

LINDA LINGLE
GOVERNOR

JAMES R. AIONA, JR.
LT. GOVERNOR



KURT KAWAFUCHI
DIRECTOR OF TAXATION

SANDRA L. YAHIRO
DEPUTY DIRECTOR

STATE OF HAWAII
DEPARTMENT OF TAXATION
P.O. BOX 259
HONOLULU, HAWAII 96809

PHONE NO: (808) 587-1510
FAX NO: (808) 587-1560

SENATE COMMITTEE ON ENERGY & ENVIRONMENT

TESTIMONY REGARDING THE JANUARY 31, 2008 AGENDA

TESTIFIER: KURT KAWAFUCHI, DIRECTOR OF TAXATION (OR DESIGNEE)

DATE: JANUARY 31, 2008

TIME: 2:15PM

ROOM: 414

Contained in this testimony are the Department of Taxation (Department) comments on the Senate Committee on Energy & Environment's agenda for January 31, 2008. Because each measure relates to taxation, the Department's comments are in summary fashion for your convenience—

This legislation provides various tax incentives aimed at renewable energy and other alternative fuel related legislation.

I. THE DEPARTMENT SUPPORTS ENERGY REFORM POLICY.

The Department recognizes the importance of this legislation because these bills serve as another step in the right direction for minimizing Hawaii's dependence on fossil fuels. The Department and the administration both recognize the importance of Hawaii's energy independence and are in strong support of policies to that effect. The administration is committed to energy conservation and promoting alternative energy production, including reducing Hawaii's fuel dependency.

This legislation also compliments current federal incentives on the same subject matter.

II. DEFERRAL TO DBEDT ON THE MERITS.

The Department also defers to the Department of Business, Economic Development, & Tourism on the merits of this legislation. Though the Department is highly involved in the administration of these tax measures, the Department is not the subject matter expert on the viability of these policies and incentives.

III. SB 3215, RELATING TO BIODIESEL

This legislation, among other things, provides a real property exemption and an income tax exemption for biodiesel feedstock crop facilities.

Real Property Exemption

The Department has **no additional comments** on the real property exemption provided in this legislation, other than it will impact the county revenues.

Income Tax Exemption

The Department has **no additional comments** on this component.

Revenue Impact

This bill will result in an indeterminate revenue loss.

IV. SB 2766, RELATING TO ETHANOL

This legislation provides an income tax credit for installation of E-85 fueling facilities.

The Department **opposes** this legislation because it is underdeveloped and requires additional common requirements associated with other tax credits. Examples of this language can be provided upon request. Other similar bills in this agenda include the necessary language.

This legislation will result in the following revenue loss:

FY2010 (loss): \$198,000
FY2011 (loss): \$204,000

V. SB 2764, RELATING TO ETHANOL FACILITY TAX CREDIT

The Department has **no additional comments** on this legislation. However, the Department requests that the Committee be cognizant of its revenue impact because the 40 million gallon cap is eliminated.

This legislation will currently result in an indeterminate revenue estimate because the credit caps are blank.

VI. SB 2468, RELATING TO ETHANOL FACILITY TAX CREDIT

The Department has **no additional comments** on this legislation.

This legislation will result in a \$4 million gain.

VII. SB 2632 RELATING TO RENEWABLE ENERGY TECHNOLOGIES

This legislation amends the current Renewable Energy Technologies Income Tax Credit, by adding a new definition for "concentrating solar power energy systems." The Department **does not like this additional definition** and prefers that a definition in this credit focus on what is put into a machine rather than an approach based upon what the machine creates. In short, the Department prefers defining the technology based upon inputs; not outputs.

Based upon the Department's estimates, this legislation will not have an impact on the general fund.

VIII. SB 2623, RELATING TO RENEWABLE ENERGY TECHNOLOGIES

This legislation amends the current Renewable Energy Technologies Income Tax Credit, by adding a new definition for "solar electric energy systems." The Department **does not like this additional definition** and prefers that a definition in this credit focus on what is put into a machine rather than an approach based upon what the machine creates. In short, the Department prefers defining the technology based upon inputs; not outputs.

Based upon the Department's estimates, this legislation will not have an impact on the general fund.

IX. SB2744, RELATING TO HYDROGEN FUEL

The Department **opposes** this bill because of the numerous technical flaws outlined below.

Income Tax Credit

COMPLIANCE WITH RULES & STATUTES—The Department objects to this provision. The Department does not have the expertise or resources to ensure that any taxpayer claiming the credit is in compliance with all rules and regulations of whatever sort. For example, if a taxpayer obtains a speeding ticket or other citation, the taxpayer would be precluded from obtaining the credit as the bill is written. This section should be removed.

