

YEARLY ACTIVITY PLAN (YAP) - FY '08

Division/Attached Agency: Strategic Industries Division

Program Name: Energy Planning and Policy Branch

Program ID: BED 120

I. PROGRAM PLANNING

Problem, issue or opportunity statement: Describe the problem(s), issue(s) and/or opportunity(ies) your program is attempting to respond to. Identify the participants (individuals, companies, industry sectors, etc.) engaged in this problem, issue and/or opportunity.

The State economic security and stability continues to remain extremely vulnerable to the increasing risks and threats to its energy security, due to Hawaii's overdependence on imported oil to meet approximately 90% of the state's total energy demand. This vulnerability is exacerbated, because nearly 77% of the state's electricity is generated using petroleum fuels. U.S. average for oil-generated electricity is only about 2.5%. There is a general consensus among experts that global oil market fundamentals have created a new, much higher "plateau price" for crude oil from which low price trends of the past are not projected to return. These factors continue to create unacceptable risks to Hawaii's economy, and energy security remains a priority.

Interrelated transitional issues affecting all energy sectors are continuing. Examples of transition issues include those associated with moving from petroleum-based liquid fuels, to biofuels (ethanol and biodiesel), and other requirements to develop a fully integrated local biofuels, and renewable hydrogen energy economy. Federal and state petroleum product specifications are rapidly changing, causing new types of petroleum fuel products to proliferate. USEPA ultra low sulfur diesel (ULSD) sulfur specifications for highway use diesel have changed refiners' production standards, and added costs. In 2010, the on-highway ULSD standard takes effect on all highway diesel "downstream" – wholesalers, retailers, and consumers.¹ Sub octane gasoline needed to meet ethanol blending mandates creates new petroleum product specifications, and adds new types of gasoline. These are but examples of myriad such issues and trends.

As the variety of fuels and fuel production feedstocks being directly imported into the state increases, so do unique risks related to availability, and the economic and energy system impacts associated with each respective commodity, should imports be disrupted. There are also new, fuel- and feedstock-specific infrastructure requirements associated with such transitional issues and trends.

To address these risks the Lingle Administration's visionary *Energy for Tomorrow (EFT)* policy package and plan was developed to fundamentally change how Hawaii consumes energy, by accelerating the production of renewable and alternative energy, increasing energy efficiency, developing and adopting new technologies and ensuring the State's energy security, which comprise the net goals of energy statutes enacted in 2006. The complexity and interrelatedness of Hawaii's energy systems and markets is reflected in the comprehensive scope and integrated nature of the *EFT* plan.

¹ USEPA ultra low sulfur diesel (ULSD) sulfur specifications require highway use diesel sulfur content to be changed from 500 parts per million (ppm) to 15 ppm, creating a third category of diesel fuel in general use in Hawaii.

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EFT implementation initiatives and activities involve actions by and affect all energy industry sectors, and consumers, and require coordinated actions by state agencies – administrative and regulatory. Additional legislative proposals may also be required. There remains the concurrent need to maintain a robust energy emergency preparedness program, and revitalize DBEDT's program capability to analyze energy systems and markets by restoring resources for energy data and statistics, due to ambiguities resulting from Act 78, SLH 2006. Act 182, SLH 2007, established Section 486J-A, clarified and directed that DBEDT conduct energy analyses with expansive volumes of data received pursuant to Chapter 486J, HRS, to effectuate purposes of HRS Chapters 125C, 196, and other relevant laws. The law recognized the use and analysis of energy and fuels data/information functions remain critical to virtually all of DBEDT's interrelated statutory energy program functional requirements. However, restoration of diminished resources to implement these data functions remains an unresolved problem. Definitive policy guidance is also needed on the nature and relationship of energy data analyses to State's energy program (DBEDT), and to clearly delineate distinctive analytic roles & responsibilities of State agencies conducting energy data functions.

As State Energy Resources Coordinator (ERC), DBEDT Director and Strategic Industries Division (SID) are tasked with implementing the *EFT* initiative. EPPB will provide lead programmatic and principal professional technical analytic staff support toward its execution.

Need and partners: Specify the need for government intervention. Provide supporting evidence. Identify any partners you will be working with to address the problem, issue and/or opportunity.

