

SB 359

DAVID Y. IGE
Governor

SHAN S. TSUTSUI
Lt. Governor



State of Hawaii
DEPARTMENT OF AGRICULTURE
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Honolulu, Hawaii 96814-2512
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SCOTT E. ENRIGHT
Chairperson, Board of Agriculture

PHYLLIS SHIMABUKURO-GEISER
Deputy to the Chairperson

**TESTIMONY OF SCOTT E. ENRIGHT
CHAIRPERSON, BOARD OF AGRICULTURE**

**BEFORE THE SENATE COMMITTEES ON AND ENERGY AND ENVIRONMENT AND
AGRICULTURE**

February 5, 2015
3:15 P.M.
CONFERENCE ROOM 225

**SENATE BILL NO. 359
RELATING TO THE ENVIRONMENTAL RESPONSE, ENERGY, AND FOOD
SECURITY TAX**

Chairpersons Gabbard and Ruderman, and Members of the Committees:

Thank you for the opportunity to testify on Senate Bill 359. This bill proposes to increase the allocations to the Environmental Response Revolving Fund, the Energy Security Special Fund, and the Agricultural Development and Food Security Special Fund. It also would make these allocations permanent. The Department is in support of this measure as long as it does not affect the Administration's budget.

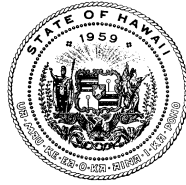
There is a growing public sentiment that realizes, as an island state, Hawaii is precariously dependent on imported food and energy. The legislature responded to this movement by passing Act 73, Session Laws of Hawaii 2010. As part of that act, the Agricultural Development and Food Security Special Fund was created with the mandate to fund activities intended to increase agricultural production or processing that may lead to reduced importation of food, fodder, or feed from outside the State. The Department has moved forward with this mandate and has funded positions and programs to build our agricultural capacity, create industry advantage, and to grow our markets; three pillars in our overall agricultural vision to move Hawaii towards a 21st century agricultural economy supported by all agencies of state government.

The Department would like to continue moving forward with its effort towards food security and views the Environmental Response, Energy, and Food Security Tax as a vital revenue source to provide the resources to realize the goal of greater food security and self-reliance. The Department is supportive of an increase in funding for the Environmental Response Revolving Fund, Energy Security Special Fund, and the



Agricultural Development and Food Security Special Fund and would defer to the respective Departments on each of those funds.

Thank you for the opportunity to testify on this measure.



STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. Box 3378
Honolulu, HI 96801-3378
doh.testimony@doh.hawaii.gov

Testimony in SUPPORT of S.B. 359
Relating to the Environmental Response, Energy, and Food Security Tax

SENATOR MIKE GABBARD, CHAIR OF COMMITTEE ON ENERGY & ENVIRONMENT
SENATOR RUSSELL E. RUDERMAN, CHAIR OF COMMITTEE ON AGRICULTURE

SENATE COMMITTEE ON ENERGY AND ENVIRONMENT
SENATE COMMITTEE ON AGRICULTURE

Hearing Date: **February 5, 2015**
3:15 p.m.

Room Number: 225

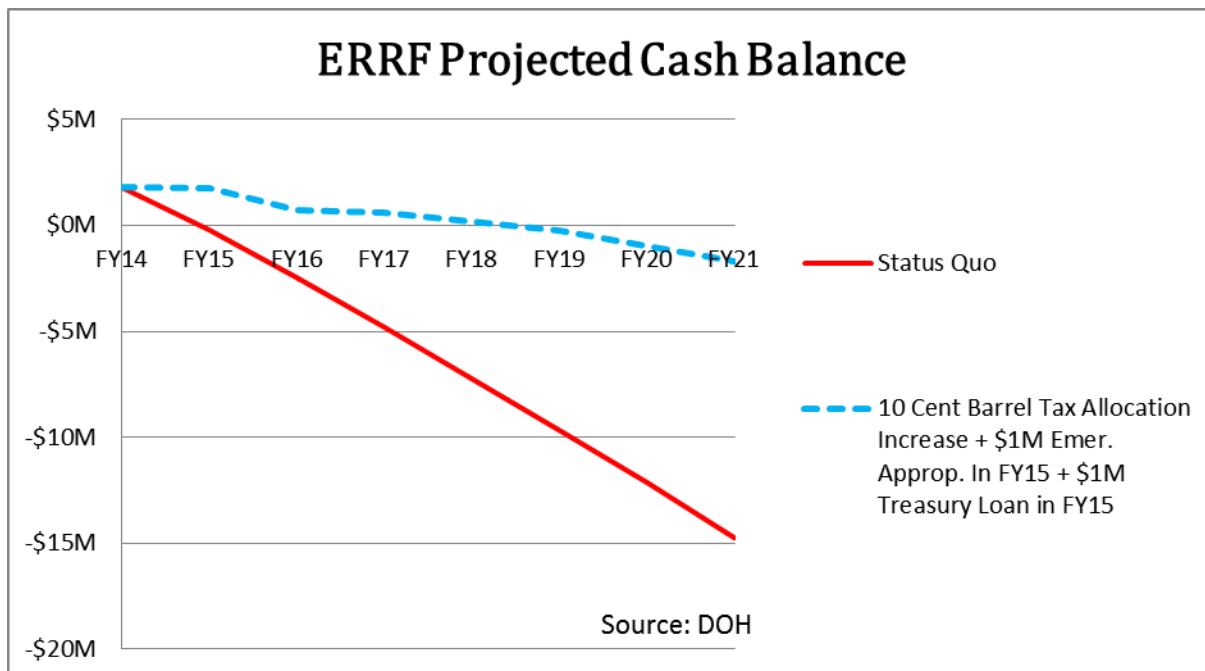
1 **Fiscal Implications:** May reduce the amount of barrel tax money that is diverted into the
2 general fund by approximately \$13,200,000 per year.

3 **Department Testimony:** The Department **SUPPORTS** this measure, which requests a 15 cent
4 allocation from the Environmental Response, Energy, and Food Security Tax ("Barrel Tax") for
5 the Department's Environmental Response Revolving Fund (ERRF), although its preferred
6 vehicle for this increase are its administrative bills (H.B. 941/S.B. 1110), which also request a 15
7 cent allocation for the ERRF. The ERRF currently receives 5 cents of the \$1.05 Barrel Tax that
8 is levied on every barrel of oil imported into Hawaii. However, the ERRF's Barrel Tax
9 allocation is insufficient to sustain the 41 positions (31 filled positions) that depend on the ERRF
10 for funding. These include positions that respond to oil spills and hazardous material releases, as
11 well as positions that work on environmental issues, like State water quality monitoring,
12 contaminated site remediation, and management of solid and hazardous waste.

13 While Hawaii's transition to renewable energy is undoubtedly of great benefit to the State, the
14 State's reduced consumption of oil means that ERRF revenues have steadily declined by ~5%
15 per year and the Fund is on a path to drop below zero balance before the end of this fiscal year.
16 The Department has done a number of things to try to sustain the ERRF during this time of
17 financial crisis, including instituting a hiring freeze and unencumbering contracts to improve
18 cash flow, but this has only succeeded in extending the time until the ERRF reaches zero balance
19 by a few months. Without adequate ERRF capitalization, the Department will need to begin the
20 process of laying off program staff as early as April 2015.

