HB2543 Testimony

Authorizes the issuance of special purpose revenue bonds of up to $50,000,000 for BioTork Hawaii LLC for the development and operation of a facility to convert agricultural crops and by-products to biofuels and high-protein feed. Effective July 1, 2014.

NEIL ABERCROMBIE
Governor

SCOTT E. ENRIGHT
Chairperson, Board of Agriculture

KEN H. KAKESAKO
Deputy to the Chairperson

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TESTIMONY OF SCOTT E. ENRIGHT
CHAIRPERSON, BOARD OF AGRICULTURE

BEFORE THE SENATE COMMITTEES ON AGRICULTURE AND ENERGY AND ENVIRONMENT
THURSDAY, MARCH 13, 2014
2:10 P.M.
Room 229

HOUSE BILL NO. 2543
RELATING TO THE ISSUANCE OF SPECIAL PURPOSE REVENUE BONDS TO ASSIST BIOTORK HAWAII

Chairpersons Nishihara and Gabbard and Members of the Committees:

Thank you for this opportunity to provide testimony on House Bill No. 2543. This measure seeks to assist BioTork Hawaii LLC with the planning, permitting, design, construction, equipping, and operation of a facility to convert agricultural crops and byproducts to biofuels and feed. The Hawaii Department of Agriculture supports the intent of this bill.

The high cost of energy and livestock feed are significant hurdles for farmers in Hawaii, and research in converting agricultural crops and byproducts to biofuels and protein feed, is an important step towards food sustainability.

Thank you for the opportunity to present testimony.

WRITTEN TESTIMONY

TESTIMONY BY KALBERT K. YOUNG
DIRECTOR, DEPARTMENT OF BUDGET AND FINANCE
STATE OF HAWAII
TO THE SENATE COMMITTEES ON AGRICULTURE
AND ENERGY AND ENVIRONMENT
ON
HOUSE BILL NO. 2543

MARCH 13, 2014

RELATING TO THE ISSUANCE OF SPECIAL PURPOSE REVENUE BONDS TO ASSIST BIOTORK HAWAII, LLC

House Bill No. 2543 authorizes the issuance of special purpose revenue bonds (SPRB) for the purpose of assisting BioTork Hawaii, LLC., a Delaware corporation, for the planning, permitting, design, construction, equipping, and operation of a facility to convert agricultural crops and by-products to biofuels and high-protein feed pursuant to Part V, Chapter 39A, Hawaii Revised Statutes.

The Department has no position on the issuance of SPRBs as contemplated in this bill. The Department would like to advise the Legislature and prospective issuers that should the legislation be approved, approval of SPRB issuance will still require further discussion and satisfactory review of the financing components involved in the transaction.

Thank you for the opportunity to provide testimony on this measure.

NEIL ABERCROMBIE
Governor

JAMES J. NAKATANI
Executive Director

STATE OF HAWAII
AGRIBUSINESS DEVELOPMENT CORPORATION
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TESTIMONY OF JAMES J. NAKATANI
EXECUTIVE DIRECTOR
AGRIBUSINESS DEVELOPMENT CORPORATION

BEFORE THE SENATE
COMMITTEES ON AGRICULTURE
AND
ENERGY AND ENVIRONMENT

Thursday, March 13, 2014
2:10 p.m.
State Capitol
Conference Room 229

HOUSE BILL NO. 2543
RELATING TO ISSUANCE OF SPECIAL PURPOSE REVENUE BONDS
TO ASSIST BIOTORK HAWAII, LLC

Chairpersons Nishihara and Gabbard and Members of the Committees:

Thank you for the opportunity to testify on House Bill No. 2543 relating to issuance of special purpose revenue bonds to assist BioTork Hawaii, LLC. This measure seeks to financially assist industrial enterprises through the issuance of special purpose revenue bonds. The Agribusiness Development Corporation (ADC) supports this bill.

ADC is committed to convert crops, crop residues, dedicated energy crops and agricultural wastes into economically and environmentally sustainable biofuels and value added co-products.

BioTork in collaboration with USDA Pacific Basin Agricultural Research Center (PBARC), Hawaii Department of Agriculture and the Agribusiness Development Corporation conducted a mini-pilot scale production of biofuel and animal feed from Heterotrophic Algae

as a part of the Zero Waste Program (ZWP) at the USDA PBARC facility. The project originated in 2010 with a focus to develop a prototype of algae/fungi from papaya waste to produce oil and feed products. The project results thus far have been phenomenal with the conversion of papaya waste into oil and protein using algae/fungi. We concur with BioTork that this project is a viable commercial operation that could help the agricultural industry. ADC respectfully requests that the Committee pass this bill.

Thank you for the opportunity to testify.

