Hawaiian Electric Company
Maui Electric Company
Hawaii Electric Light Company

ENVIRONMENTAL POLICY FOR HAWAIIAN ELECTRIC COMPANIES' PROCUREMENT OF BIOFUEL FROM SUSTAINABLY PRODUCED FEEDSTOCK

PREPARED BY HAWAIIAN ELECTRIC COMPANY AND THE NATURAL RESOURCES DEFENSE COUNCIL

AUGUST 2007 (Revised August 2013)

I. Overview and Context

In 2007, the Hawaiian Electric Company, Inc. ("HECO") and the Natural Resources Defense Council ("NRDC") joined in developing an environmental policy to guide the utility's procurement of biofuel from sustainably produced feedstock. The goal remains to reduce Hawai'i's dependence on imported fossil fuel and the adverse environmental and economic impact of burning hundreds of millions of gallons per year of petroleum fuel to generate electricity for residents and visitors to the Hawaiian Islands. A transition from petroleum fuels to biofuels derived from sustainably-produced and preferably locally-sourced feedstock offers enormous potential for near-term, dramatic reductions in greenhouse gas ("GHG") emissions and increased security from continuing oil market price hikes and potential supply interruptions.

Failure to follow through in this effort means that Hawai'i could remain dependent on petroleum-based fuel for its electricity generation - a dependence that carries a high price in terms of GHG emissions, energy security and environmental and economic impacts.

We believe that HECO's switch to biofuel derived from sustainably-produced local feedstock can help lead a global transition to increased use of sustainable fuels. Compared to other utilities in the United States, HECO generates the highest percentage of its electricity from liquid petroleum fuel. With this transition, HECO stands to become one of the largest consumers of biofuel in the United States. This effort is part of a broader strategy to transform Hawai'i's utilities into a model of diversity, sustainability and efficiency. We believe this policy represents a major step forward on the path toward increased self-reliance and sustainability.

NRDC and HECO agree that the utility needs to continue to work on reducing peak load and increasing acquisition of diverse renewable generation resources. We view this policy as a complement to, not a substitute for, other types of renewable generation. Next-generation biofuels can produce significant environmental and social benefits if they are developed with caution and foresight, and they could avoid some of the environmental and economic liabilities associated with conventional petroleum fuels. However, next-generation biofuels may also pose serious environmental risks if scaled up without safeguards (e.g., palm oil cultivation has been responsible for widespread clearing of primary tropical forests, draining of peat soils, catastrophic fires in Southeast Asia, and a number of other negative social and environmental impacts). Without sustainability standards, potential disadvantages could outweigh all potential environmental benefits.

As HECO pursues acquisition of biofuel, the utility must take stock of the possible negative consequences throughout the biofuel chain for our land, water and air, as well as biodiversity and food and feed prices. Sustainability criteria that reduce these risks will help next-generation biofuels achieve scale by setting parameters that can realistically support growth with minimal negative consequences and provide guidance for acquisition of currently available biofuels. Fortunately, voluntary certification is emerging as an option for those who want to commit to a pathway that affirms sustainable biofuels.

In March 2011, the Roundtable on Sustainable Biomaterials (formally the Roundtable on Sustainable Biofuels -"RSB") launched a global, universal sustainability standard which describes the requirements for sustainably-produced biofuels and

biomass. This standard provides a comprehensive and rigorously-tested basis for the RSB certification system and applies to all types of biomass feedstock in every region of the world and at every point in the supply chain. The RSB is supported by over 130 member organizations in more than 30 countries on all continents. It represents a wide range of stakeholders, including fuel producers, large and small farmers, oil companies, investors, non-governmental organizations, United Nations' agencies, governments, and research institutes.

While we believe that widespread adoption of credible sustainability standards and certification is essential to reducing potential environmental, cultural and social harm, NRDC and HECO recognize that voluntary certification is not a total solution. There are limits to the effectiveness of voluntary certification in addressing the problems of today's commodity markets for vegetable oils in general and biomass and oil seed crops in particular. Certification must be coupled with international agreements that protect forests and other biologically and carbon-rich natural ecosystems and keep certification from simply displacing demand to other land.

NRDC and HECO are working to support the adoption of such agreements and encourage the United States government to support and participate in them. However, by enacting this revised policy, we will be taking a step towards expanding the working model for sourcing sustainable biofuel. This model sends a market signal for development and expansion of sustainability standards and practices across the marketplace.

In sum, our approach to the potential problems with the purchase of commodity feedstock is to rely on feedstock with environmental impacts that are known and limited. Under this revision, HECO will purchase biofuels ONLY from suppliers that comply with RSB Principles & Criteria ("P&C") for agricultural, end-of-life and waste water feedstock[1], or similar certifications[2]. For those feedstocks not currently covered by the

[1] *End-of-life-products* include *Municipal Solid Waste* ("MSW") and *Used Cooking Oil* ("UCO"). These raw materials for biofuels are generated at the end of the life of products that were not produced and intended for the production of biofuel. In this way they have reached the end of their intended supply chain, as they have been consumed, used, are spoiled, etc... These end-of-life materials are thus intended to be disposed of and would potentially create environmental and social impacts.

