserved)  |                |   |                      |
| 4. Litter Control  |                |   |                      |
| 5. Use of Streets and Sidewalks by Solicitors and Canvassers   |                |   |                      |
| 6. Peddler's License   |                |   |                      |
| 6A. Peddling by Merchant of a Store on Chinatown Sidewalk or Mall, College Walk Mall, and Sun Yat Sen Mall |                |   |                      |
| 7. Handbilling in the Waikiki Special Design District  |                |   |                      |
| 8. Structures on, Above or Below a Public Sidewalk   |                |   |                      |
| 9. Procedure on Arrest   |                |   |                      |
| 10. Use of Malls   |                |   |                      |
| 11. Publication Dispensing Racks in Waikiki  |                |   |                      |

| HONOLULU COUNTY CODE  |  | Energy Impacts | Review Notes   | Issues Opportunities   |
|---|--|----------------|--|--|
| DETAILED TABLE OF CONTENTS  |  |                |  |  |
| 12.   | Charitable Sales Activities on Public Places                                     |                |  |  |
| 13.   | Use of Animals in Solicitations in the Waikiki Special District                  |                |  |  |
| 14.   | Unlawful Signs Within Street Rights-of-way and Public Malls                      |                |  |  |
| 15.   | (Reserved)   |                |  |  |
| 16.   | (Reserved)   |                |  |  |
| <b>Chapter 30 WATER MANAGEMENT</b>  |  |                |  |  |
| 1.  | General Provisions   | x              | Provisions do not present significant obstacles.   |  |
| 2.  | Oahu Water Management Plan   | x              | Provisions do not present significant obstacles.   |  |
| 3.  | Severability   |                |  |  |
| 4.  | Water Conservation Measures  | x              | Provisions do not present significant obstacles.   |  |
| 5.  | Medication in Drinking Water   |                |  |  |
| <b>Chapter 31 COMMUNITY ECONOMIC DEVELOPMENT</b>                            |  |                |  |  |
| 1.  | Enterprise Zone  | x              |  |  |
| 2.  | Enterprise Zone--Real Property Tax Rebate  |                |  |  |
| 3.  | Enterprise Zones--Exemptions from Development Requirements                       |                |  |  |
| <b>Chapter 32 BUILDING ENERGY EFFICIENCY STANDARDS</b>                      |  |                |  |  |
| 1.  | Purpose  | x              | Provisions do not present significant obstacles.   |  |
| 2.  | Scope  | x              | Provisions do not present significant obstacles.   |  |
| 3.  | Definitions, Abbreviations, Acronyms and Symbols                                 | x              | Provisions do not present significant obstacles.   |  |
| 4.  | Compliance   | x              | Provisions do not present significant obstacles.   |  |
| 5.  | Electric Power   | x              | Provisions do not present significant obstacles.   |  |
| 6.  | Lighting   | x              | Provisions do not present significant obstacles.   |  |
| 7.  | (Reserved)   | x              | Provisions do not present significant obstacles.   |  |
| 8.  | Building Envelope  | x              | Provisions do not present significant obstacles.   |  |
| 9.  | Heating, Ventilating and Air Conditioning (HVAC) Systems                         | x              | Provisions do not present significant obstacles.   |  |
| 10.   | Heating, Ventilating and Air Conditioning (HVAC) Equipment                       | x              | Provisions do not present significant obstacles.   |  |
| 11.   | Service Water Heating Systems and Equipment                                      | x              | Provisions do not present significant obstacles.   |  |
| 12.   | Energy Management  | x              | Provisions do not present significant obstacles.   |  |
| 13.   | Building Energy Cost Budget Method   | x              | Provisions do not present significant obstacles.   |  |
| 14.   | Low-rise Residential Roof Heat Gain Requirements                                 | x              | Provisions do not present significant obstacles.   |  |
| <b>Chapter 33 DEVELOPMENT AGREEMENTS</b>                                    |  |                |  |  |
| 1.  | General Provisions   | x              | Provides for agreements with developers. Projects must be consistent with general plans and zoning requirements.   |  |
| <b>Chapter 33 A IMPACT FEES FOR TRAFFIC AND ROADWAY IMPROVEMENTS IN EWA</b> |  |                |  |  |
| 1.  | General Provisions   |                |  |  |
| <b>Chapter 34 COMMUNITY FACILITIES DISTRICTS</b>                            |  |                |  |  |
|   |  | x              | Provides for procurement of services and assets that incur long term operation costs. Costs are explicitly defined as capital and acquisition costs and exclude long term operation and full life cycle costs. | Operation, long term and life cycle costs are not required to be identified or considered in establishing special districts for procurement of assets or services. |
| 1.  | General Provisions   |                |  |  |
| 2.  | Proceedings  |                |  |  |
| 3.  | Special Tax  |                |  |  |
| 4.  | Changes in Term of District, Authorized Special Improvement, and Special Tax     |                |  |  |
| 5.  | Early Termination of District  |                |  |  |
| 6.  | Annexation of Territory  |                |  |  |
| 7.  | Bonds  |                |  |  |
| <b>Chapter 35 INCENTIVES FOR BUSINESSES TO CREATE NEW JOBS</b>              |  |                |  |  |
| 1.  | General Provisions   | x              | Provisions do not present significant obstacles.   |  |
| 2.  | Property Tax Rebate for Businesses Creating New Jobs                             |                |  |  |
| <b>Chapter 36 SPECIAL IMPROVEMENT DISTRICTS</b>                             |  |                |  |  |
| 1.  | General Provisions   | x              | Provides for procurement of services and assets that incur long term operation costs. Costs are explicitly defined as capital and acquisition costs and exclude long term operation and full life cycle costs. | Operation, long term and life cycle costs are not required to be identified or considered in establishing special districts for procurement of assets or services. |
| 2.  | Proceedings  |                |  |  |
| 3.  | Special Assessment   |                |  |  |
| 4.  | Changes in Authorized Supplemental Services, Improvements and Special Assessment |                |  |  |
| 5.  | Annexation of Territory  |                |  |  |
| 6.  | Termination of District  |                |  |  |
| 7.  | Bonds  |                |  |  |

| HONOLULU COUNTY CODE       |   | Energy  | Review   | Issues   |
|----------------------------|---|---------|--|--|
| DETAILED TABLE OF CONTENTS |   | Impacts | Notes  | Opportunities  |
| 36-A.                      | Specific Special Improvement District Ordinances  |         |  |  |
| <b>Chapter 37</b>          | <b>REAL PROPERTY TRANSACTIONS INVOLVING THE CITY AND COUNTY OF HONOLULU</b>                             |         |  |  |
| 1.                         | Disposal of Real Property Owned by the City and County of Honolulu                                      |         |  |  |
| <b>Chapter 38</b>          | <b>(Reserved)</b>   |         |  |  |
| <b>Chapter 39</b>          | <b>MAXIMUM ANNUAL RENEGOTIATED LEASE RENT</b>   |         |  |  |
| 1.                         | Maximum Annual Renegotiated Lease Rent  |         |  |  |
| <b>Chapter 40</b>          | <b>PROHIBITED ACTIVITIES IN THE CITY</b>  |         |  |  |
| 1.                         | Use of Intoxicating Liquors in Certain Public Places  |         |  |  |
| 2.                         | Obnoxious Substances  |         |  |  |
| 3.                         | Watersheds--Reservoirs  |         |  |  |
| 4.                         | Iceboxes and Refrigerators  | x       | Provisions do not present significant obstacles. |  |
|                            | The Sale to, Possession of or Use by Minors of Chemical Substances Containing Volatile Organic Solvents |         |  |  |
| 5.                         | Organic Solvents  |         |  |  |
| 6.                         | Aerial Advertising  |         |  |  |
| 7.                         | Use of Sound Amplifying Device in Public Buildings  |         |  |  |
| 8.                         | Sale of Toilets and Urinals   | x       | Provisions do not present significant obstacles. |  |
| 9.                         | Sale of Showerheads and Faucets   | x       | Provisions do not present significant obstacles. |  |
| 10.                        | Advertisement and Distribution of Cigarettes and Tobacco Products                                       |         |  |  |
| 11.                        | Regulation of Distribution, Acquisition, Possession and Use of Graffiti Implements                      |         |  |  |
| 12.                        | Graffiti Damage to Public Property  |         |  |  |
| 13.                        | Ephedrine-containing Products   |         |  |  |
| 14.                        | Products Containing Gamma Hydroxybutyrate   |         |  |  |
| 15.                        | Laser Pointers and Harassment with Laser Beams  |         |  |  |
| 16.                        | Prostitution-related Public Nuisance Abatement  |         |  |  |
| 17.                        | Unofficial Age Identification Card  |         |  |  |
| 18.                        | Bidi Cigarette Prohibitions   |         |  |  |
| 19.                        | Advertisement of Intoxicating Liquor and Liquor Products  |         |  |  |
| 20.                        | Herbal Cigarettes   |         |  |  |
| 21.                        | Additional Areas of Significant Prostitution-related Activity   |         |  |  |
| 22.                        | Wearing of Masks or Disguises   |         |  |  |
| 23.                        | Replica Guns  |         |  |  |
| <b>Chapter 41</b>          | <b>REGULATED ACTIVITIES WITHIN THE CITY</b>   |         |  |  |
| 1.                         | City Seal   |         |  |  |
| 2.                         | Auctions  |         |  |  |
| 3.                         | (Reserved)  |         |  |  |
| 4.                         | Hotels  |         |  |  |
| 5.                         | Noises in Vicinity of Hospitals   |         |  |  |
| 6.                         | Shooting Galleries  |         |  |  |
| 7.                         | Operation of Certain Amusement Facilities   |         |  |  |
| 8.                         | Air Guns  |         |  |  |
| 9.                         | Palmistry   |         |  |  |
| 10.                        | Disposal of Weeds, Garbage, Trash and Waste from Property   |         |  |  |
| 11.                        | Control of and Evacuation from Disaster Areas During Potential Disasters                                |         |  |  |
| 12.                        | Bicycles  |         |  |  |
| 13.                        | Protective Regulations for Exceptional Trees  |         |  |  |
| 14.                        | Vehicular Advertising   |         |  |  |
| 15.                        | Regulations Governing Public Shows  |         |  |  |
| 16.                        | Permit and License Fees for Driving Motor Vehicles  |         |  |  |
| 17.                        | Motor Vehicle Weight Tax  | x       | Provisions do not present significant obstacles. | Vehicle weight taxes could incorporate incentives (such as feebate mechanism) to encourage light (efficient) vehicles and discourage heavy vehicles for personal transportation. |
| 18.                        | Fees for Motor Vehicle Registration   | x       | Provisions do not present significant obstacles. | Registration fees could incorporate incentives (such as feebate mechanism) to encourage light (efficient) vehicles and discourage heavy vehicles for personal transportation.    |
| 19.                        | General Provisions--Inspection Costs  |         |  |  |
| 20.                        | Overtime Inspections  |         |  |  |
| 21.                        | Smoking   |         |  |  |
| 22.                        | Banners Displayed from Lampposts  |         |  |  |
| 23.                        | Neighborhood Watch Signs  |         |  |  |

| HONOLULU COUNTY CODE | DETAILED TABLE OF CONTENTS  | Energy<br>Impacts | Review<br>Notes | Issues<br>Opportunities |
|----------------------|---|-------------------|-----------------|-------------------------|
| 24.                  | Enforcement of Water Safety Rules by Lifeguards                   |                   |                 |                         |
| 25.                  | Damage to Public Property   |                   |                 |                         |
| 26.                  | Maintenance of Channels, Streambeds, Streambanks and Drainageways |                   |                 |                         |
| 27.                  | Polystyrene Foam Containers                                       |                   |                 |                         |
| 28.                  | Parking Space Reserved for Disabled Persons                       |                   |                 |                         |
| 29.                  | Motor Vehicle Alarms  |                   |                 |                         |
| 30.                  | Historic Preservation   |                   |                 |                         |
| 31.                  | Noise Control   |                   |                 |                         |
| 32.                  | Loitering on Public School Premises                               |                   |                 |                         |
| 33.                  | Regulated Use of Uniforms by Private Security Personnel           |                   |                 |                         |
| 34.                  | Sound Levels for the Waikiki Shell                                |                   |                 |                         |
| 35.                  | Secondhand Dealers  |                   |                 |                         |
| 36.                  | Scrap Dealers   |                   |                 |                         |
| 37.                  | Possession, Use, and Sale of Pepper Sprays for Self-Defense       |                   |                 |                         |
| 38.                  | Inspection Fee for Reconstructed Vehicles                         |                   |                 |                         |
| 39.                  | Panoram Business Regulation                                       |                   |                 |                         |
| 40.                  | Lap Dancing Establishments  |                   |                 |                         |
| 41.                  | Nightclubs  |                   |                 |                         |
| 42.                  | Alarm Systems   |                   |                 |                         |

| MAUI COUNTY CODE |                              | Marked for Review   | Review Notes | Missed Opportunities   |
|------------------|------------------------------|---|--------------|--|
| Title 1.         | General Provisions           |   |              |  |
|                  | 1.01                         | CODE ADOPTION   |              |  |
|                  | 1.04                         | GENERAL PROVISIONS  |              |  |
|                  | 1.08                         | COUNTY SEAL   |              |  |
|                  | 1.10                         | COUNTY FLAG   |              |  |
|                  | 1.12                         | GENERAL PENALTY*  |              |  |
|                  | 1.14                         | REVISION AND PUBLICATION OF LAWS                                    |              |  |
|                  | 1.16                         | UNIFORM ADMINISTRATIVE RULES FORMAT                                 |              |  |
| Title 2.         | Administration and Personnel |   |              |  |
|                  | 2.04                         | COUNTY COUNCIL RULES* (RESERVED)                                    |              |  |
|                  | 2.08                         | COUNTY COUNCIL SERVICES*  |              |  |
|                  | 2.12                         | COUNTY DEPARTMENTS  |              |  |
|                  | 2.16                         | CENTRAL COORDINATING AGENCY   |              |  |
|                  | 2.20                         | INTERGOVERNMENTAL AGREEMENTS  |              |  |
|                  | 2.24                         | VOLUNTEER FIRE STATIONS   |              |  |
|                  | 2.26                         | URBAN DESIGN REVIEW BOARD   | x            | No significant applicable provisions.  |
|                  | 2.28                         | PLANNING COMMISSIONS*   | x            | No significant applicable provisions.  |
|                  | 2.29                         | AFFIRMATIVE ACTION ADVISORY COUNCIL                                 |              |  |
|                  | 2.32                         | COMMISSION ON PERSONS WITH DISABILITIES                             |              |  |
|                  | 2.34                         | COUNCIL ON AGING  |              |  |
|                  | 2.36                         | TRAFFIC SAFETY COUNCIL  |              |  |
|                  | 2.37                         | COMMISSION ON CULTURE AND THE ARTS                                  |              |  |
|                  |                              | COMMISSION ON NAMING STREETS, PARKS, AND FACILITIES                 |              |  |
|                  | 2.38                         |   |              |  |
|                  | 2.39                         | COMMISSION ON CHILDREN AND YOUTH                                    |              |  |
|                  |                              | OTHER BOARDS, COMMISSIONS, COMMITTEES AND AGENCIES*                 | x            | No significant applicable provisions.  |
|                  | 2.40                         | NOMINATIONS AND APPOINTMENTS TO BOARDS, COMMISSIONS, AND COMMITTEES |              |  |
|                  | 2.41                         | SALARY COMMISSION   |              |  |
|                  | 2.42                         | OFFICERS' SALARIES AND BONDS*                                       |              |  |
|                  | 2.44                         | TRAVEL EXPENSES   |              |  |
|                  | 2.48                         | USE OF PRIVATE VEHICLES FOR COUNTY BUSINESS                         | x            | Provisions do not present significant obstacles.   |
|                  | 2.52                         | CODE OF ETHICS  |              |  |
|                  | 2.56                         | MISCELLANEOUS ADMINISTRATIVE REGULATIONS                            |              |  |
|                  | 2.60                         | PUBLIC RECORD REPRODUCTION CHARGES                                  |              |  |
|                  | 2.64                         | VOTER REGISTRATION COMPUTER TAPES                                   |              |  |
|                  | 2.68                         | DISPOSAL OF COUNTY PROPERTY*  |              |  |
|                  | 2.72                         | REIMBURSEMENT OF EXPENSES   |              |  |
|                  | 2.76                         | GENERAL PLAN AND COMMUNITY PLANS                                    | x            | Provides for various factors to be considered in general plans, island plans and community plans. Does not explicitly identify energy issues in lists of factors to be considered.   |
|                  | 2.80B                        |   |              |  |
|                  | 2.84                         | MANAGEMENT OF RECORDS   |              |  |
|                  | 2.86                         | COUNTY HOUSING POLICIES   | x            | Provisions do not present significant obstacles.   |
|                  | 2.88                         | CULTURAL RESOURCES COMMISSION                                       |              |  |
|                  | 2.90A                        | REGULATION OF PERMITS AND WATER USE                                 |              |  |
|                  |                              | TRANSFERS BETWEEN CAPITAL IMPROVEMENT APPROPRIATIONS                |              |  |
|                  | 2.92                         | RESIDENTIAL WORKFORCE HOUSING POLICY                                | x            | Establishes requirements and specifications for affordable housing to be provided by land developers. Defines affordability in terms of purchase price but does not consider operation costs (including energy costs) or provide requirements to reduce operation costs by providing cost effective efficiency measures. |
|                  | 2.96                         |   |              |  |
| Title 3          | REVENUE AND FINANCE          |   |              |  |
|                  | 3.04                         | INFORMATION ON COUNTY OPERATIONS                                    |              |  |
|                  | 3.05                         | COLLECTION OF FARES FOR PUBLIC TRANSIT SERVICES                     | x            | Provisions do not present significant obstacles.   |
|                  | 3.08                         | FINANCIAL ADMINISTRATION*   |              |  |