21 In order to remedy this situation, the Department has separately requested a one-time Emergency
22 Appropriation of \$1,050,000 in the Governor's Package (H.B. 949/S.B. 1118), which would help

1 it to meet its financial obligations and cover payroll through the end of FY 2015. The
2 Department has also requested a \$1 million loan from the State Treasury, which the Office of
3 Budget and Finance and the Governor's Office are currently considering. The Department
4 anticipates that it would repay this loan in FY 2016. The Emergency Appropriation, Treasury
5 Loan, and 10 cent Barrel Tax allocation increase would sustain the ERRF until FY 2018 (see
6 graph below), and would help ensure the Department's ongoing ability to support the 41 ERRF-
7 funded positions while it works on finding a more viable, long-term source of funding.



8
9 The Department of Health defers to the Department of Agriculture and the Department of
10 Business, Economic Development, and Tourism regarding the Barrel Tax allocation increases for
11 their respective special funds.

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

TESTIMONY BY WESLEY K. MACHIDA
DIRECTOR, DEPARTMENT OF BUDGET AND FINANCE
STATE OF HAWAII
TO THE SENATE COMMITTEES ON ENERGY AND ENVIRONMENT
AND AGRICULTURE
ON
SENATE BILL NO. 359

February 5, 2015

RELATING TO THE ENVIRONMENTAL RESPONSE, ENERGY, AND FOOD
SECURITY TAX

Senate Bill (S.B.) No. 359 increases the amount of the environmental response, energy, and food security tax (also known as the barrel tax) collections to be deposited into the Environmental Response Revolving Fund (ERRF), Energy Security Special Fund (ESSF), and the Agricultural Development and Food Security Special Fund (ADFSSF). This measure also makes the following permanent:

- 1) renaming the environmental response tax to the environmental response, energy, and food security tax; 2) establishment of the ADFSSF; 3) amendments to the ERRF and ESSF; and 4) allocations of the environmental response, energy, and food security tax to the ERRF, ESSF, Energy Systems Development Special Fund (ESDSF), and ADFSSF.

The Department of Budget and Finance (B&F) has serious concerns with increasing the distribution of the barrel tax beyond what is proposed in S.B. No. 1061 (increases distribution to the ADFSSF by 10 cents) and S.B. No. 1118 (increases distribution to the ERRF by 10 cents). The current general fund financial plan does not take into account any additional distributions of the barrel tax away from the general fund.

Below is a breakdown of the current and proposed barrel tax distribution.

<u>Fund</u>	<u>Distribution of Barrel Tax</u>	
	<u>Current*</u>	<u>Proposed</u>
ERRF	\$.05	\$.15
ESSF	\$.15	\$.40
ESDSF	\$.10	\$.10
ADFSSF	\$.15	\$.40
General Fund	<u>\$.60</u>	<u>\$.00</u>
Total Distribution	\$1.05	\$1.05

*Current barrel tax is \$1.05.

It is estimated that this bill could result in an additional general fund revenue loss of about \$12.6 million beyond what is included in the Administration's general fund financial plan.



UNIVERSITY OF HAWAII SYSTEM

Legislative Testimony

Testimony Presented Before the
Senate Committees on Energy and Environment
and Agriculture

February 5, 2015, 3:15 p.m.

By

Robert Bley-Vroman, Chancellor

And

Richard Rochelleau, Director

Hawaii Natural Energy Institute

School of Ocean and Earth Science and Technology

University of Hawai'i at Mānoa

SB 359 – RELATING TO THE ENVIRONMENTAL RESPONSE, ENERGY, AND FOOD SECURITY TAX

Chairs Gabbard and Ruderman, Vice Chairs Green and Riviere, and members of the committees:

My name is Richard Rocheleau, Director of the Hawai'i Natural Energy Institute (HNEI) at the University of Hawai'i at Mānoa. HNEI supports using the entire barrel tax for the purposes for which it was enacted - namely to "build the capacity we need to become self-sufficient in our energy and food needs and to protect the health and function of our environment."

The Barrel Tax was intended to support critical investments in clean energy, local agricultural production, and environmental response to reduce the State's dependence on imported fossil fuels and food products. In enacting the barrel tax legislation, the legislature found that: "undertaking the important task of energy and food security requires a long-term commitment and the investment of substantial financial resources." Although we are not asking for, nor would this bill provide HNEI, any additional barrel tax funding, we strongly believe that a sustained commitment is necessary to achieve the State's goals with regard to food, energy, and the environment.

HNEI knows first-hand that the efforts needed to reduce our dependence on fossil fuels are complex. Capital investments today will dictate the shape of our energy system for decades to come.

Passage of this bill, by increasing the barrel tax funding to DBEDT, the Department of Agriculture, and the Department of Health will affirm the State's long term commitment necessary to help Hawai'i attain food and energy security and sustainability.

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843



February 5, 2015

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Manager and Chief Engineer

ELLEN E. KITAMURA, P.E.
Deputy Manager and Chief Engineer

The Honorable Mike Gabbard, Chair
and Members
Committee on Energy and Environment

and

The Honorable Russell E. Ruderman, Chair
and Members
Committee on Agriculture
The Senate
Hawaii State Capitol, Room 225
415 South Beretania Street
Honolulu, Hawaii 96813

Dear Chairs and Members:

Subject: Senate Bill 359 - Relating to the Environmental Response,
Energy, and Food Security Tax

We strongly support the intent of Senate Bill 359 to protect our environment and natural resources by changing the amount deposited into the Environmental Response Revolving Fund from 5 to 15 cents. The change will provide the state greater resources to insure our environment and groundwater aquifers are protected from the impacts of leaking underground fuel storage tanks.

The Board of Water Supply is very concerned about the threats of leaking underground fuel tank releases on Oahu's irreplaceable groundwater aquifer. Studies on the Red Hill Fuel Storage Facility (Facility) indicate past fuel releases have already contaminated the groundwater and soil underneath the Facility with petroleum hydrocarbons. Providing the state with greater resources to regulate and manage situations like Red Hill now, is prevention that will cost significantly less than the cost to clean up large scale contamination to the aquifer and environment after it occurs.

We support every effort to address this situation today to save our most precious resource – the groundwater aquifer – now and into the future.

Thank you for the opportunity to testify.

Very truly yours,

ERNEST Y.W. LAU, P.E.
Manager and Chief Engineer

TAXBILLSERVICE

126 Queen Street, Suite 304

TAX FOUNDATION OF HAWAII

Honolulu, Hawaii 96813 Tel. 536-4587

SUBJECT: FUEL, Reallocate environmental response, energy, and food security tax

BILL NUMBER: SB 359

INTRODUCED BY: Gabbard, Chun Oakland, Galuteria, Green, Riviere, Ruderman

EXECUTIVE SUMMARY: Initially, the 5 cent per barrel environmental response tax was established to address oil spills in state waters. It was temporarily increased to \$1.05, much of which was earmarked to numerous special funds, and was scheduled to sunset on 6/30/30. The tax has taken on a life of its own and lacks transparency, and the special funds it feeds do not come under close scrutiny by either lawmakers or the public. The barrel tax should be repealed and all programs funded out of the environmental response tax should be funded through the general fund.