Since the success of *EFT* also involves other state departments, Hawaii's county governments, and a broad set of non-governmental parties, the program must also include outreach and technical assistance external to DBEDT. EPPB will therefore develop plans and programs to assist these external constituencies. However, EPPB will require adequate resources to fully execute the *EFT* initiatives.

EFT requires the technical capability and adequate capacity to quantitatively and qualitatively evaluate, analyze, develop, and coordinate implementation of private and public sector energy planning efforts, and recommend market-based policies to develop Hawaii's energy systems and resources in all sectors. Among State agencies with major energy functions – Public Utilities Commission (PUC), Consumer Advocate (CA), and DBEDT-State Energy Resources Coordinator (ERC) – the Legislature established the State ERC (DBEDT Director) to ensure this is accomplished in a cost-effective, and sustainable way, while preserving and protecting the state's energy security.

EPPB is planning to support DBEDT-SID in the PUC's regulatory activities to advocate the *EFT* initiatives specifically related to intergovernmental agency wheeling of renewable energy, as approved by the Governor. Although the CA represents the consumer, the ERC represents the State and its broader, strategic policy perspectives to coordinate and manage statewide energy resource development. The ERC needs the capability to carefully consider and analyze the status of Hawaii's energy systems, because a technically informed energy industry also uses analytic arguments and rigorous "due process" channels to resist certain policy-making and implementation.

Hawaii's oil dependence and transitional issues cited above underscore the need for industry and government to coordinate contingency plans to contend with energy disruptions, irrespective of cause. The State's energy emergency preparedness program also remains a priority EPPB function. Partners include all of Hawaii's major energy companies, all levels of government, and State Civil Defense.

Government and industry partnerships work best when both partners are equally informed on technical

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and economic feasibilities of energy options. When facing energy emergencies in which both government and industry have critical roles and responsibilities, a variety of energy data and the capability to analyze it is particularly essential to define the magnitude, scope and estimated duration of the emergency energy disruption and to determine whether and to what extent any government intervention may be warranted and appropriate.

Desired results (outputs, outcomes and impacts): Identify desired results, what success will look like, by describing what you expect to achieve near (0-2 years) and long-term (2-6 years).

In the near term, and longer term this program's highest priorities focus on three principal outcomes:

1. Coordinate implementation of *EFT*, particularly initiatives for which EPPB has been assigned lead program responsibilities under DBEDT-SID's *EFT* strategic action plan. For example, SID will continue to advise the ERC and Governor on how best to achieve *EFT*-based policies for Renewable Portfolio Standards (RPS), Energy Cost Adjustment Clause (ECAC), public benefits fund (PBF) for demand-side management and renewable energy program deployment by other than electric utilities, and de-linking oil prices from renewable energy contracts and payments (De-linking). Capability and resources for technical analytic support is key to these highest priority outcomes:

Regulated Energy Sector

- a. **Results:** Credible arguments and cases, such as the Intra-governmental Wheeling Docket before PUC; i.e., favorable PUC decisions on Energy for Tomorrow initiatives, requiring PUC action and (longer-term) emergent issues in regulated energy sector.
- b. **Results:** Represent broad societal, economic and overall energy systems views articulated by Governor.
- c. **Results:** Consumer benefits through RPS, ECAC, PBF, De-linking are realized.
- d. **Impact:** Satisfactory regulatory reform will reflect desired execution of Governor's *EFT* policies; ERC responsibilities thereby fulfilled; both require adequate SID-EPPB funding/staff.

Biofuels Sector

- a. **Results:** Credible effective coordination/advocacy for biofuels production facilities development – potential investors and developers and key government agencies, particularly permitting and infrastructure management agencies.
- b. **Results:** Represent broad societal, economic and overall energy systems (value chain-wide) views articulated by Governor; operationalize ERC role.
- c. **Results:** Create value-added energy security benefits by capitalizing on value chain-wide linkages, and identifying and addressing infrastructure and other vulnerabilities related to imported fuels and fuels feedstocks (petroleum-based and biofuels).
- d. **Impact:** Success dependent on adequate funding/staff for SID-EPPB or the execution of the Governor's *EFT* policies will be jeopardized; ERC responsibilities not fulfilled.

