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Bidders' Conference

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Biofuels Request for Proposal:

Limited to Hawaii Feedstock

April 27, 2010

http://biodieselsupply.heco.com

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Agenda

1. Clean Energy / Biofuel Goals
2. Why Local?
3. Entrepreneurship
4. Expected Benefits
5. RFP Overview
6. Special Challenges
7. Question & Answer Forum

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Clean Energy Goals

- Hawaii Clean Energy Initiative (HCEI)
  - 70% clean energy by 2030
- Hawaii's renewable portfolio standard (RPS)
  - HB 1464 legislation passed in 2009.

% of net electricity sales	By December 31:
10%	2010
15%	2015
25%	2020
40%	2030

- Energy security
- Independence from fossil fuels

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Biofuel Goals

- Replace imported oil and diesel.
- Renewable firm power generation to meet RPS.
- Use in existing generating units:
  - 3 million barrels/yr of crude biofuel on Oahu
- Greater fuel diversification.
- Environmental Compliance: air emissions

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Why Local Biofuels?

- Energy Security.
- Stimulate local economy.
- Price de-linked from fossil fuel volatility.
- Oil prices expected to rise.
- Increasing global oil demand.
- Global competition for transportation biofuels.
- Consistency / quality of supply.

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Are local biofuels possible?

- Sufficient agricultural lands
- Multiple processing technologies
- Potential feedstocks in Hawaii:
  - Sugar cane, bagasse, sorghum
  - Jatropha, eucalyptus, invasive trees
  - Algae, aquatic plants, microbes, yeast
  - Waste products
- Significant attention:
  - National focus on renewable fuels
  - HCEI / RPS international awareness
  - Hawaii demonstration pilots:
    1. UOP – Tesoro Kapolei, $25 million DOE grant
    2. US Navy – USDA MOU, launched in Hawaii

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Biofuel Crop Yield Estimates

Crop or Feedstock	Approx Oil Yield (gal/ac/y)
Soybeans	50
Sunflower	100
Jatropha	200
Corn (cellulose)	100-500
Palm Oil	640
Algae (Simple Systems)	1000 - 4000
Algae (other claims)	5000 – 15000

Estimates from U.S. Algal Biofuels Roadmap

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Potentially Available Lands

Type of Land	Acres	Source
Former plantation irrigated lands	137,000	Hawaii Bioenergy Master Plan
Prime irrigated lands	300,000	Biofuels Assessment Project
Non-prime lands, potentially suitable	800,000	Biofuels Assessment Project

Hawaii Bioenergy Master Plan Vol. II, 12/2009

- HNEI, UH College of Tropical Agriculture
- http://www.hnei.hawaii.edu/bmpp/home.asp

Biofuels Assessment Project, 01/2010

- University of Hawaii & Black and Veatch
- "The Potential for Biofuels Production in Hawaii"
- http://hawaii.gov/dbedt/info/energy/publications/bfar-09.pdf

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Land Requirements

- Requirements by crop to yield **215Mg** biofuel per year.
- Based on estimated 300,000 acres available.

Crop or Feedstock	Acres	% of Hawaii Cropland
Soybeans	4.3 million	1433%
Sunflower	2.15 million	717%
Jatropha	1.1 million	358%
Corn (cellulose-high)	430,000	143%
Palm Oil	336,000	112%
Algae (Simple Systems-low)	215,000	72%
Algae (other claims-low)	43,000	14%

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Can local biofuels compete?

- Transportation costs continue to increase.
- Growth and processing technologies are emerging to allow smaller scale, distributed production.
- Price stability is valuable
- Oil prices expected to rise.