| MAUI COUNTY CODE |   | Marked for<br>Review | Review<br>Notes   | Missed<br>Opportunities  |
|------------------|---|----------------------|---|--|
|                  | PURCHASING PROCEDURES*  | x                    | Establishes procedures for procurement of goods and services.<br>Incorporates provisions of HRS Chapter 103 | Requires award of contract to lowest bidder in competitive bidding procedures.<br>Does not require identification or consideration of operating costs, life cycle costs of energy costs in project specifications of bid selection criteria. |
| 3.12             |   |                      |   |  |
| 3.16             | PAYMENT OF CLAIMS*  |                      |   |  |
| 3.20             | FUEL TAX  | x                    | Provisions do not present significant obstacles.  |  |
|                  | MOTOR VEHICLE WEIGHT TAX  | x                    |   | Vehicle weight taxes could incorporate incentives (such as feebate mechanism) to encourage light (efficient) vehicles and discourage heavy vehicles for personal transportation.   |
| 3.24             |   |                      |   |  |
|                  | MOTOR VEHICLE REGISTRATION  | x                    |   | Registration fees could incorporate incentives (such as feebate mechanism) to encourage light (efficient) vehicles and discourage heavy vehicles for personal transportation.  |
| 3.25             |   |                      |   |  |
| 3.28             | REAL PROPERTY TAX* (RESERVED)   |                      |   |  |
| 3.30             | FIRST-TIME HOME BUYERS' REVOLVING FUND*   |                      |   |  |
|                  | HOUSING INTERIM FINANCING AND BUY-BACK REVOLVING FUND                                 |                      |   |  |
| 3.32             |   |                      |   |  |
| 3.34             | RENTAL HOUSING DEVELOPMENT REVOLVING FUND   |                      |   |  |
| 3.35             | AFFORDABLE HOUSING FUND   |                      |   |  |
| 3.36             | MAUI COUNTY GRANTS PROGRAM  | x                    | Provisions do not present significant obstacles.  |  |
|                  | CONCESSION AWARDS AND RENTAL OR LEASE OF COUNTY PROPERTY                              |                      |   |  |
| 3.40             |   |                      |   |  |
| 3.44             | ACQUISITION AND DISPOSITION OF REAL PROPERTY*   |                      |   |  |
| 3.48             | REAL PROPERTY TAX   |                      |   |  |
| 3.52             | NASKA SEWAGE PUMP STATION FUND  |                      |   |  |
| 3.54             | SOLID WASTE MANAGEMENT FUND   |                      |   |  |
| 3.56             | GIFTS AND DONATIONS   |                      |   |  |
| 3.64             | MAUI COUNTY INSURANCE PROGRAM   |                      |   |  |
| 3.68             | FIRE HAZARD REMOVAL REVOLVING FUND  |                      |   |  |
| 3.72             | AFTER-SCHOOL PROGRAM REVOLVING FUND   |                      |   |  |
| 3.76             | MOLOKAI ECONOMIC DEVELOPMENT REVOLVING FUND   |                      |   |  |
| 3.80             | ENTERPRISE ZONE PROGRAM   |                      |   |  |
| 3.84             | ANIMAL MANAGEMENT REVOLVING FUND  |                      |   |  |
|                  | OPEN SPACE, NATURAL RESOURCES, CULTURAL RESOURCES, AND SCENIC VIEWS PRESERVATION FUND |                      |   |  |
| 3.88             |   |                      |   |  |
| 3.92             | WATER SYSTEM DEVELOPMENT FUND   |                      |   |  |
| 3.96             | EMERGENCY FUND  |                      |   |  |
| Title 5.         | Business Licenses and Regulations   |                      |   |  |
| 5.06             | GOLF CART CROSSINGS*  |                      |   |  |
| 5.08             | HOTELS  |                      |   |  |
| 5.12             | VENDORS   |                      |   |  |
| 5.16             | TAXICABS  |                      |   |  |
| 5.20             | ORGANIZATIONS EXEMPT FROM LICENSE FEES  |                      |   |  |
| 5.22             | BICYCLE TOUR BUSINESS   |                      |   |  |
| 5.24             | OCEAN RECREATIONAL ACTIVITY BUSINESS PERMITS*   |                      |   |  |
| Title 6.         | Animals   |                      |   |  |
| 6.01             | PROHIBITING THE EXHIBITION OF CAPTIVE CETACEANS                                       |                      |   |  |
| 6.04             | ANIMAL CONTROL  |                      |   |  |
| 6.05             | GUIDE, SIGNAL/HEARING AND SERVICE DOGS  |                      |   |  |
| 6.08             | ANIMALS AT LARGE  |                      |   |  |
| 6.16             | IMPOUNDMENT OF ANIMALS  |                      |   |  |
| 6.20             | COLLECTION SERVICE  |                      |   |  |
| Title 8.         | Health and Safety   |                      |   |  |
| 8.04             | REFUSE COLLECTION AND LANDFILLS   |                      |   |  |
| 8.08             | CONVEYANCE OF SWILL   |                      |   |  |
| 8.12             | HANDLING GASOLINE   |                      |   |  |
| 8.16             | FIREWORKS   |                      |   |  |

| MAUI COUNTY CODE |                                      | Marked for<br>Review | Review<br>Notes   | Missed<br>Opportunities |
|------------------|--------------------------------------|----------------------|---|-------------------------|
|                  | 8.19                                 |                      |   |                         |
|                  | 8.20                                 |                      |   |                         |
|                  | 8.21                                 |                      |   |                         |
|                  | 8.24                                 |                      |   |                         |
|                  | 8.28                                 | x                    | Prohibits nuclear power generation plants in Maui County. |                         |
|                  | 8.30                                 |                      |   |                         |
|                  | 8.32                                 |                      |   |                         |
|                  | 8.34                                 |                      |   |                         |
| Title 9          | PUBLIC PEACE, MORALS AND WELFARE     |                      |   |                         |
|                  | 9.04                                 |                      |   |                         |
|                  | 9.08                                 |                      |   |                         |
|                  | 9.12                                 |                      |   |                         |
|                  | 9.16                                 |                      |   |                         |
|                  | 9.20                                 |                      |   |                         |
|                  | 9.24                                 |                      |   |                         |
|                  | 9.28                                 |                      |   |                         |
|                  | 9.32                                 |                      |   |                         |
|                  | 9.36                                 |                      |   |                         |
| Title 10.        | VEHICLES AND TRAFFIC*                |                      |   |                         |
|                  | 10.04                                |                      |   |                         |
|                  | 10.08                                |                      |   |                         |
|                  | 10.12                                |                      |   |                         |
|                  | 10.16                                |                      |   |                         |
|                  | 10.20                                |                      |   |                         |
|                  | 10.24                                |                      |   |                         |
|                  | 10.28                                | x                    | Does not explicitly mention timing of traffic signals.    |                         |
|                  | 10.32                                |                      |   |                         |
|                  | 10.33                                |                      |   |                         |
|                  | 10.36                                |                      |   |                         |
|                  | 10.40                                |                      |   |                         |
|                  | 10.44                                |                      |   |                         |
|                  | 10.48                                |                      |   |                         |
|                  | 10.52                                |                      |   |                         |
|                  | 10.56A                               |                      |   |                         |
|                  | 10.60                                |                      |   |                         |
|                  | 10.68                                |                      |   |                         |
|                  | 10.70                                |                      |   |                         |
|                  | 10.72                                |                      |   |                         |
|                  | 10.76                                |                      |   |                         |
|                  | 10.80                                |                      |   |                         |
|                  | 10.84                                |                      |   |                         |
|                  | 10.90                                |                      |   |                         |
| Title 12.        | Streets, Sidewalks and Public Places |                      |   |                         |
|                  | 12.02                                |                      |   |                         |
|                  | 12.04                                |                      |   |                         |
|                  | 12.08                                |                      |   |                         |
|                  | 12.12                                |                      |   |                         |
|                  | 12.16                                |                      |   |                         |
|                  | 12.17                                | x                    | No significant applicable provisions.                     |                         |
|                  | 12.20                                |                      |   |                         |
|                  | 12.24A                               |                      |   |                         |
|                  | 12.28                                |                      |   |                         |
|                  | 12.32                                |                      |   |                         |
|                  | 12.36                                |                      |   |                         |
|                  | 12.38                                |                      |   |                         |
|                  | 12.40                                |                      |   |                         |

| MAUI COUNTY CODE |                       | Marked for Review                                 | Review Notes | Missed Opportunities                             |
|------------------|-----------------------|---|--------------|--|
|                  | 12.42                 | SIGN WAVING ON PUBLIC HIGHWAYS                    |              |  |
|                  |                       | DISPLAY OF NEIGHBORHOOD WATCH SIGNSON PUBLIC      |              |  |
|                  | 12.46                 | PROPERTY  |              |  |
|                  | 12.48                 | SPEED HUMPS                                       |              |  |
|                  | 12.50                 | MAINTENANCE OF OLD GOVERNMENT ROADS               |              |  |
|                  | 12.52                 | ENCROACHMENT ON PUBLIC RIGHTS-OF-WAY              |              |  |
|                  |                       | RECYCLED GLASS PRODUCT REQUIREMENTSFOR COUNTY     |              |  |
|                  | 12.54                 | FUNDED PROJECTS                                   |              |  |
| Title 13.        | Parks and Recreation  |   |              |  |
|                  | 13.04                 | RECREATIONAL AREA REGULATIONS                     |              |  |
|                  | 13.16                 | WAIIEHU MUNICIPAL GOLF COURSE                     |              |  |
|                  | 13.20                 | VETERANS' CEMETERIES                              |              |  |
|                  | 13.22                 | PUBLIC ACCESS                                     |              |  |
| Title 14.        | Public Services       |   |              |  |
| Article 1.       | Water                 |   |              |  |
|                  | 14.01                 | GENERAL PROVISIONS                                |              |  |
|                  | 14.02                 | WATER USE AND DEVELOPMENT PLAN                    |              |  |
|                  | 14.03                 | WATER CONSERVATION                                | x            | Provisions do not present significant obstacles. |
|                  | 14.04                 | WATER SERVICES (RESERVED)                         |              |  |
|                  |                       | REQUIREMENTS FOR SUBDIVISION WATER SYSTEMS        |              |  |
|                  | 14.05                 | (RESERVED)  |              |  |
|                  |                       | CONTROL OF WATER USAGE DURING PERIODS OF DROUGHT  |              |  |
|                  | 14.06                 | (RESERVED)  |              |  |
|                  | 14.07                 | WATER SYSTEM DEVELOPMENT FUND (RESERVED)          |              |  |
|                  |                       | RESTRICTIONS ON USE OF POTABLE WATERFOR GOLF      |              |  |
|                  | 14.08                 | COURSES (RESERVED)                                |              |  |
|                  | 14.09                 | REGULATION OF PERMITS AND WATER USE(RESERVED)     |              |  |
|                  | 14.10                 | RATES AND FEES (RESERVED)                         |              |  |
| Article 2.       | Wastewater            |   |              |  |
|                  | 14.19A                | GENERAL PROVISIONS                                |              |  |
|                  | 14.21A                | GENERAL PRETREATMENT REGULATIONS                  |              |  |
|                  | 14.23A                | CONSTRUCTION STANDARDS                            |              |  |
|                  | 14.25A                | SERVICE CONNECTIONS                               |              |  |
|                  | 14.27                 | PRIVATE WASTEWATER DISPOSAL SYSTEMS               |              |  |
|                  | 14.29                 | PUMPING OF CESSPOOLS AND SEPTIC TANKS             |              |  |
|                  | 14.31                 | SERVICE CHARGES AND SEWER FUND                    |              |  |
|                  | 14.32                 | PROHIBITED ACTS AND PENALTIES                     |              |  |
|                  |                       | WASTEWATER ASSESSMENT FEES FOR FACILITY EXPANSION |              |  |
|                  |                       | AND THE COLLECTION/TRANSMISSION SYSTEM UPGRADE    |              |  |
|                  |                       | FOR THE KIHEI REGIONAL WASTEWATER                 |              |  |
|                  | 14.34                 |   |              |  |
|                  |                       | TREATMENT SYSTEM                                  |              |  |
|                  |                       | WASTEWATER ASSESSMENT FEES FOR FACILITY EXPANSION |              |  |
|                  |                       | FOR THE WAILUKU/KAHULUI WASTEWATER TREATMENT      |              |  |
|                  |                       | SYSTEM  |              |  |
|                  | 14.35                 |   |              |  |
| Article 3.       | Improvement Districts |   |              |  |
|                  | 14.36                 | GENERAL PROVISIONS                                |              |  |
| I. General       | Provisions            |   |              |  |
| II. Defini       | tions                 |   |              |  |
|                  | 14.38                 | REGULATIONS GENERALLY                             |              |  |
|                  | 14.40                 | INITIATION OF PROCEEDINGS                         |              |  |
|                  | 14.42                 | COUNCIL ACTION AND REPORTS                        |              |  |
|                  | 14.44                 | HEARING NOTICE REQUIREMENTS                       |              |  |
|                  | 14.46                 | PROTESTS, HEARINGS AND COUNCIL ACTION             |              |  |
|                  | 14.48                 | MAKING THE IMPROVEMENT                            |              |  |
|                  | 14.50                 | COLLECTION OF ASSESSMENTS                         |              |  |
|                  | 14.52                 | IMPROVEMENT DISTRICT BONDS                        |              |  |
|                  | 14.54                 | AMENDED ASSESSMENTS                               |              |  |

| MAUI COUNTY CODE |                                 | Marked for Review   | Review Notes | Missed Opportunities  |
|------------------|---------------------------------|---|--------------|---|
|                  | 14.56                           | REASSESSMENTS   |              |   |
|                  | 14.58                           | REFUNDING   |              |   |
|                  | 14.60                           | TIME LIMIT FOR ACTIONS  |              |   |
| Article 4.       | Impact Fees                     |   |              |   |
|                  | 14.62                           | IMPACT FEES FOR TRAFFIC AND ROADWAYIMPROVEMENTS IN WEST MAUI, HAWAII              |              |   |
|                  | 14.68                           | IMPACT FEES FOR TRAFFIC AND ROADWAYIMPROVEMENTS IN KIHEI AND MAKENA, MAUI, HAWAII |              |   |
|                  | 14.72                           | NEEDS ASSESSMENT STUDY RELATING TO PARKING ASSESSMENT FEES                        |              |   |
| Title 16         | BUILDINGS AND CONSTRUCTION      |   |              |   |
|                  | 16.04B                          | FIRE CODE   |              |   |
|                  | 16.08                           | HOUSING CODE  |              |   |
|                  | 16.12A                          | NONCOMMERCIAL SIGNS   |              |   |
|                  | 16.13                           | COMMERCIAL SIGNS  |              |   |
|                  |                                 | ENERGY CODE   | x            | Code applies to commercial buildings. Code excludes single family, duplex or garden apartments (per Ashrae 90.1) except for roof heat gain standards.   |
|                  | 16.16                           |   |              | Code provides only minimal requirements for low rise (detached) residential buildings.  |
|                  | 16.18A                          | ELECTRICAL CODE   |              |   |
|                  | 16.20A                          | PLUMBING CODE   |              |   |
|                  | 16.26                           | BUILDING CODE   | x            | Provisions do not present significant obstacles.  |
|                  | 16.28                           | EXPERIMENTAL AND DEMONSTRATION HOUSING PROJECTS                                   |              |   |
| Title 18.        | Subdivisions                    |   |              |   |
|                  | 18.04                           | GENERAL PROVISIONS  | x            |   |
|                  | 18.08                           | PRELIMINARY PLAT  |              |   |
|                  | 18.12                           | FINAL PLAT  |              |   |
|                  | 18.16                           | DESIGN STANDARDS  | x            | Provisions do not present significant obstacles.  |
|                  |                                 | IMPROVEMENTS  | x            | Requires that street lights shall be installed in all subdivisions in order to obtains subdivision approval. Does not allow exceptions. Does not provide for efficient fixtures.                                    |
|                  | 18.20                           |   |              |   |
|                  | 18.24                           | FEES  |              |   |
|                  | 18.28                           | BUILDING PERMITS  |              |   |
|                  | 18.32                           | VARIANCES AND EXCEPTIONS  |              |   |
|                  | 18.36                           | APPEALS   |              |   |
|                  | 18.40                           | ADMINISTRATION  |              |   |
|                  | 18.44                           | VIOLATION--PENALTY  |              |   |
|                  | 18.50                           | INTERIM RESTRICTIONS ON AGRICULTURALSUBDIVISIONS                                  |              |   |
| Title 19.        | Zoning                          |   |              |   |
| ARTICLE I.       | INTERIM ZONING PROVISIONS       |   |              |   |
|                  | 19.02                           | REGULATIONS GENERALLY   |              |   |
| ARTICLE II       | COMPREHENSIVE ZONING PROVISIONS |   |              |   |
|                  |                                 | GENERAL PROVISIONS AND DEFINITIONS  | x            | Provisions do not explicitly present significant obstacles.   |
|                  | 19.04                           |   |              | Zoning and land use policy could provide substantial energy efficiency by consideration of transportation requirements in determining where new development will occur and by providing for mass transit corridors. |
|                  | 19.06                           | DISTRICTS AND BOUNDARIES*   | x            | Provisions do not present significant obstacles.  |
|                  | 19.07                           | OPEN SPACE DISTRICTS  |              |   |
|                  | 19.08                           | RESIDENTIAL DISTRICTS   |              |   |
|                  | 19.09                           | R-O ZERO LOT LINE RESIDENTIAL DISTRICT  |              |   |
|                  | 19.10                           | TWO-FAMILY (DUPLICATE) DISTRICT   |              |   |
|                  | 19.12                           | APARTMENT DISTRICT  |              |   |
|                  | 19.14                           | HOTEL DISTRICTS   |              |   |
|                  | 19.15                           | COUNTRY TOWN BUSINESS DISTRICTS   |              |   |
|                  | 19.16                           | B-1 NEIGHBORHOOD BUSINESS DISTRICT  |              |   |
|                  | 19.18                           | B-2 COMMUNITY BUSINESS DISTRICT   |              |   |
|                  | 19.20                           | B-3 CENTRAL BUSINESS DISTRICT   |              |   |

