Hawaii Fuels Study

Public Information Briefing

September 8, 2003

Hawaii Fuel Study – Background

- Initiative for Act 77 followed after settlement of anti-trust lawsuit brought by the State of Hawaii against several refiners and marketers
- Key feature of Act 77 was the creation of price cap regulation for regular gasoline
- Price caps to become effective July 1st, 2004
- Bill required a study to be conducted in the intervening period to evaluate the potential impact of price caps
- Stillwater Associates was retained by DBEDT to conduct study after competitive bidding process

Hawaii Fuel Study – Methodology

- Study required comprehensive analysis of Hawaii's petroleum industry
  - Gasoline market can not be studied in isolation
  - In Hawaii, gasoline is only small fraction of refinery output
  - Evaluation of market, infrastructure, prices, volumes, refineries, supply and demand
- Information required from all segments of industry and relevant entities
  - Stillwater conducted over 30 meetings with stakeholders
  - Stakeholders included legislators, administration officials, academics, refiners, marketers, dealers, logistic service providers
- Unsealed court documents from State of Hawaii anti-trust lawsuit (*Anzai v. Chevron, et al.*) were extensively used
  - Analysis of documents was required by Act 77
  - Summary brief redacted documents
  - Expert Witness reports – Industry and State experts' analysis

Hawaii Fuel Study – Methodology (Continued)

- Comprehensive Policy Impact Analysis
  - Evaluate Impact of Price Caps
  - Develop Alternative Solutions
  - Cost/Benefit Analysis of Feasible Alternatives
  - Presentation of options to legislation
- Multi-disciplinary 5 Member Team
  - Previous experience in advising government on energy policy issues
  - All members 25+ years industry experience
  - Several were familiar with Hawaii fuel markets
  - Extensive West Coast and Pacific Rim experience

Conclusions – Gasoline Prices

High gasoline prices in Hawaii are caused by

- Intrinsic high cost of manufacture, distribution and marketing
  - Refining cost: + 5 cpg vs. US average
  - Distribution and marketing: + 12 cpg
  - Dealer cost: + 3 cpg
- High taxes
  - 12 cpg higher than average US