BRIEF SUMMARY: Amends HRS section 243-3.5 to increase the amount deposited into the environmental response revolving fund from 5 cents to 15 cents, increases the amount deposited into the energy security special fund from 15 cents to 40 cents, and increases the amount deposited into the agricultural development and food security fund from 15 cents to 40 cents.

Amends Act 107, SLH, 2014, to make the tax permanent by repealing the 6/30/30 sunset date.

EFFECTIVE DATE: July 1, 2015

STAFF COMMENTS: The legislature by Act 300, SLH 1993, enacted an environmental response tax of 5 cents per barrel on petroleum products sold by a distributor to any retail dealer or end user. The collections of the tax were deposited into the environmental response revolving fund until such time the balance in the fund reached \$7 million at which time the imposition of tax was suspended until the balance in the fund declined to less than \$3 million, at which time the imposition would be reinstated.

The legislature by Act 73, SLH 2010, increased the amount of the tax to \$1.05 per barrel and provided that 5 cents of the tax shall be deposited into a newly established environmental response revolving fund; 15 cents shall be deposited into a newly established energy security special fund, 10 cents shall be deposited into a newly established energy systems development special fund; 15 cents shall be deposited into the newly established agricultural development and food security special fund; and the residual of 60 cents shall be deposited into the general fund between 7/1/10 and 6/30/15. Act 107, SLH 2014, extended the sunset date of the \$1.05 environmental response, energy, and food security tax from 6/30/15 to 6/30/30. This measure would increase the amount deposited into the various funds and make the allocations to these special funds which were scheduled to sunset on 6/30/30, permanent.

The environmental response tax was initially adopted for the purpose of setting up a reserve should an oil spill occur on the ocean waters that would affect Hawaii's shoreline. The nexus was between the oil importers and the possibility that a spill might occur as the oil product was being imported into the state. Now that the fund has become a cash cow, lawmakers have placed other responsibilities on the fund, including environmental protection, food security, and natural resource protection programs, energy conservation and alternative energy development, air quality, global warming, clean water, polluted runoff, solid and hazardous waste, drinking water, and underground storage tanks, including support for the underground storage tank program of the department of health.

The basic problem with the barrel tax is that it lacks transparency, and because the funds are earmarked they do not come under close scrutiny by either lawmakers or the public. Rather than perpetuating the problems of the barrel tax, it should be repealed and all programs that are funded out of the environmental response fund should be funded through the general fund. At least program managers would then have to justify their need for these funds. If general funds are insufficient to underwrite all the essential programs and programs such as those funded through the barrel tax, then lawmakers need to justify any increase in taxes which underwrite the general fund or lawmakers will be forced to set priorities for those precious general funds. Currently, lawmakers are able to side step that difficult task by creating these hidden taxes and earmarked funds like the barrel tax. By continuing to special fund these programs, it makes a statement that such programs are not a high priority for state government. This sort of proliferation of public programs needs to be checked as it appears to be growing out of hand and at the expense of the taxpayer.

Digested 2/3/15



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February 5, 2014

HEARING BEFORE THE
SENATE COMMITTEE ON ENERGY
SENATE COMMITTEE ON AGRICULTURE

TESTIMONY ON SB 358
RELATING TO ENERGY

Room 225
3:15 PM

Aloha Chair Gabbard, Chair Ruderman, Vice Chair Green, Vice Chair Riviere, and
Members of the Committees:

I am Christopher Manfredi, President of the Hawaii Farm Bureau (HFB). Organized since 1948, the HFB is comprised of 1,932 farm family members statewide, and serves as Hawaii's voice of agriculture to protect, advocate and advance the social, economic and educational interest of our diverse agricultural community.

HFB supports SB 358, which increases the amount of the environmental response, energy, and food security tax (barrel tax) collections to be deposited into the environmental response revolving fund, energy security special fund, and agricultural development and food security special fund. It also makes the barrel tax permanent.

The barrel tax was intended to support critical investments in clean energy, local agricultural production, and environmental response to reduce the State's dependence on imported fossil fuels and food products. As an organization opposed to new taxes, HFB took an unusual step by supporting the barrel tax. It was a desperate move by the industry to secure stable funding for Hawaii's agricultural industry.

The barrel tax was originally intended to increase local capacity to grow and produce import replacement products in order to fulfill the State's vision for increased self sufficiency and sustainability. During the economic downturn, proceeds from this fund were reallocated to balance the budget. We understand that some of the proceeds continued to benefit agriculture.

As our economy rebounds, it is time to restore the original intent of the measure to focus to import replacements and to meet new needs of agriculture. We respectfully request your strong support of this measure along with consideration of reallocation of funds.



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Testimony of ERIK KVAM

President of Renewable Energy Action Coalition of Hawaii

e-mail: Erik.Kvam@REACHhawaii.org

In SUPPORT of SB 359 RELATING TO ENERGY

**Before the
SENATE COMMITTEE ON ENERGY AND ENVIRONMENT**

Thursday, February 5, 2015 3:15 p.m.

Aloha Chair Gabbard, Vice-Chair Green and members of the Committee.

My name is Erik Kvam. I am the President of Renewable Energy Action Coalition of Hawaii (REACH). REACH is a trade association whose vision is a Hawaiian energy economy based 100% on renewable sources indigenous to Hawaii.

REACH is in **SUPPORT** of SB 359.

Right now, about 95% of Hawaii's energy is imported through an oil supply line that stretches an average distance of 7000 miles to Southeast Asia, the Middle East, Africa, Argentina and Russia. As imported fuels like oil get scarcer and more expensive, sooner or later these imported fuels will stop flowing to Hawaii. When imported fuels stop flowing to Hawaii, we necessarily will be at 100% renewable energy.

To plan for Hawaii's 100% renewable energy future, Hawaii's public needs the services of energy planning and development agencies of the State government – primarily the Hawaii Natural Energy Institute (HNEI) and the Hawaii State Energy Office (HSEO).

Since 2010, many energy planning and development activities of HNEI and HSEO have been funded with revenues from a tax on each barrel of petroleum product (“Barrel Tax”).

REACH **SUPPORTS** SB 359 – increasing the proportionate amount of the Barrel Tax allocated to the Hawaii’s state agencies such as HNEI and HSEO -- to fund the energy planning and development activities needed to achieve 100% renewable energy for Hawaii.

Thank you for providing this opportunity to testify.



