

ENERGY FOR TOMORROW

OUTLINE SUMMARY OF COMPREHENSIVE ENERGY PACKAGE

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Part I. Introduction.

This package comprehensively addresses Hawaii's decades-long overdependence on imported oil for its energy by establishing a bold, strategic energy policy framework of integrated measures to encourage and support market-based development of reliable, cost-effective, and self-reliant energy systems. The package's integrated, coordinated, and complementary measures constitute a network of policy pathways to achieve results over the near-, mid-, and long-term. This energy vision will enable Hawaii to attain a niche leadership role in the global hydrogen energy economy by accelerating the development of the state's own indigenous, renewable energy resources. The package's parts and overall purposes are:

Part II. “Empowering Hawaii’s Consumers” - - Improve Petroleum and Energy Industry and Market Transparency and Competition, and Energy System Information Reporting and Analyses.

- a. Repeal price caps; deploy “Import Parity Pricing Indicator” (IPPI).
- b. Establish monitoring program to achieve petroleum industry and market transparency. Include use of "Import Parity Price Indicator" (IPPI), similar to Australia's IPPI, one component of its monitoring and transparency program after repeal of Australia's wholesale gasoline price caps.
- c. Develop petroleum and energy industry data, information database and analytic system. Increase statewide energy systems data sharing (DBEDT and PUC) with enhanced

internal data/information security provisions; i.e., data on fuels, electric and gas utilities, and independent power producers.

Immediate Impact: Relief from price caps volatility and uncertainty.

Mid-Term Impact:

(1) DBEDT and enforcement agencies (AG, DoTax, PUC, and DCCA) receive expanded, in-depth information on each level of Hawaii's petroleum market.

(2) IPPI enhances competition and competitive gasoline pricing through heightened market awareness. Australia's example shows lower prices *after repeal* of price caps under watchdog monitoring and use of import parity indicator (IPI).

(3) Strengthen State data analytic capacity for total energy systems to support informed policy decisions and all programs' assessments of renewables, energy efficiency, leading to hydrogen in long term.

Cost: Currently PUC Special Fund supports 3.0 FTE, and program total annual cost of \$311,769. After FY 07, may need General Funds. PUC FTE needed for gas caps may be savings.

d. Repeal Divorcement (Anti-Encroachment Law).

Immediate Impact: According to U.S. Federal Trade Commission executive staff report of econometric analysis of 6 states (including Hawaii) and D.C. with divorcement *added* an average 2.7¢/gallon at retail/self-serve on regular unleaded gasoline, which may be saved by repeal.

e. Enact legislation to prohibit price gouging in petroleum fuel sales, in particular. Enhance State's enforcement authority by specifically making it an unfair or deceptive trade practice for any petroleum-related business to sell or offer to sell any petroleum product for an unconscionably excessive price during any abnormal market disruption, irrespective of disruption location.

Approach: Legislative (DCCA initiative).

Part III. "Fuels through Farming" - - Develop and Increase Use of Alternative Transportation Fuels.

a. Require that State diesel fuel purchases include a purchase preference for biodiesel blends.

Approach: Legislative or Administrative (including funding and staff resources).

Immediate Impact: Reduce engine wear; diversify fuel sources; and support local fuel production.

Cost: Minimal. Biodiesel is currently lower cost than petroleum-based diesel fuel.

- b. Offer incentives for purchasers of gasoline-efficient hybrid and alt fuel vehicles: allow “AFV” or “HEV” license plates; allow vehicles with “HEV” and “AFV” plates to be exempt from vehicle registration fees.

Approach: Legislative.

Near- to Long-Term Impact: Increases consumer use of fuel-efficient and fuel-diverse vehicles.

Cost: Minimal (vs. tax credits for purchase of vehicles).

- c. Reconcile vehicle purchase requirements in Chapter 103D, Hawaii Revised Statutes, to allow alternative fuel vehicles and to be consistent with federal alternate fuel vehicle requirements.

Immediate Impact: State fleets will be able to comply with Federal law, 10 CFR 490.604. Penalties for noncompliance are \$5,000 per violation for civil penalties, \$10,000 per willful violation, and \$50,000 if violations are willful and repeated; the law also includes provisions for withholding of Federal funding as a penalty for non-compliance.