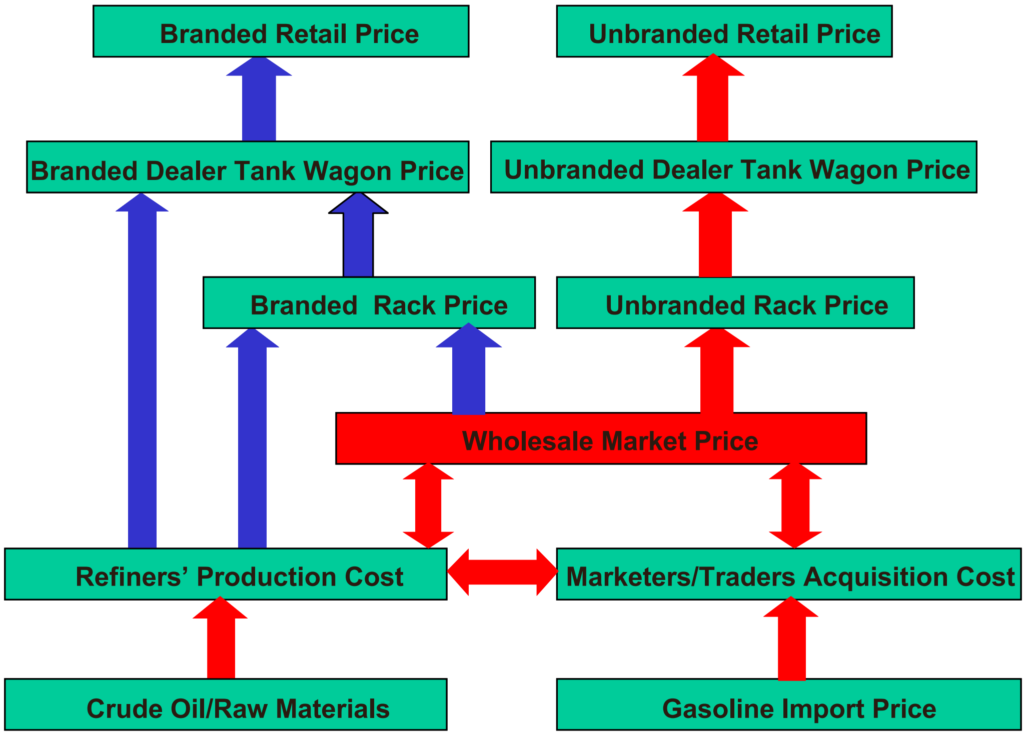
30 – 35 cpg over US average

- Exercise of market power in concentrated markets
  - 2 refiners, 5 total marketers
  - Import parity at wholesale level is not passed through in branded retail
  - Prices show prolonged disconnects from crude oil, international markets
- Consumer preferences
  - Some consumers prefer small volume retailers for location and service, regardless of price
  - Purchase of premium and midgrade when not required

Conclusions – Hawaii Gasoline Market

- Hawaii's wholesale gasoline market is competitive
  - Since Aloha/Texaco opened an import terminal in 1998, Hawaii's non-refining marketers have had access to gasoline at import parity pricing
  - Supply contracts for the large marketers have since shifted from mainland related exchange deals to PacRim based formula pricing
  - Some large volume offtake agreements also incorporate other pricing elements, i.e., US Gulf Coast
- Hawaii's retail gasoline market is competitive
  - Dealers struggle to survive, compete with service, convenience stores
  - High Volume Retailers (Costco) have made significant inroads
  - Other low cost market channels exist where members use cardlocks, PX
- Wholesale to Retail is where market breaks down
  - High cost, notably land lease not recovered in dealer leases
  - Sluggish, complacent pricing behavior

Conclusions – Market Structure



- Hawaii's gasoline market structure is limited by its size
  - 25,000 BPD
  - Size of a single pipeline deal in other markets
  - Cannot support actively traded wholesale and rack markets
- Lack of transparency
  - Absence of traded markets does not allow for monitoring
  - Market analysis only after subpoena of company records
- Diseconomies of scale
  - More competitors may result in higher costs per gallon
  - New entrants have not been successful