| MAUI COUNTY CODE |   | Marked for Review | Review Notes  | Missed Opportunities |
|------------------|---|-------------------|---|----------------------|
| 19.22            | B-R RESORT COMMERCIAL DISTRICT                                |                   |   |                      |
| 19.24            | M-1 LIGHT INDUSTRIAL DISTRICT                                 |                   |   |                      |
| 19.26            | M-2 HEAVY INDUSTRIAL DISTRICT                                 |                   |   |                      |
| 19.27            | MAUI CENTRAL PARK DISTRICT                                    |                   |   |                      |
| 19.28            | AIRPORT DISTRICT  |                   |   |                      |
| 19.29            | RURAL DISTRICTS   |                   |   |                      |
| 19.30A           | AGRICULTURAL DISTRICT   |                   |   |                      |
| 19.31            | PUBLIC/QUASI-PUBLIC DISTRICTS                                 |                   |   |                      |
| 19.32            | PLANNED DEVELOPMENT   |                   |   |                      |
| 19.33            | KIHEI RESEARCH AND TECHNOLOGY PARK DISTRICT                   |                   |   |                      |
| 19.34            | CIVIC IMPROVEMENT DISTRICTS                                   |                   |   |                      |
| 19.35            | ACCESSORY DWELLINGS   |                   |   |                      |
| 19.36            | OFF-STREET PARKING AND LOADING                                |                   |   |                      |
| 19.37            | TIME SHARING PLANS  |                   |   |                      |
| 19.40            | CONDITIONAL PERMITS   |                   |   |                      |
| 19.45            | PROJECT DISTRICT PROCESSING REGULATIONS                       |                   |   |                      |
| Article III      | Maui County Historic Districts                                |                   |   |                      |
| 19.48            | GENERAL PROVISIONS  |                   |   |                      |
| 19.50            | DISTRICTS ESTABLISHED   |                   |   |                      |
| 19.52            | REGULATIONS ON BUILDINGS AND USES                             |                   |   |                      |
| Article IV       | Regulation of Miscellaneous Areas                             |                   |   |                      |
| 19.56            | OPEN SPACE INCENTIVE SYSTEM                                   |                   |   |                      |
| 19.58            | PROJECT DISTRICT DEVELOPMENT                                  |                   |   |                      |
| 19.60            | NAPILI BAY CIVIC IMPROVEMENT DISTRICT                         |                   |   |                      |
| 19.62            | FLOOD HAZARD AREAS  |                   |   |                      |
| 19.64            | BED AND BREAKFAST HOMES                                       |                   |   |                      |
| 19.66            | NUCLEAR ENERGY  | x                 | Prohibits nuclear power generation plants in Maui County. |                      |
| 19.68            | STATE LAND USE DISTRICT BOUNDARIES                            |                   |   |                      |
| 19.69            | URBAN RESERVE DISTRICT  |                   |   |                      |
| 19.70            | LANAI PROJECT DISTRICT 1 (MANELE)                             |                   |   |                      |
| 19.71            | LANAI PROJECT DISTRICT 2 (KOELE)                              |                   |   |                      |
| 19.73            | LAHAINA PROJECT DISTRICT 1 (KAPALUA)                          |                   |   |                      |
| 19.74            | KIHEI-MAKENA PROJECT DISTRICT 5                               |                   |   |                      |
| 19.75            | MAKAWAO-PUKALANI-KULA PROJECT DISTRICT 1 (KULA)               |                   |   |                      |
| 19.78            | WAILUKU-KAHULUI PROJECT DISTRICT 1 (MAUI LANI)                |                   |   |                      |
| 19.79            | WAILUKU-KAHULUI PROJECT DISTRICT 2 (PIIHANA)                  |                   |   |                      |
| 19.80            | WAILUKU-KAHULUI PROJECT DISTRICT 3 (WAILUKU)                  |                   |   |                      |
| 19.81            | WAILUKU-KAHULUI PROJECT DISTRICT 4 (WAIHE'E)                  |                   |   |                      |
|                  | INTERIM RESTRICTIONS ON THE DEVELOPMENT OF HOTELS             |                   |   |                      |
| 19.82            |   |                   |   |                      |
| 19.83            | CLUSTER HOUSING DEVELOPMENTS                                  |                   |   |                      |
| 19.84            | R-O ZERO LOT LINE OVERLAY DISTRICT                            |                   |   |                      |
| 19.85            | ADULT ENTERTAINMENT ACTIVITY                                  |                   |   |                      |
|                  | WAILUKU-KAHULUI PROJECT DISTRICT 5 (MAUI TROPICAL PLANTATION) |                   |   |                      |
| 19.86            |   |                   |   |                      |
| 19.89            | KIHEI-MAKENA PROJECT DISTRICT 2 (KIHEI GATEWAY PARK PROJECT)  |                   |   |                      |
| 19.90            | KIHEI-MAKENA PROJECT DISTRICT 9 (WALEA 670)                   |                   |   |                      |
| 19.91            | KIHEI-MAKENA PROJECT DISTRICT 8 (PALAUEA)                     |                   |   |                      |
| 19.92            | WEST MAUI PROJECT DISTRICT 2 (KAPALUA MAUKA)                  |                   |   |                      |
| Article V.       | Administration and Enforcement                                |                   |   |                      |
| 19.500           | GENERAL PROVISIONS  |                   |   |                      |
| 19.510           | APPLICATION AND PROCEDURES                                    |                   |   |                      |
| 19.520           | VARIANCES AND APPEALS   |                   |   |                      |
| 19.530           | ENFORCEMENT   |                   |   |                      |
| 19.615           | PARK DISTRICTS  |                   |   |                      |
| Title 20.        | Environmental Protection                                      |                   |   |                      |
| 20.04            | AIR POLLUTION   | x                 | No significant applicable provisions.                     |                      |

| MAUI COUNTY CODE |  | Marked for<br>Review | Review<br>Notes | Missed<br>Opportunities |
|------------------|--|----------------------|-----------------|-------------------------|
| 20.08            | SOIL EROSION AND SEDIMENTATION CONTROL   |                      |                 |                         |
|                  | RESTRICTION ON CONNECTIONS AND INTRODUCTION OF<br>WASTEWATER FLOWS TO COUNTY WASTEWATER<br>TREATMENT SYSTEMS |                      |                 |                         |
| 20.16            |  |                      |                 |                         |
| 20.20            | LITTER CONTROL   |                      |                 |                         |
|                  | GLASS RECYCLING FOR LICENSED LIQUORESTABLISHMENTS  |                      |                 |                         |
| 20.22            |  |                      |                 |                         |
|                  | RESTRICTIONS ON USE OF POTABLE WATERFOR GOLF<br>COURSES  |                      |                 |                         |
| 20.24            |  |                      |                 |                         |
|                  | ALLOCATING EXPANSION CAPACITY FOR THE<br>WAILUKU/KAHULUI WASTEWATER TREATMENT FACILITY                       |                      |                 |                         |
| 20.28            |  |                      |                 |                         |
| 20.30            | Use of Reclaimed WaterArticle I. General Provisions  |                      |                 |                         |
| Article II       | Reclaimed Water Fill Stations  |                      |                 |                         |
| Article III      | Reclaimed Water Distribution System  |                      |                 |                         |
| Title 22.        | Agricultural Parks   |                      |                 |                         |
|                  | 22.04A KULA AGRICULTURAL PARK  |                      |                 |                         |
| ARTICLE I.       | GENERAL PROVISIONS   |                      |                 |                         |
| ARTICLE II       | ADMINISTRATION   |                      |                 |                         |
| ARTICLE III      | APPLICATION FOR LEASE OF LOT   |                      |                 |                         |
| ARTICLE IV       | CONDITIONS AND RESTRICTIONS  |                      |                 |                         |
| ARTICLE V.       | SEVERABILITY CLAUSE  |                      |                 |                         |

| <b>Hawaii County Code</b> |  | <b>Energy</b>  | <b>Review</b>                                    | <b>Issues</b>        |
|---------------------------|--|----------------|--|----------------------|
| <b>Table of Contents</b>  |  | <b>Impacts</b> | <b>Notes</b>                                     | <b>Opportunities</b> |
| <b>Chapter 1.</b>         | <b>GENERAL PROVISIONS</b>  |                |  |                      |
| <b>Chapter 2.</b>         | <b>ADMINISTRATION</b>  |                |  |                      |
| Article 1.                | General Provisions.  |                |  |                      |
| Article 2.                | Executive Branch.  |                |  |                      |
| Article 3.                | Office of the Corporation Counsel.   |                |  |                      |
| Article 3A.               | Office of the Prosecuting Attorney.  |                |  |                      |
| Article 4.                | Department of Finance.   |                |  |                      |
| Article 5.                | Fire Department.   |                |  |                      |
| Article 6.                | Volunteer Fire Department.   |                |  |                      |
| Article 7.                | Planning Department.   | x              | Provisions do not present significant obstacles. |                      |
| Article 8.                | Department of Research and Development.  | x              | Provisions do not present significant obstacles. |                      |
| Article 9.                | Department of Public Works.  | x              | Provisions do not present significant obstacles. |                      |
| Article 10.               | Junior Police Officers.  |                |  |                      |
| Article 11.               | Department of Parks and Recreation.  |                |  |                      |
| Article 12.               | Central Coordinating Agency.   |                |  |                      |
| Article 13.               | County Housing Agency.   |                |  |                      |
| Article 14.               | Mass Transit Agency.   |                |  |                      |
| Article 15.               | Code of Ethics.  |                |  |                      |
| Article 16.               | Travel and Other Expenses.   | x              | Provisions do not present significant obstacles. |                      |
| Article 17.               | Public Records Fee Schedule.   |                |  |                      |
| Article 18.               | Uncollectible Accounts.  |                |  |                      |
| Article 19.               | Real Property Disposition.   |                |  |                      |
| Article 20.               | Voter Registration.  |                |  |                      |
| Article 21.               | Reserved.  |                |  |                      |
| Article 22.               | Disposal of County Equipment.  |                |  |                      |
| Article 23.               | Federal Revenue Sharing Fund.  |                |  |                      |
| Article 24.               | Payment to County, Subsequently Dishonored.  |                |  |                      |
| Article 25.               | Appropriation of Funds to Nonprofit Organizations.   |                |  |                      |
| Article 26.               | Salaries for Deputies in the Office of the Corporation Counsel and the Office of the Prosecuting Attorney. |                |  |                      |
| Article 27.               | Numbering, Form, Revision of Ordinances; Supplementation of Hawai'i County Code.                           |                |  |                      |
| Article 28.               | County Seal.   |                |  |                      |
| Article 29.               | Self-Insurance Fund.   |                |  |                      |
| Article 30.               | Gifts or Donations; Dedications.   |                |  |                      |
| Article 31.               | Sister City Relationships.   |                |  |                      |
| Article 32.               | Recovery of Rescue Expenses.   |                |  |                      |
| Article 33.               | Development Agreement with the State for Mass Transportation Programs.                                     | x              | Provisions do not present significant obstacles. |                      |
| Article 34.               | Fees and Charges for Special Duty Services of the Hawai'i County Police Department.                        |                |  |                      |
| Article 35.               | Geothermal Asset Fund.   | x              | Provisions do not present significant obstacles. |                      |
| Article 36.               | Geothermal Relocation Program.   | x              | Provisions do not present significant obstacles. |                      |
| Article 37.               | Family Violence Advisory Commission.   |                |  |                      |
| Article 38.               | Claims and Actions Against County Officers, Employees and Former Employees.                                |                |  |                      |
| Article 39.               | Workforce Investment Act Program.  |                |  |                      |
| Article 40.               | Department of Environmental Management.  | x              | Provisions do not present significant obstacles. |                      |
| Article 41.               | Disaster and Emergency Fund.   |                |  |                      |
| Article 42.               | Public Access, Open Space, and Natural Resources Preservation Fund.  |                |  |                      |
| Article 43.               | Budget Stabilization Fund.   |                |  |                      |
| <b>Chapter 3.</b>         | <b>SIGNS</b>   |                |  |                      |
| Article 1.                | Signs.   |                |  |                      |
| <b>Chapter 4.</b>         | <b>ANIMALS</b>   |                |  |                      |

| <b>Hawaii County Code</b> |   | <b>Energy</b>  | <b>Review</b>   | <b>Issues</b>  |
|---------------------------|---|----------------|---|--|
| <b>Table of Contents</b>  |   | <b>Impacts</b> | <b>Notes</b>  | <b>Opportunities</b>   |
| <b>Chapter 5.</b>         | <b>BUILDING</b>   |                |   |  |
| Article 1.                | Adoption of Uniform Building Code.                          | x              |   |  |
|                           | Building Energy Efficiency Standards.*                      | x              | Energy Code applies to commercial buildings that have human occupancy.<br>Single family and small detached residential structures are exempt. | Code only provides minimal requirements for single family and small detached residential buildings.  |
| Article 2.                |   |                |   |  |
| Division 1.               | Purpose.  | x              |   |  |
| Division 2.               | Scope.  | x              |   |  |
| Division 3.               | Definitions, Abbreviations, Acronyms and Symbols.           | x              |   |  |
| Division 4.               | Compliance.   | x              |   |  |
| Division 5.               | Electric Power.   | x              |   |  |
| Division 6.               | Lighting.   | x              |   |  |
| Division 7.               | Reserved.   | x              |   |  |
| Division 8.               | Building Envelope.  | x              |   |  |
| Division 9.               | Heating, Ventilating and Air-Conditioning (HVAC) Systems.   | x              |   |  |
| Division 10.              | Heating, Ventilating and Air-Conditioning (HVAC) Equipment. | x              |   |  |
| Division 11.              | Service Water Heating Systems and Equipment.                | x              |   |  |
| Division 12.              | Energy Management.  | x              |   |  |
| Division 13.              | Building Energy Cost Budget Method.                         | x              |   |  |
| Division 14.              | Enforcement.  | x              |   |  |
| <b>Chapter 6.</b>         | <b>BUSINESSES</b>   |                |   |  |
| Article 1.                | Cemeteries.   |                |   |  |
| Article 2.                | Dance Halls.  |                |   |  |
| Article 3.                | Mobile Homes.   |                |   |  |
| Article 4.                | Miscellaneous Business Licenses.                            |                |   |  |
| Article 5.                | Licensing of Auctioneers.                                   |                |   |  |
| <b>Chapter 7.</b>         | <b>CIVIL DEFENSE</b>  |                |   |  |
| Article 1.                | Civil Defense Organization.                                 |                |   |  |
| Article 2.                | Disaster Control.   |                |   |  |
| <b>Chapter 8.</b>         | <b>DEDICATION OF LAND</b>                                   |                |   |  |
| Article 1.                | Park Dedication Code.                                       |                |   |  |
| <b>Chapter 9.</b>         | <b>ELECTRICITY</b>  | x              | Provisions do not present significant obstacles.  |  |
| Article 1.                | General Provisions.   | x              | Provisions do not present significant obstacles.  |  |
| Article 2.                | Administration and Enforcement.                             |                |   |  |
| Article 3.                | National Electrical Code.                                   |                |   |  |
| Article 4.                | Modifications to National Electrical Code.                  |                |   |  |
| Article 5.                | Permits for Electrical Work.                                |                |   |  |
| Division 1.               | Application, Issuance and Contents.                         |                |   |  |
| Division 2.               | Fees and Charges.   |                |   |  |
| <b>Chapter 10.</b>        | <b>EROSION AND SEDIMENTATION CONTROL</b>                    |                |   |  |
| Article 1.                | General Provisions.   |                |   |  |
| Article 2.                | Permits.  |                |   |  |
| Article 3.                | Conditions and Specifications.                              |                |   |  |
| <b>Chapter 11.</b>        | <b>HOUSING</b>  |                |   |  |
|                           | Affordable Housing.   | x              | Provisions do not present significant obstacles.  | Defines affordability in terms of purchase price but does not consider operation costs (including energy costs) or provide requirements to reduce operation costs by providing cost effective efficiency measures. |
| Article 1.                |   |                |   |  |
| <b>Chapter 12.</b>        | <b>IMPROVEMENTS BY ASSESSMENTS</b>                          |                |   |  |
| Article 1.                | General Provisions.   | x              | Provisions do not present significant obstacles.  |  |
| Article 2.                | Procedure.  |                |   |  |
| Article 3.                | Assessments.  |                |   |  |
| Article 4.                | Finance and Payment.  |                |   |  |
| Article 5.                | Refunding.  |                |   |  |
| <b>Chapter 13.</b>        | <b>MINORS</b>   |                |   |  |
| <b>Chapter 14.</b>        | <b>GENERAL WELFARE</b>                                      |                |   |  |