Advanced Energy Technologies

- a. **Results:** Implement renewable hydrogen program authorized by Act 240 SLH 2006.
- b. **Results:** Develop program delivery mechanism to deploy funds in the Renewable Hydrogen Capital Investment Fund, in coordination with HSDC.
- c. **Impact:** National model for transition to hydrogen economy, capitalizing on unique Hawaii renewable energy assets, and growing Hawaii advanced energy technology companies while

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increasing utilization of indigenous energy resources.

Global Warming Solutions Act of 2007

- a. **Results:** Credible effective coordination and establishment of Greenhouse Gas Task Force as mandated by the Act (Act administratively established Task Force within DBEDT).
 - b. **Results:** Develop updated State greenhouse gas (GHG) inventory as required by the Act.
 - c. **Results:** Coordinate efforts with the Department of Health (DOH), named as co-lead for the Act.
 - d. **Results:** Support Director of DBEDT and Deputy Director of DOH, named co-chairs of the GHG Task Force under Act 234.
 - e. **Results:** Support essential energy programs to increase energy efficiency and use of renewable energy; implementation and expansion of Governor's Energy for Tomorrow renewable energy and energy efficiency initiatives as key instrumentalities in comprehensive statewide program of GHG reduction measures Act requires GHG Task Force to develop for compliance with the Act's mandated GHG reduction and limits, since over 92% of Hawaii's GHG emitted by statewide energy sectors.
 - f. **Impact:** Success dependent on adequate funding/staff for SID-EPPB or the execution of the Act will be jeopardized; DBEDT responsibilities not fulfilled.
2. Private and public sector energy related programs and activities whose purpose serves to preserve the State's energy security, including:
- Complete the update and alignment of Hawaii's energy emergency preparedness program and plan with relevant state and federal policies and plans; e.g., State Civil Defense *Statewide Response Plans*, and U.S. *National Response Plan* and *National Infrastructure Protection Plan*. Propose amendments to Chapter 125C and Chapter 196, HRS.
 - Coordinate and conduct comprehensive vulnerability assessment; develop recommendations to address statewide economic impacts and risks associated with oil import dependence, and transition issues/requirements re: evolving petroleum fuels specifications/increased variety of unique fuels (e.g., ULSD, sub octane gasolines for ethanol blending, and non-ethanol blended gasolines, etc.), move from petroleum-based liquid fuels to biofuels (ethanol and biodiesel) (e.g., infrastructure), local biofuels production, and renewable hydrogen energy economy.

Energy Emergency Preparedness

- a. **Results:** Restores EEP program effectiveness to respond to natural and geopolitical energy disruptions, including acts of terrorism.
 - b. **Results:** Provides critical all source energy market information.
 - c. **Results:** Retains ability to function as ESF-12 (lessons learned; Katrina, Big Island earthquake)
 - d. **Results:** Create value-added energy security benefits by capitalizing on value chain-wide linkages, and identifying and addressing infrastructure and other vulnerabilities related to imported fuels and fuels feedstocks (petroleum-based and biofuels).
 - e. **Impact** Absent funding/staff critical gaps in SID-EPPB ability to manage energy emergencies. will remain, jeopardizing ability to support Governor and State Civil Defense; in the event of an energy emergency, possible detrimental effects on Hawaii's economy, and public's health, safety and welfare.
3. Establish in-house capability for systematic quantitative and qualitative technical analyses of integrated energy systems and markets, assess effectiveness of, and unbiased analytic proposals

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developed for: policy and regulatory decisions, conduct energy emergency planning, and assessments of renewable energy, energy efficiency, and fossil fuels in all energy sectors and ensure energy security.

Data-Based Energy Systems & Markets Analytic Function and Capability

- a. **Results:** Informed policy-making, strategic investments, develop and defend Governor's positions before PUC dockets on RE, PBF, ECAC, De-linking, other emergent issues.
- b. **Results:** Monitor and help achieve compliance with RPS and AFS.
- c. **Impact:** Absent funding/staff DBEDT/State ERC has no credible, effective voice before Legislature, PUC, developers, and energy companies.

The success of these three principal outcomes is critically dependent on adequate funding/staff for SID-EPPB. SID-EPPB's functions and workload have been expanded by statutory mandates, yet EPPB staff positions have been cut. The program believes that the **need for staff resources commensurate with expanded functional requirements has become critical, and must be addressed, or expectations adjusted.** Implementation of these requirements is already in jeopardy, and DBEDT responsibilities are at high risk of not being fulfilled.