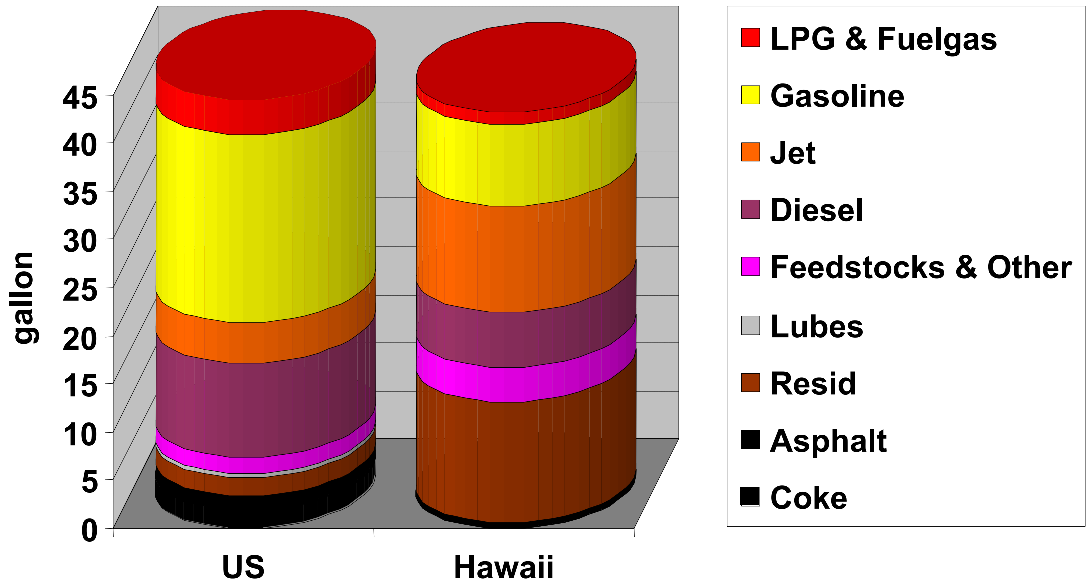
Conclusions – Neighbor Island Markets

- Maui gasoline prices on average higher than can be justified by logistic cost
  - Only 4 marketers active on Maui vs. 5 on Oahu
  - Lack of tankage in Kahului prevents entry of 5th marketer
  - 5th marketer is supplier of Costco
  - Cardlocks provide cheaper gasoline for knowledgeable local consumers
- Big Island West Coast situation somewhat similar to Maui
  - Lack of terminals & tankage restricts access
  - Market concentration plus logistic costs for trans-island trucking create high prices in isolated markets
  - Costco does have a store in Kona
- Kauai, Lanai small markets with intrinsic high costs

Conclusions – Industry Profitability

- Overall profitability of refiners is not excessive
  - 20 to 25% Return on Capital Employed in good years for the most profitable companies
  - 0 to 10% for less profitable companies in bad years
  - The famous quote "Chevron made 20% of profits in Hawaii, which is only 3% of sales" actually referred to lessee dealer sales only – lessee dealers at the time represented 74% of ChevronTexaco dealers in Hawaii vs. 7% in the rest of the US
- Refinery profitability is a complex issue
  - In Hawaii, gasoline is less than 20% of product slate vs. 60% in rest of US
  - Margins in main products of Hawaii's refineries, fuel oil and jet fuel, are slim
  - Refineries require expensive sweet, light crude oil – which is getting scarce
  - Operating cost in Hawaii are higher than in mainland US
- Long term, Hawaii's refineries unlikely to remain economically viable
  - Similar refineries in mainland US were upgraded or shut down long ago
  - Upgrade to full conversion capability is costly

Product Yields from a Barrel of Crude – Mainland vs. Hawaii



- Residual Fuel Oil is only 4% of total US refinery output, vs. 40% in Hawaii
- Historically residual fuel oil sells for less than the cost of crude oil (recent problems in Japans nuclear industry have caused prices to go up)
- Jet Fuel is a competitive global market, with import logistics controlled by buyers

Conclusions – Price Caps

- Price Caps are not effective
  - Federal price controls did not work, created shortages
  - In-depth review of Canadian initiatives failed to identify clear benefits
  - Transparency initiatives (Australia, Canada, Pacific Islands) are more effective with less unintended side effects
- Current price formula unlikely to bring lower prices
  - Link to West Coast prices brings exposure to volatility, seasonal swings
  - Formula allows for current intrinsic high costs to continue
- Unwanted side effects
  - Time lag provides opportunity for manipulation of market
  - Caps perceived by marketers and dealers as a license to price at the cap
  - Price controls project an anti-business image for Hawaii