AMBIGUOUS CREDIT ACTIVITY—Currently the credit applies to "capital, operation, maintenance, or leasing costs related to the investments in hydrogen-powered vehicles and hydrogen fueling stations." The Department points out that it would be better to allow a credit for "costs" generally. Also, the Department suggests that the credit be narrowed to apply only to investments in the "development" of hydrogen fuel vehicles or fueling stations. This bill presupposes that such vehicles and stations exist, which they do not. The Department's comments should be taken into account to spur the activity that will result in the foregoing products.

ELIMINATE CAPS—This credit has caps in the aggregate. The Department strongly opposes caps because they are difficult to administer. There is no guidance. Should the caps be on a first-come-first-served basis? The caps should be eliminated in favor of a cap per taxpayer, which is

administrable.

DEFINITION OF "CORPORATION"—It would be unwise to define a corporation to include what are clearly partnership or pass through entities. Under well settled tax principles, a corporation is not a partnership and a partnership is not a corporation. However, a taxpayer may ELECT under current law to be taxed as a corporation. Better policy would be to defer to taxpayer desires and allow the taxpayer to control its own taxing status, rather than mandate it by statute.

TRANSFER OF CREDIT—The Department strongly opposes transferring any state tax credit. Transferring of credits turns otherwise good tax policy into tax shelters subject to abuse and fraud. Moreover, transferring credits makes administration difficult when it comes time to audit. One taxpayer claims the credit, when all of the facts relate to an unrelated taxpayer. The Department will be required to chase two different entities—one with the facts, the other with the money. The transfer of credits should be eliminated.

RECAPTURE—This credit lacks recapture provisions. The Committee should consider adding recapture provisions in order to ensure that if property is sold or disposed of the state is made whole by including in income the previously taken credit.

General Excise Tax Exemption

ELIMINATE CAPS—The Department does not support caps on credits or exemptions throughout the tax code. Caps on exemptions specifically are the most difficult to administer because there is no guidance provided in the statute for how to administer them. For example, is the exemption to be claimed on a first-come-first-served basis? Also, tax returns are filed periodically, which could likely result in going over the cap during a given period.

Revenue Impact

This bill will result in an indeterminate revenue loss.

X. SB 2455, RELATING TO RENEWABLE ENERGY TECHNOLOGIES

This legislation extends the current Renewable Energy Technologies Income Tax Credit to include hydrogen energy systems. There is no definition of the term "hydrogen energy system." The **Department requests that a definition be added** so that the Department can effectively administer this credit's extension.

This bill's revenue estimate is estimated to be minimal.

XI. SB 2932, RELATING TO ENVIRONMENTAL RESPONSE TAX

This bill increases the State Environmental Response Tax to \$0.25 per barrel of petroleum product. The bill also provides that an unspecified amount be used for concerns relating to drinking

water. The Department has **no comments** on this legislation.

The increased environmental response tax will increase the annual revenue of the Environmental Response Revolving Fund by approximately \$7.0 million dollars.

XII. SB 2032, RELATING TO INCOME TAX

This legislation increases the wind-powered Renewable Energy Technologies Income Tax Credit by various amounts. The Department has **no comments** on this legislation.

This legislation would result in a revenue loss of \$10,600 annually.

XIII. SB 2986, RELATING TO REFUNDABLE RENEWABLE ENERGY TAX CREDIT

This **Lingle-Aiona Administration measure** amends the Renewable Energy Technologies Income Tax Credit by allowing the credit to be refundable for those that have little Hawaii taxable income. The Department **strongly supports** this measure as a policy to encourage additional investment in renewable energy technologies.

Under current Hawaii law, pension income, including social security is not taxable. This population includes retirees that may have little Hawaii taxable income (investment income) due to the exclusion, but would otherwise have the resources to invest in these technologies. This legislation will allow those with the resources to obtain a refundable incentive for installations of renewable energy technologies. This legislation also extends to any taxpayer with less than \$20,000 of adjusted gross income. This would provide incentives for the lower- and middle-class to invest in these technologies.

Annual revenue loss is estimated to be \$41,000, starting in fiscal year 2009.

XIV. SB 3230, RELATING TO ENERGY

This legislation creates a Energy Security Tax assessed on a per-barrel of petroleum product basis, as well as a special fund to administer the revenue.

The Department of Taxation has **no additional comments** on this legislation other than it is a tax increase that will eventually impact the gasoline prices all Hawaii drivers pay and creates an unnecessary special fund.

XV. SB 2943, RELATING TO ENERGY

This legislation increases the Renewable Energy Technology Income Tax Credit amounts to various amounts. This legislation also includes wave energy as a qualifying energy technology. The Department has **no additional comments** on this legislation.

This legislation will result in a revenue loss of approximately \$400,000 for FY 2009 and \$1.2 million for FY 2010.

XVI. SB 2946, RELATING TO RENEWABLE ENERGY OPPORTUNITY ZONES

This legislation creates Renewable Energy Opportunity Zones that, among other things, provide taxpayers within the zones with tax incentives similar to that of current Enterprise Zones.