Influential Factors: List the factors you believe will influence your ability to impact the problem or opportunity. (Things that support success and barriers to success.)

1. Approval of funding for the purposes described below, and leadership concurrence with proposed approach and work plan.
2. Adequate resources commensurate to scope, nature and long-term duration of work to be done, especially establishing positions and funding required to complete the programmatic responsibilities assigned by the Governor and Legislature for new starts in 2007.
3. Level of commitment by Administration and legislative leaders to *EFT*, and patience with some of the processes, particularly regulatory proceedings, which will be required to achieve desired outcomes.
4. Favorable regulatory climate for reform of long-standing regulatory framework, which supported rigid avoidance of oil price-induced risk by regulated energy utilities.
5. Feasibility to significantly improve level of trust afforded to, belief in the mission and relative priority of the program by watchdog agencies, especially Department of Budget and Finance. Absent this necessary shift, this becomes a potential "show-stopping" influential factor.
6. Assumed conditions of a world oil market and that projected high oil price trends continue.

Strategies: List the general successful strategies or "best practices" that have helped other programs achieve the kind of results your program promises.

Execution of the program is based on comprehensive and integrated coverage of all energy sectors, and technical depth and detail to identify the most potent policy "levers" – changes and new initiatives – to influence and produce the targeted outcomes and results. For example, recognition of how the energy industry's – particularly regulated utilities – avoidance of risk exposure to high and volatile oil price had become complicatedly integrated into state energy policy due to Hawaii's primarily oil-based energy systems. *EFT* incorporated policy initiatives requiring coordinated legislative, administrative, and regulatory actions to break these oil-based policy linkages, as well as incentives to reward private sector investments and actions in favor of energy efficiency, indigenous renewable energy resources, and sharing the risks of oil dependency rather than just consumer pass-through.

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SID-EPPB will continue to offer the analytical basis to state leadership, bolstered by the solid data & statistics-based and technical policy analytic work. Energy systems and policy analyses at this technical level of detail and integration are a strategy EPPB will continue to use to support implementation activities, assuming restoration of adequate resources. Equally important was the coordination and consensus-building strategy, used to obtain broad-based support for significant changes to standing energy policies, which EPPB also plans to apply.

Assumptions: State the assumptions behind *how* and *why* the change strategies you have identified will work.

1. Approval of funding for the purposes described below, and leadership concurrence with proposed approach and work plan.
2. Adequate resources commensurate to scope, nature and long-term duration of work to be done, especially in obtaining adequate staffing and funds to complete assigned initiatives.
3. Level of commitment by Administration and legislative leaders to *EFT*, and patience with some of the processes, particularly regulatory proceedings, which will be required to achieve desired outcomes.
4. Favorable regulatory climate for reform of long-standing regulatory framework, which supported rigid avoidance of oil price-induced risk by regulated energy utilities.
5. Feasibility to significantly improve level of trust afforded to, belief in the mission and relative priority of the program by watchdog agencies, especially Department of Budget and Finance. Absent this necessary shift, this becomes a potential "show-stopping" influential factor.
6. Assumed conditions of a world oil market and that projected high oil price trends continue.

II. PROGRAM IMPLEMENTATION

Resources: Describe the resources or influential factors available to support your program.

1. Coordinate implementation of *EFT* – key resource/support needs for priority outcomes:

Regulated Energy Sector

- a. **Need:** Outside counsel to help analyze, develop testimonies.
- b. **Need:** Credible expert witnesses.
- c. **Need:** Consultant support for in-house staff.
- d. **Need:** Adequate in-house technical and data-based analytic staff capability.
- e. **Need:** Legal representation.

Biofuels Sector

- a. **Need:** Adequate in-house technical and data-based analytic staff capability.
- b. **Need:** Consultant support for in-house staff.

Advanced Energy Technology—Renewable Hydrogen Program

- a. **Need:** Consultant support for program implementation.

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- b. **Need:** Consultant or technical investment and advisory support for renewable hydrogen capital investment fund.

Global Warming Solutions Act of 2007

- a. **Need:** Consultant support for update of Hawaii green house gas inventory.
b. **Need:** Consultant and staffing support to assist with DBEDT responsibilities to staff the task force established as part of Act 234.