Act 77 – Structure of Current Caps

<table>
<tr><td colspan="6">Maximum Pre-Tax Wholesale Price = Baseline Price + Applicable Adjustment* Factors</td></tr>
<tr><th>Island</th><th>Baseline Price</th><th>Location Adjustment Factor*</th><th>Marketing Adjustment Factor*</th><th colspan="2">Adjustment Factors* for Neighbor Islands
Hawaii Island, Kauai, Lanai, Maui, Molokai
(Oahu Maximum Price + Adjustment Factors)</th></tr>
<tr><td rowspan="2">Oahu
(Honolulu)</td><td rowspan="2">Calculated as previous week's 5 business-day average of OPIS Spot Pipeline Price in Los Angeles, San Francisco, and Pacific Northwest.</td><td rowspan="2">4¢/Gallon</td><td rowspan="2">18¢/Gallon</td><td>Location Adjustment Factor*</td><td>Marketing Adjustment Factor*</td></tr>
<tr><td>4¢/Gallon</td><td>4¢/Gallon</td></tr>
<tr><td>Other</td><td></td><td colspan="2">Oahu Maximum Wholesale Price Margin = 22¢/Gallon</td><td colspan="2">Neighbor Islands
Maximum Wholesale Price Margin = 30¢/Gallon</td></tr>
<tr><td colspan="6">Maximum Pre-Tax Retail Price Margin (All Islands) = 16¢/Gallon**</td></tr>
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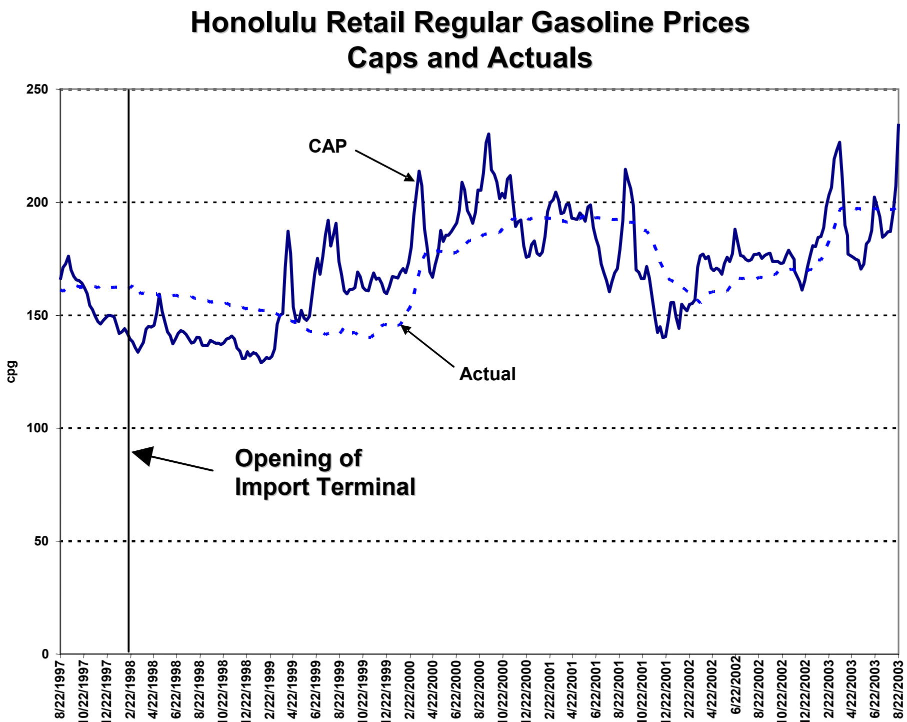
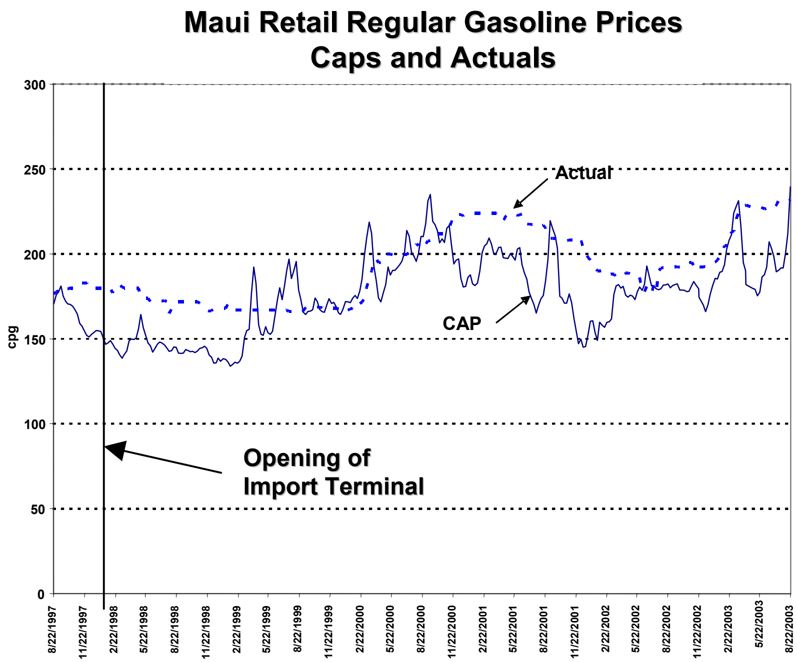
Price Caps – Impact of West Coast Volatility