| <b>Hawaii County Code</b> |  | <b>Energy</b>  | <b>Review</b>  | <b>Issues</b>   |
|---------------------------|--|----------------|--|---|
| <b>Table of Contents</b>  |  | <b>Impacts</b> | <b>Notes</b>   | <b>Opportunities</b>  |
| Article 1.                | Alcoholic Beverages.   |                |  |   |
| Article 2.                | Firearms and Explosives.   |                |  |   |
| Article 3.                | Noise Control.   |                |  |   |
| Article 4.                | Prohibition of Smoking in Certain Places.  |                |  |   |
| Article 5.                | Fireworks.   |                |  |   |
| Article 6.                | Property Offenses.   |                |  |   |
| Article 7.                | Radio Interference.  |                |  |   |
| Article 8.                | Nuclear Energy.  | x              | Prohibits nuclear power generation.  |   |
| Article 9.                | Outdoor Lighting.  | x              | Prohibits mercury vapor lighting, requires low pressure sodium for area lighting, requires shielding, limits hours of operation. |   |
| Article 10.               | Exceptional Trees.   | x              | Provisions do not present significant obstacles.   | The value of trees to regulate urban temperatures and reduce air conditioning requirements is not explicitly noted. |
| Article 11.               | Neighborhood Watch Signs.  |                |  |   |
| Article 12.               | Official Bulletin Board.   |                |  |   |
| Article 13.               | Soliciting for Money or Objects of Value.  |                |  |   |
| Article 14.               | Street Addressing And Naming.  |                |  |   |
| Division 1.               | General Provisions.  |                |  |   |
| Division 2.               | Address Numbers.   |                |  |   |
| Division 3.               | Street Names.  |                |  |   |
| Division 4.               | Violations.  |                |  |   |
| <b>Chapter 15.</b>        | <b>PARKS AND RECREATION</b>  |                |  |   |
| Article 1.                | General Provisions.  | x              | Provisions do not present significant obstacles.   |   |
| Article 2.                | Restrictions and Prohibitions.   |                |  |   |
| Division 1.               | Park Areas.  |                |  |   |
| Division 2.               | Recreation and Park Areas.   |                |  |   |
| Article 3.                | Public Meetings and Assemblies.  |                |  |   |
| Article 4.                | Camping.   |                |  |   |
| Article 5.                | Picnics.   |                |  |   |
| Article 6.                | Credit Against User Fees for Private Improvementsto Parks and Recreational Facilities. |                |  |   |
| Article 7.                | Veterans Advisory Committee.   |                |  |   |
| Article 8.                | Naming of Facilities.  |                |  |   |
| Article 9.                | Farmers Markets.   |                |  |   |
| Article 10.               | Municipal Golf Course Funds.   |                |  |   |
| <b>Chapter 16.</b>        | <b>PLANNING</b>  |                |  |   |
| <b>Chapter 17.</b>        | <b>PLUMBING</b>  |                |  |   |
| Article 1.                | General Provisions.  | x              | Provisions do not present significant obstacles.   |   |
| Article 2.                | Administration and Enforcement.  |                |  |   |
| Article 3.                | Variances; Appeals.  |                |  |   |
| Article 4.                | Qualification of Performers of Work Under Plumbing Code.                               | x              | Provisions do not present significant obstacles.   |   |
| Article 5.                | Installation Requirements.   |                |  |   |
| Article 6.                | Amending the Plumbing Code.  |                |  |   |
| Article 7.                | Plumbing Work Within Special Flood Hazard Areas.                                       |                |  |   |
| <b>Chapter 18.</b>        | <b>PUBLIC TRANSPORTATION</b>   | x              | Provisions do not present significant obstacles.   |   |
| Article 1.                | Common Carriers.   |                |  |   |
| Division 1.               | General Provisions.  |                |  |   |
| Division 2.               | County Transportation Commission.  |                |  |   |
| Division 3.               | Certificate of Public Convenience and Necessity.                                       |                |  |   |
| Division 4.               | Passenger Capacity.  |                |  |   |
| Division 5.               | Bus Terminals and Parking.   |                |  |   |
| Article 2.                | Taxicabs.  |                |  |   |
| Division 1.               | General Provisions.  |                |  |   |
| Division 2.               | Driver's Permit.   |                |  |   |
| Division 3.               | Taximeters and Fares.  |                |  |   |
| Article 3.                | School Buses.  |                |  |   |

| Hawaii County Code |                                     | Energy  | Review   | Issues        |
|--------------------|-------------------------------------|---------|--|---------------|
| Table of Contents  |                                     | Impacts | Notes  | Opportunities |
| Division 1.        | General Provisions.                 |         |  |               |
| Division 2.        | Specifications and Equipment.       |         |  |               |
| Division 3.        | Drivers and Bus Operations.         |         |  |               |
| Division 4.        | Inspections.                        |         |  |               |
| Article 4.         | Public Transit System.              | x       | Provisions do not present significant obstacles. |               |
| Division 1.        | Island-Wide Fare Structure.         | x       | Provisions do not present significant obstacles. |               |
| <b>Chapter 19.</b> | <b>REAL PROPERTY TAXES</b>          | x       | Provisions do not present significant obstacles. |               |
| Article 1.         | Administration.                     |         |  |               |
| Article 2.         | Notice of Assessments and Lists.    |         |  |               |
| Article 3.         | Tax Bills, Payments and Penalties.  |         |  |               |
| Article 4.         | Remissions.                         |         |  |               |
| Article 5.         | Liens, Foreclosure.                 |         |  |               |
| Article 6.         | Rate; Levy.                         |         |  |               |
| Article 7.         | Tax Maps; Valuations.               |         |  |               |
| Article 8.         | Dedications.                        |         |  |               |
| Article 9.         | Nontaxable Property; Assessment.    |         |  |               |
| Article 10.        | Exemptions.                         |         |  |               |
| Article 11.        | Determination of Rates.             |         |  |               |
| Article 12.        | Appeals.                            |         |  |               |
| <b>Chapter 20.</b> | <b>REFUSE</b>                       | x       | Provisions do not present significant obstacles. |               |
| Article 1.         | Littering.                          |         |  |               |
| Article 2.         | Clearing Unoccupied Lots.           |         |  |               |
| Article 3.         | Refuse Disposal.                    | x       | Provisions do not present significant obstacles. |               |
| Article 4.         | Solid Waste Fees.                   | x       | Provisions do not present significant obstacles. |               |
| <b>Chapter 21.</b> | <b>SEWERS</b>                       |         |  |               |
| Article 1.         | General Provisions.                 |         |  |               |
| Article 2.         | Public Sewers.                      |         |  |               |
| Article 3.         | Sewage Works and Connections.       |         |  |               |
| Division 1.        | General Provisions.                 |         |  |               |
| Division 2.        | Subdivisions.                       |         |  |               |
| Division 3.        | Laterals.                           |         |  |               |
| Division 4.        | Extensions.                         |         |  |               |
| Article 4.         | Sewer Service Charges.              |         |  |               |
| Article 5.         | Sewer Connection Loan Program.      |         |  |               |
| <b>Chapter 22.</b> | <b>COUNTY STREETS</b>               |         |  |               |
| Article 1.         | General Provisions.                 |         |  |               |
| Article 2.         | Prohibitions.                       |         |  |               |
| Article 3.         | Use of County Streets.              |         |  |               |
| Division 1.        | Types of Permits.                   |         |  |               |
| Division 2.        | Repealed                            |         |  |               |
| Division 3.        | Publication Dispenser Permits.      |         |  |               |
| Division 4.        | Sidewalk Use Permits.               |         |  |               |
| Division 5.        | Permit Conditions.                  |         |  |               |
| Division 6.        | Permit Fees.                        |         |  |               |
| Article 4.         | Construction in County Streets.     |         |  |               |
| Division 1.        | Permitting.                         |         |  |               |
| Division 2.        | Sidewalk Standards.                 |         |  |               |
| Division 3.        | Driveway Approach Standards.        |         |  |               |
| Article 5.         | Addresses.                          |         |  |               |
| Division 1.        | Street Names.                       |         |  |               |
| Division 2.        | Reserved.                           |         |  |               |
| Article 6.         | Speed Humps.                        |         |  |               |
| Article 7.         | Variances.                          |         |  |               |
| Article 8.         | Violations, Penalties, Enforcement. |         |  |               |
| Article 9.         | Legal Compliance and Rulemaking.    |         |  |               |

# Hawaii County Code

## Table of Contents

|                    |   | Energy  | Review   | Issues  |
|--------------------|---|---------|--|---|
|                    |   | Impacts | Notes  | Opportunities   |
| <b>Chapter 23.</b> | <b>SUBDIVISIONS</b>                               | x       | Provisions do not present significant obstacles. |   |
| Article 1.         | General Provisions.                               | x       | Provisions do not present significant obstacles. |   |
| Article 2.         | Administration.                                   |         |  |   |
| Division 1.        | General Provisions.                               |         |  |   |
| Division 2.        | Variances.  |         |  |   |
| Article 3.         | Design Standards.                                 | x       | Provisions do not present significant obstacles. |   |
| Division 1.        | General Provisions.                               | x       | Provisions do not present significant obstacles. |   |
| Division 2.        | Blocks.   |         |  |   |
| Division 3.        | Lots.   |         |  |   |
| Division 4.        | Street Design.                                    |         |  |   |
| Division 5.        | Utilities.  | x       | Provisions do not present significant obstacles. |   |
| Article 4.         | Application for Subdivision and Preliminary Plat. |         |  |   |
| Division 1.        | General Provisions.                               |         |  |   |
| Division 2.        | Contents of Preliminary Plat.                     |         |  |   |
| Article 5.         | Final Plat.                                       |         |  |   |
| Article 6.         | Improvements.                                     |         |  |   |
| Division 1.        | Construction.                                     |         |  |   |
| Division 2.        | Improvements Required.                            |         |  |   |
| Article 7.         | Inspection and Certification.                     |         |  |   |
| Article 8.         | Safety Flood Hazard District Requirements.        |         |  |   |
| Article 9.         | Plantation Community Subdivision.                 |         |  |   |
| Article 10.        | Farm Subdivisions.                                |         |  |   |
| Article 11.        | Pre-Existing Lots.                                |         |  |   |
| Article 12.        | Condominium Property Regimes.                     |         |  |   |
| <b>Chapter 24.</b> | <b>VEHICLES AND TRAFFIC</b>                       |         |  |   |
| Article 1.         | General Provisions.                               |         |  |   |
| Article 2.         | Administration.                                   |         |  |   |
| Article 3.         | Citations and Penalties.                          |         |  |   |
| Article 4.         | Fees.   |         |  |   |
| Article 5.         | Inspection of Vehicles.                           |         |  |   |
| Article 6.         | Equipment.  |         |  |   |
| Article 7.         | Operation of Vehicles.                            |         |  |   |
| Article 8.         | Parking, Standing and Stopping.                   |         |  |   |
| Article 9.         | Pedestrians.                                      |         |  |   |
| Articles 10 / 1    | Vehicle and Traffic Schedules.*                   |         |  |   |
|                    | <b>ZONING</b>                                     | x       | Provisions do not present significant obstacles. | Zoning and land use policy could provide substantial energy efficiency by consideration of transportation requirements in determining where new development will occur and by providing for mass transit corridors. |
| <b>Chapter 25.</b> |   |         |  |   |
| Article 1.         | General Provisions.                               | x       | Provisions do not present significant obstacles. |   |
| Article 2.         | Administration and Enforcement.                   |         |  |   |
| Article 3.         | Establishment of Zoning Districts.                |         |  |   |
| Article 4.         | General Development Regulations.                  |         |  |   |
| Article 5.         | Zoning District Regulations.                      |         |  |   |
| Article 6.         | Optional Development Regulations.                 |         |  |   |
| Article 7.         | Special District Regulations.                     |         |  |   |
| <b>Chapter 26.</b> | <b>FIRE</b>                                       |         |  |   |
| <b>Chapter 27.</b> | <b>FLOOD CONTROL</b>                              |         |  |   |
| Article 1.         | Authorization.                                    |         |  |   |
| Article 2.         | General Provisions.                               |         |  |   |
| Article 3.         | Administration.                                   |         |  |   |
| Article 4.         | Standards.  |         |  |   |
| Article 5.         | Variances and Appeals.                            |         |  |   |
| Article 6.         | Enforcement.                                      |         |  |   |

| <b>Hawaii County Code</b> |  | <b>Energy</b>  | <b>Review</b>   | <b>Issues</b>   |
|---------------------------|--|----------------|---|---|
| <b>Table of Contents</b>  |  | <b>Impacts</b> | <b>Notes</b>  | <b>Opportunities</b>  |
| <b>Chapter 28.</b>        | <b>STATE LAND USE DISTRICT BOUNDARY AMENDMENT PROCEDURES</b>           |                |   |   |
| <b>Chapter 29.</b>        | <b>WATER USE AND DEVELOPMENT DEVELOPMENT AGREEMENTS</b>                | x              | Provisions do not present significant obstacles.  |   |
| <b>Chapter 30.</b>        | <b>ENTERPRISE ZONE PROGRAM</b>   | x              | Provisions do not present significant obstacles.  | Provides for developments consistent with General and Community Plans but does not otherwise explicitly address transportation (energy) impacts.  |
| <b>Chapter 31.</b>        | <b>SPECIAL IMPROVEMENT FINANCING BY COMMUNITY FACILITIES DISTRICTS</b> | x              | Provides for approval and financing of broad spectrum of improvements including facilities that incur long term operation costs and energy use. | No requirements or criteria are provided to identify or consider operating costs (including energy costs) or life cycle costs. Costs are explicitly defined as exclusively capital and development costs. |
| <b>Chapter 32.</b>        | General Provisions.  | x              | Costs are explicitly defined as exclusively capital and development costs.  |   |
|                           | Article 1.   |                |   |   |
|                           | Article 2.   |                |   |   |
|                           | Article 3.   |                |   |   |
|                           | Article 4.   |                |   |   |
|                           | Article 5.   |                |   |   |
|                           | Article 6.   |                |   |   |
| <b>Chapter 33.</b>        | <b>TAX INCREMENT DISTRICTS</b>   |                |   |   |
|                           | Article 1.   |                |   |   |
|                           | Article 2.   |                |   |   |
|                           | Article 3.   |                |   |   |
|                           | Article 4.   |                |   |   |
|                           | Article 5.   |                |   |   |
| <b>Chapter 34.</b>        | <b>PUBLIC ACCESS</b>   |                |   |   |
|                           | Article 1.   |                |   |   |
|                           | Article 2.   |                |   |   |
|                           | Article 3.   |                |   |   |
|                           | Article 4.   |                |   |   |
|                           | Article 5.   |                |   |   |
|                           | Article 6.   |                |   |   |
| <b>Chapter 35.</b>        | <b>BUSINESS IMPROVEMENT DISTRICTS</b>                                  | x              | Provisions do not present significant obstacles.  | Does not explicitly address or require consideration of transportation or other energy impacts.   |
|                           | Article 1.   | x              | Provisions do not present significant obstacles.  |   |
|                           | Article 2.   |                |   |   |
|                           | Article 3.   |                |   |   |
|                           | Article 4.   |                |   |   |
|                           | Article 5.   |                |   |   |
|                           | Article 6.   |                |   |   |
|                           | Article 7.   |                |   |   |

|           |                                      |
|-----------|--------------------------------------|
| Article 1 | Title Of Volume                      |
| Article 2 | Construction Of Ordinances           |
| Article 3 | Definitions                          |
| Article 4 | Repeal Of Ordinances And Resolutions |
| Article 5 | Severability                         |

## TITLE II

### COUNTY ORGANIZATION AND ADMINISTRATION

#### CHAPTER 2 COUNTY ORGANIZATION AND ADMINISTRATION

|           |                                    |
|-----------|------------------------------------|
| Article 1 | County Departments                 |
| Article 2 | Boards, Commissions And Committees |
| Article 3 | Administrative Code                |

#### CHAPTER 2A RENTAL HOUSING LOAN PROGRAM

|           |                                       |
|-----------|---------------------------------------|
| Article 1 | Establishment Of Program              |
| Article 2 | Promulgation Of Rules And Regulations |

#### CHAPTER 3 INTERNAL COUNTY REGULATIONS

|           |  |
|-----------|--|
| Article 1 | Code Of Ethics                         |
| Article 2 | Salaries Of Certain Officers           |
| Article 3 | Salaries Of The County Council         |
| Article 4 | Salaries Of Council Services Employees |
| Article 5 | Travel Allowance                       |

#### CHAPTER 4 GENERAL PROVISIONS RELATING TO COUNTY ORGANIZATION AND ADMINISTRATION

|           |                                    |
|-----------|------------------------------------|
| Article 1 | (Reserved)                         |
| Article 2 | Public Records                     |
| Article 3 | Electronic Public Data             |
| Article 4 | Initiative And Referendum Petition |

## TITLE III

### TAXATION AND FINANCIAL ADMINISTRATION

#### CHAPTER 5 TAX ASSESSMENTS

Article 1

|             |                                   |
|-------------|-----------------------------------|
| Article 3   | Tax Bills, Payments And Penalties |
| Article 4   | Remissions                        |
| Article 5   | Liens, Foreclosure                |
| Article 6   | Rate                              |
| Article 7   | Real Property To Be Assessed      |
| Article 8   | Valuation, In General             |
| Article 9   | Valuation Of Dedicated Lands      |
| Article 10  | Valuation Of Wasteland            |
| Article 11  | Exemptions                        |
| Article 11A | Limitation Of Taxes               |
| Article 12  | Appeals                           |

CHAPTER 6 GENERAL PROVISIONS RELATING TO FINANCE

|            |   |
|------------|---|
| Article 1  | Treasury Trust Fund   |
| Article 2  | Revenue Sharing Trust Fund  |
| Article 3  | Standards For The Appropriation Of<br>Funds To Private Organizations                |
| Article 4  | Beautification Trust Fund   |
| Article 5  | Payment To County By Check Or<br>Negotiable Instrument,<br>Subsequently Dishonored  |
| Article 6  | Housing And Community Development<br>Revolving Fund                                 |
| Article 7  | Kauai Police Department Criminal Assets<br>Forfeiture Fund And Non-Cash<br>Property |
| Article 8  | Trust Fund for Contributions By<br>Developers                                       |
| Article 9  | Housing Revolving Fund  |
| Article 10 | Maximum Interest Rate Of Bonds  |
| Article 11 | Amounts Less Than One Dollar \$1.00   |
| Article 12 | Payments And Obligations  |
| Article 13 | Recovery Of Rescue Expenses   |
| Article 14 | Public Access, Open Space, and Natural<br>Resources Preservation Fund.              |

TITLE IV  
COUNTY PLANNING AND LAND DEVELOPMENT

CHAPTER 7 THE GENERAL PLAN FOR THE COUNTY OF KAUAI

|           |                                   |
|-----------|-----------------------------------|
| Article 1 | General Provisions                |
| Article 2 | Goals; Application                |
| Article 3 | Policies And Their Implementation |
| Article 4 | Amendment Procedures              |