Email: communications@ulupono.com

SENATE COMMITTEE ON ENERGY & ENVIRONMENT AND AGRICULTURE
Thursday, February 5, 2015 — 3:15 p.m. — Room 225

Ulupono Initiative Supports Some Portions of SB 359, Relating to Energy

Dear Chair Gabbard, Vice Chair Green, Chair Ruderman, Vice Chair Riviere, and Members of the Committees:

My name is Kyle Datta and I am General Partner of the Ulupono Initiative, a Hawai'i-based impact investment company that strives to improve the quality of life for the people of Hawai'i by working toward solutions that create more locally grown food, increase clean, renewable energy, and waste reduction. We believe that self-sufficiency is essential to our future prosperity, and will help shape a future where economic progress and environmental stewardship work hand in hand.

Ulupono supports some portions of SB 359, which will redistribute the Environmental Response, Energy and Food Security Tax on barrels of petroleum products to restore the original intent of lawmakers in funding vital sustainability measures to help make our community more self-sufficient. Furthermore, this measure would make the barrel tax permanent. **While Ulupono supports the intent, we prefer SB 358 becomes the primary vehicle for adjusting the barrel tax.**

This tax was designed to support critical investments in clean energy, local agricultural production, and environmental response, reduce the State's dependence on imported fossil fuels and food products, and support environmental activities and programs. The tax represents a balanced approach to public policy where greater fossil fuel consumption would create more funding for these initiatives. Meanwhile, as fossil fuel use is reduced, the money collected from the residents of Hawai'i is also reduced. During difficult economic times, the fund was intended to be diverted temporarily toward the general fund. However, funding has yet to be restored to its original purpose, while not aligning the incentives of the barrel tax with its environmental restoration purposes.

This bill also makes the barrel tax permanent. Ulupono does not want to see the barrel tax be permanent based on the principle that special funds that were designed for a specific intent should sunset when the policy for which they were raised has been achieved. We would prefer to see the tax remain as long as imported fossil fuels continue to comprise more than 50 percent of our fossil fuel mix. **Instead, we believe SB 358, which adds a tax on other forms of fossil fuel such as natural gas and coal should be the primary**

Investing in a Sustainable Hawai'i



vehicle for increasing more revenue via the barrel tax.

We believe that by working together, we can help produce more local food, reduce our dependence on fossil fuels, and strengthen our community. Thank you for this opportunity to testify.

Respectfully,

Kyle Datta
General Partner

Testimony of The Nature Conservancy of Hawai'i
Supporting S.B. 359 Relating to the Environmental Response,
Energy, and Food Security Tax
Senate Committee on Energy and Environment
Senate Committee on Agriculture
Thursday, February 5, 2015, 3:15PM, Room 225

The Nature Conservancy of Hawai'i is a private non-profit conservation organization dedicated to the preservation of the lands and waters upon which life in these islands depends. The Conservancy has helped to protect nearly 200,000 acres of natural lands in Hawai'i. Today, we actively manage more than 35,000 acres in 11 nature preserves on Maui, Hawai'i, Moloka'i, Lāna'i, and Kaua'i. We also work closely with government agencies, private parties and communities on cooperative land and marine management projects.

The Nature Conservancy supports S.B. 359 and its provisions to redistribute the barrel tax revenue and ensure the permanence of barrel tax allocations. We believe this is effective policy for investing in clean energy and local agriculture initiatives that reduce our dependence on imported fossil fuel and imported food, and to enhance the State's oil spill response capacity.

Climate change caused by burning fossil fuels is an imminent and unprecedented threat to every person in Hawai'i. It is our responsibility to do what we can and what is necessary reduce our own carbon emissions, however small on a global scale, to contribute to the worldwide effort needed to mitigate the growing effects of climate change.

Even if we drastically reduce CO2 emissions now, however, we will still feel certain effects of climate change. In Hawai'i, science indicates that this will likely include:

- More frequent and more severe storms that can increase runoff and siltation;
- Overall, less rainfall and therefore less fresh water;
- Higher temperatures that affect watershed and agricultural health, while being beneficial to invasive species;
- Sea level rise and high waves that will harm coastal areas and groundwater systems;
- Ocean acidification that will inhibit the growth of protective coral reefs.

In response, we must plan and implement mitigative and adaptive measures to ensure the resilience of our natural and human systems. Protecting and enhancing the health and function of our forested watersheds as proposed by the Department of Land and Natural Resources is one critically important initiative. Likewise, investing in local energy and agriculture security are essential components of building self-reliance and resilience here in the middle of the Pacific Ocean.

Using the barrel tax revenue for its originally intended purposes is a wise investment in our future. We urge your support.

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**SENATE COMMITTEE ON ENERGY AND ENVIRONMENT
SENATE COMMITTEE ON AGRICULTURE**

February 5, 2015, 3:15 P.M.
Room 225

TESTIMONY IN SUPPORT OF SB 359, PROPOSED AMENDMENTS

Chair Gabbard, Chair Ruderman, and members of the Committees on Energy & Environment and Agriculture:

The Blue Planet Foundation supports SB 359, which aligns the allocation of the barrel tax with the original intention of the legislature when it enacted the barrel tax. However, we strongly support amending the bill to achieve an equally important task; applying the tax more fairly and sensibly to all fossil fuels, rather than applying the tax only to petroleum, while exempting coal and natural gas. To adjust the reallocation of the barrel tax, but ignore the importation of other fossil fuels would be a missed opportunity. This would also ignore the risk that shifting to a different fossil fuel will reduce barrel tax funding.

To this end, we respectfully request amendments to match the language in SB 358, also before these Committees. As with SB 358, we also propose some clarifying amendments that are needed in SB 358, (1) to address the potential question of which import supply chain entity is responsible for paying the barrel tax, and (2) to clarify the allocation of the tax in terms of “units” of fossil fuel rather than in terms of “barrels.”

(1) It is Fair and Sensible to Apply the Barrel Tax to All Fossil Fuels

The barrel tax currently exempts coal and gas, while taxing petroleum. The state should not provide favorable treatment to some fossil fuels and some fossil fuel importers. This is neither fair, nor advantageous to the public.

The fair inclusion of all fossil fuels in the barrel tax is smart energy policy. Hawai'i's barrel tax law is keystone clean energy policy that provides a dedicated investment in clean energy, funding the critical planning, development, and implementation of clean energy programs that will foster energy security for Hawai'i. Blue Planet believes the best way to fund solutions is by tapping the source of our problem—imported fossil fuel. We have also found, through three separate surveys commissioned by Blue Planet, that Hawai'i residents support this taxing policy (see section 3).

The petroleum products currently covered by the barrel tax are fossil fuels, just like coal and natural gas. The environmental response, energy, and food security issues addressed by the barrel tax are no less threatened by coal and gas imports than by any other fossil fuel. In addition, if the energy system shifts from one fossil fuel to another, the work funded by the barrel tax should not be reduced.

While Blue Planet Foundation believes that \$1.05 per barrel of petroleum is far less than the true negative impact of each barrel of fossil fuel, we do believe that the proposed tax fairly apportions the existing \$1.05 per barrel tax to solid fossil fuel (i.e. coal) and gaseous fossil fuel (i.e. natural gas) based on the energy content of the various fuels. The tax amounts reflected in SB 358 are fairly consistent with information from the U.S. Energy Information Administration (“EIA”; see Attachment 1). To reflect the EIA data precisely, the tax on coal should be increased to \$3.90 per ton.