RSB P&C, HECO will continue to use these sources in concurrence with NRDC understanding that they currently fall outside of the RSB P&C. If a P&C for these becomes available, NRDC and HECO will consider adopting that P&C into this policy. In the long term, HECO will continue to support the production in Hawai‘i of feedstock that are sustainably grown in accordance with these P&C. HECO will not purchase biofuel feedstock or biofuel that does not meet the criteria of this policy, even if that means continuing to operate HECO's generators with petroleum products to the extent allowed. This policy will continue to be periodically evaluated and updated.

II. Environmental Policy for HECO Biofuel Strategy

When HECO first considered the use of biofuel for power generation, the utility approached NRDC to help determine how a transition to biofuel could be accomplished in a sustainable manner. The two parties conducted research, negotiated issues, and developed the original Environmental Policy For the Hawaiian Electric Company's Procurement of Biodiesel from Palm Oil and Locally–Grown Feedstock, dated August 2007 ("original Procurement Policy"). In March 2012, HECO and NRDC worked together to review and update the original Procurement Policy. The result was the development of this Environmental Policy for the Hawaiian Electric Company's Procurement of Biofuel from Sustainable Produced Feedstock**,** which is intended to provide comprehensive guidance for a range of biomass and oil seed crop feedstock as well as waste feedstock.

This policy is supported by NRDC and HECO as a unified agreement, intended to address a range of issues raised by the transition to biofuel and to balance environmental, social, cultural and economic objectives. Both parties believe that this policy benefits HECO customers and the agricultural community in Hawai‘i. Further, it is fully consistent with international efforts to develop sustainable biofuels and respond to the threat of climate change. This policy does not address the merits or endorse any specific proposed biofuel production facility or power generation facility in Hawai‘i.

Wastewater can be used to produce biofuels or renewable fuels from its components. These include greases, fats and any other lipid-rich material, which can be transformed into biodiesel, as well as starchy material or cellulosic elements, which can be used to produce bioethanol.

[2] Similar certifications are subject to review and approval by HECO and the NRDC to determine adequacy.

The original Procurement Policy was reviewed by a panel of academic experts[3] with expertise in biofuels, agriculture, energy policy, and international development. Following the academic panel review, a public review draft was made available and public meetings were held in Honolulu, Hilo, Kona, and Kahului. The policy as here revised is in line with the original Procurement Policy and updates that policy to clarify the standards.

This policy has seven separate components including (1) local feedstock support mechanisms, (2) sourcing requirements for biofuel, (3) chain of custody tracking for feedstock and oils, (4) GHG emissions accounting and reporting, (5) role of the Hawai'i Biofuels Foundation, (6) public review and notification, and (7) contingencies.

[3] The academic panel members were: Alex Farrell, U.C. Berkeley, Mike Hamnett, University of Hawai'i, and Pamela Matson and Peter Vitousek, Stanford University. None of these reviewers necessarily endorses or is responsible for the recommendations of this document.

1. Local Feedstock Support Mechanisms

1.1. HECO will preferentially purchase biofuel from feedstock sustainably grown in Hawai‘i if it is available.

1.2. HECO will work with the Hawai‘i State Government and other stakeholders, including the Hawai‘i Biofuels Foundation (see section 5 below), to develop and implement incentives to grow biofuel feedstock sustainably grown in Hawai‘i.

1.3. HECO will work with the Hawai‘i State Government to identify and support low GHG biofuel feedstock and sustainable cultivation practices, using accounting protocols developed by the RSB or similar certifications.

Both NRDC and HECO maintain a strong preference for biofuel feedstock sustainably grown in Hawai‘i with the goal that 100% be locally grown and processed. Local feedstock cultivation can benefit the State’s economy, improve energy security, and substantially reduce the cost and emissions associated with transportation of imported fuels.

To facilitate development of sustainable and locally-grown feedstock, HECO is committed to work with the Hawai‘i Biofuels Foundation, Hawai‘i State government agencies, the University of Hawai‘i, and Hawai‘i's agricultural industry and landowners to:

- conduct research and develop sustainably-produced biofuel feedstock
- support the development of processing facilities for biofuel crops
- develop an economic analysis and policy incentives that take into account the value of local job creation in Hawai‘i, reduced import costs, and other benefits to ensure that Hawai‘i-grown feedstock competes on an even playing field with imported oil

2. Sourcing Requirements for Biofuel

2.1. All agricultural feedstock sourced under this policy must be certified, or show proof of working towards certification within a specific timeframe, by the RSB or similar certifications prior to the first shipment to HECO with the exception of palm oil (see 2.5).

2.2. The biofuel producer and all downstream participants in the chain of custody will allow an independent audit of performance.

2.3. The independent auditor will identify any deficiencies relative to the RSB P&C or similar certifications and propose corrective actions and a schedule for remediation of the identified deficiencies.