CHAPTER 8 COMPREHENSIVE ZONING ORDINANCE

|           |                    |
|-----------|--------------------|
| Article 1 | General Provisions |
|-----------|--------------------|

|            |  |
|------------|--|
| Article 3  | Residential Districts (R)                        |
| Article 4  | Resort Districts (RR)                            |
| Article 5  | Commercial Districts (C)                         |
| Article 6  | Industrial Districts (I)                         |
| Article 7  | Agriculture Districts (A)                        |
| Article 8  | Open Districts (O)                               |
| Article 9  | Special Treatment Districts (ST)                 |
| Article 10 | Constraint Districts (S)                         |
| Article 11 | Drainage Districts (S-DR)                        |
| Article 12 | Flood Districts (S-FL)                           |
| Article 13 | Shore Districts (S-SH)                           |
| Article 14 | Slope Districts (S-SL)                           |
| Article 15 | Soils Districts (S-SO)                           |
| Article 16 | Tsunami Districts (S-TS)                         |
| Article 17 | Time Sharing And Transient Vacation<br>Rentals   |
| Article 18 | Project Development                              |
| Article 19 | Zoning Permits                                   |
| Article 20 | Use Permits                                      |
| Article 21 | Variance   |
| Article 22 | Amendments                                       |
| Article 23 | Non-Conforming Structures And Uses               |
| Article 24 | Enforcement, Legal Procedures And<br>Penalties   |
| Article 25 | Kauai Historic Preservation Review<br>Commission |
| Article 26 | Additional Dwelling Unit                         |

**CHAPTER 9            SUBDIVISION ORDINANCE**

|           |  |
|-----------|--|
| Article 1 | General Provisions                             |
| Article 2 | Requirements And Standards For<br>Subdivisions |
| Article 3 | Procedures For Approval Of Subdivisions        |
| Article 4 | Modifications Of Requirements                  |
| Article 5 | Enforcement, Legal Procedures And<br>Penalties |

**CHAPTER 9A          AGRICULTURAL PARK SUBDIVISION**

|           |   |
|-----------|---|
| Article 1 | General Provisions  |
| Article 2 | Requirements And Standards For<br>Agricultural Park Subdivision |
| Article 3 | Procedure For Approval Of Agricultural<br>Park Subdivision      |
| Article 4 | Enforcement, Legal Procedures And<br>Penalties                  |

**CHAPTER 10          SPECIAL DEVELOPMENT PLANS**

Article 5 Lihue Development Plan  
Article 6 Koloa-Poipu-Kalaheo Development Plan

CHAPTER 11 STATE LAND USE DISTRICT BOUNDARY AMENDMENT  
ORDINANCE

Article 1 General Provisions  
Article 2 Application Process  
Article 3 Hearing Process  
Article 4 Reclassification

CHAPTER 11A ENVIRONMENTAL IMPACT ASSESSMENT ON LAND  
DEVELOPMENT

Article 1 General Provisions  
Article 2 Application

CHAPTER 11B WATER USE AND DEVELOPMENT PLAN

Article 1 General Provisions  
Article 2 Water Use and Development Plan

TITLE V  
BUILDING AND CONSTRUCTION REGULATIONS

CHAPTER 12 BUILDING CODE

Article 1 General Provisions  
Article 2 Adoption Of The Uniform Building Code  
And Amendments Thereto  
Article 3 Relocation Of Buildings  
Article 4 Factory Built Housing  
Article 5 Thatched Material On Exterior Of  
Building: Protection Against  
Exposure Fires  
Article 6 Energy Conservation  
Article 7 Public Swimming Pools

CHAPTER 13 ELECTRICAL CODE

Article 1 General Provisions  
Article 2 Administration And Enforcement  
Article 3 Qualifications Of Performers Of Work  
Under The Electrical Code  
Article 4 Installation Requirements National  
Electrical Code  
Article 5 Electrical Work Within Flood Hazard  
Area  
Article 6 Energy Conservation

- Article 4 Installation Requirements
- Article 5 Plumbing Work Within Flood Hazard  
Districts And Developments  
Adjacent To Drainage Facilities
- Article 6 Energy Conservation

**CHAPTER 15 GENERAL PROVISIONS RELATING TO BUILDING AND  
CONSTRUCTION REGULATIONS**

- Article 1 Flood Plain Management
- Article 2 Driveway Approaches
- Article 3 Numbering Of Houses
- Article 4 Outdoor Signs

**CHAPTER 15A FIRE CODE**

- Article 1 General Provisions
- Article 2 Adoption Of The Uniform Fire Code And  
Amendments Thereto

**TITLE VI  
MOTOR VEHICLES AND TRAFFIC REGULATIONS**

**CHAPTER 16 TRAFFIC CODE**

- Article 1 General Provisions
- Article 2 Traffic Administration
- Article 3 Enforcement Of Traffic Regulations
- Article 3A Emergency Use Of Real Private Property
- Article 4 Traffic Control Devices
- Article 5 Speed Restrictions
- Article 6 Limitations On Turning
- Article 7 No Passing Zone; Towed Vehicles
- Article 8 Special Stops
- Article 9 Stopping, Standing And Parking
- Article 10 Stopping, Standing Or Parking Prohibited  
In Specified Places
- Article 11 Stopping For Loading Or Unloading Only
- Article 12 Stopping, Standing Or Parking Restricted  
Or Prohibited On Certain Streets Or  
Areas; Exceptions
- Article 13 Parking Or Operation Of Motor Vehicles  
Within Public Parks, School Grounds  
Or On Federal-Aid Highways  
Restricted
- Article 14 Buses; Bus Stops
- Article 15 Pedestrians' Rights and Duties

- Article 21 Penalties And Procedures On Arrest
- Article 22 Speed Humps

**CHAPTER 17 GENERAL PROVISIONS RELATING TO MOTOR VEHICLES AND TRAFFIC REGULATIONS**

- Article 1 Renewal Fee For Motor Vehicle Operator's License

**CHAPTER 17A COUNTY BUS FARES**

- Article 1 County Bus Fares

**TITLE VII  
PUBLIC WAYS AND PLACES**

**CHAPTER 18 PUBLIC ROADS, STREETS AND HIGHWAYS**

- Article 1 Restrictions On Use Of Roads, Streets And Highways
- Article 2 Improvements To Private Streets And Roads
- Article 3 Excavation And Repairs Of Streets And Sidewalks
- Article 4 Relocation of Utility Facilities In County Property

**CHAPTER 19 PUBLIC PARKS AND RECREATION**

- Article 1 Regulation And Control Of County Parks And Recreational Areas
- Article 2 Camping On County Parks And Properties
- Article 3 Wailua Golf Course

**CHAPTER 20 GENERAL PROVISIONS RELATING TO PUBLIC WAYS AND PLACES**

- Article 1 Estrays
- Article 2 Trimming And Cutting Of Trees And Plants
- Article 3 Litter Prohibited
- Article 4 Distribution Of Handbills
- Article 5 Revocable Permits
- Article 6 Easements

**TITLE VIII  
PUBLIC HEALTH, SAFETY AND WELFARE**

- Article 6 Residential Stop On Signaling
- Article 7 Municipal Solid Waste Landfills
- Article 8 Resource Exchange Facility (Reserved)
- Article 9 Fees For Collection And Disposal Of Solid Waste

**CHAPTER 22 GENERAL PROVISIONS RELATING TO PUBLIC HEALTH, SAFETY AND WELFARE**

- Article 1 Curfew
- Article 2 Stray Dogs
- Article 3 Fireworks
- Article 4 Pellet Guns
- Article 5 Preservation Of Exceptional Trees
- Article 6 Removal Of Sand, Coral Or Rock From Government Beach, Reef Or Sandbar
- Article 7 Grading, Grubbing And Stockpiling
- Article 8 Prohibition Of Smoking In Certain Areas
- Article 9 Vacant Lots
- Article 10 Dog Licenses And Regulations
- Article 11 Summer Hire Program
- Article 12 Use Of Motor Vehicles On Beaches
- Article 13 Gasoline Distribution Plan
- Article 14 Noise Control
- Article 15 Obnoxious Substances
- Article 16 Drainage
- Article 17 Dangerous Dog

**TITLE IX  
BUSINESS AND TRADES**

**CHAPTER 23 REGULATION OF BUSINESS AND TRADES**

- Article 1 Taxis
- Article 2 Scrap Metal Dealers
- Article 3 Peddlers And Concessionaires
- Article 4 County Business Licenses
- Article 5 "Kaua'i Made" Program Ordinance

**CHAPTER 23A ENTERPRISE ZONES**

- Article 1 General Provisions
- Article 2 Enterprise Zones

**TITLE X  
PUBLIC WORKS**

**CHAPTER 24 IMPROVEMENT BY ASSESSMENT**

- Article 1 General Provisions

Article 7 Limitation On Time To Sue  
Article 8 Severability

**CHAPTER 25 SEWERS**

Article 1 General Provisions  
Article 2 Requirements For Use Of Public Sewers  
Article 3 Restrictions On Use Of Public Sewers  
Article 4 Right Of Entry And Inspection  
Article 5 Administration, Management And  
Construction Of Sewage Works;  
General Requirements  
Article 6 Improvement Districts; Administration,  
Management And Construction  
Article 7 Subdivisions; Administration,  
Management And Construction  
Article 8 Extensions; Administration, Management  
And Construction  
Article 9 Laterals; Administration, Management  
And Construction  
Article 10 Application For Sewer Service  
Article 11 Sewer Connection Charges  
Article 12 Wastewater Treatment Capacity Assessment  
Article 13 Sewer Service Charges  
Article 14 Sewer Funds And Delinquent Accounts  
Article 15 Penalty

**CHAPTER 26 SPECIAL IMPROVEMENT FINANCING BY  
COMMUNITY FACILITIES DISTRICTS**

Article 1 General Provisions  
Article 2 Proceedings  
Article 3 Special Tax  
Article 4 Changes in Term of District,  
Authorized Special Improvement,  
and Special Tax  
Article 5 Early Termination of District  
Article 6 Annexation of Territory  
Article 7 Bonds

**APPENDIX A--Table of Organization Of The Executive  
Agencies**

**STATUS OF ORDINANCES**



## Ten-Point Plan To Meet Hawaii's Preferred Energy Vision

### Preamble

Hawaii's preferred energy future requires a comprehensive integrated approach. The Hawaii Energy Policy Forum's Ten Point Plan strives to:

- Promote energy security and sustainability
- Reduce energy consumption
- Enhance regulatory goals & protections
- Foster civic action & participation
- Diversify energy sources

### The Ten Point Plan:

1. Expand Renewable Energy Opportunities
2. Promote Conservation and Energy Efficiency
3. Reduce Green House Gas Emissions in Hawaii
4. Foster Civic Action and Participation
5. Enhance Regulatory Goals and Protections
6. Encourage Culturally Appropriate and Sustainable Energy Planning
7. Improve Energy Efficiencies and Options in Transportation
8. Support research and development of alternative energy sources (hydrogen, wave energy, etc.)
9. Support sustainable development and use of biofuels
10. Ensure the security and reliability of energy supply and distribution

**HAWAII ENERGY POLICY FORUM  
RENEWABLE ENERGY WORKING GROUP  
ACTION PLAN**

**TEN POINT PLAN POINTS #1, #8 & #9**

- #1 -- Expand Renewable Energy Opportunities**  
**#8 -- Support research and development of renewable energy to hydrogen.**  
**#9 -- Support sustainable development and use of biofuels**

**Co-Chair:** Warren Bollmeier  
**Co-Chair:** Rick Reed

**TPP #1: Expand Renewable Energy Opportunities**

**Goals:**

- Support the state's Renewable Portfolio Standards mandate for Hawaii's electric utilities to meet 20% of utility sales of electrical energy in Hawaii from renewable sources by 2020.
- Promote the development and increased use of Hawaii's indigenous renewable resources to meet Hawaii's residential, commercial, industrial, government and transportation energy needs to the extent possible.

**Background:**

Current status of renewables in Hawaii:

1. Wind: three new windfarms with a total of 61 MW capacity were installed in 2006 and in 2007; and a number of other projects are under consideration. It is estimated roughly 10% of net-metered systems are small wind turbines, with the remainder being photovoltaic systems.
2. Solar: there are no large solar farms at the present time; one is under consideration. There are on the order of 100,000 solar hot water systems installed statewide with 3,000 to 4,000 new installations a year; and there are over 100 net metered PV systems and more than 1 MW of commercial, non-net-metered PV systems statewide.
3. Biomass-Electric: The biomass cogeneration units on Maui (HC&S) and Kauai (Gay & Robinson) continue to operate to meet site loads and export to the grid (up to 12 MW – HC&S). The City & County of Honolulu has issued a request for competitive sealed proposals to construct and operate an alternative energy facility and/or to improve and continue to operate the H-POWER facility (currently 46 MW). The City expects to award a contract(s) by January 2008. New biomass projects are under consideration: Kauai Island Utility Cooperative has selected two projects for negotiations as a result of a recent RFP for as-available renewable projects, and Renewable Hawaii Inc. has indicated there are one or

more biomass projects under consideration following its RFPs seeking renewable energy partners. HELCO has signed a purchase power agreement with Tradewinds, Inc. to buy energy from the burning of wood waste from company's proposed veneer plant.

4. Biomass-Fuels: Biodiesel production continues at Pacific Biodiesel's facility on Oahu and there is interest in expanding their production with development of new biomass feedstocks in the islands. BlueEarth Biodiesel, in partnership with a new HECO non-regulated subsidiary called Uluwehi o Kama Biodiesel, plans a large biodiesel production facility on Maui to supply MECO. Imperium Renewables, independent of HECO, is planning a similarly large biodiesel on Oahu near Kalaeloa Harbor. One ethanol facility is in development on Kauai (Gay & Robinson), and others are being considered for Oahu and Maui. Note: HECO is proceeding with construction of the 110 MW Campbell Industrial Park Generating Station which will be fueled 100 percent by biodiesel, and is also investigating use of biofuels in other units.
5. Geothermal: Puna Geothermal Ventures is planning to increase their 30 MW capacity by 8 MW in the near-term and an additional 22 MW is under consideration.
6. Hydro: Operation of run-of-the-stream hydropower units continues on Hawaii (12 MW-Wailuku Hydro and 2.5 MW-HELCO), Kauai (8 MW-non-utility), and Maui (5.6 MW –HC&S, and 500kW- Hawaii Energy Group). MECO is investigating the feasibility of a pumped-hydro storage facility on Maui
7. Ocean: A subsidiary of a mainland firm, Honolulu Seawater Air Conditioning, LLC, is developing the first of several large renewable energy seawater air conditioning (SWAC) district cooling systems in Hawaii.

The 2006 legislature passed significant legislation to provide tax credit incentives for the adoption of renewable energy systems by both the residential and commercial sectors. SB2957, Section 2 increased income tax credits for solar thermal, photovoltaic, and wind installations. The sunset date for these incentives was permanently removed which brings stability to the market and encourages the renewable energy business to invest in their business.

HB2175, Section 2 appropriated \$5,000,000 to install a minimum of four (4) photovoltaic, net energy metered pilot projects in public schools, one in each county.

## **Objectives**

The overall objective is to encourage further use of renewable energy in Hawaii, in part, by taking advantage of the momentum already gained in the market, evaluating the impact of existing policies and incentives and assessing the need for additional measures.

**Action Plans:**

1. In the near term, the Renewable Energy Working Group (“REWG”) will work with the state (DOE and DBEDT), the utilities, industry and others to monitor the rate of “take up” by the market to determine how well existing policies and incentives are working. Periodic progress reports will be prepared.
2. Program “Tune-Up” - identify barriers to the effective implementation of the program – can we make them better? Seek input from industry on barriers and “speed bumps”.
3. Brief legislature & PUC – provide near-term briefings to the legislature and PUC/DCA on how the program is going.
4. Prepare OPeds on the successes and/or failures of the program to keep the program on the front burner with the public and the legislature. It would be very useful to prepare energy savings “success” stories.
5. Coordinate with the EE and Communications WG’s.
6. Report on the energy savings results of the Department of Education solar pilot project.
7. Support inclusion of additional schools to the solar program.
8. Support DBEDT renewable energy and energy efficiency programs and initiatives. Evaluate the need for additional funding and positions at DBEDT to support their mission.
9. Identify and report on promising new renewable energy technologies (such as solar thermal electric, SWAC, solar air conditioning and wave energy). Recommendations will be made to the Forum regarding potential State energy initiatives and appropriate legislative or regulatory actions.
10. Consider establishment of development zones for ocean and wave energy.
11. Evaluate the need for incentives to support state-wide waste-to-energy projects.

**TPP #8 - Support research and development of renewable energy to hydrogen (RE2H2).****Goals :**

- Advocate for recognition for Hawaii as a premier demonstration site for the deployment of hydrogen fuels and energy systems
- Support funding requests for R&D on Hawaii’s renewable energy sources as potential sources to produce hydrogen.
- Support leveraging state funds to attract federal programs that will assist in the development of Hawaii’s RE2H2 sources and energy systems.

**Background**

The 2006 legislature passed legislation now embodied in HRS 196-10 to establish the Hawaii Renewable Hydrogen Program (“RHP”) and the Hydrogen Investment Capital Special Fund. DBEDT and the Hawaii Strategic Development Corporation (HSDC) will administer the fund. DBEDT will select a private-sector entity to manage of the fund under contract to DBEDT.

## **Objectives/Desired Outcomes**

1. Significant investments are made in existing and new R&D programs in Hawaii to develop RE2H2 production technologies.
2. Hawaii becomes a national leader and prime demonstration site in the United States for -developing and implementing the use of hydrogen fuels and energy systems.
3. A new hydrogen fuel and energy system technology industry is spawned and nurtured via the development and implementation the RHP by DBEDT.

## **Indicators/Metrics**

1. Numbers of projects/new businesses
2. Dollar value of projects/new business
3. Dollar value of Federal investment
4. Number of people employed in R&D &P

## **Action Plans:**

1. Work with DBEDT to provide support for the implementation of the RHP.
2. Assess areas where the Forum can provide ongoing support including additional financial resources for DBEDT to fulfill its mandate.