	Unit	Unit heat content (from Attachment 1)	Existing tax	Tax per mmBTU (calculated)	This bill
Petroleum	Barrel (“bbl”)	5.174 mmBTU / bbl	\$1.05 / bbl	\$.020 / mmBTU	\$1.05 / bbl
Coal	Short ton (“ton”)	19.21 mmBTU / ton		\$.020 / mmBTU	\$3.90 / ton
Natural Gas	Thousand cubic feet (“mcf”)	1.027 mmBTU / mcf		\$.020 / mmBTU	\$0.21 / mcf

We also note that there may be some uncertainty about which entity in the chain of fossil fuel imports would be responsible for paying the barrel tax. The following amended language in H.R.S. § 243-3.5 would language would suffice to address that issue:

The tax imposed by this subsection shall be paid by the distributor of the ~~[petroleum product]~~ fossil fuel. In the event that the fossil fuel is sold by a distributor to a retail dealer or end user of the fossil fuel, and the same fossil fuel is re-sold to a retail dealer or end user of the fossil fuel, the distributor that is earlier in this resale supply chain shall pay the tax imposed on the distributor of the fossil fuel.

(2) The Barrel Tax Can – and Should – Be Allocated In Accordance With the Original Intent of the Legislature

If we truly want to rapidly transition Hawai‘i to a clean, sustainable energy future, we have to be prepared to invest in that preferred future today. The reallocation of the barrel tax would provide needed funding for clean energy and efficiency research, planning, and implementation to transition the energy system. As we dramatically expand our clean energy capacity in Hawai‘i, the real economic benefits of this carbon surcharge will far outweigh the additional burden it

may present. The majority of these revenues should be directed to clean energy planning, development, integration, incentives, and other activities facilitating Hawai'i's energy transformation.

In the interest of clarity, we note that the reallocation proposed in SB 358 is currently described in “barrel” units. Because the bill also utilizes units of short tons (for coal) and thousand cubic feet (for natural gas), we suggest that the allocation provision utilize the general phrase “unit of fossil fuel,” and rather than describing the allocation in cents, use percentage terms:

(1) 14.3% of the tax on each unit of fossil fuel shall be deposited into the environmental response revolving fund established under section 128D-2;

(2) 38.1% of the tax on each unit of fossil fuel shall be deposited into the energy security special fund established under section 201-12.8;

(3) 9.5% of the tax on each unit of fossil fuel shall be deposited into the energy systems development special fund established under section 304A-2169.1; and

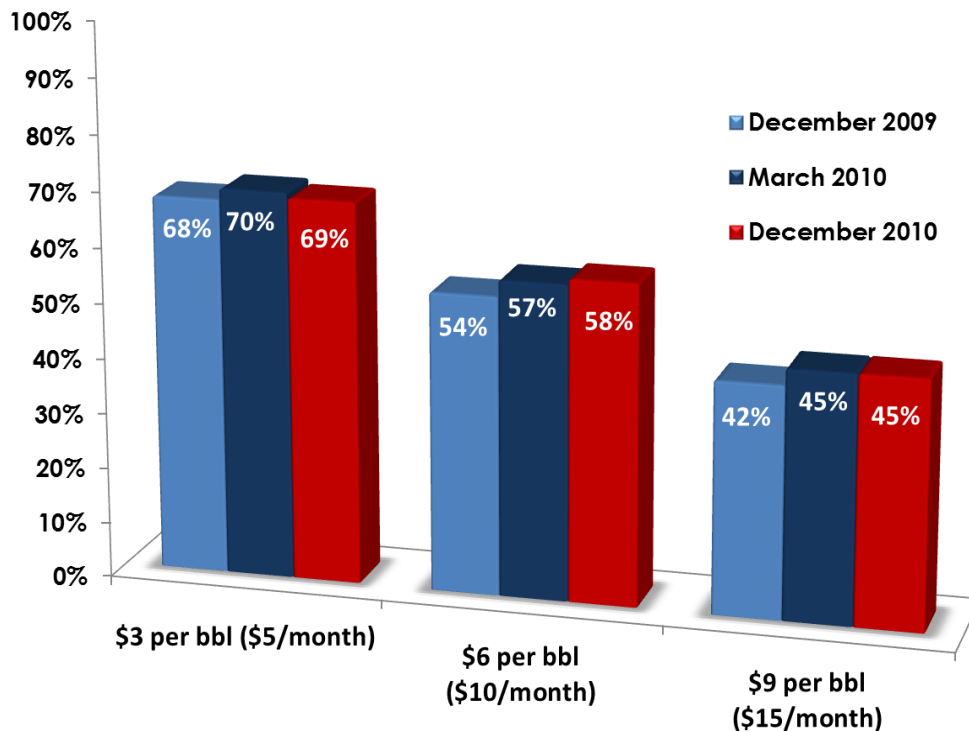
(4) 38.1% of the tax on each unit of fossil fuel shall be deposited into the agricultural development and food security special fund established under section 141-10.

(3) A Carbon Tax is Smart Energy Policy, Supported by the Public

The barrel tax (or “carbon tax”) is smart tax-shifting policy that discourages fossil fuel use while providing a source of revenue for clean energy planning and implementation. The concept behind the measure is to help “internalize” the external costs of certain activities; in this case, charge a fee for products that are damaging to the environment and use that money to help mitigate the damage. The link is quite clear between the use of petroleum products and corresponding impacts on our fragile island environments—not only in oil spills, which was the original impetus for the environmental response tax, but also in runoff from the roads our cars drive on, in degraded air quality, and in greenhouse gas emissions and climate change.

Unlike many other taxes, most residents and businesses can take actions reduce that impact their share of the barrel tax. Energy efficiency, conservation, and switching to clean sources of power all reduce the burden of the tax. In fact, most residents could reduce the amount of barrel tax they pay by installing some LED light bulbs at home and ensuring that car tires are properly inflated.

Blue Planet Foundation conducted market research in December 2009, March 2010, and December 2010 to discern the level of public support for a barrel tax for clean energy investment. The statewide survey of residents found broad support for a barrel tax with roughly 70% supporting a tax of some amount. Each survey had a random sample of 500 residents statewide, providing a margin of error of 4.4% at a 95% confidence level.



The average level of support was equivalent to a \$5 per barrel tax. Forty-five percent of residents supported paying an additional \$15 on their monthly energy bills, equivalent to a \$9 per barrel tax. These findings should provide comfort to decision makers wrestling with how to develop funding for Hawai'i's clean energy future—Hawai'i's residents are willing to pay to wean Hawai'i from its oil dependence.

While it's clear that we need to aggressively increase our energy efficiency and clean energy use in Hawai'i to decrease our reliance on imported crude, we cannot do it without adequate funding for development and implementation. We believe with appropriate amendments to Hawai'i's carbon tax policy, we can wisely tap the source of its problem—imported fossil fuel—to fund a food- and energy-secure future.