2. Private and public sector energy related programs and activities whose purpose serves to preserve the State's energy security, including:

Energy Emergency Preparedness

- a. **Need:** Conduct up-to-date energy security and fuels vulnerability analysis; resolve deficiencies identified in 2006 EEP programmatic review and update; e.g., propose amendments to Chapters 125C and 196, HRS.
b. **Need:** Restore ability to obtain and manage, and interpret critical energy data changed through Act 78, SLH 2006. Although Act 182, SLH 2007, Section 486J-A (i.e., one (1) sentence section), clarified and directed DBEDT conduct energy analyses with data received pursuant to Chapter 486J, HRS, to effectuate purposes of HRS Chapters 125C, 196, and other relevant laws. Specified purpose and use of data/information by DBEDT/State ERC should be added Chapters 125C, 196, HRS, and funds/staff needed to address deficiencies. Definitive policy guidance needed on the nature and relationship of energy data analyses to State's energy program (DBEDT), and to clearly delineate distinctive analytic roles & responsibilities of State agencies conducting energy data functions.
3. Establish in-house capability and function to systematically conduct quantitative and qualitative technical analyses complex, integrated energy system and markets, and unbiased analysis, using data and information to recommend, develop proposals for, and assess the effectiveness of policy and regulatory decisions, conduct energy emergency planning, and assessments of renewable energy, energy efficiency, and fossil fuels in all sectors.
- a. **Need:** Restore capability for energy data and analysis lost with transfer of gas cap function to PUC.
b. **Need:** In-house capacity for design, collection, interpretation and analysis of broad spectrum energy data.
c. **Need:** PUC position development, fuels planning and emergency management (HRS 125C, 196, and 486J).

Activities: Describe each of the activities you plan to conduct within your program.

The following Action Plan is based on measures adopted by a series of legislation enacted in 2006 that parallel efforts described by Governor Lingle's *EFT* plan. It forms the basis of EPPB activities planned to implement *EFT*, together with new requirements established by legislation in 2007:

(1) Savings Through Efficiency

- Provide assistance or intervene in dockets before the Public Utilities Commission (PUC) as

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approved by the Governor for the intra-governmental agency wheeling docket (pertains also to (2) Renewable Energy, below). The program will also provide technical support for the statutory role and responsibilities of the State ERC in the regulated energy sector, in which a major share of Hawaii's energy resources development occurs.

- If requested, provide technical assistance for policies related to regulatory reform.

(2) Independence Through Renewable Energy

- Provide assistance to strengthen the Renewable Portfolio Standards law by considering updated information to justify increasing percent targets for renewable energy.
- Provide assistance to determine whether the existing Energy Cost Adjustment Clause, or ECAC, fairly allocates the risk of fuel cost changes between the public utility and its customers.
- Provide assistance to establish a ratemaking methodology that removes or significantly reduces any linkage between the cost of fossil and non-fossil resources to potentially enable utility customers to benefit from fuel cost savings.

(3) Fuels Through Farming

- Develop execution plans to implement the new statewide renewable fuels standard of 20 percent of highway fuel demand to be obtained from alternate fuels by 2020.
- Provide assistance and evaluate models to streamline siting and permitting of renewable energy projects.
- Provide technical assistance to the DOA on the use of the \$150,000 appropriated (FY 07) to assist farmers with developing energy projects, especially biofuels, and to seek funding from federal and other sources.

(4) Security Through Technology

- Provide interim contract management, and professional staff support to Hawaii renewable hydrogen program within DBEDT, coordinating with HSDC as appropriate, and preparing execution and staffing plans considering that no formal positions counts were authorized.
- Manage use of the \$10,000,000 hydrogen investment capital special fund together with needed guidelines, rules, and execution plans (FY 07 appropriation).
- Coordinate with the University of Hawaii who was appropriated \$100,000 (FY 07) for a hydrogen system program manager position within the Hawaii Natural Energy Institute, and with whom DBEDT is partnering on the USDOE hydrogen power park project.

(5) Empowering Hawaii's Consumers

- Provide expert counsel on issues that arise from the indefinite suspension of gasoline price controls and develop suggestions to specify purpose and use of data/information by DBEDT/State ERC, within Chapters 125C, 196, HRS, given Act 182, SLH 2007 requirement for DBEDT to conduct energy analyses to effectuate purposes of those HRS and other relevant laws with the critical energy industry data DBEDT receives under Chapter 486J.
- Coordinate with the PUC who has been empowered to obtain information from oil companies to increase "transparency" of gasoline prices.
- Coordinate with the AG on matters relating to prohibiting of unfair pricing practices by petroleum companies.