## **TPP #9 – Support the sustainable development and use of biofuels**

### **Goals :**

- Advocate for the increased sustainable utilization of biofuels in Hawaii's energy mix.
- Support efforts to increase local biofuel production with the emphasis on the development of sustainable local sources of biofuel feedstocks.
- Support development of a Hawaii Bioenergy Master Plan.

### **Background**

During the 2007 legislative session, the Forum initiated legislation for the development of a Hawaii Bioenergy Master Plan that was ultimately included in HB1003 and funded for \$300,000 to be expended by DBEDT. The legislation directed the plan be completed by the start of the 2009 session with an interim progress report at the start of the 2008 session.

## **Objectives/Desired Outcomes**

1. The development of an action-based Bioenergy Master Plan with input from all interested stakeholders.
2. The amount of biofuels used in transportation increases by 20% in ten years.

## **Indicators/Metrics**

1. Biofuels Master Plan is produced on time

2. Percentage of biofuels increases by 20% over 10 years

**Action Plans:**

1. Provide support to DBEDT for the development of the Hawaii Bioenergy Master Plan.
2. Evaluate the need for additional funding and positions to support the development of the Hawaii Bioenergy Master Plan.
3. Prepare a white paper on Biofuels for Hawaii. The paper will include issues relating to use of biofuels for electricity and transportation needs. Input will be solicited from all interested stakeholders.

**HAWAII ENERGY POLICY FORUM  
ENERGY EFFICIENCY WORKING GROUP  
ACTION PLAN**

**TEN POINT PLAN POINT #2  
Promote Conservation and Energy Efficiency  
TEN POINT PLAN POINT #7  
Improve Energy Efficiencies and Options in Transportation**

**TPP #2 Promote Conservation and Energy Efficiency**

**Goal(s):**

1. Improve widespread energy efficiency in the State.
  
2. Support the State's Lead by Example Program – demonstrate the financial benefits of energy efficient buildings to the commercial and residential sector by implementing public building energy legislation and documenting the effects of energy efficiency.
  - Communicate the progress to the legislature and public.
  - Identify barriers to implementation and develop solutions to dismantling them.

**Background:**

The 2006 legislature passed HB2175 which along with three other energy bills (SB2957, SB3185, and HB2848) became Act 96. The legislation established that all new construction of state facilities and large retrofits should achieve the Leadership in Energy and Environmental Design LEED Silver rating. This standard improves the energy performance in the new buildings by approximately 30% over buildings designed and constructed without the LEED Silver rating.

In addition HB 2175 requires the state to lead by example, setting green building standards for state buildings and instructs state agencies to maximize usage of energy-savings contracts, including performance contracts and utility energy-efficiency service contracts. The legislation also promotes the use of "green building" practices by requiring counties to establish priority processing of permit applications for construction projects that incorporate energy efficiency and environmental design.

Pursuant to enactment of this law, the Director of the Department of Business, Economic Development and Tourism (DBEDT) is designated as the "coordinator" in Act 96. Therefore, DBEDT has taken the lead in providing technical assistance to state agencies; providing training to state personnel and consulting design professionals. In addition, DBEDT has been and will continue to facilitate, and coordinate efforts among state agencies to adhere to the new legislation and it will report activities and progress to the Legislature. Members of this working group have been working closely with decision makers on various state projects and alongside DBEDT to achieve the goals as stated above. There has been an unprecedented level of coordination among state agencies (facilitated by DBEDT) to share information and experiences to streamline the establishment and implementation of energy efficient building design standards, energy

efficiency financing options, including performance contracting, and commissioning/retro-commissioning services. This level of cooperation is essential if the large-scale energy goals for the state are to be realized.

**Objectives and Desired Outcomes:**

1. Adequate staffing and administrative support for Lead by Example
2. Adequate staffing, administrative support and personnel training to support goals of legislation in each state agency
3. Establish contract language, procurement processes and contractual vehicles for securing power purchasing agreements for renewable energy systems, commissioning, retro-commissioning, performance contracts, and sustainable design services as well as municipal leasing and other financing options for state energy projects.
  - a. Standardized and utilized these procedures across state agencies.
  - b. Develop in- house technical capacity to verify the adequate delivery of these services
4. Successful implementation of energy efficiency in public buildings
5. Acceptance and implementation of energy efficiency by commercial and residential sectors
6. Link energy conservation and renewable energy applications to greenhouse gas reduction in state facilities

**Indicators / Metrics:**

1. Four State buildings have been approved and certified by the US Environmental Protection Agency as ENERGY STAR.
  - The State Office Tower [2006]
  - Kapolei Office Building [2005 and 2006]
  - Paki Hale Courthouse [2006]
  - Kapolei has been awarded ENERGY STAR® (for two years.)
2. Six state buildings have been completed or are under construction to meet
  - LEED standards, from LEED Certified to LEED Platinum. The buildings are:<sup>1</sup>
  - NELHA Hawai'i Gateway Energy Center: LEED Platinum
  - UH John A. Burns School of Medicine: LEED Certified
  - UH-Manoa Frear Hall Resident Building (Building permit application phase; foundation under construction): LEED Silver

---

<sup>1</sup> DBEDT, Lead by Example, State of Hawai'i Agencies' Energy Initiatives, FY 2005-2006, Report to the 2007 Hawai'i State Legislature

- DOE Waipahu Intermediate School Cafeteria: LEED Certified
  - UH-Hilo Student Life Complex – Phase 1A (Under construction): LEED Certified
  - UH Hilo – Mauna Kea Astronomy Education Center (construction completed; pending verification for LEED Silver): LEED Silver
3. In FY06 alone, DBEDT sponsored or cosponsored more than 45 training and informational events that included participation by over 289 state employees.<sup>2</sup>
  4. A Sub-metering program on the UH Manoa Campus has been started allowing the UHM administration to accurately measure energy consumption on a per building basis.

### **Specific Forum Actions:**

#### Actions to be Taken/Underway

1. Continue to work with state agencies and the private sector to advance improved energy efficiency in buildings. Identify barriers and make recommendations to amend existing legislation or provide recommendations to develop new legislation to advance energy conservation, renewable energy and reduced green house gas emissions in the State.
2. Improve the Energy Performance of the State Capitol Building.
  - a. Pursuant to the energy assessments that were performed on the Capitol building in 2006-07 DBEDT and DAGS have procured the services for a retro commissioning of the building. It is being performed (3<sup>rd</sup>-4<sup>th</sup> quarters of 2007). This will lead to an estimated energy saving of 25% for the building.
  - b. Working Group members will continue to track that project to promote and expand the use of retro-commissioning services for other state facilities.
3. Working Group members will continue to work with DBEDT and other agencies to track and quantify the energy savings realized or anticipated in on-going projects.
4. Working Group members will continue to work with DBEDT, the UHM Administration and other State Agencies to implement and track the use of Commissioning, Retro-commissioning services and Energy Performance Contracts on State buildings.
5. Continue to work closely with the University of Hawaii at Manoa (UHM) administration to demonstrate energy conservation and energy efficiency applications on the campus
  - a. Explore energy efficiency on other UH campuses

---

<sup>2</sup> DBEDT, Lead by Example, State of Hawai'i Agencies' Energy Initiatives, FY 2005-2006, Report to the 2007 Hawai'i State Legislature

6. Continue to work with UHM administration and other State Agencies to develop language for procuring power purchasing agreements, commissioning, retro commissioning, energy performance and sustainable design services.
7. Continue to work with DBEDT and other State agencies to identify viable options for financing energy efficiency and renewable energy opportunities
8. Develop case studies showing the financial benefits of implementing energy efficiency projects in state buildings.
9. Explore other strategies with other Working Groups (eg. regulatory relating to utility DSM programs, third party administrator, etc.)
10. Work with the Communications WG to provide periodic reports for dissemination to the public.

**Actions Taken:**

1. "Energy by Example" program performed energy audits for the State Capitol, Saunders Hall on the university of Hawaii Manoa campus, Farrington High School, and United Laundry Service.
2. An advisory group has been established to make recommendations to the state for implementing greater levels of energy conservation in public buildings.
3. The University of Hawaii at Manoa administration has established new energy policy guidelines for the main campus. They include:
  - i. 30% reduction in overall campus energy use by 2012
  - ii. 50% reduction in overall campus energy use by 2015
  - iii. 25% renewable energy supply by 2020
4. A partnership has been formed between HECO and the UH Manoa campus to pursue large-scale energy reduction on the campus. This has lead to an electrical metering program.
5. An Assistant Vice Chancellor has been hired at the Manoa campus to oversee the operations of the campus facilities and to ensure an improved energy performance of all new and existing building to be compliant with or to exceed the standards that are articulated in Act 96.
6. UH Manoa issued a Statement of Interest for qualified commissioning/retro-commissioning agents.
7. DOE initiated an incentive/disincentive energy conservation program for 280 schools statewide.
8. DAGS has initiated retro commissioning for five state buildings, including the State Capitol.
9. Hawaii Public Housing Authority is developing a performance-contracting Request for Proposals to initiate energy efficiency improvements in its state and federal public housing facilities.
10. DAGS is now the lead for performance contracting initiatives; DBEDT will continue working with HPHA on their performance contract.
11. DBEDT completed a cost-benefit, life-cycle analysis for the new College of Education.
12. DBEDT is developing a cost-benefit, life-cycle analysis for the State Capitol at LEED Silver.

### **Synopsis of Achievements/Progress**

1. State agencies are working together and moving forward in developing the contractual and procurement vehicles to enable them to implement commissioning, energy services contracts and green building design services.
2. State agencies are developing methods to quantify energy usage through energy assessments and sub-metering. Next steps toward a more effective and accurate energy tracking will be the widespread application of coordinated Energy Management Systems (EMS) for state facilities.
3. Retro-commissioning for existing facilities and LEED Silver projects are currently being initiated in response to the new legislation. As these projects are completed, more energy related data and information on the opportunities and barriers of the process will be available.

### **Impact on Community:**

1. Projects that are implementing the ACT 96 standards are just getting initiated. Data is being collected on the costs, energy savings, benefits and barriers associated with Retro-commissioning, Energy Service Contracts and LEED Silver buildings. The community impacts and benefits are :
  - a. Elevated standards of practice for professionals that will serve both the public and private sectors.
  - b. State facility based initiative encourages the private sector to follow
  - c. Reduced state-wide dependence of fossil fuel
  - d. Increase resources for programs rather than revenue going to inefficient use of electricity
  - e. Reduced green house gas emissions

### **TPP #7: Improve Energy Efficiencies and Options in Transportation**

#### **Goals:**

- Dramatically improve the energy efficiency and the use of indigenous fuels in the transportation sector.
- Lead by example – demonstrate to the commercial sector the financial benefits of energy efficient vehicles by documenting the effects of energy efficiency on state transportation fleets.
  - Monitor progress in implementing alternative fuels in state transportation fleets;
  - Communicate the progress (or lack of progress) to the legislature and public.
  - Identify barriers to implementation and develop solutions to dismantling them.

**Background:**

In Hawaii the major emphasis on transportation energy efficiency has focused on the use of mass transit and very little effort has been made to make the vehicle fleet more efficient. This is despite the high cost of vehicle fuels and the high visibility enjoyed by the Gas Cap program. This emphasis diverted attention from the basic premise – use less gas in the first place through the use of fuel-efficient vehicles. Furthermore the public culture is a “love affair” with large vehicles, however as the price of fuels continues to rise, this may be displaced by a new energy efficiency culture. The Forum needs to work on encouraging this cultural shift.

Legislation passed by the 2006 legislature includes the following:

SB 2957, Section 5 – establishes a statewide alternative fuel standard;

HB 2175, Section 28 – clarifies the state procurement policy for energy efficient vehicles.

Transportation efficiency was an area where the Forum made a more concentrated effort during the 2007 legislative session. HB 869–Energy Efficient Transportation Strategies was passed in the 2007 session.

**Objectives and Desired Outcomes:**

- Support the development and implementation of energy efficient strategies in the transportation sector in the state and counties
- Support the development and use of alternative energy fuels for transportation

**Indicators / Metrics:**

- Energy consumption (btu/passenger mile)

**Specific Forum Actions:**

- Actions to be Taken/Underway
  - Explore energy efficient strategies in the transportation sector
  - Develop indicator(s) to measure progress of an energy efficient vehicles= program and the implementation of the alternative fuel standard.
  - State Government Energy Efficiency Vehicle Report Card: work with DBEDT to monitor the effectiveness of energy efficient vehicle implementation actions in state departments and produce a departmental energy efficient vehicle report card;
- Actions Taken
  - Obtained support (Act 254 passed by 2007 Legislature and signed by the Governor) for developing energy efficient strategies in the transportation sector.
  - \_ State, county, and private agencies are working together to explore energy impacts in the transportation sector and to develop strategies that will increase energy efficiency in transportation.

**Impact on Community:**

- Reduce GHG emissions and consumption of imported fossil fuels in the transportation sector

**HAWAII ENERGY POLICY FORUM  
GREENHOUSE GAS EMISSIONS WORKING GROUP  
ACTION PLAN**

**TEN POINT PLAN POINT # 3  
Reduce Greenhouse Gas Emissions in Hawaii**

**Goal(s):**

- To assist the State and energy stakeholders to reduce greenhouse gas emissions to 1990 levels as called for in Act 234 adopted and signed into law in 2007
- To identify and promote greenhouse gas emission reduction measures that optimize global benefits and minimize the negative impacts of greenhouse gas emission controls on the state economy with particular attention to impacts on low-income residents.

**Background:** The Hawaii State Legislature adopted Act 234, which calls for the reduction of greenhouse gas emissions in Hawaii to levels at or below estimated emissions for 1990 by January 1, 2020. Act 234 calls for the Department of Health and the Department of Business, Economic Development and Tourism to update the inventory of greenhouse gas emissions by December 31, 2008. The law also establishes a Greenhouse Gas Emissions Reduction Task Force that is charged with developing a work plan and regulatory scheme to achieve the maximum practically and technically feasible and cost effective reduction in greenhouse gas emissions to achieve the emissions limit established by the Act.

Act 234 calls on the Task Force to make recommendations on options for reducing greenhouse gas emissions including:

- Direct emissions reduction measures;
- Alternative compliance mechanisms;
- Market-based compliance measures; and
- Potential monetary and non-monetary incentives.

Act 234 also calls on the Task Force to investigate analytical tools, economic models, and other scientific methods to evaluate the total potential costs and total potential economic benefits of plans to reduce greenhouse gas emissions to the state's economy, environment, and public health.

The greenhouse gas emission reduction measures identified in Act 234 could have extensive impacts on Hawaii's economy. Several mainland states are currently evaluating the impacts of emissions reductions and market-based compliance measures on their greenhouse gas emissions and on their economies. The United States Congress is also contemplating such measures. Therefore, it is imperative that the Greenhouse Gas Emissions Task Force and the Departments of Health and Business, Economic Development and Tourism provide the Legislature and the Governor with solid environmental and economic analyses of the costs and benefits of alternatives for reducing greenhouse gas emissions.

## **Objectives and Desired Outcomes:**

- To provide guidance and analytical support to the Greenhouse Gas Emission Task Force to assess policy options for greenhouse gas emission reductions;
- To work with the Greenhouse Gas Emissions Task Force to develop recommendations to the Legislature on greenhouse gas emissions control policies that will meet the targets set forth in Act 234 and minimize the negative impacts of emissions controls
  - To assess the feasibility and costs and benefits of possible implementation measures including: limiting stack emissions of greenhouse gases on power plants, a carbon tax levied on oil imports and/or at the local refineries, cap and trade systems managed locally, and incentives to reduce greenhouse gas emissions
  - To evaluate policies developed and implemented by other states and regions and impact assessments of those policies;
  - To assess options for national legislation being considered by the US Congress and the potential impacts of such legislation on state policies and the Hawaii economy

## **Indicators / Metrics:**

- Completion of an assessment of existing greenhouse gas emissions data
- Compilation and development of data identifying 1990 and current levels of Hawaii greenhouse gas emissions by source
  - Completion of an initial assessment of policy options for reducing greenhouse gas emissions
- Development of methods to project greenhouse gas emissions, reduction costs and economic impacts for various possible reduction measures and policies
- Identification of policy, technical and regulatory issues associated with greenhouse gas reduction regulations
  - Development of recommendations to the Legislature on additional analytical work required to fully assess policy options for reducing greenhouse gas emissions in Hawaii

## **Specific Forum Actions:**

Specific Forum actions will be determined based on the process and actions of the Greenhouse Gas Emissions Task Force. Interim actions include:

- Monitoring the formation and actions of the Greenhouse Gas Emissions Task Force
- Monitoring actions of stakeholders, stakeholder groups, governmental agencies or other entities involved in the analysis, regulation or implementation of greenhouse gas measures and policies.

**HAWAII ENERGY POLICY FORUM  
COMMUNICATION/OUTREACH WORKING GROUP  
ACTION PLAN**

**TEN POINT PLAN POINT #4  
FOSTER CIVIC ACTION AND PARTICIPATION**

**Goal(s):**

- Increase awareness and outreach for HEPF activities and initiatives to opinion leaders and the community at large
- A more effective Hawaii Energy Policy Forum due to increasing awareness and respect for its role, work and recommendations among policy makers, energy stakeholders and the public.

**Background:**

- The C/O Working Group was established to communicate the work of the other substantive working groups and increase awareness and education of opinion leaders as well as the general public. Over the years it has worked with other working groups to publicize briefings, develop and distribute press releases to the media, coordinate press conferences, and explored ways to educate the decision makers and the public on energy issues and policies.

**Objectives and Desired Outcomes:**

- Develop with the Forum and implement a communications and outreach strategy to support the activities of the HEPF, and to implement the Ten Point Action Plan.
- Engage key stakeholders, business leaders, government officials, and energy specialists in supporting HEPF activities.
- Assist in the conceptualization and coordination of public education forums, including workshops and panels, to educate the general public about energy issues facing Hawaii.
- Coordinate media, communications and public education activities (both paid and free media) with support HEPF goals and objectives.
- Assist in obtaining print, radio, and television sponsorships, including public service announcements and special showings, which feature energy issues.