Mahalo for the opportunity to testify.

ATTACHMENT 1: Excerpt from January 2015 U.S. Energy Information Administration Report, including appendices indicating heat content of various fuels.

January 2015

Monthly Energy Review



Independent Statistics & Analysis

U.S. Energy Information
Administration

www.eia.gov/mer

Table A3. Approximate Heat Content of Petroleum Consumption and Fuel Ethanol
(Million Btu per Barrel)

	Total Petroleum ^a Consumption by Sector						Distillate Fuel Oil Consumption ^f	Liquefied Petroleum Gases Consumption ^g	Motor Gasoline (Finished) Consumption ^h	Petroleum Coke Consumption ⁱ	Fuel Ethanol ^j	Fuel Ethanol Feedstock Factor ^k
	Residential	Commercial ^b	Industrial ^b	Transportation ^{b,c}	Electric Power ^{d,e}	Total ^{b,c}						
1950	5.473	5.817	5.953	5.461	6.254	5.649	5.825	4.011	5.253	6.024	NA	NA
1955	5.469	5.781	5.881	5.407	6.254	5.591	5.825	4.011	5.253	6.024	NA	NA
1960	5.417	5.781	5.818	5.387	6.267	5.555	5.825	4.011	5.253	6.024	NA	NA
1965	5.364	5.760	5.748	5.386	6.267	5.532	5.825	4.011	5.253	6.024	NA	NA
1970	5.260	5.708	5.595	5.393	6.252	5.503	5.825	^g 3.779	5.253	6.024	NA	NA
1975	5.253	5.649	5.513	5.392	6.250	5.494	5.825	3.715	5.253	6.024	NA	NA
1980	5.321	5.751	5.366	5.441	6.254	5.479	5.825	3.674	5.253	6.024	3.563	6.586
1981	5.283	5.693	5.299	5.433	6.258	5.448	5.825	3.643	5.253	6.024	3.563	6.562
1982	5.266	5.698	5.247	5.423	6.258	5.415	5.825	3.615	5.253	6.024	3.563	6.539
1983	5.140	5.591	5.254	5.416	6.255	5.406	5.825	3.614	5.253	6.024	3.563	6.515
1984	5.307	5.657	5.207	5.418	6.251	5.395	5.825	3.599	5.253	6.024	3.563	6.492
1985	5.263	5.598	5.199	5.423	6.247	5.387	5.825	3.603	5.253	6.024	3.563	6.469
1986	5.268	5.632	5.269	5.426	6.257	5.418	5.825	3.640	5.253	6.024	3.563	6.446
1987	5.239	5.594	5.233	5.429	6.249	5.403	5.825	3.659	5.253	6.024	3.563	6.423
1988	5.257	5.597	5.228	5.433	6.250	5.410	5.825	3.652	5.253	6.024	3.563	6.400
1989	5.194	5.549	5.219	5.438	^d 6.240	5.410	5.825	3.683	5.253	6.024	3.563	6.377
1990	5.145	5.553	5.253	5.442	6.244	5.411	5.825	3.625	5.253	6.024	3.563	6.355
1991	5.094	5.528	5.167	5.441	6.246	5.384	5.825	3.614	5.253	6.024	3.563	6.332
1992	5.124	5.513	5.168	5.443	6.238	5.378	5.825	3.624	5.253	6.024	3.563	6.309
1993	5.102	^{b,R} 5.504	^{b,R} 5.177	^{b,R} 5.422	6.230	^{b,R} 5.370	5.825	3.606	^h 5.232	6.024	3.563	6.287
1994	^R 5.095	^R 5.512	^R 5.149	5.424	6.213	^R 5.360	^f 5.820	3.635	5.231	6.024	3.563	6.264
1995	^R 5.060	^R 5.475	5.121	^R 5.418	^R 6.187	^R 5.342	5.820	3.623	5.218	6.024	3.563	6.242
1996	^R 4.995	^R 5.430	5.114	5.420	^R 6.194	5.336	5.820	3.613	5.218	6.024	3.563	6.220
1997	^R 4.986	^R 5.388	^R 5.119	5.416	^R 6.198	5.336	5.820	3.616	5.215	6.024	3.563	6.198
1998	^R 4.972	^R 5.362	^R 5.136	^R 5.414	6.210	5.349	5.819	3.614	5.215	6.024	3.563	6.176
1999	^R 4.899	^R 5.288	^R 5.091	5.413	^R 6.204	5.328	5.819	3.616	5.213	6.024	3.563	6.167
2000	^R 4.905	^R 5.313	^R 5.056	^R 5.423	^R 6.188	5.326	5.819	3.607	5.214	6.024	3.563	6.159
2001	^R 4.934	^R 5.322	^R 5.141	^R 5.413	6.199	^R 5.346	5.819	3.614	5.214	6.024	3.563	6.151
2002	^R 4.883	^R 5.290	^R 5.092	5.411	^R 6.172	5.324	5.819	3.613	5.211	6.024	3.563	6.143
2003	^R 4.918	^R 5.312	^R 5.143	^R 5.404	6.182	^R 5.338	5.819	3.629	5.203	6.024	3.563	6.116
2004	^R 4.949	^R 5.323	5.144	^R 5.410	^R 6.134	^R 5.341	5.818	3.618	5.201	^f 5.982	3.563	6.089
2005	^R 4.913	^R 5.359	^R 5.179	^R 5.412	^R 6.126	^R 5.353	5.818	3.620	5.198	5.982	3.563	6.063
2006	^R 4.883	^R 5.296	^R 5.159	^R 5.409	^R 6.038	^R 5.336	5.803	3.605	5.191	5.987	3.563	6.036
2007	^R 4.831	^R 5.271	^R 5.122	^R 5.385	^R 6.064	^R 5.309	5.785	3.591	5.155	5.996	3.563	6.009
2008	^R 4.769	^R 5.156	^R 5.147	^R 5.355	^R 6.013	^R 5.287	5.780	3.600	5.126	5.992	3.563	5.983
2009	^R 4.661	^R 5.216	^R 5.014	^{c,R} 5.328	^R 5.987	^{c,R} 5.236	5.781	3.558	5.101	6.017	3.563	5.957
2010	^R 4.660	^R 5.193	^R 4.983	^R 5.321	^R 5.956	^R 5.222	5.778	3.557	5.078	6.059	3.561	5.931
2011	^R 4.640	^R 5.163	^R 4.962	^R 5.317	^R 5.900	^R 5.212	5.776	3.541	5.068	6.077	3.560	5.905
2012	^R 4.703	^R 5.117	^R 4.909	^R 5.305	^R 5.925	^R 5.191	5.774	3.534	5.063	6.084	3.560	5.880
2013	^{RE} 4.675	^{RE} 5.060	^{RE} 4.864	^{RE} 5.301	^{RP} 5.895	^{RE} 5.174	5.774	3.556	5.062	6.089	3.559	5.880
2014	^{RE} 4.675	^{RE} 5.060	^{RE} 4.864	^{RE} 5.301	^{RE} 5.895	^{RE} 5.174	^E 5.774	^E 3.556	^E 5.062	^E 6.089	^E 3.559	5.880

^a Petroleum products supplied, including natural gas plant liquids and crude oil burned directly as fuel. Quantity-weighted averages of the petroleum products included in each category are calculated by using heat content values for individual products shown in Tables A1 and A3.