The Department of Taxation **supports the intent** of this measure because it is an intuitive, logical, and bold step in the right direction for supporting Hawaii energy independence. The Department, as a co-participant of the Enterprise Zone system, agrees that these systems have worked to attract businesses to high-risk areas that need economic stimulus. This legislation will provide businesses with the opportunity to join other similar businesses geographically in order to consolidate the talent and resources of alternative energy research and development into one opportunity zone. The Department also points out that similar "opportunity zone" legislation has been very successful on the federal level with the Liberty Zone in New York and the Gulf Opportunity Zones in the south.

This legislation will result in a revenue loss of approximately \$1 million per year.

STATEMENT OF PLUG POWER INC. ON HB 840

**In Support of Hawaii Senate Bill 2744
Hydrogen Fuel; Tax Credit; General Excise Tax Exemption**

To: Senate Committee on Energy and Environment
Hawaii State Legislature

From: Ethan Brown
Ballard Power Systems
518-738-0369

Thursday January 31, 2008
2:15pm
Conference Room 414

I represent Ballard Power Systems and am testifying in support of SB2744. Ballard Power Systems is a leading PEM fuel cell developer and manufacturer. The company is focused on the commercialization of fuel cell technology in the following markets: back-up power, materials handling (i.e. forklifts); cogeneration; and buses. Ballard is also a partner in a newly formed private company with Ford and Daimler AG that is focused on the automotive fuel cell market.

The Committee cannot underestimate the importance that this legislation will have on the State of Hawaii. Renewable energy technologies, including ultra-clean technologies such as fuel cells, are a key part of the solution to important public policy challenges including sustainable economic growth, energy independence, and climate change.

A number of groups representing environmental concerns have argued that tax credits should not be extended to fuel cells using hydrogen derived from fossil fuels because they are not strictly "renewable." The legislature should focus on the results that it intends to achieve with the tax credit, rather than the literal definition of a label. If the title of the tax credit was "sustainable" or "clean" or "efficient" or "climate-friendly," then there would be little debate as to whether fuel cells would be eligible.

The position previously taken by environmental groups in Hawaii is out of step with environmental groups and clean energy producers elsewhere. In New York, a coalition of environmental groups and clean energy producers submitted formal testimony to the New York Public Service Commission, urging that fuel cells should be included within that State's Renewable Portfolio Standard. This coalition included the American Lung Association of New York, NRDC, New York PIRG, Sierra Club Atlantic Chapter, Union of Concerned Scientists, the American Wind Energy Association, and the Solar Energy Industries Association.

The coalition took a common sense, long-term approach to the definition of "renewable" and explained, referring to fuel cells, that: "some resources must go through a development phase before they can reach full sustainability." The environmental groups concluded that, "Because fuel cells will play an integral role in a future hydrogen economy, it is imperative to develop the conversion technology ..." and they supported the inclusion of fuel cells using natural gas and

STATEMENT OF PLUG POWER INC. ON HB 840

similar products “as a bridge technology toward a future in which fuel cells will have access to pure hydrogen.”

CONCLUSION

Hawaii has taken a leadership role in adopting new energy technologies. We support SB 2744 and the inclusion of fuel cells as part of a portfolio of clean energy technologies that will ultimately lead to a sustainable future for the State of Hawaii.

**In Support of Hawaii Senate Bill 2744
Hydrogen Fuel; Tax Credit; General Excise Tax Exemption**

To: Senate Committee on Energy and Environment
Hawaii State Legislature

From: Katrina Fritz Intwala
Plug Power Inc.
518-738-0369

Thursday January 31, 2008
2:15pm
Conference Room 414

I represent Plug Power Inc. and am testifying in support of SB2744. Plug Power is a leader in the development of on-site energy systems utilizing proton exchange membrane ("PEM") fuel cells for stationary power applications and emergency backup power. Plug Power espouses the values of sustainability and is commercializing fuel cell systems that contribute to the United States' energy independence.

The Committee cannot underestimate the importance that this legislation will have on the State of Hawaii. Renewable energy technologies, including ultra-clean technologies such as fuel cells, are critical in addressing natural disasters, resource depletion and global environmental degradation. Plug Power believes that we as a nation currently have an opportunity to make a great difference to our economy, to our world position, and to the environment. The dollar costs associated with transforming our energy market are extraordinary, and the regulatory challenges daunting. We face an upcoming change in our energy situation that is related to worldwide adverse environmental impacts and the growing scarcity of natural resources. As we move from a centralized energy distribution model to a mosaic of centralized and distributed generation based on fossil fuels, wind, biomass, solar, nuclear and others, we will require inspired leadership from our government over an extended period of time. To maintain our competitive advantage, the U.S. and the State of Hawaii must be a technological leader in the emergence of this economic opportunity.