**Indicators / Metrics:**

- Public events: number of events, attendance, media coverage
- Press releases issued; news mentions
- Legislative and similar briefings: number, consistency, attendance; attendee responsiveness

- Sponsorship of public informational activities through venues to include broadcast and print media and public meetings

### **Specific Forum Actions:**

- Actions to be Taken/Underway
  - Increase public awareness of energy initiatives to community at large
  - Develop regular energy efficiency briefings for community leaders
  - Create more informational material about energy issues
  - Identify and develop better relationships with key opinion leaders to let them know about HEPF, and encourage their involvement
  - Enhance marketing and paid media activities to reach broader audiences
  - Better coordinate with WG chairs to support their activities
- Actions Taken
  - Coordinated informational briefings before the House and Senate
  - Facilitated Congressional delegation involvement in HEPF
  - Conducted public forums on HEPF e.g., energy efficiency, Hawaii Business 2050 series, biofuels briefings, energy efficiency briefings with business sector and commercialization of renewable energy technologies
  - Developed HEPF Brochure and informational packet
  - Provided media and public relations support as appropriate

### **Synopsis of Achievements/Progress (KISS):**

- Awareness of and respect for the Hawaii Energy Policy Forum continues to grow, though more needs to be done to provide independent, respected information to the general public.

### **Impact on Community:**

- Broader public awareness of energy issues.
- Education and information regarding energy issues re: renewable energy technologies and energy efficiency in the business and agriculture sectors.

**HAWAII ENERGY POLICY FORUM  
REGULATORY REFORM WORKING GROUP  
ACTION PLAN**

**TEN POINT PLAN POINT #5  
Enhance Regulatory Goals and Protections.**

**Goal:**

- Ensure policies, laws and regulations are consistent in promoting efficiency and renewable resources.
- Promote policies, reforms and resources to support the Public Utilities Commission (PUC) and the Division of Consumer Advocacy (DCA) in progressive and aggressive efforts to protect the public's interest and implement sound energy strategy.

**Background:**

Two important ways that the State expresses its energy policies are through its laws and through the actions of its utility regulatory agencies. It is important that the State's laws encourage, rather than impede, energy efficiency and renewable energy resources. The State's utility regulatory program includes the Public Utilities Commission and the Division of Consumer Advocacy. Both of these agencies play central and essential roles in determining and implementing the State's energy policies. These agencies need sufficient resources and a determined resolve to promote sound energy policies.

**Objectives and Desired Outcomes:**

- Improve County and State policies and regulations to enable and promote energy efficiency and renewable energy resources.
  - Determine what existing policies and regulations present barriers to promoting efficiency and renewable resources
  - Identify solutions and opportunities to make state and county policies and regulations supportive of efficiency and renewable resources
- Provide for adequate financial and staff resources for the PUC and DCA
  - Staff salaries commensurate with industry standards and sufficient to attract and maintain qualified personnel
  - Agency modernization and reorganization to facilitate efficient agency productivity
  - Agency budgets sufficient to retain qualified consulting services as necessary
- Develop awareness of the importance of implementing progressive energy policy
  - Appreciation by government leaders and legislators of the crucial importance of regulatory agency capability and productivity to implement sound state energy policies.

- Active resolve by the PUC and DCA to embrace and implement progressive energy policies in the regulation of the State's energy utilities.

**Indicators / Metrics:**

- All pertinent county and state ordinances, statutes, administrative rules and agency policies reviewed for consistency with enabling and promoting energy efficiency and renewable resources.
- Specific solutions and opportunities identified to make policies and regulations more conducive to energy efficiency and renewable resources.
- Specific amendments proposed and promoted to improve county and state policies and regulations.
- Government leaders informed and appreciative of the importance of regulatory agency capability and productivity
- Support and passage of regulatory agency reorganization plans to provide invigorated agency capability and productivity
  - Sufficient and appropriate agency staff positions
  - Sufficient agency staff salaries
  - Sufficient agency budgets
- Adequate financial and staff resources for the PUC and DCA
  - Staff salaries commensurate with industry standards and sufficient to attract and maintain qualified personnel
  - Agency modernization and reorganization to facilitate efficient agency productivity
  - Agency budgets sufficient to retain qualified consulting services as necessary
- PUC and DCA effectively determining and implementing sound energy policies in the regulation of energy utilities.

**Specific Forum Actions:**

- (Action underway) Commission a methodical study to examine existing policies and regulations and recommend amendments to promote efficiency and renewable resource implementation (August 2006 – August 2007)
  - Examine and catalogue existing relevant policies and regulations
  - Determine which policies are and are not consistent with promoting energy efficiency and renewable resources
  - Determine what amendments or options are feasible to improve policies and regulations
  - Formulate recommendations for implementing amendments and/or options

- (Action ongoing) Monitor the implementation of recently adopted laws regarding energy utility regulation and actions to be implemented by the PUC and DCA (July 2006 – July 2008)
  - Implementation of Renewable Portfolio Standards
  - Implementation of a Public Benefits Fund and “Third Party” DSM administrator by the PUC
  - Greenhouse gas emission limits
- (Action Ongoing) Coordinate with other Forum working groups regarding matters pertaining to the PUC and DCA (July 2006 – July 2008)
- (Action Taken) Determine, evaluate and promote recommendations for legislation for the 2007 legislative session.
- (Action Ongoing) Determine, evaluate and promote recommendations for legislation for the 2008 legislative session.
- Ensure that the PUC and DCA have the necessary resources to timely and fairly address regulatory issues. (July 2006 – July 2008)
  - (Action Ongoing) Continue dialogue with the Governor’s office to emphasize the importance of sufficient staffing of these agencies
  - (Action Ongoing) Monitor the progress of agency reorganization plans and support the agencies’ plans and funding in the 2007 legislature

**HAWAII ENERGY POLICY FORUM  
SOCIAL AND CULTURAL IMPACT WORKING GROUP  
ACTION PLAN**

**TEN POINT PLAN POINTS #6 & 9**

**#6 - Encourage Culturally Appropriate and Sustainable Energy Planning**

**#9 - Support Sustainable Development and Use of Biofuels**

**Goal(s):**

- Develop strategy and procedures to identify cultural sites in which new energy production facilities should not occur, and an appropriate methodology for communicating such information to energy production facility planners and developers, policymakers and the public.
- Advocate for establishment of a model, community-based biofuel production & distribution system to displace non-indigenous (imported) energy sources
- Identify proven indigenous models that might be used to introduce less expensive energy to Hawaii's urban centers and remote rural communities.
- Provide incentives to involve Native Hawaiians and Native Hawaiian communities as stakeholders in efforts to redevelop idled urban and plantation era lands into productive use within the energy production business chain.
- Encourage no-development areas that promote energy conservation by reducing the demand for energy.
- Address sustainable community energy requirements.

**Background:**

Native Hawaiian and other less affluent communities have historically been "burdened" with the placement in their neighborhoods of large power generating, and water, sewage and waste treatment facilities. Two issues of concern to the Forum are:

- Options to be considered usually feature conventional technologies that use disproportionate amounts of energy to operate, or are more expensive on a life-cycle basis.
- Finding a location for new such facilities is often a difficult and divisive process that often pits more populous, affluent communities with less affluent communities.

Hawaii, with its wealth of smart, proven, indigenous technologies, should be leading a change in energy production towards innovative, energy efficient options as well as options that have life cycle savings over conventional practices. The placement of energy production facilities should also not disturb culturally sensitive sites and avoid creating "burdened" communities.

HECO's recent approach to working with the Kapolei and Waianae communities as "burdened communities" with respect to the construction of five power plants in their district serves as an excellent model in terms of devising an action plan.

Development of indigenous renewable energy resources in Hawai'i creates opportunities to combine economic development and renewable energy policy objectives. Given that many of these resources are located or may be efficiently developed on Native Hawaiian lands, cooperative ventures with ali'i trust and other Hawaiian organizations are encouraged. Some of these lands hold significant cultural value to the Native Hawaiian community and their development may not be supported, and, in fact, opposed by the Native Hawaiian community.

It is recommended that the Forum create strategic alliances with organizations like the Office of Hawaiian Affairs (OHA), Kamehameha Schools – Bishop Estates (KSBE), and the Department of Hawaiian Home Lands (DHHL) to identify appropriate resources by building on current State Historical Preservation Department (SHPD) listings, current reviews, development of a list of undocumented sites (with appropriate technical support) and eventually determine “go/no go” areas for infrastructure development via a Cultural Inventory of Traditional and Energy Resources (CITER) Model.

In keeping with the original Cultural Issues Working Group (2003 and 2005), priority must be given to involvement of Native Hawaiian values and community leaders in site selections of industrial infrastructure in burdened communities, and how to commence discussion and empowerment. This will be accomplished by developing a demonstration project in a burdened community for culturally appropriate and environmentally responsible technologies with support from the community, Native Hawaiian groups and stakeholders.

**Objectives and Desired Outcomes:**

- Formulate policies and procedural frameworks to include an evaluation of social and cultural impacts of energy issues.
- Establish a community benefits process (such as one used by HECO re: a proposed energy installation near Nanakuli) to address concerns of “burdened communities”.
- Engage Hawaiian and broader community in selection of culturally appropriate sites for energy production and distribution
- Establish a process which defines cultural energy issues, and facilitates making more informed decisions regarding the protection of “traditional and customary” practices and resources impacted by land use and shoreline projects related to energy projects.
- Empower surrounding communities as stakeholders in new technology and energy self-sufficiency by successful demonstration projects.
- Forum becomes energy member of the 2050 Sustainability Plan group

**Indicators / Metrics:**

- “Burdened communities” are identified and charted.
- Areas in which energy production facilities should not be placed are identified and appropriately charted.

- A “white paper” is prepared that identifies and summarizes how energy conservation and production can best occur in Hawai‘i under several successful indigenous models of sustainability (i.e., ahupua‘a).
- A community outreach plan is developed.
- A “white paper” is prepared in ways that indigenous communities can be major stakeholders in new technology and opportunities for energy production and energy conservation.
- CITER Model for potential “positive” sites.

**Specific Forum Actions:**

- Actions to be Taken/Underway
  - Begin preliminary meetings to develop strategic alliance with OHA
  - Convene working group with OHA to cross check West Oahu sites and development options statewide;
  - Conduct teleconference meetings with local utilities, OHA, SHPD and other Hawaiian organizations, and private sector partners. Minimal cost - should be absorbed by strategic alliance partners.
- Actions Taken
  - Preparation of LNG Study

**HAWAII ENERGY POLICY FORUM  
HYDROCARBON WORKING GROUP  
ACTION PLAN**

**TEN POINT PLAN POINT #10**

**Ensure the security and reliability of energy supply and distribution**

**Goals:**

- Ensure policies, laws and regulations are consistent in promoting infrastructure to support the security and reliability of energy supply and distribution.
- Promote policies to support appropriate cost recovery for utility companies for prudent investments to protect the security and reliability of energy generation, supply and distribution systems.
- Protect our transportation and electricity infrastructure by developing systems that have endurance, hardening resistance and can overcome vulnerabilities to potential acts of terrorism and natural disasters such as hurricanes and tsunamis and fuel supply disruptions
- Support policies, laws and regulations that facilitate the integration of biofuels into the energy infrastructure in a manner that does not compromise the security and reliability of the state's overall energy supply and distribution.

**Background:**

In recent years Hawaii has become increasingly concerned about the need to lessen its dependence upon hydrocarbons to run its economy and to maintain the lifestyles of its residents and visitors. Bold legislative initiatives have been passed to support and incent greater use of renewable resources and energy conservation. The transformation to renewable energy based economy will take many years and we need to ensure that during this transition that additional investments and ongoing maintenance of hydrocarbon facilities are continued to ensure the security and reliability of the state's overall energy supply and distribution system.

It is important that the State's laws and regulations encourage, rather than impede continued investment and maintenance of hydrocarbon facilities and distribution systems to ensure their continued security and reliability.

For the state's energy utilities, the Public Utilities Commission and the Division of Consumer Advocacy oversee their operations and capital investments. In addition the Department of Business Economic Development and Tourism is responsible for energy planning and through the Energy Council coordinates responses to emergencies concerning energy shortages caused by natural disasters or other supply disruptions. These agencies play central and essential roles in determining and implementing the State's energy policies.

**Objectives and Desired Outcomes:**

- Develop systems that have endurance, hardening resistance, and can overcome vulnerabilities to potential acts of terrorism and natural disasters such as hurricanes and tsunamis.

- Provide guidance to PUC on the recovery of utility investments that encourage investments to improve hydrocarbon fuel system manufacturing, transmission and distribution systems security and reliability.
- Improve county and state policies and regulations to ensure the security and reliability of energy supply and distribution.
  - Determine existing policies and regulations that present barriers to promoting the security and reliability of energy supply and distribution
  - Identify solutions and opportunities to make state and county policies and regulations supportive of the security and reliability of energy supply and distribution
  - To ensure the continued security and reliability of the county's/state's energy supply and distribution, offer expertise/commentary on proposals designed to supplant fossil fuels with renewable forms of energy.

**Indicators / Metrics:**

- All pertinent county and state ordinances, statutes, administrative rules and agency policies reviewed for consistency with enabling and promoting security and reliability of energy supply and distribution.
- Specific solutions and opportunities identified to make policies and regulations more conducive to security and reliability of energy supply and distribution.
- Specific amendments proposed and promoted to improve county and state policies and regulations.
- Government leaders informed and appreciative of the importance of security and reliability of energy supply and distribution.
- Support and passage of legislation that promote security and reliability of energy supply and distribution.
- PUC and DBEDT effectively determining and implementing sound energy policies to support the security and reliability of energy supply and distribution.

**Specific Forum Actions:**

1. Develop indicator(s) to measure progress in developing secure and safe energy system.
2. Develop information on issues/options for communication/outreach
3. Provided partial funding for FACTS to prepare the report entitled, "Evaluating Natural Gas Import Options for the State of Hawaii," which updated their previous study on the feasibility of importing LNG. This study was used in part to satisfy Section 355 requirements of the 2005 National Energy Policy Act

relating to analyzing the impacts on the local refinery industry of displacing petroleum with renewable energy or liquefied natural gas.

4. Support the development of the 2006 Hawaii Energy Strategy being conducted by DBEDT & RMI, which is scheduled to be completed in 2007
5. (Action Taken) Determine, evaluate and promote recommendations for legislation for the 2007 legislative session. Monitor legislation and testify on bills that the Forum has reached a consensus on:
  - a. HB 250, HD 2, SD2, CD1 (Act 127) which would establish a formal agreement between the Aloha Tower Development Corporation and DOT-Harbors to work jointly on Honolulu harbor infrastructure projects (passed)
  - b. HB 791, HD1, SD1, CD1 (Act 130) (monitor and work with renewable subcommittee) requires distributors to report to the department of business, economic development, and tourism on the distribution and availability of gasoline that does not contain ethanol. Requires report to legislature.
8. (Action ongoing) Monitor the implementation of recently adopted laws regarding energy utility regulation and actions to be implemented by the PUC and DCA (July 2006 – July 2008)
  - o Implementation of Petroleum Industry Monitoring, Analysis and Reporting (PIMAR) law
9. (Action Ongoing) Determine, evaluate and promote recommendations for legislation for the 2008 legislative session.
10. (Action ongoing) Support advance preparedness for energy shortage emergencies due to oil market disruptions or natural or manmade disasters by securing delivery of electric and gas services and protecting production and storage of fuel and fuel feedstocks for utility and transportation (ground, air, and marine) uses.
11. (Action ongoing) Keep abreast of the efforts of the Hawaii Harbors User Group and the State Harbors to work together on a statewide Harbor Modernization Plan which is designed to implement and aggressive infrastructure upgrade of the harbors in order to ensure that there is adequate harbor capacity to avoid disruption in the delivery of hydrocarbon and biofuels as well as other cargos.