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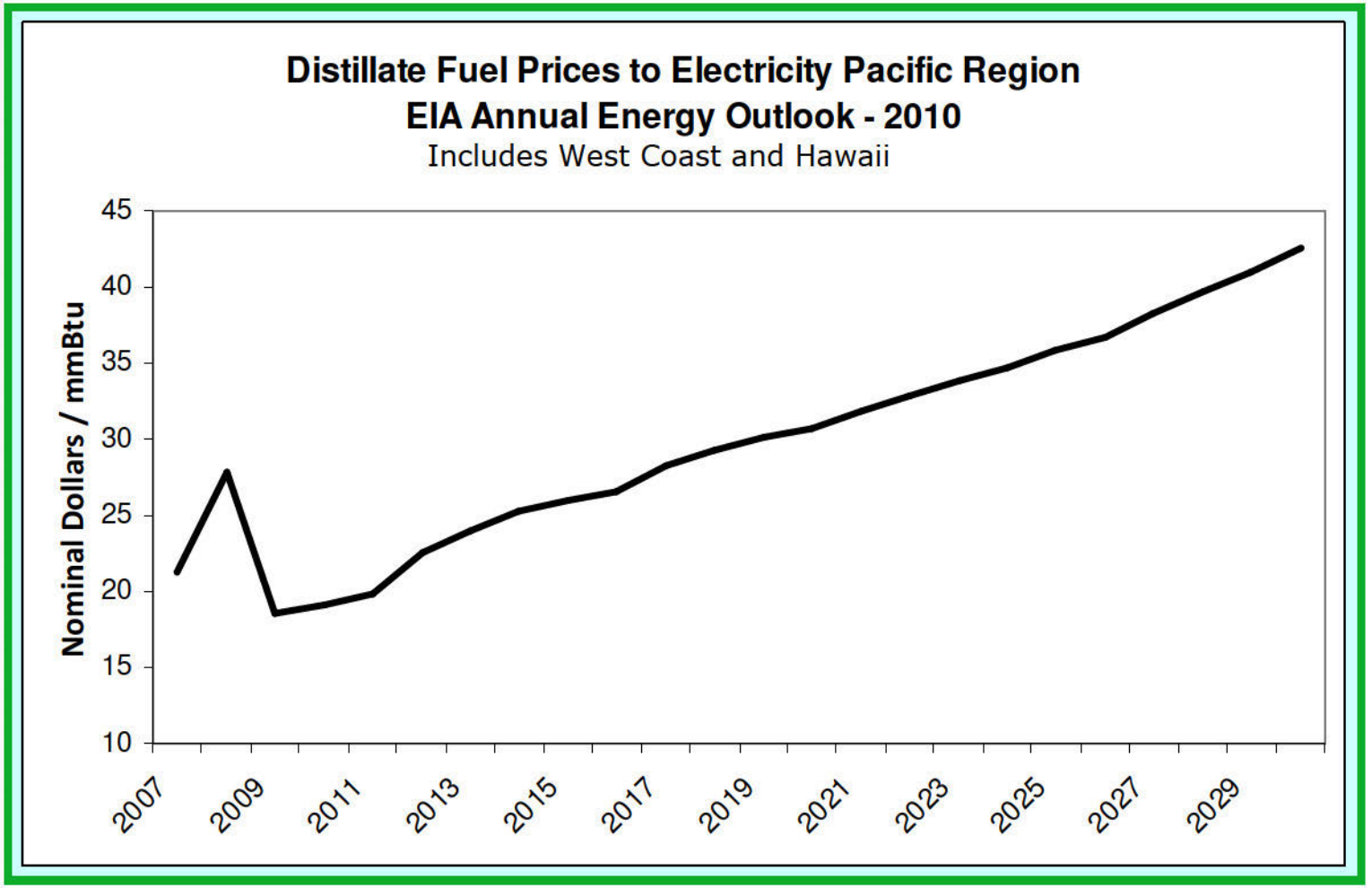
Fossil Fuel Price Projection

Cost per BTU:



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Entrepreneurial Opportunity

- New biofuel technologies may be competitive for Hawaii's scale.
- Sub-tropical climate accelerates crop growth.
- Large % of fuel for power generation.
  - Potential for long-term revenue commitment.
- Higher price threshold due to transportation costs to import fuel.

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RFP Design: *Entrepreneurial Stimulation*

- Long term contracts
- Five-year period to 1st delivery
- Multiple islands considered
- Diverse feedstock & technologies allowed.
- Potential to partner with landowners & refineries.
- Progress milestones to phase-in development.

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RFP Design: *Consumer Benefits*

- Long-term stable price:
  - Insulates from volatile oil-based electricity costs.
- Secure fuel supply:
  - Greater reliability and resistance to disturbance.
- Utilization of existing units:
  - Ability to generate renewable energy @ lower capital costs.
- Produces local jobs and tax revenue.
- Rejuvenates tradition of agriculture as an economic force in the State of Hawaii.