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(6) Preserving Hawaii's Energy Security

- Sustain DBEDT responsibility to the Governor and SCD to fulfill State-level Emergency Support Function #12 (Energy) under Federal emergency management and SCD Statewide disaster response plans as well as function as lead State agency for fuel shortage management plans and responses (Chapter 125C, HRS). Conduct at least quarterly meetings of Hawaii State Energy Council and convene meetings of Governor's Energy Emergency Preparedness Advisory Committee and State Energy Council as contingency situations warrant. Conduct energy emergency preparedness exercises.
- Complete the programmatic review and update of the state's energy emergency preparedness program plan, and pursue recommended administrative and legislative recommendations developed over the course of this multi-year project. The USDOE requires state to maintain up-to-date EEP plans to remain eligible to receive federal, State Energy Program funding.
- Restore and revitalize the programs initiative to develop an in-house capability and function to systematically conduct quantitative and qualitative technical analyses of Hawaii's statewide energy systems and markets (Please see item 1d, below, regarding resources to be requested). This initiative is to enable the program to provide essential data and statistical, and energy economics technical and information support to the State ERC, and, thus, to all private and public sector energy stakeholders.

Outputs: For each program activity, identify what outputs you aim to produce

1. Coordinate implementation of *EFT* – key resource/support needs for priority outcomes:

Regulated Energy Sector

- a. Legal representation (outside counsel) -- well-analyzed/developed testimonies.
- b. Credible expert witnesses -- strong, persuasive *EFT* positions and testimonies.
- c. Technical consultants -- complementary supplemental support of in-house staff.
- d. Adequate in-house technical and data-based analytic staff capability -- accurate, valid and reliable, analytic information products.

Biofuels Sector

- a. Transition issues/requirements identified value chain-wide -- infrastructure efficiencies and potential partnering opportunities analyzed and reported for use by investors, producers and government.
- b. Adequate in-house technical and data-based analytic staff capability -- accurate, valid and reliable, analytic information products.
- c. Technical consultants -- complementary supplemental support of in-house staff.

Advanced Technology Sector—Renewable Hydrogen

- a. Obtaining consultant support to implement the program and to deploy the renewable hydrogen capital investment fund.
- b. Partnering to obtain federal cost share, and co-investments from the private sector.

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Global Warming Solutions Act of 2007

- a. Adequate in-house staffing and consultant support to assist with DBEDT responsibilities to staff the GHG Task Force established as part of Act 234.
 - b. Consultant support for update of Hawaii GHG inventory.
2. Private and public sector energy related programs and activities whose purpose serves to preserve the State's energy security, including:

Energy Emergency Preparedness

- a. Up-to-date energy security and fuels vulnerability analysis; resolution of deficiencies identified in 2006 EEP programmatic review and update; e.g., proposed amendments to Chapters 125C and 196, HRS, adopted.
 - b. Restored ability to obtain and manage, and interpret critical energy data changed through Act 78, SLH 2006. Purpose and use of data/information by DBEDT/State ERC, specified/added to Chapter 486J, HRS, by Act 182, SLH 2007 (i.e., one (1) sentence section), amplified and explicated by amendments to Chapters 125C and 196, HRS, and funds/staff are adequate to address deficiencies.
 - c. Definitive policy guidance in place, regarding nature and relationship of energy data analyses to State's energy program (DBEDT), and distinctive analytic roles & responsibilities of State agencies conducting energy data functions clearly delineated.
3. Establish in-house capability and function to systematically conduct quantitative and qualitative technical analyses to support both EFT implementation and major new starts.
- a. Restored capability for energy data and analysis lost with transfer of gas cap function to PUC.
 - b. Restored in-house capacity for design, collection, interpretation and analysis of broad spectrum energy data.

Outcomes: Identify the short-term (0-2 years) and long-term (2-6 years) outcomes you expect to achieve.

