

Biofuel for Power Generation: Developing the Supply



Hawaiian
Electric
Company,
Inc.

Cecily Barnes, Manager of Biofuels

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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:
10%	2010
15%	2015
25%	2020
40%	2030

- Independence from fossil fuels
- Hawaii spends \$billions per year on oil.

Why Biofuel?

- Generation primarily from liquid fuel:
 - Consume over 9 million barrels per year.
- Biofuel successfully tested
- Provides renewable firm power generation
- Cleaner air emissions
- Energy security



HECO as a Strategic Partner

2010 Request for Proposal

- Exclusive to local supplies
- Long term contracts
- Allowance for development timelines
- Negotiable biofuel supply volumes



Project Criteria

- Sustainably grown / processed in Hawaii
- Consistent and reliable biofuel supply
- Reasonable volume for specified sites
- Milestones → contract off ramps:
 - Access to land
 - Realistic permitting plans
 - Demonstration of technology development
 - 3rd party contracts

Contracting

- Biofuel meets generation specifications
- Reasonable price:
 - Fixed pricing for all or a portion of the price
 - Starting price comparable to industry price
 - De-linked from indices directly tied to oil
 - Variable pricing forecast not to exceed reasonable inflationary escalation (2 to 3% per year)

Resulting Awards (to-date)

	Volume	Supply Location
Aina Koa Pono: <i>biodiesel</i>	16Mgy	Island of Hawaii
Pacific Biodiesel: <i>biodiesel</i>	up to 1 Mgy	Oahu
Hawaii Bioenergy: <i>biocrude</i>	10Mgy	Oahu

Areas of Focus

- Seller's 3rd party contracts
- Biofuel infrastructure
 - Segregated or drop-in?
 - Inter-island shipments
- Uncertain supply date
 - Managing contingent supplies
 - Public Utility Commission proceedings
 - Structuring biofuel test provisions
- Community Relations





<http://biofuelsupply.heco.com>

Request for Proposals, 2011

- Biodiesel for Campbell Industrial Park
 - 3M to 7M gallons/year; 3 year term expected
 - Supply to begin after July 2012
- Crude Biofuel for Kahe Power Plant
 - Potential to supply from 1M to 3M barrels
 - Supply to begin by 2015