Cost: Will be a savings, as avoids potential Federal fines or withholding of Federal funds. Continue to build fuel diversification ability into State fleets, to allow the eventual use of alternative fuels when available and when less costly than gasoline.

- d. Establish a Renewable Fuels Standard (RFS) of 20% of highway fuel demand to be provided by renewable fuels by 2020. Interim standards would be 10% in 2010 and 15% in 2015. “Renewable fuels” include:
 - (1) Ethanol;
 - (2) Biodiesel;
 - (3) Hydrogen, or other liquid or gaseous fuels, produced:
 - i. From renewable feedstocks, including wastes; or
 - ii. From water, using electricity from renewable energy sources.

Mid- to Long-Term Impact: Demand-pull for diversification of transportation fuel sources; development of local fuels production capability; support of transition to hydrogen; stabilization and reduction of fuel costs.

Cost: No General Funds. At historical rates of increase in demand, a requirement for 20% renewable fuel by 2020 would simply capture the projected growth in ground transportation fuel demand. The E10 blending requirement beginning in April, 2006, will result in renewable fuels contributing about 7% of the ground transportation fuel demand in 2006 and 9% in 2007.

- e. Extend the expiration date for the alcohol fuels State excise tax exemption from December 31, 2006 to December 31, 2009.

Approach: Legislative.

Near-Term Impact: Lower fuel costs for Hawaii motorists; increased public and retailer acceptance during introduction of ethanol blended fuel.

Long-Term Impact: Increased likelihood of successful transition to and expansion of local fuels production capability; stabilization and reduction of fuel costs.

Cost: Whether or not the measure would require an adjustment to the State budget depends on what is being assumed for ethanol facility income tax credits and excise tax revenues on gasoline. If neither is assumed in the State budget, no adjustment would be needed.

When the excise tax exemption for E10 was originally enacted (in 1980), there was no sunset date. The sunset date was added in 2000, when the ethanol facility incentive was enacted. The intent was to allow for a limited period of overlap between the excise tax exemption and the facility tax credit, to aid in the establishment of the industry and provide retailers and consumers with a certain period of excise tax exemption. To date, neither the ethanol facility incentive nor the excise tax exemption have been utilized.

It is not anticipated that the ethanol facilities currently being planned for construction in Hawaii will be taking the ethanol facility tax incentive until 2008 at the earliest, since none of the projects have yet broken ground. Project developers are projecting early 2007 startup dates; the facilities cannot take the credit until and unless (after) they have produced at least 75% of their nameplate capacity for the year. Tax incentives paid out to ethanol production facilities cannot exceed \$12 million per year. It appears highly unlikely that any ethanol production facility incentives will be expended in 2006 or 2007 and it also appears unlikely that the full amount will be expended in 2008.

The retail price assumed for gasoline determines the cost of the extension of the excise tax exemption. If gasoline is assumed to have an annual average pre-tax retail price of \$1.70 (Honolulu pump price of \$2.28), the excise tax that would be collected per gallon of gasoline would be about \$0.071. If 230 million gallons of gasoline are assumed to be used between January 1, 2007 and June 30, 2007, the cost of the extension of the exemption

would be \$16 million. Higher gasoline prices would result in a higher figure; lower gasoline prices would result in a lower figure.

- f. Provide appropriation to quantify potential for ethanol and biodiesel production in Hawaii for motor fuels, electricity production, and as a potential hydrogen carrier for the future. Facilitates supply-push.

Approach: Legislative. May be implemented administratively. Funding and staff resources need to be provided.

Near- to Long-Term Impact: Facilitates development of local fuels production capability. A 2003 study commissioned by DBEDT projected that an ethanol industry of 90 million gallons per year “could add as much as \$300 million to the local economy in direct and indirect value.” A statewide multi-fuel biofuels production assessment will provide a longer term and comprehensive evaluation of potential feedstocks, technologies, and economics of the various renewable fuels pathways.

Cost: General Funds \$200,000.00

Part IV. “Savings through Efficiency” - - Stimulate State and Consumer Energy Efficiency.