^b Beginning in 1993, includes fuel ethanol blended into motor gasoline.

^c Beginning in 2009, includes renewable diesel fuel (including biodiesel) blended into distillate fuel oil.

^d Electricity-only and combined-heat-and-power (CHP) plants within the NAICS 22 category whose primary business is to sell electricity, or electricity and heat, to the public. Through 1988, data are for electric utilities only; beginning in 1989, data are for electric utilities and independent power producers.

^e Electric power sector factors are weighted average heat contents for distillate fuel oil, petroleum coke, and residual fuel oil; they exclude other liquids.

^f There is a discontinuity in this time series between 1993 and 1994; beginning in 1994, the single constant factor is replaced by a quantity-weighted factor.

Quantity-weighted averages of the sulfur-content categories of distillate fuel oil are calculated by using heat content values shown in Table A1. Excludes renewable diesel fuel (including biodiesel) blended into distillate fuel oil.

^g There is a discontinuity in this time series between 1966 and 1967; beginning in 1967, the single constant factor is replaced by a quantity-weighted factor.

Quantity-weighted averages of the major components of liquefied petroleum gases are calculated by using heat content values shown in Table A1.

^h Through 1992, excludes oxygenates. Beginning in 1993, includes fuel ethanol blended into motor gasoline; and for 1993–2006, also includes methyl tertiary butyl ether (MTBE) and other oxygenates blended into motor gasoline.

ⁱ There is a discontinuity in this time series between 2003 and 2004; beginning in 2004, the single constant factor is replaced by a quantity-weighted factor.

Quantity-weighted averages of the two categories of petroleum coke are calculated by using heat content values shown in Table A1.

^j Includes denaturant (petroleum added to ethanol to make it undrinkable). Fuel ethanol factors are weighted average heat contents for undenatured ethanol (3.539 million Btu per barrel) and products used as denaturant (pentanes plus, finished motor gasoline, and motor gasoline blending components—see Tables A1 and A3 for factors). The factor for 2009 is used as the estimated factor for 1980–2008.

^k Corn input to the production of undenatured ethanol (million Btu corn per barrel undenatured ethanol), used as the factor to estimate total biomass inputs to the production of undenatured ethanol. Observed ethanol yields (gallons undenatured ethanol per bushel of corn) are 2.5 in 1980, 2.666 in 1998, 2.68 in 2002, and 2.764 in 2009; yields in other years are estimated. Corn is assumed to have a gross heat content of 0.392 million Btu per bushel. Undenatured ethanol is assumed to have a gross heat content of 3.539 million Btu per barrel.

R=Revised. P=Preliminary. E=Estimate. NA=Not available.

Note: The heat content values in this table are for gross heat contents. See "Heat Content" in Glossary.

Web Page: See <http://www.eia.gov/totalenergy/data/monthly/#appendices> (Excel and CSV files) for all available annual data beginning in 1949.

Sources: See "Thermal Conversion Factor Source Documentation," which follows Table A6.

This table has been modified to include columns for "Distillate Fuel Oil Consumption," "Motor Gasoline (Finished) Consumption" (formerly called "Motor Gasoline Consumption (New)"), and "Petroleum Coke Consumption." Columns for "Motor Gasoline Consumption (Old)," "Biodiesel," and "Biodiesel Feedstock Factor" have been deleted. Revisions to "Total Petroleum Consumption" factors are due to the incorporation of new and revised commodity factors in Tables A1 and A3.

Table A4. Approximate Heat Content of Natural Gas
(Btu per Cubic Foot)

	Production		Consumption ^a			Imports	Exports
	Marketed	Dry	End-Use Sectors ^b	Electric Power Sector ^c	Total		
1950	1,119	1,035	1,035	1,035	1,035	--	1,035
1955	1,120	1,035	1,035	1,035	1,035	1,035	1,035
1960	1,107	1,035	1,035	1,035	1,035	1,035	1,035
1965	1,101	1,032	1,032	1,032	1,032	1,032	1,032
1970	1,102	1,031	1,031	1,031	1,031	1,031	1,031
1975	1,095	1,021	1,020	1,026	1,021	1,026	1,014
1980	1,098	1,026	1,024	1,035	1,026	1,022	1,013
1981	1,103	1,027	1,025	1,035	1,027	1,014	1,011
1982	1,107	1,028	1,026	1,036	1,028	1,018	1,011
1983	1,115	1,031	1,031	1,030	1,031	1,024	1,010
1984	1,109	1,031	1,030	1,035	1,031	1,005	1,010
1985	1,112	1,032	1,031	1,038	1,032	1,002	1,011
1986	1,110	1,030	1,029	1,034	1,030	997	1,008
1987	1,112	1,031	1,031	1,032	1,031	999	1,011
1988	1,109	1,029	1,029	1,028	1,029	1,002	1,018
1989	1,107	1,031	1,031	^c 1,028	1,031	1,004	1,019
1990	1,105	1,029	1,030	1,027	1,029	1,012	1,018
1991	1,108	1,030	1,031	1,025	1,030	1,014	1,022
1992	1,110	1,030	1,031	1,025	1,030	1,011	1,018
1993	1,106	1,027	1,028	1,025	1,027	1,020	1,016
1994	1,105	1,028	1,029	1,025	1,028	1,022	1,011
1995	1,106	1,026	1,027	1,021	1,026	1,021	1,011
1996	1,109	1,026	1,027	1,020	1,026	1,022	1,011
1997	1,107	1,026	1,027	1,020	1,026	1,023	1,011
1998	1,109	1,031	1,033	1,024	1,031	1,023	1,011
1999	1,107	1,027	1,028	1,022	1,027	1,022	1,006
2000	1,107	1,025	1,026	1,021	1,025	1,023	1,006
2001	1,105	1,028	1,029	1,026	1,028	1,023	1,010
2002	1,103	1,024	1,025	1,020	1,024	1,022	1,008
2003	1,103	1,028	1,029	1,025	1,028	1,025	1,009
2004	1,104	1,026	1,026	1,027	1,026	1,025	1,009
2005	1,104	1,028	1,028	1,028	1,028	1,025	1,009
2006	1,103	1,028	1,028	1,028	1,028	1,025	1,009
2007	1,102	1,027	1,027	1,027	1,027	1,025	1,009
2008	1,100	1,027	1,027	1,027	1,027	1,025	1,009
2009	1,101	1,025	1,025	1,025	1,025	1,025	1,009
2010	1,098	1,023	1,023	1,022	1,023	1,025	1,009
2011	1,142	1,022	1,022	1,021	1,022	1,025	1,009
2012	1,091	1,024	1,025	1,022	1,024	1,025	1,009
2013	1,100	1,027	1,028	^P 1,025	^P 1,027	1,025	1,009
2014	^E 1,100	^E 1,027	^E 1,028	^E 1,025	^E 1,027	^E 1,025	^E 1,009

^a Consumption factors are for natural gas, plus a small amount of supplemental gaseous fuels.