| FORUM MEMBERS |           |                     |  |   |                        |  |                         |                |                |   |                                      |
|---------------|-----------|---------------------|--|---|------------------------|--|-------------------------|----------------|----------------|---|--------------------------------------|
| Name          |           |                     | Address  |   |                        |  | Phone                   | Fax            | e-mail         |   |                                      |
| Mr.           | Robbie    | Alm                 | HECO   | P.O. Box 2750   |                        |  | Hon, HI 96840-0001      | 543-7650       |                | Robbie.Alm@heco.com                               | SrVP,Public Affairs                  |
| Mr.           | Bob       | Arrigoni            | Hi County, Res. & Dev., Lanihau Prof. Center       | 75-5591 Palani Road                                   | Suite 2001             |  | Kailua-Kona, HI 96740   | 1-808-327-3664 | 1-808-327-3667 | rarrigoni@co.hawaii.hi.us                         | Hi County Energy Coordinator         |
| Ms.           | Amy       | Asselbaye           | The Office Congressman Neil Abercrombie            | Prince Kuhio Federal Building, 300 Ala Moana Blvd.    | Rm 4-104               |  | Honolulu, HI 96850      | 541-2570       | 533-0133       | Amy.Asselbaye@mail.house.gov                      | Chief of Staff                       |
| Ms.           | Catherine | Awakuni             | Division of Consumer Advocacy                      | 335 Merchant St.                                      | Rm 326                 |  | Honolulu, HI 96813      | 586-2770       | 586-2780       | Catherine.P.Awakuni@DCCA.hawaii.gov               | Executive Director                   |
| Mr.           | Warren    | Bollmeier           | Hi Renewable Energy Alliance                       | 46-040 Konone Pl                                      | #3816                  |  | Kaneohe, HI 96744       | 247-7753       | 247-7753       | wsb@lava.net                                      | President                            |
| Mr            | Carlito   | Caliboso (observer) | Public Utilities Commn                             | 465 S King St   | Rm 103                 |  | Hon, HI 96813           | 586-2020       | 586-2066       | Hawaii.PUC@hawaii.gov                             | Chairman (Observer)                  |
| Mr.           | Albert    | Chee                | Chevron  | 91-480 Malakole Street                                |                        |  | Kapolei, HI 96707       | 682-2313       | 682-3116       | AlChee@chevron.com                                | Public Affairs Manager               |
| Mr.           | Kyle      | Datta               | US BioDiesel Group                                 | 75-170 Hualulai Rd                                    | Ste C311A              |  | Kailua-Kona, HI 96740   | 808-329-4360   | 808-329-4370   | kdatta@usbdgroup.com                              | CEO                                  |
| Sen           | Kalani    | English             | Senate Comm on Transportation & Internat'l Affairs | State Capitol   | Rm 205                 |  | Hon HI 96813            | 587-7225       | 587-7230       | senenglish@capitol.hawaii.gov                     | Senator; Chair of Committee          |
| Mr.           | Mitch     | Ewan                | HNEI   | 1680 East-West Road                                   | POST 109               |  | Honolulu, HI 96822      | 956-2337       | 956-2336       | ewan@hawaii.edu                                   | Hydrogen Systems Program Mgr         |
| Mr.           | Carl      | Freedman            | Haiku Design & Analysis                            | 4234 Hana Hwy   |                        |  | Haiku, HI 96708         | 1-808-572-2519 |                | jcfrn@hawaiiantel.net                             | President                            |
| Mr.           | Mark      | Glick               | Ofc of Hawaiian Affairs                            | 711 Kapiolani Blvd.                                   | Suite 500              |  | Honolulu, HI 96813      | 594-1911       | 594-1865       | markg@oha.org                                     | Director, Economic Development       |
| Mr.           | Steve     | Golden              | The Gas Company                                    | PO Box 3000   |                        |  | Honolulu, HI 96802-3000 | 535-5913       | 535-5943       | sgolden@hawaiiqas.com                             | Director/External Affairs & Planning |
| Dr.           | Mike      | Hamnett             | RCUH   | 2800 Woodlawn Dr.                                     | Suite 200              |  | Hon HI96822             | 988-8311       | 988-8319       | mhamnett@rcuh.com                                 | Executive Director                   |
| Ms.           | Paula     | Helfrich            | Econ Development Alliance of Hawaii                | 737 Bishop St.  | Suite 2040 Mauka Tower |  | Hon, HI 96813           | 989-1899       | 536-2281       | paula.helfrich@edahawaii.org;clipper@hi-lo808.net | CEO                                  |
| Mr.           | William   | Kaneko              | Hi Institute for Public Affairs                    | 1001 Bishop St. - Amer Sav Bank Tower                 | Suite 1132             |  | Hon HI 96813            | 535-7931 X103  | 585-7932       | wkaneko@hipaonline.com                            | Pres & CEO                           |
| Mr.           | Maurice   | Kaya                | DBEDT Energy, Resources & Technology Division      | P.O. Box 2359   |                        |  | Honolulu, HI 96804      | 587-3812       |                | mkaya@dbedt.hawaii.gov                            | Program Administrator                |
| Mr.           | Darren    | Kimura              | Energy Industries Holdings                         | 2660 Waiwai Loop                                      |                        |  | Honolulu, HI 96819      | 839-7300       | 839-7400       | dkimura@sopogy.com                                | President&CEO                        |
| Mr.           | Mike      | Kitamura            | Office of Senator Daniel K. Akaka                  | Prince Kuhio Federal Bldg., 300 Ala Moana Blvd.       | Rm. 3-106              |  | Honolulu, HI 96850      | 522-8790       | 545-4683       | Michael.Kitamura@akaka.senate.gov                 | State Director                       |
| Mr.           | Kal       | Kobayashi           | Maui County Energy Office                          | 200 S. High St.                                       |                        |  | Wailuku, HI 96793       | 1-808-270-7832 | 1-808-270-7141 | kal.kobayashi@co.maui.hi.us                       | Maui Energy Coordinator              |
| Mr.           | Larry     | Lau                 | Department of Health                               | 1250 Punchbowl St                                     |                        |  | Honolulu, HI 96813      | 586-4424       | 586-4368       | lkau@doh.hawaii.gov                               | Dep Dir, Environmental Health        |
| Ms.           | Yvonne    | Lau                 | Office of Congresswoman Maize Hirono               | 5104 Prince Kuhio Federal Building, 300 Ala Moana Ave |                        |  | Honolulu, HI 96850      | 541-1986       | 538-0233       | Yvonne.Lau@mail.house.gov                         | District Director                    |
| Mr.           | Allyn     | Lee                 | Dept of Design & Construction                      | 650 S King St.  | 9th Fir                |  | Hon HI 96813            | 523-4106       | 526-6002       | alee2@honolulu.gov                                | Engineer                             |

| Name |         |            | Address  |                                   |                            |                         | Phone               | Fax            | e-mail   |                                       |
|------|---------|------------|--|-----------------------------------|----------------------------|-------------------------|---------------------|----------------|--|---------------------------------------|
| Mr.  | Aaron   | Leong      | Office of the Hon. Daniel Inouye                     | 300 Ala Moana Blvd.               | Room 7212                  | Honolulu, HI 96813      | 541-2877            | 541-2549       | <a href="mailto:aaron_leong@inouye.senate.gov">aaron_leong@inouye.senate.gov</a> | Staff Assistant                       |
| Dr.  | Stephen | Meder      | AIA Honolulu   | 2525 Correa Rd.                   | HIG 238                    | Honolulu, HI 96822      | 956-7031            |                | <a href="mailto:smeder@hawaii.edu">smeder@hawaii.edu</a>                         |                                       |
| Sen  | Ron     | Menor      | Sen Energy & Environment                             | Hawaii State Capitol              | Room 208                   | Honolulu, HI 96813      | 586-6740            | 586-6829       | <a href="mailto:senmenor@capitol.hawaii.gov">senmenor@capitol.hawaii.gov</a>     | State Senator; Chair of the Committee |
| Mr.  | Jeff    | Mikulina   | Sierra Club Hawai'i Chapter                          | P.O. Box 2577                     |                            | Honolulu, HI 96803      | 538-6616            |                | <a href="mailto:mikulina@lava.net">mikulina@lava.net</a>                         | Director/Hawaii Chapter               |
| Dr.  | Bruce   | Miller     | University of Hawai'i Office of Sustainability       | Hawaii Energy House               | 2020 East-West Road        | Honolulu, HI 96822      | 956-8645            | 956-5142       | <a href="mailto:bmiller@hawaii.edu">bmiller@hawaii.edu</a>                       | Director                              |
| Dr.  | Sharon  | Miyashiro  | Public Policy Ctr                                    | Saunders Hall 723                 | 2424 Maile Way             | Hon HI 96822            | 956-7070            | 956-0950       | <a href="mailto:sharonmi@hawaii.edu">sharonmi@hawaii.edu</a>                     | Assoc Dir,SSPublicPolicy Ctr          |
| Rep. | Hermina | Morita     | House Committee on Energy & Environmental Protection | Hawai'i State Capitol, Room 315   | 415 South Beretania Street | Honolulu, HI 96813      | 586-8435            | 586-8437       | <a href="mailto:repmorita@capitol.hawaii.gov">repmorita@capitol.hawaii.gov</a>   | State Rep;Chair of the Committee      |
| Mr.  | Tim     | O'Connell  | USDA/Rural Development                               | 154 Waiianuenue Avenue            | Room 303                   | Hilo, HI 96720          | 1-808-933-8313      | 1-808-933-8326 | <a href="mailto:tim.oconnell@hi.usda.gov">tim.oconnell@hi.usda.gov</a>           |                                       |
| Mr.  | Richard | Paglinawan | Pa Ku'i A Lua  | 47-710 Ahuimanu Rd                |                            | Kane'ohe, HI 96744      | 594-4700            | 239-8945       |  | Hawaiian Specialist                   |
| Ms.  | Melissa | Pavlicek   | Western States Petroleum Assn                        | 841 Bishop St                     | Rm 1628                    | Honolulu, HI 96813      | 523-3695;c-722-7007 |                | <a href="mailto:pavlicekm001@hawaii.rr.com">pavlicekm001@hawaii.rr.com</a>       | Legislative Advocate                  |
| Mr.  | Randy   | Perreira   | Hi State AFL-CIO                                     | 888 Millilani                     | Ste 601                    | Honolulu, HI 96813      | 543-0003            | 528-0922       | <a href="mailto:rperreir@hgea.org">rperreir@hgea.org</a>                         | President                             |
| Mr.  | Rick    | Reed       | Hawaii Solar Energy Assn                             | 761 Ahua Street                   |                            | Honolulu, HI 96819      | 523-0711            | 536-5586       | <a href="mailto:reed@solarsupply.com">reed@solarsupply.com</a>                   | President                             |
| Dr.  | Rick    | Rocheleau  | Hawaii Natural Energy Institute                      | Univ of Hawaii--1680 East-West Rd | POST 109                   | Honolulu, HI 96822      | 956-8366            | 956-2336       | <a href="mailto:rochelea@hawaii.edu">rochelea@hawaii.edu</a>                     | Director                              |
| Mr.  | Peter   | Rosegg     | HECO   | P.O. Box 2750                     |                            | Honolulu, HI 96840-0001 | 543-7780            | 543-7790       | <a href="mailto:peter.rosegg@heco.com">peter.rosegg@heco.com</a>                 | Sr.Communications Consultant          |
| Mr.  | Steven  | Rymsha     | KIUC   | 4463 Pahee St.                    | Suite 1                    | Lihue, Kauai, HI 96766  | 808-246-8287        |                | <a href="mailto:srymsha@kiuc.coop">srymsha@kiuc.coop</a>                         | Renewable Energy Staff Engineer       |
| Mr.  | Riley   | Saito      | PowerLight Corp.                                     | 73-1294 Awakea St.                |                            | Kailua-Kona, HI 96740   | 1-808-895-0646      | 1-808-325-6256 | <a href="mailto:rsaito@powerlight.com">rsaito@powerlight.com</a>                 | Solar Energy Strategist               |
| Mr.  | Glenn   | Sato       | Office of Economic Development                       | 4444 Rice Street                  | Room 200                   | Lihue, Kaua'i, HI 96766 | 1-808-241-6390      |                | <a href="mailto:gsato@kauai.gov">gsato@kauai.gov</a>                             | Energy Coordinator                    |
| Mr.  | Bill    | Short      | Building Industry Association of Hawai'i             | 1727 Dillingham Blvd.             |                            | Honolulu, HI 96819      | 349-5560            | 237-8928       | <a href="mailto:short@am-pres.com">short@am-pres.com</a>                         | Chair, Govt Relations Committee       |
| Mr.  | H. Ray  | Starling   | Hawaii EnergyGrp                                     | 1001 Bishop St-Pacific Tower      | Rm 977                     | Honolulu HI 96701       | 478-7097            | 262-9967       | <a href="mailto:raystarling@off-peak.com">raystarling@off-peak.com</a>           | President                             |
| Mr.  | Lance   | Tanaka     | Tesoro Hawaii Corp.                                  | 91-325 Komohana St.               |                            | Kapolei, HI 96707       | 547-3920            | 547-3858       | <a href="mailto:itanaka@tsocorp.com">itanaka@tsocorp.com</a>                     | Manager, Governmental Relations       |
| Dr.  | Don     | Thomas     | Center for the Study of Active Volcanoes             | POST 619B                         | 200 Kawili St.             | Hilo, HI 96720          | 956-6482; 895-6547  | 1-             | <a href="mailto:dthomas@soest.hawaii.edu">dthomas@soest.hawaii.edu</a>           | Director                              |
| Mr.  | Murray  | Towill     | Hawai'i Hotel & Lodging Assn                         | 2250 Kalakaua Ave.                | Suite 404-4                | Honolulu, HI 96815      | 923-0407            |                | <a href="mailto:mtowill@hawaiihotels.org">mtowill@hawaiihotels.org</a>           | President                             |
| Ms.  | Joan    | White      | Honolulu Community Action Program                    | 1109 Maunakea Street              | 2nd Floor                  | Honolulu, HI 96813      | 521-4531            |                | <a href="mailto:joanw@hcapweb.org">joanw@hcapweb.org</a>                         | Executive Director                    |



## HAWAII ENERGY POLICY FORUM

### FORUM ACHIEVEMENTS TO DATE | 2003–2007

The Forum focuses on addressing the recommendations put forth in the 2003 Hawaii Energy Policy Summit report, *“Hawaii at the Crossroads: A Long Term Energy Strategy”* and in its comprehensive *“10 Point Energy Plan.”*

To achieve its mission of reaching understanding and collaborative action, the Forum developed a set of governance procedures to guide its deliberations and to promote a collegial environment where all opinions and positions are freely expressed.

The Forum continues to be a safe environment where all ideas and interests can be discussed, where white papers and research studies can be developed and analyzed, and where all viewpoints can be shared in civil, deliberative dialogue. Our objective is to arrive at consensus positions so that actions can be implemented; and, when there is disagreement, to articulate the divergent positions.

Because energy issues are multiple and complex, the Forum believes that the development of a Hawaii knowledge base is critical. Ongoing discussion and collaboration are also key to enable sound decision-making on policy issues and options.

This is not always easy, but members are committed to working together because they know that Hawaii must meet the challenge of finding energy solutions to sustain a healthy, prosperous and secure Hawaii for current and future generations. They also believe that Hawaii’s energy strategy must be based on knowledge and on a thorough understanding of how various segments of Hawaii’s economy and people are interconnected and will be impacted by their individual strategies. The Forum works to study, discuss and inform.

#### **Specifically, the forum has achieved the following to date:**

- Conducted research on various policy issues ranging from hydrocarbons outlook, environmental requirements on energy producers, renewable and unconventional energy, energy utility regulation and taxation, and energy efficiency. Some of the reports have already influenced policies and practices.
- Developed recommendations that involved several hundred key energy and policy stakeholders and community leaders who share the need for a common strategic vision for Hawaii’s energy future both at a Energy Summit held in 2003 and Forum discussions.
- Developed and adopted a vision for our future: “Smart energy solutions to sustain a healthy,

Continued on back

- prosperous, and secure Hawaii” and a comprehensive 10 Point Energy Plan as a framework for action.
- Established Working Groups to address the major goals of the 10 Point Plan: (1) renewable energy; (2) energy efficiency; (3) regulatory reform; (4) hydrocarbon future; (5) social and cultural impacts (6) communication; and (7) greenhouse gases.
  - Developed Action Plans, including benchmarks, for all Working Groups.
  - Developed legislative proposals and consensus positions on energy bills in the Hawaii State Legislature. Numerous proposals developed by the Forum, relating to developing renewable energy, energy efficiency, and regulatory reform, were passed by the Legislature and signed into law by the Governor.
  - Convened an “Executive Energy Briefing” for over 50 top executives in business and government to brief them on the benefits and how tos of increasing energy efficiency in their buildings (August 2006).
  - Established an “Energy by Example” awards program to increase energy efficiency in the public and private sector by providing preliminary energy assessments to four organizations as case studies to demonstrate energy efficiency measures.
  - Co-sponsored a workshop on biofuels development (October 2006).
  - Sponsored a briefing by Congressman Colin Peterson, Chairman of the US House Agriculture Committee, on “Hawaii’s Pathway to Energy Independence: Bioenergy Opportunities from the Federal Perspective” (April 2007).
  - Co-sponsored with the Office of Hawaiian Affairs an evaluation of natural gas import options for Hawaii (2007).
  - Co-sponsored a briefing by US Departments of Energy and Commerce, High Tech. Development Corp., and local renewable energy businesses, on Commercializing Renewable Energy Technologies.

**MAJOR HEPF  
LEGISLATIVE PROPOSALS  
PASSED BY THE LEGISLATURE  
& SIGNED BY THE GOVERNOR**

- Increases the renewable energy technologies tax credit and makes it permanent
- Establishes a standard that 50% of the renewable portfolio standards for electrical energy generated be from a renewable energy source
- Ensures a “fair rate of return” rather than “guaranteeing a profit margin” for the utilities
- Promotes energy efficiency “green” building standards
- Supports organizational reform and appropriate staffing of the Public Utilities Commission and the Division of Consumer Advocacy
- Establishes a renewable hydrogen program and investment capital fund of \$10M
- Establishes “pay as you save” pilot project to help residential utility customers buy solar water heating systems without upfront costs and pay for the system by savings to be realized
- Supports development of and funding for a Bioenergy Master Plan for Hawaii
- Supports funding for a study on energy efficiency strategies in the transportation sector



## HAWAII ENERGY POLICY FORUM

### THE BEGINNING | 2002–2003

Collaboration is a tradition in Hawaii. Part of a rich cultural heritage, collaboration has also been recognized as a successful tool in reaching agreement among varying, and often conflicting, interests.

Adhering to the wisdom of that tradition, in May 2002 the Hawaii Energy Policy Project at the University of Hawaii at Manoa convened the state's major energy stakeholders and community leaders to assess the emerging energy crisis and to develop a vision and a strategy for implementation that would carry the state through the year 2030.

These stakeholders — more than 40 people from community and environmental groups, electric utilities, oil and natural gas suppliers, renewable energy industries, academia and federal, state and local governments — were in sync from the onset. There was no argument

about whether Hawaii was facing a crisis — albeit hidden at that time. That was acknowledged as fact.

Instead they turned immediately to science and getting more facts. The group, now called the HAWAII ENERGY POLICY FORUM, or “FORUM,” asked for baseline information and a review of the environmental, regulatory, economic, social and cultural issues surrounding Hawaii's energy structure.

Once again acknowledging the wisdom of collaboration, in December 2003, the Forum convened another meeting — the Hawaii Energy Policy Summit — a community forum to review current knowledge and policy papers and to develop a vision and strategy for Hawaii's energy future. The resulting report, “Hawaii at the Crossroads: A Long Term Energy Strategy,” recommended guiding principles and policy options.