- a. Improve Energy Efficiency in State Facilities and Vehicles:
 - (1) Direct that new State building construction strive to meet the U.S. Green Building Council’s Leadership in Energy and Environmental Design (LEED) guidelines, with a goal to achieve Silver certification; at minimum agencies shall follow commissioning and retrocommissioning requirements, as well as appropriate LEED checklists;
 - (2) Retrofit and renovate existing State facilities using energy efficient design and equipment;
 - (3) Require solar water heating where cost-effective; exempt Hawaiian Home Lands to allow clients to participate in utility rebate programs for solar water heating;
 - (4) Require that all new residential facilities three stories and below, built using any portion of State funds and/or located on State lands, meet minimum roof and wall standards to prevent heat gain and, if air conditioned, minimize cool air loss. Work with Counties to adopt similar requirements in their building codes;
 - (5) Purchase environmentally preferable products;
 - (6) Include waste management programs for all construction and demolition projects;
 - (7) Incorporate reduce, reuse, and recycle as a standard operating practice; and
 - (8) Promote purchase of fuel-efficient vehicles and use of alternative transportation fuels.

Approach: Legislative. Statute would provide clear and strong policy statement. May be implemented administratively. Funding is essential to ensure compliance and meet projected impacts.

Near- to Long-Term Impact: If agencies are properly funded to conduct retrofits using energy efficient equipment, the state facilities could reduce consumption by 14% and save about \$10 million a year. If agencies are provided sufficient funding for new buildings to design to Leadership in Energy and Environmental Design (LEED), Silver Standard, the added costs for new facilities would be about 5% to 10% per new facility, but the operating costs would be reduced by 30%. State agencies also will continue and strengthen programs for efficient vehicles and alternative transportation fuels, recycling, and environmentally preferable purchasing.

Cost: General Funding for programs and staff is essential, consisting of 2.0 FTE and \$500,000 in program support to provide training and technical assistance to agency personnel and conduct demonstration projects in state facilities. Agencies with facility requirements need additional funding of 5% to 10% of construction cost to meet LEED standards and Energy Star standards.

b. Amend State Energy Tax Credit Law:

- (1) Remove the sunset date of January 1, 2008 for the renewable energy tax credits;
- (2) Increase the dollar cap from \$1,750 to \$10,000 for single family residential taxpayers who purchase and place into service photovoltaic systems;
- (3) Increase the dollar cap from \$350 per unit to \$1,000 per unit for solar water heating or photovoltaic systems installed by taxpayers in multi-unit residential buildings;
- (4) Increase the dollar cap from \$250,000 to \$500,000 for commercial taxpayers who purchase and place into service a solar thermal or photovoltaic energy system.

Approach: Legislative.

Immediate Impact: For each \$1 in tax credits paid, \$1.82 in tax revenues is generated from solar water heating, which presently constitutes about 100 percent of the tax credits claimed.

Mid- and Long-Term Impact: Increased revenues, jobs, and environmental benefits.

Cost: Increase in tax credits paid of \$1.75 million. Possible impact on the tax credits paid due to increased number of commercial photovoltaic installations is estimated at \$1.5 million more than presently paid out. The residential photovoltaic impact is estimated to be \$250,000 per year. (Between 2001 and 2004, 46 net metered residential photovoltaic systems were installed statewide. If that number were to be installed in a single year, at an estimated net cost after the Federal tax credit of \$15,000, the revenue impact would be \$241,500.) The tax credit impact for multi-unit residential solar water heaters is not expected to be significant.

Part V. “Independence through Renewable Energy” - - Significantly Increase Use of Renewable Energy Resources.

- a. Encourage the Public Utilities Commission to establish “advanced pricing measures” for electrical consumers.

Approach: Legislative. Statute would provide clear and strong policy statement. May be implemented administratively through Public Utilities Commission docket process.

Near-Term Impact: Electricity conservation and peak energy demand reduction.

Cost: None directly to state. Advanced pricing tariffs could involve improved residential metering, which may ultimately be paid for through savings.

- b. Re-direct existing utility demand-side management (DSM) surcharge to directly support energy efficiency and renewable energy programs for electricity customers (i.e., ratepayers); change designation to “Public Benefits Charge.” If enacted, Public Benefits Fund and programs could be administered by a government entity or out-sourced to professional third party. Eighteen (18) states have active Public Benefits Charge-funded energy efficiency (EE) and renewable energy (RE) programs.