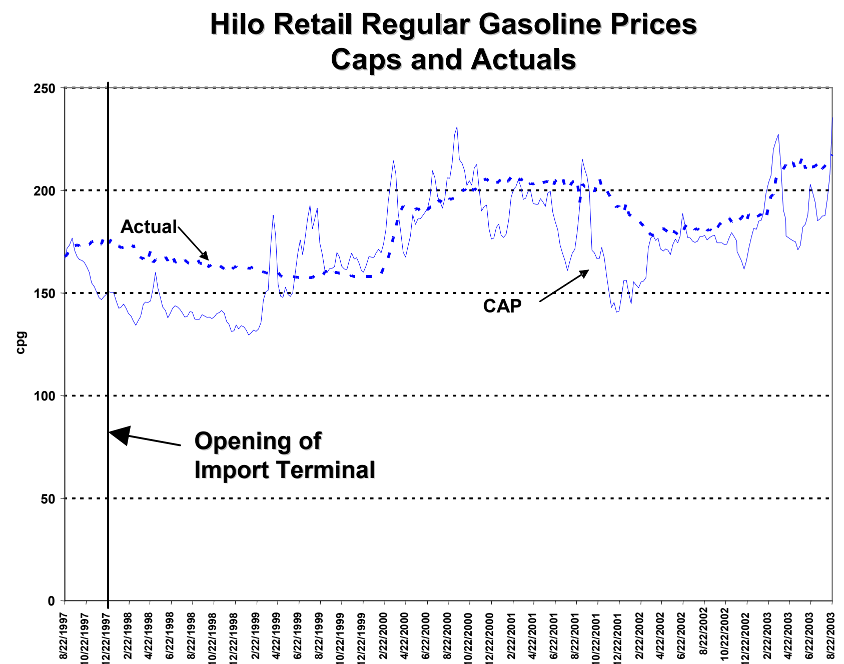


- 2003 phase out of MTBE and introduction of ethanol has made California even more vulnerable to supply disruptions
- Combinations of minor outages now lead to major price spikes in California
  - Significant price spikes in March/April, June and August
  - Extreme volatility likely to get worse next year when all CA refiners will switch to ethanol and East Coast states also ban MTBE
- California supply/demand affects Pacific Northwest as well
- These external factors would have impacted Hawaii price caps