A number of groups representing environmental concerns have argued that tax credits should not be extended to fuel cells using hydrogen derived from fossil fuels because they are not strictly "renewable." The legislature should focus on the results that it intends to achieve with the tax credit, rather than the literal definition of a label. If the title of the tax credit was "sustainable" or "clean" or "efficient" or "climate-friendly," then there would be little debate as to whether fuel cells would be eligible. The position previously taken by environmental groups in Hawaii is out of step with environmental groups and clean energy producers elsewhere. Attached is a letter from 25 national environmental organizations supporting a federal tax credit for fuel cells and solar. Similarly, in New York, a coalition of environmental groups and clean energy producers submitted formal testimony to the New York Public Service Commission, urging that fuel cells should be included within that State's Renewable Portfolio Standard. This coalition included the American Lung Association of New York, NRDC, New York PIRG, Sierra Club Atlantic

Chapter, Union of Concerned Scientists, the American Wind Energy Association, and the Solar Energy Industries Association.

The coalition took a common sense, long-term approach to the definition of “renewable” and explained, referring to fuel cells, that: “some resources must go through a development phase before they can reach full sustainability.” The environmental groups concluded that, “Because fuel cells will play an integral role in a future hydrogen economy, it is imperative to develop the conversion technology ...” and they supported the inclusion of fuel cells using natural gas and similar products “as a bridge technology toward a future in which fuel cells will have access to pure hydrogen.”

STATIONARY FUEL CELL DESCRIPTION

A stationary fuel cell is an on-site power generation system that electrochemically combines hydrogen with oxygen in the air to form electricity. Hydrogen fuel can be generated by electrolyzing water with low-cost off-peak electricity, or with electricity obtained from renewable sources such as solar, wind, or biomass. This makes such fuel cell systems highly efficient as well as environmentally friendly. The heart of the stationary PEM fuel cell system is the stack, which is comprised of the same technology as is used in most fuel cell vehicle applications.

STATIONARY FUEL CELL BENEFITS

- In backup applications, fuel cells can provide power for critical infrastructure such as communication systems and water utilities.
- Fuel cell systems are designed to stringent standards developed by the telecommunications industry that qualify equipment under extreme environmental conditions and requires specific levels of technological resiliency including temperature extremes, wind-driven rain, altitude, earthquake and ballistics tolerance.
- When fueled by hydrogen from a renewable energy source such as solar, wind, or hydropower, or if the fuel source is bio-fuel like ethanol from plant wastes, CO₂ emissions are net zero.
- Fuel cells can provide highly reliable electricity. Some studies estimate that power quality and reliability issues cost our economy alone as much as \$150 billion per year in lost materials and productivity, while others have reported estimates as high as \$400 billion per year.
- Because fuel cells provide electricity at the site of consumption, they reduce the load on the existing transmission and distribution system. Siting the fuel cells at the point of consumption also avoids the line losses (up to 15%) inherent in moving electricity and provides an alternative to costly and unattractive traditional power lines. Provides critical backup when grid power is unavailable due to weather related outages and can carry the load at the site of consumption until grid power is restored.

CONCLUSION

Hawaii has taken a leadership role in adopting new energy technologies. We support SB 2744 and the inclusion of fuel cells as part of a portfolio of clean energy technologies that will ultimately lead to a sustainable future for the State of Hawaii.

American Lung Association • Apollo Alliance • Audubon Society • Business Council for Sustainable Energy • Clean Air Watch • Clear the Air • EarthJustice • Environment & Energy Study Group • Environmental Defense • Environmental Working Group • Friends of the Earth • Greenpeace • Interfaith Environmental Council • National Association of State Energy Officials • National Environmental Trust • National Parks Conservation Association • National Wildlife Federation • Natural Resources Defense Council • Northeast States for Coordinated Air Use Management • Physicians for Social Responsibility • Public Citizen • Sierra Club • Southern Alliance for Clean Energy • Union of Concerned Scientists • U.S. Green Building Council • U.S. PIRG

April 19, 2007

Re: *Securing America's Energy Independence Act*, HR 550

Dear Chairman Rangel & Ranking Member McCrery

On behalf of our members, we are writing to urge your support and co-sponsorship of the *Securing America's Energy Independence Act*.

The *Securing America's Energy Independence Act* would extend existing solar and fuel cell credits for eight years. This responsible, forward-looking bill would provide the stability these industries need to make major new investments, serve as a down payment on efforts to address global warming, reduce air pollution, help relieve our national energy crunch and create quality, high-paying technology jobs.

The United States possesses some of the best solar resources in the world, and it is time that we start putting the sun to work for all Americans. Solar energy is a clean renewable energy source. It helps us reduce the use of high cost natural gas used for water heaters and peak electricity production. Additionally, the distributed nature of solar power relieves strains on our over-taxed transmission system and thereby improves grid integrity to safeguard against grid failure.

Fuel cells for certain applications are providing early adopters with clean, quiet and efficient power. Extension of the investment tax credit will not only provide stability and certainty for the industry, it will help hasten the introduction of other fuel cell applications, as improved supply chains bring down component costs and supplier competition spurs innovation.