Approach: Legislative.

Near-Term Impact: Up to \$8.8 million of additional EE & RE programs could be provided for ratepayers with no additional cost beyond what Hawaii utilities currently charge for existing DSM programs. For example, in 2003 HECO applied a \$0.0023 kilowatt hour surcharge, raising about \$16.6 million to fund five DSM programs. Of this surcharge amount,

- \$6.2 million (37%) was paid for DSM program services,
- \$9.1 million (55%) was used for lost sales recovery payments, and
- \$1.3 million (8%) was paid for shareholder incentives.

63% of these funds went to the utility to pay for electricity it did not sell due to energy efficiency and shareholder incentives.

Cost: None. This is a transfer of payment, with a goal to put bulk of money raised to direct program support. Administrative costs funded by the Public Benefit Fund, limited to no more than 10% of the fund.

- c. Fund programs and additional positions in Strategic Industries Division to support above EE & RE installations in state facilities and implement Chapter 196-12-29, Hawaii Revised Statutes. Total costs of the above programs included above (total of 2.0 FTE and

program funds for total funding support of \$630,000 per year). Could be supported with Public Benefit Fund.

- d. Require Renewable Portfolio Standard (RPS) targets be achieved only by electricity produced from renewable energy resources, and repeal definition of energy efficiency gains as renewable resources. Eliminate "off-ramps" and direct the PUC to develop penalties for utilities' non-attainment of RPS target. Provide for an opportunity for the utilities to earn a fair rate of return. Establish a methodology to establish a price for renewable energy, a competitive bidding process, and an approval process for long-term fixed price renewable energy contracts.

Approach: Legislative.

Near- to Mid-Term Impact: Strengthens mandate for RE development, and encourages private investment and development of RE.

Cost: None, accommodated by existing mechanism.

- e. Provide funding for Department of Land and Natural Resources (DLNR) to inventory State lands available for renewable energy, and establish renewable energy resource development sub-zones, streamline permitting for sub-zones; e.g., eliminate contested case provisions.

Approach: Legislative. Appropriation of \$200,000 requested.

Near- to Mid-Term Impact: Identifies State assets that can be used to facilitate RE development, encourages private investment.

Cost: \$200,000 General Fund appropriation to DLNR.

- f. Streamline permitting of renewable energy projects by directing that State agencies (Land Use Commission, DLNR, Department of Transportation, Department of Health, etc.) with permitting jurisdiction give priority over conventional fuel energy projects

Approach: Legislative.

Mid- to Long-Term Impact: Facilitates renewable energy projects by reducing permit time.

Cost: None.

- g. Direct the PUC to pursue utilities' sharing of the risk of oil price increases through modification or elimination of the fuel price adjustment clause, and de-link the payment of oil-based avoided cost to renewable energy producers and developers.

Approach: Legislative.

Immediate Impact: Consumer savings from both measures.

Mid- to Long-Term Impact: Sharing oil price volatility drives utilities' cost-effectiveness and attractiveness of renewables. De-coupling payments to RE producers eliminates inequity; i.e., windfall profits from higher payments for RE when oil prices rise when actual production costs do not change.

Cost: None.

- h. Through the Department of Agriculture, work with local producers to stimulate the production of energy crops and use of agricultural waste streams for energy. Position local agricultural industries to take advantage of the Energy Policy Act and Farm Bill incentives.

Approach: Legislative appropriation.

Near-Term Impact: By providing resources to the Department of Agriculture assistance to agricultural community interested in developing energy projects and seeking external funds can be increased.

Cost: \$150,000 General Fund appropriation to DOA.

Part VI. "Security through Technology" - - Establish Hawaii as Leader in Renewable Hydrogen Research and Development.

- a. Establish a world class renewable hydrogen program – The State's combination of abundant renewable resources, high fossil fuel prices, limited geographic area and recognized expertise in hydrogen research and development makes Hawaii an ideal leader for hydrogen R and D. The hydrogen program would also develop hydrogen education and outreach programs to accelerate use of renewable energy to produce hydrogen and create public private partnerships to expand development.

Approach: Legislative. Statute would provide clear and strong policy statement.