^b Residential, commercial, industrial, and transportation sectors.

^c Electricity-only and combined-heat-and-power (CHP) plants within the NAICS 22 category whose primary business is to sell electricity, or electricity and heat, to the public. Through 1988, data are for electric utilities only; beginning in 1989, data are for electric utilities and independent power producers.

P=Preliminary. E=Estimate. -- =Not applicable.

Note: The values in this table are for gross heat contents. See "Heat Content" in Glossary.

Web Page: See <http://www.eia.gov/totalenergy/data/monthly/#appendices> (Excel and CSV files) for all available annual data beginning in 1949.

Sources: See "Thermal Conversion Factor Source Documentation," which follows Table A6.

Table A5. Approximate Heat Content of Coal and Coal Coke
(Million Btu per Short Ton)

	Coal									Coal Coke
	Production ^a	Waste Coal Supplied ^b	Consumption					Imports	Exports	Imports and Exports
			Residential and Commercial Sectors ^c	Industrial Sector		Electric Power Sector ^{e,f}	Total			
				Coke Plants	Other ^d					
1950	25.090	NA	24.461	26.798	24.820	23.937	24.989	25.020	26.788	24.800
1955	25.201	NA	24.373	26.794	24.821	24.056	24.982	25.000	26.907	24.800
1960	24.906	NA	24.226	26.791	24.609	23.927	24.713	25.003	26.939	24.800
1965	24.775	NA	24.028	26.787	24.385	23.780	24.537	25.000	26.973	24.800
1970	23.842	NA	23.203	26.784	22.983	22.573	23.440	25.000	26.982	24.800
1975	22.897	NA	22.261	26.782	22.436	21.642	22.506	25.000	26.562	24.800
1980	22.415	NA	22.543	26.790	22.690	21.295	21.947	25.000	26.384	24.800
1981	22.308	NA	22.474	26.794	22.585	21.085	21.713	25.000	26.160	24.800
1982	22.239	NA	22.695	26.797	22.712	21.194	21.674	25.000	26.223	24.800
1983	22.052	NA	22.775	26.798	22.691	21.133	21.576	25.000	26.291	24.800
1984	22.010	NA	22.844	26.799	22.543	21.101	21.573	25.000	26.402	24.800
1985	21.870	NA	22.646	26.798	22.020	20.959	21.366	25.000	26.307	24.800
1986	21.913	NA	22.947	26.798	22.198	21.084	21.462	25.000	26.292	24.800
1987	21.922	NA	23.404	26.799	22.381	21.136	21.517	25.000	26.291	24.800
1988	21.823	NA	23.571	26.799	22.360	20.900	21.328	25.000	26.299	24.800
1989	21.765	^b 10.391	23.650	26.800	22.347	^e 20.898	21.307	25.000	26.160	24.800
1990	21.822	9.303	23.137	26.799	22.457	20.779	21.197	25.000	26.202	24.800
1991	21.681	10.758	23.114	26.799	22.460	20.730	21.120	25.000	26.188	24.800
1992	21.682	10.396	23.105	26.799	22.250	20.709	21.068	25.000	26.161	24.800
1993	21.418	10.638	22.994	26.800	22.123	20.677	21.010	25.000	26.335	24.800
1994	21.394	11.097	23.112	26.800	22.068	20.589	20.929	25.000	26.329	24.800
1995	21.326	11.722	23.118	26.800	21.950	20.543	20.880	25.000	26.180	24.800
1996	21.322	12.147	23.011	26.800	22.105	20.547	20.870	25.000	26.174	24.800
1997	21.296	12.158	22.494	26.800	22.172	20.518	20.830	25.000	26.251	24.800
1998	21.418	12.639	21.620	27.426	23.164	20.516	20.881	25.000	26.800	24.800
1999	21.070	12.552	23.880	27.426	22.489	20.490	20.818	25.000	26.081	24.800
2000	21.072	12.360	25.020	27.426	22.433	20.511	20.828	25.000	26.117	24.800
2001	^a 20.772	12.169	24.909	27.426	22.622	20.337	20.671	25.000	25.998	24.800
2002	20.673	12.165	22.962	27.426	22.562	20.238	20.541	25.000	26.062	24.800
2003	20.499	12.360	22.242	27.425	22.468	20.082	20.387	25.000	25.972	24.800
2004	20.424	12.266	22.324	27.426	22.473	19.980	20.290	25.000	26.108	24.800
2005	20.348	12.093	22.342	26.279	22.178	19.988	20.246	25.000	25.494	24.800
2006	20.310	12.080	22.066	26.271	22.050	19.931	20.181	25.000	25.453	24.800
2007	20.340	12.090	22.069	26.329	22.371	19.909	20.168	25.000	25.466	24.800
2008	20.208	12.121	^c 23.035	26.281	22.304	19.713	19.979	25.000	25.399	24.800
2009	19.963	12.076	22.852	26.334	21.823	19.521	19.741	25.000	25.633	24.800
2010	20.173	11.960	22.611	26.295	21.846	19.623	19.870	25.000	25.713	24.800
2011	20.142	11.604	22.099	26.299	21.568	19.341	19.600	25.000	25.645	24.800
2012	20.215	11.539	21.300	28.636	21.449	19.211	19.544	23.128	24.551	24.800
2013 ^P	20.187	12.428	21.233	28.705	21.623	19.210	19.548	23.367	24.604	24.800
2014 ^E	20.187	12.428	21.233	28.705	21.623	19.210	19.548	23.367	24.604	24.800

^a Beginning in 2001, includes a small amount of refuse recovery (coal recaptured from a refuse mine, and cleaned to reduce the concentration of noncombustible materials).

^b Waste coal (including fine coal, coal obtained from a refuse bank or slurry dam, anthracite culm, bituminous gob, and lignite waste) consumed by the electric power and industrial sectors. Beginning in 1989, waste coal supplied is counted as a supply-side item to balance the same amount of waste coal included in "Consumption."

^c Through 2007, used as the thermal conversion factor for coal consumption by the residential and commercial sectors. Beginning in 2008, used as the thermal conversion factor for coal consumption by the commercial sector only.

^d Includes transportation. Excludes coal synfuel plants.

^e Electricity-only and combined-heat-and-power (CHP) plants within the NAICS 22 category whose primary business is to sell electricity, or electricity and heat, to the public. Through 1988, data are for electric utilities only; beginning in 1989, data are for electric utilities and independent power producers.

^f Electric power sector factors are for anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and, beginning in 1998, coal synfuel.

P=Preliminary. E=Estimate. NA=Not available.

Note: The values in this table are for gross heat contents. See "Heat Content" in Glossary.

Web Page: See <http://www.eia.gov/totalenergy/data/monthly/#appendices> (Excel and CSV files) for all available annual data beginning in 1949.

Sources: See "Thermal Conversion Factor Source Documentation," which follows Table A6.