You have an opportunity to provide energy leadership, diversify our energy portfolio and expand America's clean, carbon-smart energy industry. Passage of a long-term investment tax credit is forecasted to produce billions of dollars of new investment, tens of thousands of jobs, and trillions of cubic feet of avoided natural gas consumption and the consumer savings that come with it.

We ask you to demonstrate your support for carbon-smart, increasingly affordable and independent renewable energy by supporting and cosponsoring the *Securing America's Energy Independence Act*, HR 550.

Very truly yours,

American Lung Association

Apollo Alliance

Audubon Society

Business Council for Sustainable Energy

Clean Air Watch

Clear the Air

EarthJustice

Environment & Energy Study Group

Environmental Defense

Environmental Working Group

Friends of the Earth

Greenpeace

Interfaith Environmental Council

National Association of State Energy Officials

National Environmental Trust

National Parks Conservation Association

National Wildlife Federation

Natural Resources Defense Council

Northeast States for Coordinated Air Use Management

Physicians for Social Responsibility

Public Citizen

Sierra Club

Southern Alliance for Clean Energy

Union of Concerned Scientists

U.S. Green Building Council

U.S. PIRG

cc: Speaker Pelosi, Leader Boehner, Chairman Neal, Ranking Member English,
Members of the Committee on Ways and Means

GUY TOYAMA
H2 Technologies, Inc
73-4347 Malie Pl, Kailua-Kona, Hawaii 96740
Phone (808) 938-6325

Wednesday, January 30, 2008

Ladies and gentlemen:

*I hereby submit the following testimony regarding **SB2455, SB 2744 and SB2932**. The SENATE Energy and Environment Committee is set to hear this bill on Thursday, January 31, 2008 at 2:15 pm in Senate Conference Room 414.*

I would appreciate if you would make and deliver appropriate number of copies of my testimony to Room 414 for this hearing. Thank you.

TO: THE SENATE ENERGY and ENVIRONMENT COMMITTEE, Senator Ron Menor, Chair,
Senator Gary L Hooser, Vice-Chair

FROM: GUY TOYAMA, H2 TECHNOLOGIES, INC

SUBJECT: Testimony relating to RENEWABLE ENERGY TECHNOLOGIES and
ENVIRONMENTAL RESPONSE TAX (**SB2455, SB 2744 and SB2932**) - set to be heard on
1/31/2008 at 2:15 pm in Conference Room 414

I support each of these three bills, which support incentives for clean energy technology growth in Hawaii. A support for moving Hawaii into a more energy secure and environmentally responsible State.

I encourage this committee to approve **SB2455, SB 2744 and SB2932** and hasten their passage.

Thank you very much for your consideration of my views and my testimony on this bill.

Respectfully submitted,

Guy Toyama
H2 Technologies, Inc
guy@h2-techs.com

Will Rolston
NELHA – Gateway Manager
Kailua-Kona, Hawaii 96740
Phone (808) 217-0201

Wednesday, January 30, 2008

Ladies and gentlemen:

*I hereby submit the following testimony regarding **SB2455, SB 2744 and SB2932**. The SENATE Energy and Environment Committee is set to hear this bill on Thursday, January 31, 2008 at 2:15 pm in Senate Conference Room 414.*

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TO: THE SENATE ENERGY and ENVIRONMENT COMMITTEE, Senator Ron Menor, Chair,
Senator Gary L Hooser, Vice-Chair

FROM: Will Rolston, Hawaii Gateway Manager

SUBJECT: Testimony relating to RENEWABLE ENERGY TECHNOLOGIES and
ENVIRONMENTAL RESPONSE TAX (**SB2455, SB 2744 and SB2932**) - set to be heard on
1/31/2008 at 2:15 pm in Conference Room 414

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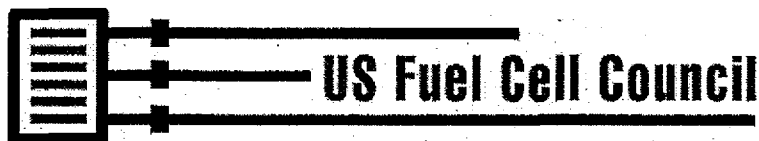
Thank you very much for your consideration of my views and my testimony on this bill.

Respectfully submitted,

Will Rolston

NELHA – Gateway Manager

willr@nelha.org



**In Support of Hawaii Senate Bill 2744
Hydrogen Fuel; Tax Credit; General Excise Tax Exemption**

To: Senate Committee on Energy and Environment
Hawaii State Legislature

From: Robert Rose
US Fuel Cell Council
202-293-5500

*Thursday January 31, 2008
2:15pm
Conference Room 414*

Dear Committee Members:

On behalf of the 110 members of the US Fuel Cell Council, I am writing in strong support of SB2744, an initiative designed to create a hydrogen fuel tax credit.