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RFP Design:
Strengthens HECO's ability to serve

- Provides firm dispatchable renewable power.
- Maintains value of existing plant investments.
- Contract benchmarks ensure developers' performance.
- Increases diversity of fuel supply.
- Protects against supply disruption.
- Insulates HECO from oil volatilities.

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RFP Timing

Convergence of Opportunity

- Biofuel-ready generation units:
  - CIP CT-1 biodiesel
  - Maalaea and Keahole biodiesel *
  - Kahe, Waiau and other units *
- DOE and USDA funding for developers:
  - Grants, tax credits, loan guarantees
- Availability of agricultural lands

* Subject to testing.

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RFP Scope

Supply:

- Limited to local feedstock
- Biodiesel and/or crude biofuel
- Heco, Helco, and/or Meco

Term:

- Award contract now, subject to PUC approval.
- Biofuel supply inception up to 5 years from now.
- Contract term: 10 yr supply possible + extensions
- Firm, mutually agreeable benchmarks

Flexibility:

- Multiple awards possible.
- Subsequent RFP rounds may occur.
- Co-exist with offshore supply contracts.
- All volumes considered.

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Definition of "Local" Biofuels

- Feedstock grown in Hawaii, including aquaculture, algae ponds located in Hawaii.

OR

- Feedstock such as waste must originate in Hawaii.
- Feedstock processed in Hawaii.
- Biofuel refined in Hawaii.
- Transporting between islands acceptable. *Consider LCA.*

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RFP Volume Potential:

COMPANY	Plant "generating unit(s)"	Location	Crude Biofuel barrels	Biodiesel barrels	TOTAL gallons (millions)
Helco	Keahole	Keahole, Hawaii		458,000	19.2
	Puna	Keau, Hawaii		38,000	1.6
	Hill	Hilo, Hawaii		6,600	0.3
	Waimea	Waimea, Hawaii		2,200	0.1
					21.2
	*Hill	Hilo, Hawaii	398,000		16.7
	*Shipman	Hilo, Hawaii	16,000		0.7
	Puna	Keau, Hawaii	169,000		7.1
					24.5
Meco	Maalaea	Kihei, Maui		1,091,000	45.8
	Miki Basin	Lanai		35,000	1.5
	Manele CHP	Lanai		10,000	0.4
	Molokai	Molokai		58,000	2.4
Heco	*Kahe @ 50% *assumes a 50/50 blend*	Nanakuli, Oahu	2,700,000		113.4
	Campbell Industrial Park	Kapolei, Oahu		150,000	6.3
TOTAL			3,283,000	1,848,800	
	millions of gallons:		**137.9**	**77.6**	**215.5**

* Fuel currently received via pipeline.

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Proposal Volumes

- Consider transportation logistics.
- All proposed volumes evaluated.
- No minimum volume requirement:
  - Volume must justify HECO's investment.
- Maximum volume may be restricted:
  - Mitigate supply risk for the site(s).
  - Balance with existing commercial contracts.

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Biofuel Specifications:
Attachments B and C

- Liquid biofuel processed to enable utilization in existing generating units.
- RFP specifications are desired and preferable.

  OR

- Propose alternate specifications for further evaluation:
  - Feasibility / additional costs to enable utilization evaluated as part of total cost.
- If biofuel properties not available, propose target / date for submission.

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Environmental Sustainability

- Palm oil → HECO-NRDC Policy
- NRDC guidance / non-palm oil
- Roundtable for Sustainable Biofuels
  - http://cgse.epfl.ch/page84341.html
  - Applies to growers, processors, and refiners.
- Life Cycle / GHG Analysis required:
  - If not prepared at time of proposal submission, propose plan / date for completion.
- Consider social and environmental impacts.
- Environmental permitting.
- Land use planning considerations.
- Soil health, water, air emissions (burning)

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Pricing

Fuel contracts must be approved by the PUC.

- Propose pricing by volume and delivery period for term duration.
- Preference for pricing de-linked from volatile indices.
- Flexible consideration of:
  - Reasonable escalators
  - Early stage premiums balanced by later stage discounts
  - Fixed, variable and benchmark approaches
  - Innovate pricing

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Co-generation of electricity

Refining technologies may require / produce electricity. Consideration given to purchase power.

- Regulated competitive bidding thresholds:
  - Oahu: 5 megawatts
  - Maui, Lanai, Molokai, & Big Island: 2.7 MW
- Co-generation proposals to submit NUG:
  - If components are unavailable at time of proposal submission, state approach and plan to complete.
- Liquid biofuel must be primary product.
- Proposals with co-gen will be evaluated on overall cost reasonableness.