Achievement of statewide Renewable Portfolio Standard and Alternative Fuels Standard and achievement of energy efficiency targets:

1. Hawaii's regulated electric utilities' achievement of the statutory renewable portfolio standards with renewable energy representing electricity sales as follows: 10% by 2010; 15% by 2015; and 20% by 2020.
2. Statewide achievement of the statutory alternative fuels standards, such that ground transportation fuel demand will be met by biofuels (e.g., ethanol and biodiesel) or hydrogen as follows: 10% by 2010; 15% by 2015; and 20% by 2020.
3. Successful implementation of the renewable hydrogen program and the global climate change policies as described above.

Estimate of total impact of *EFT* package proposed by Governor Lingle, which EPPB believes that the following were possible by 2020.

- Displace 110 million barrels of imported petroleum

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- Retain \$6.3 billion in Hawaii’s economy
- Eliminate 49 million tons of carbon dioxide
- Result in 65,700 job-years of employment
- Eliminate the equivalent of 2 years of oil flows to Hawaii

Achieving these targets requires that adequate resources are provided to execute the *EFT* initiatives, along with new assignments: PUC intervention, renewable hydrogen, global climate change program.

Impact: Describe the lasting impact you anticipate.

As stated above, *EFT* is genuinely groundbreaking energy policy strategy. Committed leadership by the Governor, and DBEDT Director, backed by professional policy and quantitative analysts identified the interrelated energy policy "sweet spots", particularly oil price-based risk avoidance/pass-through inequities, and provided workable technical solutions – both “carrots and sticks” – to what has been intransigent problem. Given the assumptions above, all of the targeted outcomes can be achieved, and benefits of significantly reduced dependence on imported oil can finally be achieved. Ultimately, Hawaii can achieve greater energy self-sufficiency, by sustainably developing its own clean, indigenous renewable energy resources.

Successful implementation will require continued commitment, endurance, patience, political will to resist any external opposition and to internal inefficiencies. It will also take an investment of resources in funding and staff (At minimum, staff resources for implementation should be at baseline required to develop *EFT* package, with minimum staff requirements met to implement Act 234, SLH 2007, Global Warming Solution Act.)

III. PROGRAM EVALUATION

Focus Area: From your program logic model, list the components of the most important aspects of your program.

By implementing with the planned and proposed activities of this program, and providing resources commensurate to its functional and operational requirements, DBEDT will achieve its strategic *Energy for Tomorrow (EFT)* goal to fundamentally change how Hawaii consumes energy, by accelerating the production of renewable and alternative energy, increasing energy efficiency, developing and adopting new technologies and ensuring the State's energy security, as reflected in the net goals of energy statutes enacted in 2006. Specifically, the quantified outcomes, benefits, and results set forth above will be achieved.

Audience: Identify the key audiences for each focus area. Who has an interest in your program?

1. **Taxpayers**
2. **Energy Consumers Statewide** – residential, commercial, industrial, military.
3. **Governor, and Governor's Office.**
4. **DBEDT Director** -- as department head, and State ERC.
5. **Legislature** -- Subject Matter Committees, and Financial Committees particularly significant.
6. **Other State Agencies** -- PUC, CA, DOT, DLNR, DOAg, DOH, SCD, B&F.

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7. **County Agencies** -- County energy coordinators, County Civil Defense, County planning agencies.
8. **Federal Agencies** -- USDOE, National Laboratories , US Environmental Protection Agency, US Army Corps of Engineers, US Department of Homeland Security/FEMA.
9. **Energy Utilities** -- Hawaiian Electric Company, Maui Electric Company, Hawaiian Electric Light Company, Kauai Island Utility Cooperative, The Gas Company.
10. **Independent Power Producers** -- renewable energy, co-generators, self-generators via distributed generation, and net-metering.
11. **University of Hawaii** -- Hawaii Natural Energy Institute, College of Tropical Agriculture and Human Resources, Social Sciences Research Institute (Hawaii Energy Policy Forum (HEPF)), Climate Change Commission.
12. **Public Interest Groups and Nongovernmental Organizations** -- HEPF, Sierra Club, Life of The Land, Hawaii Renewable Energy Alliance, Hawaii Solar Energy Association, National Association of State Energy Officials.
13. **Government and Industry Coordinating Organizations** -- Hawaii State Energy Council, Governor's Energy Emergency Preparedness Advisory Committee, Hawaii Emergency Preparedness Executive Committee.
14. **Potential Developers, Investors and Feedstock Producers** for biofuels and alternate fuels production facilities and related infrastructure.
15. **Petroleum Refiners, Wholesalers, Terminal Owners/Operators Jobbers, and Retailers** -- Chevron, Tesoro, Aloha Petroleum, Mid-Pac Petroleum, Shell, Honolulu Fueling Facilities Corp., and numerous others.