As you know, hydrogen fuel cells are providing early adopters with clean, efficient and secure energy. Knowing Hawaii's leadership in promoting clean energy technologies, our organization feels that this credit, when coupled with the High Technology Business Investment Tax Credit, will expand the use of fuel cells; improve Hawaii's economy; mitigate greenhouse gas emissions; and allow the state to take advantage of its hydrogen rich resources.

Furthermore, a hydrogen fuel tax credit, when coupled with the existing federal incentives, will give Hawaii a significant advantage over other states that do not offer similar incentives. By offering incentives that bring down the cost of hydrogen, the state will promote near-term commercial uses of hydrogen for use in fuel cell forklifts, stationary fuel cell power applications and fuel cell buses while laying the infrastructure foundation for hydrogen fuel cell vehicles.

In turn, this strategy will also help the state to comply with the Renewable Portfolio Standard passed in 2004.

Many private and public institutions throughout Hawaii have contributed greatly to the development of hydrogen and fuel cell technology. As these technologies begin to enjoy commercial success, a hydrogen fuel tax credit will not only incentivize clean energy, it will ensure an early market for many Hawaii-developed technologies and components.

Thank you for your consideration. Should you have any questions, please do not hesitate to contact me or Bud DeFlaviis of my staff at 202-293-5500.

Sincerely,

A handwritten signature in black ink, appearing to read "R. Rose", is written over a horizontal line.

Robert Rose
Executive Director



National Hydrogen Association

1211 Connecticut Ave NW, Suite 600

Washington, DC 20036-2701 U.S.A

Phone: 202-223-5547

Fax: 202-223-5537

Email: info@HydrogenAssociation.org

**In Support of Hawaii Senate Bill 2744
Hydrogen Fuel; Tax Credit; General Excise Tax Exemption**

To: Senate Committee on Energy and Environment
Hawaii State Legislature

From: Jerome Hinkle
National Hydrogen Association; 1211 Connecticut Ave., NW; Washington, DC 20036
202-223-5547

Thursday January 31, 2008
2:15pm
Conference Room 414

The National Hydrogen Association would like to enthusiastically support S.B. 2744. The NHA represents a wide variety of energy, auto and hydrogen and fuel cell companies, universities and research institutions. For 20 years we have supported research, development, testing and commercialization of a broad family of technologies and systems to help make the hydrogen economy a reality. We believe in the necessity of establishing markets for clean, efficient and sustainable hydrogen and fuel cell systems that contribute to our energy independence and economic growth.

The Committee cannot underestimate the importance of this legislation to the State of Hawaii. Renewable energy technologies, including ultra-clean technologies such as hydrogen and fuel cells, are critical in addressing energy supply security, resource depletion and global environmental degradation.

The NHA believes that we as a nation now have the opportunity to make a great difference to our economy, our position in the world, and the global environment. The dollar costs associated with transforming our energy markets are extraordinary, and the regulatory challenges daunting. Direct offshore wealth transfers for our oil import bill are likely to exceed \$3 trillion over the next ten years. Against the backdrop of growing energy demand, we face dramatic change in our energy situation, adverse worldwide environmental impacts and the growing scarcity of natural resources. As we move from a centralized energy distribution model to a mosaic of domestic, centralized and distributed generation based on fossil fuels, wind, biomass, solar, nuclear and others, we will need inspired leadership from our government over an extended period of time. To maintain our competitive advantage, the U.S. and the State of Hawaii must be technological leaders in the emergence of these economic opportunities.

Hawaii has a proud history of supporting innovative hydrogen and fuel cell legislation in the U.S. Congress, first through the dedicated efforts of Senator Spark Matsunaga in the 1990s and now thanks to Senator Daniel Akaka. Senator Akaka was extensively involved in the formation of the *Spark M. Matsunaga Hydrogen Act of 2005*, which is Title VIII. Hydrogen of the *Energy Policy Act of 2005*.

A number of groups representing environmental concerns have argued that tax credits should not be

extended to fuel cells using hydrogen derived from fossil fuels because they are not strictly "renewable." The legislature should focus on the results that it intends to achieve with the tax credit, rather than the label. If the title of the tax credit included the words "sustainable" or "clean" or "efficient" or "climate-friendly," then there would be little debate as to whether fuel cells would be eligible.

The position previously taken by environmental groups in Hawaii is out of step with environmental groups and clean energy producers elsewhere. In New York, a coalition of environmental groups and clean energy producers recently submitted formal testimony to the New York Public Service Commission urging that fuel cells should be included within that State's Renewable Portfolio Standard. This coalition included the American Lung Association of New York, Natural Resources Defense Council, New York Public Interest Research Group, Sierra Club Atlantic Chapter, Union of Concerned Scientists, the American Wind Energy Association, and the Solar Energy Industries Association.