Actual vs. Cap – Neighbor Islands

Stillwater Associates

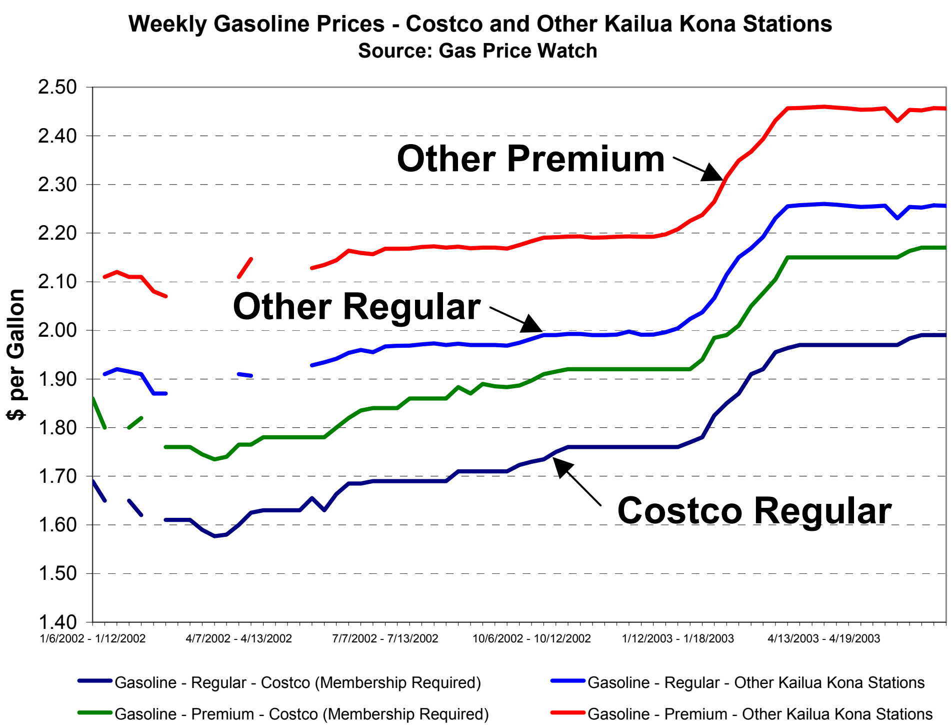




- Neighbor Island caps would be governing more often than Oahu cap
- Caps however may threaten existence of remote, low volume stations
- Retail price history does not reflect the impact of High Volume Retailers or cardlocks

Impact of High Volume Retailers - Hawaii

Stillwater Associates



Average price difference for regular is 27 cpg

- High Volume Retailers are rapidly gaining market share in mainland US
- Best suited for high demand areas
- In Hawaii PX and cardlocks have similar cost-to-volume ratios
- Small volume traditional dealers can compete with convenience (location) and service
- Consumer who buys premium at high cost station when not necessary for engine overpays 45 to 50 cpg vs. regular at HVR

Estimated Economic Impact Table

Estimated Economic Impacts State Motor Fuels Business Achieves Full Import Parity Gasoline Prices	
Direct costs to state: • $40 Million in capital • $3 Million/year operating • $150 Million/year loss of refinery revenue	Assuming closure of both refineries: • Loss of ≈ 1,400 jobs – 0.2% of Hawaii's total workforce *(950 direct x 1.5 multiplier)*. • Loss of ≈ $405 Million/year economic contribution *($150 Million/year direct x 2.7 multiplier)*.
· Consumer benefits ≈ $67 Million/year savings on motor fuel purchases	

- Full Import Parity means more than just import parity at wholesale level (already achieved)
- Scenario implies cost efficiencies in marketing, distribution and retail equivalent to those in main US gasoline markets
- Requires closure of high cost low volume outlets
- Requires withdrawal of three marketers with two remaining brands in active competition

Recommendations – Price Caps

- Do not implement price caps
  - Not likely to accomplish their objectives of lowering prices
  - Will be ineffective
  - Costly to administer
  - Open to manipulation
  - Creates an anti-business climate
- Eliminate position of Petroleum Commissioner
  - The regulatory function is redundant with enforcement agencies' responsibilities
  - Maintain DBEDT's role as a business development agency

Recommendation - Transparency

- Create Transparency
  - Extend volume reporting requirements to cover volume and prices for all petroleum products and all classes of trade
  - Analyze profitability by sector on an ongoing basis
  - Maintain a continuous dialogue between industry and oversight agencies, with quick resolution of observed issues
  - DBEDT to be provided with adequate tools and means for data collection and analysis
  - Implement in consultation with industry
  - Harmonize data reporting requirements between various agencies
  - Minimize burden on small businesses

Recommendations – Cost of Transparency

Table 4 NCSL's *Option 1 -- Monitoring, Analysis and Reporting Only* (pp. 21 &				
Expenses	**Personnel Class**	**# of FTE**	**Salary & Benefits**	**Category Total**
Salary & Fringes				
	Economist	1	$67,845	$67,845
	Research Analyst	1	$49,535	$49,535
	Secretary	1	$35,245	$35,245
Salary & Fringes Total				$152,625
Consultant & Specialized Data				$75,000
Other Expenses*				$26,769
Grand Total				$254,394
*Other expenses include estimates for office furniture, computer and related equipment, and subscription-based				

- Experts from the National Conference of State Legislators (NCSL) evaluated feasibility and cost of several options
- Implementation
  - Concerted effort with industry
  - Avoid duplicate reporting, burden on small businesses

Cost of Price Cap Program

Table 2. NCSL's -- *Option 2a. Collect data, monitor, analyze, report and enforce compliance with the price caps.* *(p. 22)*