Near-Term Impact: To date small, but significant steps to advance this initiative have been taken by DBEDT in partnership with UH. The Governor's and Legislature's commitment to establish and fund a program will significantly ramp-up activity. The

program will plan, implement and/or conduct a range of developmental activities including:

- (1) Establishment of strategic partnerships;
- (2) Engineering and economic studies;
- (3) Electric grid reliability/security projects;
- (4) Hydrogen demonstration projects;
- (5) A statewide hydrogen economy public education and outreach plan;
- (6) Promotion of Hawaii's renewable hydrogen assets and opportunities;
- (7) Plans to more fully deploy hydrogen technologies and infrastructure through 2020;
and
- (8) Evaluation of policy instruments and development of policy recommendations.

Mid- to Long-Term Impact: Development and use of hydrogen technologies reduces or eliminates curtailment of renewable energy on Big Island, encourages more renewable energy production, attracts significant outside investment from the USDOE and private companies, and positions Hawaii as the U.S. leader in renewables to hydrogen conversion.

Cost: General Funding for programs and staff is essential, consisting of 3.0 FTE (\$250,000) and \$500,000 in program funding to provide to manage and conduct hydrogen energy program activities; e.g., formation of partnerships, technical analyses, and project implementation.

To ensure longer-term program sustainability, \$10 million will be needed to establish a hydrogen investment capital revolving fund to leverage federal funding and partner with private investments for research, development, testing and deployment of renewable hydrogen systems in Hawaii. Contributions from public or private partners are expected to maintain the fund.

Part VII. Draft Administrative Directive

- a. Issue an Administrative Directive to all state agencies regarding Energy and Resource Efficiency and Renewable Energy and Resource Development. The Directive provides for following energy efficiency standards for state facilities, purchasing energy-efficient state vehicles, using alternative transportation fuels, and streamlining permitting requirements affecting renewable energy development

Approach: Administrative Directive.

Immediate Impact: If agencies are properly funded to conduct retrofits using energy efficient equipment, the state facilities could reduce consumption by 14% and save about \$10 million a year. State agencies will use alternative transportation fuels, as appropriate and available. Reviewing permitting requirements for renewable energy projects with the

intent of identifying streamlining opportunities will generate increased interest from private developers.

Near-Term Impact: If new buildings are designed to Leadership in Energy and Environmental Design (LEED), Silver Standard, the added costs for new facilities would be about 5% to 10% per new facility, but the operating costs would be reduced by 30%. State agencies also will continue and strengthen programs for efficient vehicles and alternative transportation fuels, recycling, and environmentally preferable purchasing. State agencies will purchase more fuel efficient vehicles and use alternative transportation fuels, as appropriate and available.

Mid- to Long-Term Impact: Accrued reduced operating expenses by 30% if new facilities are built to LEED Silver Standard. Costs to design to LEED Silver Standard should decline below the projected 5% to 10% as private design firms and state agencies become familiar with LEED standard and implementation of the LEED checklists. Streamlining permitting requirements could help to expedite renewable energy developments.

Cost: Initial funding for programs and staff consists of 2.0 FTE and \$500,000 in program support to provide training and technical assistance to agency personnel and conduct demonstration projects in state facilities. Agencies with facility requirements would need additional funding of 5% to 10% of construction cost to meet LEED standards and Energy Star standards.

Part VIII. Letter to the Public Utilities Commission

a. Advanced Pricing Tariffs

Approach: Letter to the Public Utilities Commission suggesting the Commission consider encouraging the utilities to adopt advanced pricing tariffs.

Immediate Impact: Ideally, the Commission will initiate a docket to examine the options and select the best for Hawaii.

Near-Term Impact: Upon adoption, as ratepayers use advanced pricing tariffs, peak demand and energy use will begin to decline.

Mid- to Long-Term Impact: In other states, utilities have cost-effectively achieved from 7 to 23% reductions of peak load. This could result in reduced need to maintain very high reserve margins, and need for fossil fueled peaking units. If load curve is flattened due to reduction of peak, the electricity system overall will operate more efficiently, reducing oil use.

Cost: None to State, other than PUC cost of holding a docket. Utility customers may need to pay an additional fee for meters capable of measuring time of use and other equipment, but these costs will likely be offset by future savings.

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