The coalition took a common sense, long-term approach to the definition of "renewable" and explained, referring to fuel cells, that: "some resources must go through a development phase before they can reach full sustainability." The environmental groups concluded that, "Because fuel cells will play an integral role in a future hydrogen economy, it is imperative to develop the conversion technology." They also supported the inclusion of fuel cells using natural gas and similar products "as a bridge technology toward a future in which fuel cells will have access to pure hydrogen."

The arguments in Section 1. of the bill are convincing. Hydrogen and fuel cell systems also provide an opportunity, as others have observed, to help smooth the variability in wind and solar electricity production by storing renewable electricity for use at any time of day. This also helps distributed fuel cell generation or vehicles or generating turbines to work effectively upstream of congested nodes on the grid, enabling higher capacity factors and more cost effective utilization of existing power infrastructure. And we would encourage the Committee to consider applying these incentives to available bridge technologies for direct hydrogen combustion, in addition to fuel cell applications. Some vehicle and small engine retrofit equipment is available now, and production hydrogen multifuel vehicles are close to mass production—offering commercial opportunities to develop the necessary hydrogen supply infrastructure.

CONCLUSION

Hawaii has a long tradition of taking a leadership role in adopting new energy technologies. We support S.B. 2744 and the inclusion of hydrogen and fuel cells as part of a portfolio of clean energy technologies that will ultimately lead to a sustainable future for the State of Hawaii.

L E G I S L A T I V E

TAXBILLSERVICE

126 Queen Street, Suite 304

TAX FOUNDATION OF HAWAII

Honolulu, Hawaii 96813 Tel. 536-4587

SUBJECT: INCOME, GENERAL EXCISE, Hydrogen fuel tax credit

BILL NUMBER: SB 2744; HB 2746 (Identical)

INTRODUCED BY: SB by Fukunaga; HB by Karamatsu, Magaoay, Mizuno

BRIEF SUMMARY: Adds a new section to HRS section 235-12.5 to allow each individual or corporate income taxpayer to claim a hydrogen fuel tax credit of 35% for all capital, operation, maintenance, or leasing costs related to investments in: (1) hydrogen-powered vehicles and vehicle fueling stations in the state; provided that the total amount of tax credits shall not exceed \$ _____; and (2) commercial stationary hydrogen fuel cells in the state, provided that the total amount of tax credits shall not exceed \$ _____; provided that the tax credit per _____ fuel cell shall not exceed \$12,000 per taxpayer.

Credits for fuel cell property that serves a single-family dwelling shall be taken in the tax year the property is placed in service. For all other property, the tax credit may be taken in five equal installments beginning the taxable year the property is placed in service. Further stipulates that if any of the years in which the installment of a tax credit accrues and the fuel cell for which the credit was claimed is disposed of, taken out of service, or moved out of state, the tax credit shall expire and the taxpayer shall not take any remaining installment of the credit.

No credit shall be allowed for any fuel cell obtained with public funds. Permits the transfer of tax credits if proper documentation procedures are followed.

Tax credits in excess of income tax liability shall be refunded to the taxpayer provided such amounts are over \$1. Requires all claims for the credit to be filed on or before the twelfth month following the close of a taxable year. Directs the director of taxation to prepare the necessary forms to claim the credit, require proof of the claim, and adopt rules pursuant to HRS Chapter 91.

Adds a new section to HRS chapter 237 to exempt from the general excise tax, the value or gross income derived from the sale of: (1) hydrogen powered vehicles; (2) materials or parts incorporated into hydrogen powered vehicles; and (3) hydrogen fuel provided the amount of the exemption shall not exceed \$ _____.

Also exempts from the general excise tax, the value or gross income derived from the sale of commercial and residential stationary hydrogen fuel cells provided that the amount of the exemption shall not exceed \$ _____ annually.

Defines "corporation," "fuel cell property," "hydrogen fuel cells" for purposes of the measure.

EFFECTIVE DATE: Tax years beginning after December 31, 2007

SB 2744; HB 2746 - Continued

STAFF COMMENTS: It appears that this measure is proposed to encourage taxpayers to use hydrogen fuel cell systems in the state by allowing taxpayers to claim a 35% tax credit for the cost of a system. It further proposes a general excise tax exemption for the purchase of a hydrogen powered motor vehicle, its parts and hydrogen fuel.

While some may consider tax incentives necessary to encourage the use of hydrogen based energy conservation devices, it should be noted that the high cost of these energy systems limits the benefit to those who have the initial capital to make the purchase. It is doubtful that the state credits alone will encourage many more taxpayers to adopt the hydrogen technology proposed by this measure, given the relative high cost to acquire. Until the technology can make this production of hydrogen fuel cells cost efficient, no subsidy short of 100% will convince users to convert.