Expenses	Personnel Class	# of FTE	Salary & Benefits	Category Total
Salary & Fringes				
	Economist	2	$67,845	$135,690
	Research Analyst	1	$49,535	$49,535
	Audit/Inspector Staff	3	$45,790	$137,371
	Secretary	1	$35,245	$35,245
Salary & Fringes Total				$357,841
Consultant & Specialized Data				$75,000
Other Expenses*				$42,000
Grand Total				$474,841

*Other expenses include estimates for office furniture, computer and related equipment, and subscription-based

- Price Cap implementation and program management is more than twice the cost of transparency only
- Current structure would create overlaps in responsibilities and tasks of various agencies

Cost of Price Caps (Continued)

Table 2. NCSL's *Option 2b -- Collect data, monitor, analyze, report and audit not only for compliance but also for supply manipulation.* *(pp. 22-23)*

Expenses	Personnel Class	# of FTE	Salary & Benefits	Category Total
Salary & Fringes				
	Economist	2	$67,845	$135,690
	Research Analyst	1	$49,535	$49,535
	Chemical Engineer	1	$67,845	$67,845
	Attorney	1	$67,845	$67,845
	Audit/Inspector Staff	3	$45,790	$137,371
	Secretary	1	$35,245	$35,245
Salary & Fringes Total				$493,531
Consultant & Specialized Data				$100,000
Other Expenses*				$45,460
Grand Total				$638,991

*Other expenses include estimates for office furniture, computer and related equipment, and subscription

- Full implementation of intended tasks* would be even more expensive

***Price caps, <u>and</u> Petroleum Commissioner regulatory functions of industry audits and inspections.**

Below Import Parity Indicator Before and After Deregulation

	Period Before Deregulation January-June 1998 % Days below IPI	Period After Deregulation January-June 2001 % Days below IPI
Sydney	37%	82%
Melbourne	88%	76%
Brisbane	55%	90%
Adelaide	50%	82%
Perth	24%	90%

Recommendations – Broader Outlook

- Future Hawaii Energy Infrastructure
  - Opportunities exist to fundamentally lower Hawaii's energy cost, electrical power as well as gasoline
  - Need for integrated approach
  - Potential to reduce petroleum dependency by 35% (LNG replacing fuel oil)
  - Integrated approach required to create opportunities for ethanol, renewables, hydrogen, and other emerging energy technologies
- Elements of an Integrated Energy Strategy
  - Assess LNG to replace residual fuel oil and SNG in Oahu
  - Analyze relevant factors (market, infrastructure, cost-effectiveness, legal, policy, etc.) for potential refinery upgrades and to produce and export high value gasoline blendstocks to California
  - Production of ethanol from sugarcane with integrated power production from biomass
- Requires private industry initiatives as well as coherent State energy policies, to create climate conducive to investment

Recommendations – Broader Outlook (Continued)

Potential Benefits of an Integrated State Energy Strategy

- Preliminary findings
  - Workable economics for LNG as fuel for Oahu power generation
  - Workable economics for integrated, export capable refinery system
- Estimated Potential Benefits to the State of Hawaii
  - ≈ 30% decreased petroleum dependency
  - ≈ $300 Million/year energy cost savings
  - Systematic planning for cleaner fossil fuels, LNG as transition fuel to H_2, renewables, energy efficiency, energy emergency planning
  - Maintains existing jobs through retention and growth of Hawaii's refinery industry facing future competitive challenges
  - Creates significant number of new, high quality jobs associated with $0.5 to 1 billion dollar in potential investments

Recommendations – Broader Outlook (Continued)

Role for the State in creating an Integrated Energy Strategy

- State has responsibility, authority, and need to coordinate overall energy needs to support energy policy objectives for a productive, sustainable and efficient State economy
- Strategic energy planning
  - Analyze feasibility of LNG and export-capable, integrated refinery, and full range of sustainable energy options -- renewables, hydrogen, ethanol, and other indigenous energy resources
  - As State Energy Resources Coordinator, DBEDT Director's leadership role in this area is established and recognized, and can facilitate strategic partnerships to develop effective Integrated State Energy Strategy