Questions: For each focus area and audience, list the questions they may have about your program.

What is return on our investment in your program?
What does your program really do, why, and how?
Do you have funding/resources that you can dispense to us? If so, how much and how can we obtain it?
What can your program do for us, how do we get you to do it, and can we obtain it at no cost?
What does energy security really mean, and how do we know whether/when Hawaii has achieved energy security?
What constitutes an energy emergency, and what options do we have to address it if one occurs?
Why should we share data and information with you, especially confidential or proprietary information?
Why won't you share data and information with us, especially confidential and proprietary information?
What funding and other resources do you really need to be both effective and efficient?
Why should we cooperate and coordinate with you, if you cannot provide us funding or other resources?
More technical questions frequently posed regarding availability of energy data and analytic capabilities and whether/how program can strategically partner or otherwise provide such services.

Information Use: For each audience and question you have identified, identify the ways you will use the evaluation information.

EPPB has and, with adequate resources, will continue to address such questions on an individual and broader basis via targeted technical analyses and reports, presentations, issue-specific and situational analyses, post-event evaluations and reports (e.g., propane shortage after action report) position papers, legislative proposals and testimony, Web-based data and information products, authorized media contacts and press releases, information- and action-oriented meetings (e.g., Biofuels Summit), and other relevant data-based and information products.

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EPPB consciously develops information/knowledge products for pre-defined objectives, and targeted audiences. Recent examples effective in conceptualizing and garnering support for *EFT* and other Administration positions: Gas Cap Impact Analysis, Nationwide ECAC Survey/Hawaii ECAC Impact Analysis, analytic basis and products used to quantify targeted *EFT* outcomes/results, and estimate of implementation benefits, DBEDT *EFT* testimony and briefings.

Indicators: Describe what information can be collected that would convey the status of your program.

Energy data in relationship to other variables as indicators (examples):

Energy Intensity: Thousands BTU per \$Gross State Product.

RPS Indicators: % electricity sales from renewable energy resources (both from RE as now defined, and RE-generated electricity).

AFS Indicators: % ground transportation demand met by ethanol, biodiesel and hydrogen.

Energy Diversification: Total primary energy, and electricity production/consumption by type of resource/production technology (e.g., utility generation, distributed generation, off-grid generation, net metered self-generation; for consumption, by end-use sector).

Energy Emergency Preparedness/Energy Security Indicators: Fuel shortage specific data requirements include; e.g., Statewide storage capacities in volumes (barrels)/estimated days' supply under normal demand, import/export/production/consumption data (average barrels per day/week/month/year), possible alternate supply sources, estimated shortage scope (statewide, island, etc.), severity and estimated duration, etc.

Data and information on energy and fuel prices, supply, consumption, inventories, capacities and costs of: storage, distribution, transport, imports, exports, production, and other critical energy infrastructure data on Hawaii's all sectors of energy industry (e.g., and energy utilities' (electricity and gas), petroleum companies, renewable energy and alternate fuels producers, etc.), all fuels, natural energy resources and feedstocks, and markets – sales and purchases at wholesale and retail and other market subdivisions or trade classes. Data and information would be used in specified terms and units of measure, such as \$/gallon and \$/barrel, barrels/hour and barrels/day, barrels; \$ of fuel cost/kWh and /therm; ratios, percentages, and other such metrics; and, in relational graphical and tabular output formats. Similar data on global, regional, national basis needed/used for comparative, issue-specific and situational analyses.

Accuracy, validity and reliability of more rigorous analyses and assessments, such as examples above (*Information Use*), and those necessary to support positions in regulatory process are also indicators of EPPB program effectiveness.

IV. ALIGNMENT

How is your program linked to DBEDT's six strategic objectives?		
1.		Workforce Housing
2.		Workforce Development

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3.	x	"Energy For Tomorrow"
4.	x	"Global Links/Export of Goods and Services"
5.	x	The Creation Of An "Innovation Infrastructure"
6.	x	Improve Hawaii's Small Business Environment

If your program is not linked to any of the six objectives, explain why it is still important.