From: mailinglist@capitol.hawaii.gov
To: AGL Testimony
Cc: cmanfredi@kaufarmandranch.com
Subject: *Submitted testimony for HB2543 on Mar 13, 2014 14:10PM*
Date: Tuesday, March 11, 2014 12:38:19 PM

HB2543
Submitted on: 3/11/2014
Testimony for AGL/ENE on Mar 13, 2014 14:10PM in Conference Room 229

Submitted By	Organization	Testifier Position	Present at Hearing
Chris Manfredi	Hawaii Farm Bureau	Support	Yes

Comments:

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March 13, 2014

TO: **The Honorable Clarence K. Nishihara, Chair**
The Honorable Ronald D. Kouchi, Vice Chair
Senate Committee on Agriculture

The Honorable Mike Gabbard, Chair
The Honorable Russell E. Ruderman, Vice Chair
Senate Committee on Energy and Environment

FROM: **Eudes de Crecy, CEO**
BioTork Hawaii, LLC

SUBJECT: **H.B. 2543, RELATING TO THE ISSUANCE OF SPECIAL PURPOSE REVENUE BONDS TO ASSIST BIOTORK HAWAII LLC**

POSTION: **Support**

Aloha Chairs Nishihara and Gabbard , Vice Chairs Kouchi and Ruderman, and Members of the Senate Committees on Agriculture, and on Energy and Environment:

My name is Eudes deCrecy and I am the Chief Executive Officer of BioTork Hawaii, LLC. I appreciate your efforts to hear this bill as I would like to provide testimony in strong support of HB 2543 that could catapult Hawaii to be a global leader of microbial strain development used to support Zero Waste Programs in its conversion of low to no-value agricultural products into high value co-products like biofuel and high protein feed.

Since 2010, the Pacific Basin Agricultural Research Center has been continuously collaborating with BioTork to develop microbes (algae, fungi, etc.) and processes for the production of renewable oil and high-protein feed from agricultural byproducts. One of the keys to success has been the use of BioTork's evolutionary optimization technology to generate highly specialized microbes capable of converting specific agricultural byproducts into oil-rich microbial biomass rapidly, in high yield and with maximal conversion of the feedstock in a relatively short period of time. In the case of papaya the conversion process is 14 days.

Another key to success has been the optimization of culture conditions by PBARC allowing for the most efficient conversion of feedstock into oil and high-protein meal with BioTork's oil-producing microbes. The major advantage of this approach is that it uses low-cost feedstocks without any cost-prohibitive pretreatment, thus enhancing the prospects for economically viable enterprise.

Impressive research and development has been made in the program since its inception and the main conclusions are briefly summarized in the order that they were researched:

Papaya. This crop is a great model because it is Hawaii's second most important fruit crop and 35% of the harvested crop that is brought to the packing houses is discarded as culls. Heterotrophic algae (Chlorella prototheoides) were adapted to feed on papaya; conditions were identified for high mass production as well as oil production.

At this point we have reached and surpassed the economic threshold of oil production from papaya through our technology. Beyond that, BioTork has also adapted oil producing fungi to grow on the papaya 'solids' that are not utilized by the algae, and thus increase the amount of oil we recover from papaya.

The high protein algae meal is also as important as the oil due to its very high value to create fish and other animal feeds. It is the overwhelming consensus that the high cost of importing animal feed is the most important bottle neck that limits profitability of raising fish, chickens, other land animals in Hawaii. This technology can assist in producing local feed.

Albizia. Albizia is a fast growing tree that is the most invasive (weedy) tree in Hawaii. It is present in communities, roadsides, and also in native forests in Hawaii. Strong winds can cause large limbs to drop, potentially causing costly damage to homes and power lines. As a potential feedstock for the fungi, it represents a huge waste product resource for producing biofuel and feed.

BioTork successfully adapted mixture of fungi to feed on crystalline cellulose with very little glucose (0.1 gram glucose to 9 grams of cellulose). And, it showed evidence that the fungi grew on dilute puree of ground albizia wood. The fungi were further characterized and identified at PBARC and preliminarily analyzed for their ability to grow on cellulose and sugarcane bagasse.

The albizia effort is still at the research and development stage, but the initial observation that the adapted fungi can grow on cellulosic material has been demonstrated.

Waste Glycerin. Waste glycerin is a byproduct that is produced in ethanol production as well as biodiesel that is produced from waste fats. Hawaii's biodiesel refineries use waste fats from restaurants for producing fuel. BioTork obtained waste glycerin from a Hilo bio-refinery in 2012 and successfully adapted algae to grow robustly on its waste glycerin that can be converted in more oil as well as high protein feed.

Molasses. The value of our zero waste approach was further displayed when BioTork was contacted and partially funded by the state of Hawaii (ADC) to determine if algae could be adapted to utilize molasses produced by HC&S following an unfortunate spillage of molasses in Honolulu Harbor. After just a month of evolving there were impressive results to report that within another 2-3 months it would exceed economic threshold and have the ability to move into the mini-pilot stage.

We are confident that we will continue making progress in these areas so we could:

- provide additional revenue stream for farmers to sell off-grade or overripe fruit
- provide secondary market during high supply / low demand periods
- provide additional diversification for bio-fuel
- provide locally developed feed for fish, poultry and cattle production
- produce biofuel and high protein meal from the selected fungi that use albizia as a carbon source which will also be a major technology 'game changer'

The issuance of the special purpose revenue bonds will assist us in providing the necessary infrastructure beyond the research and development phases in Hilo, Hawaii, and on the islands of Maui and Oahu . It is also important to recognize Hawaii's Department of Agriculture and the Agribusiness Development Corporation for their constant support and guidance. We all share the same vision to provide Hawaii with the tools needed to achieve our energy sustainability and food security goals.

I thank you for your time and consideration in this matter and ask again for your support to continue moving this project forward to help Hawaii improve profitability for our farmers, create a lower cost animal feed, and increase our sustainability.