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Renewable Subsidies & Credits

- Tax credits may remain with supplier.
- *Renewable Energy Credits / Certificates must remain with HECO.*
- Applicable to present and future programs.
- 2010 program deadlines:
  - Present any mitigating dependencies.
  - Include required timeline.
  - Early evaluation / award considered.
  - Final contract subject to PUC approval.

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Qualifications

Detailed "Contract Questionnaire" required:

- Company / organizational structure
- Financial data
- Permits required
- Quality Assurance plan
- Land history and title

Explain preliminary plans and target submission date for incomplete components.

Demonstrate:

- Proposed supply chain / reliability
- Reasonable business plan
- Reasonable farm /technology development plan.

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FASB ACS Topic 810 (formerly FIN 46R)

HECO will <u>not</u> consolidate the entity supplying biofuel.

- If HECO is the only revenue source, consolidation is likely.
- Specifics of each proposal to be evaluated.
- Financial review will be required.
- HECO may provide guidance on required structure.

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PUC Approval

- Responsibility to ensure reliable, affordable energy.
- Process includes Consumer Advocate ("CA") participation.
- Awarded Contract(s) submitted to PUC under regulatory process.
- All proposals reviewed by CA and PUC.
- PUC filings are public; price data protected.

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Proposal Confidentiality

- Pricing protected:
  - Clearly note and separate.
- Substantiate and clearly document other requests for confidentiality.
- Limits to confidentiality in the PUC process.
- Confidential information may be omitted during initial submission; details to be required prior to award.
- External reviewers subject to NDA.

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Proposed Benefits

Describe:

- Expenditures in local communities
- Jobs produced (direct and indirect)
- Environmental benefits / services
- Businesses supported

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Proposal Submission

- Follow RFP questions and structure.
- Submit pricing information as separate document.
- Must fill out contract questionnaire completely:
  - If components are incomplete, unavailable, or inapplicable…explain.
  - Provide plan and timeline for later submittal.
- Consider submitting a business plan.

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REVISION TO RFP

Page 12, Section 3.1 of RFP states:

Bidders shall submit a single Proposal only.

REVISED TO:

Bidders may submit more than one proposal to provide for multiple partnering options within the supply chain.

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RFP Special Challenges

Compressed Proposal Schedule:

- Short turn-around to submit proposals.
- Comparative, comprehensive evaluation of diverse approaches.
- Due diligence balanced with contract milestones / penalties.

Contract Award Timeline:

- Deadlines for stimulus funding.
- Developer's ability to secure financing.
- Land commitments.
- Multiple awards possible on staggered award schedule.

Issue of subsequent local RFPs:

- Dynamic, evolving opportunities.
- 1st round may not yield a viable contract.

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RFP Bid Schedule

March 31	RFP issued
April 27	Bidders conference in Hawaii and online
May 7	Letters of Intent Due
May 14	Opening day for early submissions
June 18	Final deadline for submissions
July 15	Technical & business reviews completed

Contract award date contingent upon:

- Viable proposal(s)
- Due diligence
- Developers' funding drivers

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Questions and Feedback

- Questions welcomed; will strive to provide timely feedback.
- Submit all questions through email: RFPquestion@heco.com
- All responses presented through regular updates on the HECO biofuels website:

  http://biodieselsupply.heco.com

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Ingredients for success:

1. Partnerships
   - Landowners
   - Growers
   - Technology providers
2. Viable economics
3. Innovative thought and action
4. Favorable legislation
5. Focus on the future

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Question and Answer Forum

- Questions will be answered in the order received, time permitting.
- Questions from the audience will be alternated with questions from Webex participants for presentation to the panel.
- Webex participants are to submit questions in writing that will be read to the panel.
- Today's presentation is available at:
  http://biodieselsupply.heco.com
- A written transcript of today's questions and answers will be available by May 5, 2010 at:
  http://biodieselsupply.heco.com

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Question and Answer Forum

PANELISTS:

- Cecily Barnes
  Hawaiian Electric Company
  Manager of Biofuels
- Tony Michaels
  Proteus Environmental Technologies
  Managing Director
- Mark Bernstein *via telephone*
  USC Energy Institute
  Managing Director

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