Lawmakers need to remember two things. First, the tax system is the device that raises the money that they, lawmakers, like to spend. Using the tax system to shape social policy merely throws the revenue raising system out of whack, making the system less than reliable as there is no way to determine how many taxpayers will avail themselves of the credit and in what amount. The second point to remember about tax credits is that they are nothing more than the expenditure of public dollars albeit out the back door. If, in fact, these dollars were subject to the appropriation process, would taxpayers be as kind about the expenditure of these funds when schools go wanting for books and repairs, or for the lack of space prisoners are sent off to the mainland for incarceration or there isn't enough money for substance abuse treatment?

Utilizing tax credits other than to alleviate an excessive tax burden cannot be justified and is of a questionable benefit relative to the cost for all taxpayers. If lawmakers want to encourage the use of hydrogen fuel cells or hydrogen fueled motor vehicles by reducing the cost of such systems, then a direct appropriation to subsidize those costs would be more accountable and transparent. Instead of merely subsidizing the purchase of existing technology, lawmakers may wish to consider appropriating funds for a research grant and awarding that grant based on the most promising development and research in the area of hydrogen fuel cells and alternate energy use. At least then Hawaii could be on the cutting edge of developing advanced alternate energy technology.

Digested 1/30/08

**In Support of Hawaii Senate Bill 2744
Hydrogen Fuel; Tax Credit; General Excise Tax Exemption**

To: Senate Committee on Energy and Environment
Hawaii State Legislature

From: Rich Romer
IdaTech plc
63065 N.E. 18th Street
Bend, OR 97701
518-729-0161

Thursday January 31, 2008
2:15pm
Conference Room 414

I represent IdaTech plc and am testifying in support of SB2744. IdaTech is a global leader in the development and manufacture of clean and reliable proton exchange membrane (PEM) fuel cell solutions for telecommunications, commercial and industrial backup power. IdaTech's technologies provide solutions for a wide range of applications from portable to off grid power and directly support efforts towards sustainable energy.

SB2744 is an important piece of legislation that can benefit the State of Hawaii and the fuel cell industry. Stationary fuel cell systems are available today and are being deployed in many applications. With the proper incentives, fuel cells systems can play an integral role in our future energy infrastructure.

One current application for stationary fuel cell systems is the mission critical backup power market. Deployed on telecommunications networks and in commercial UPS applications, the systems displace valve regulated lead acid batteries and backup power generators by providing (i) improved reliability (ii) lower emissions (GHG and noise) and (iii) extended run operation. Extended run time is significant in light of the Federal Communications Commission's recent ruling that cell phone towers must have at least 8 hours of on-site backup capability⁽¹⁾.

Operating on hydrogen or hydrogen rich fuels, fuel cells provide a significant reduction in emissions compared to backup power generators typically deployed on telecommunication networks. With the proper incentives, fuel cells are expected to increase their share of the mission critical backup power market and expand in the base load, peak shaving and specialty vehicle applications.

Some have argued that tax credits should not be extended to fuel cells that operate on hydrogen derived from fossil fuels because they are not strictly renewable. This position is not universally accepted. Five states (Connecticut, Colorado, Maine, New York and Pennsylvania) and the District of Columbia have included fuel cells in their Renewable Portfolio Standards and although not strictly renewable, fuel cell systems are widely viewed as sustainable, clean, efficient, environmentally-friendly and a key bridging technology to the hydrogen economy.

⁽¹⁾ *Katrina Panel Order*, 22 FCC Rcd 10541 (2007).

FUEL CELL DESCRIPTION

A fuel cell is an electrochemical device in which a fuel and an oxidant are combined to produce electricity and heat. With two electrodes separated by an electrolyte, a fuel cell is similar to a battery, except that it operates as long as fuel and air are supplied. Because the fuel is converted to electricity electrochemically, without combustion, the process is highly efficient, clean and quiet.

HOW A PEM FUEL CELL OPERATES

A fuel cell is comprised of two chambers — the anode and the cathode — separated by a membrane. Hydrogen is fed into the anode where the atoms release their electrons when reacting with a platinum catalyst on the membrane. The anode chamber becomes flooded with free electrons and with hydrogen protons (hydrogen atoms stripped of their electrons). The positively charged hydrogen protons pass through the membrane into cathode. The electrons exit the anode and flow into an external electrical circuit. After running through the circuit, the electrons re-enter the fuel cell on the cathode side, completing the electrical path. In the cathode, the hydrogen protons that passed through the membrane combine with the free electrons and with oxygen molecules to produce water and heat.

STATIONARY FUEL CELL BENEFITS

Stationary fuel cells are better suited for intermittent power demand (e.g., backup power) compared to incumbent combustion-based generating technologies for the following reasons:

- Lowest environmental impact of any power generation system using similar fuels
- High quality power produced
- Ease of siting at or near the point of use
- Unattended operation, low maintenance, high availability
- Ability to cycle on and off and follow the load to meet the power demand
- Minimal permitting and installation time.

CONCLUSION

We support SB 2744 and the inclusion of fuel cells as part of a portfolio of clean energy technologies that will ultimately lead to a sustainable future for the State of Hawaii.