2.4. The producer and all downstream participants in the chain of custody will agree to work toward remediation of identified deficiencies, adoption of the corrective actions identified in the independent audit, and RSB or similar certifications

2.5. HECO will not agree to purchase palm oil from any supplier that is not currently certified by the RSB, the Roundtable of Sustainable Palm Oil ("RSPO"), or similar certifications.

2.6. As provided in RSB Principle 7.a, biofuel crops shall not be established on land that was converted from natural ecosystems after January 1st, 2009 (or after 2005 for palm oil, in compliance with RSPO). Biofuel operations shall at a minimum meet requirements provided in RSB Principle 7.e to prevent invasive species from entering areas outside the operation site.

2.7. As provided in RSB Principles 2, 4, 5 and 6, the feedstock producer must have developed and be implementing a management plan that addresses long-term economic and financial viability and is responsibly considering the social and cultural effects of operations on employees and communities.

2.8. As provided in RSB Principles 2, 3, 9,10 and 11 the feedstock producer must have developed and be implementing plans for identifying, reducing and monitoring all polluting activities and emissions, including GHGs.

2.9. Fire may not be used to clear land for new plantings.

Some of these criteria overlap with existing requirements in the RSB P&C, and have been highlighted here for emphasis, while others – in particular, 2.9. – impose even more stringent requirements on feedstock suppliers.

3. Chain of Custody Tracking for Feedstock and Oil

3.1. There is a clear, documented and verifiable chain of custody for all feedstock.

Establishment of a clear and verified chain of custody is an essential component of this policy. Mass-balance may be used for verifying the chain-of-custody for feedstock other than palm oil. Mass-balance and tradable certificate accounting may provide an acceptable approach to establishing chain of custody for palm oil at some time in the future. However, NRDC and HECO believe that complete segregation of palm oil derived fuel supply is currently the most reliable and credible approach to ensuring that all purchased palm oil is compliant with this policy. To ensure that it meets the requirements of this agreement, the utility must be able to track all palm-derived feedstock from the field where it is grown to HECO's facilities.

4. GHG Emissions Accounting and Reporting

4.1. HECO will use the protocols developed by RSB or the U.S. Environmental Protection Agency for calculating and tracking GHG emissions from biofuels.

The methodology/tool developed by RSB or the U.S. Environmental Protection Agency will be used for GHG emission accounting and reporting as well as for the GHG reductions requirements in RSB.

5. Role of the Hawai‘i Biofuels Foundation (“HBF”)

5.1. HECO has provided seed funding for agricultural research related to biofuel feedstock production.

5.2. The HBF governing board represents the following constituencies:

- **Hawai‘i State government**
- **HECO**
- **Labor**
- **Local agricultural community**
- **Local environmental community**
- **Native Hawaiian community**
- **R&D/engineering**

5.3. The HBF funds activities in the following areas:

- **Research and development of locally-grown vegetable oil feedstock**
- **Research and development of algae and other next generation feedstock**
- **Research into measuring and reducing the environmental impacts from RSPO certified palm oil and potential local feedstock, including the net GHG emissions from different agricultural practices**
- **Support for local feedstock production, processing, and use**
- **Development and testing of sustainability standards**
- **Conservation and restoration of ecosystems affected by biofuel feedstock production**

The HBF has representation from key stakeholders that are affected by the transition to biofuels, including state, local agricultural, local environmental, native Hawaiian cultural, and R&D/engineering interests. The HBF has used funds to invest in efforts to enhance the environmental, social, cultural and economic viability of the production and consumption of biofuels in Hawai‘i.

6. Public Review and Notification

6.1. A draft of the original policy dated August 2007 was made available for public review and comment.

6.2. The adopted policy and any future amendments or revisions shall be publicly available and posted on NRDC and HECO's websites.

The NRDC and HECO value public input into the development of this policy. NRDC and HECO are independent, private organizations with ultimate decision-making authority vested in members and shareholders, respectively. We believe this revision will benefit Hawai'i's citizens, (in particular, HECO's customers), the environment, and the state economy and well-being. We recognize that state and county officials and regulators have their own responsibilities, must take into account competing concerns and have the authority to make their own determinations.

7. Contingencies

7.1. Either party will inform the other as early as possible of unforeseen issues associated with the content or implementation of this policy.

7.2. NRDC and HECO agree to cooperate to resolve issues that arise in the implementation of this policy.

NRDC and HECO recognize that after adoption of this policy new issues and problems or opportunities may arise that require further effort and/or discussions to resolve. In particular, HECO has not tested this policy in the market and does not know whether it is possible to contract for a reliable and cost-effective source of oil that meets the foregoing criteria. Both NRDC and HECO are committed to working collaboratively to resolve any issues that arise in implementation of this policy.

APPENDIX A: RESOURCES FOR ADDITIONAL INFORMATION

Information for the following organizations is available at these websites:

HECO: www.heco.com

RSPO: www.rspo.org

Roundtable on Sustainable Biomaterials: http://rsb.org/