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H.R. 2635, THE CARBON-NEUTRAL GOVERNMENT ACT OF 2007

HEARING

BEFORE THE

SUBCOMMITTEE ON GOVERNMENT MANAGEMENT, ORGANIZATION, AND PROCUREMENT

OF THE

COMMITTEE ON OVERSIGHT AND GOVERNMENT REFORM

HOUSE OF REPRESENTATIVES

ONE HUNDRED TENTH CONGRESS

FIRST SESSION

ON

H.R. 2635

TO REDUCE THE FEDERAL GOVERNMENT'S CONTRIBUTION TO GLOBAL WARMING THROUGH MEASURES THAT PROMOTE EFFICIENCY IN THE FEDERAL GOVERNMENT'S MANAGEMENT AND OPERATIONS, AND FOR OTHER PURPOSES

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CONTENTS

	Page
Hearing held on May 17, 2007	1
Text of H.R. 2635	4
Statement of:	
Figdor, Emily, director, Federal global warming program, U.S. Public Interest Research Group; Jeffrey Harris, vice president for programs, Alliance to Save Energy; and Marshall Purnell, first vice-president/president-elect, the American Institute of Architects	45
Figdor, Emily	45
Harris, Jeffrey	56
Purnell, Marshall	70
Letters, statements, etc., submitted for the record by:	
Figdor, Emily, director, Federal global warming program, U.S. Public Interest Research Group, prepared statement of	47
Harris, Jeffrey, vice president for programs, Alliance to Save Energy, prepared statement of	59
Purnell, Marshall, first vice-president/president-elect, the American Institute of Architects, prepared statement of	73

H.R. 2635, THE CARBON-NEUTRAL GOVERNMENT ACT OF 2007

THURSDAY, MAY 17, 2007

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON GOVERNMENT MANAGEMENT,
ORGANIZATION, AND PROCUREMENT,
COMMITTEE ON OVERSIGHT AND GOVERNMENT REFORM,
Washington, DC.

The subcommittee met, pursuant to notice, at 2 p.m., in room 2154, Rayburn House Office Building, Hon. Edolphus Towns (chairman of the subcommittee) presiding.

Present: Representatives Towns, Welch, Platts, Duncan, Issa, Bilbray, Waxman, and Davis of Virginia.

Staff present: Michael McCarthy, staff director; Velvet Johnson, counsel; Cecelia Morton, clerk; David Marin, minority staff director; A. Brooke Bennett, minority counsel; Larry Brady, minority senior investigator and policy advisor; and Benjamin Chance, minority clerk.

Mr. TOWNS. The subcommittee will come to order.

Today's hearing is on an important new bill to make the Federal Government a leader in reducing emissions that could contribute to global warming. Chairman Henry Waxman is the author of this bill and has joined us today. I would like to recognize him first to give an introduction of the bill and then we will proceed with the rest of the opening statements. Let me yield now to the chairman of the full committee, Mr. Henry Waxman from California.

Mr. WAXMAN. Thank you very much, Mr. Chairman. I appreciate this courtesy that you are extending to me. In the months and years ahead, we will be asking Americans to make many changes to combat irreversible climate change. Companies will be asked to internalize the costs of global warming pollution, to operate more efficiently, and to innovate and find newer and cleaner ways to operate. Families will be asked to make their homes energy efficient and to buy fuel efficient vehicles.

What this bill does is say that the Federal Government should lead the effort to protect the planet from global warming.

Over the last few years, the reverse has happened. As companies have stepped up to act on global warming, the Federal Government has stepped back.

On January 24, 2007, President Bush issued an Executive order that actually repealed a previous Executive order calling for the Government to reduce its greenhouse gas emissions.

The legislation we are considering today says that the Federal Government is no longer going to be doing the least. It will become the world leader.

This bill aims to freeze and dramatically reduce the Federal Government's greenhouse gas emissions until we achieve a carbon-neutral Government in 2050. It also includes specific requirements for agency actions to help the Government meet these goals.

The Federal Government is the largest energy consumer in the United States and probably the world. A carbon-neutral Government is a symbol that the United States will set the standard for environmental responsibility.

The Federal Government's actions can also transform the economy. The Federal Government owns or controls a huge number of buildings, vehicles, planes, and other equipment, and it makes hundreds of billions of dollars of purchases every year. Entire industries have developed solely to meet the Government's demands for goods and services. Because Government needs drive technology advances and create markets for new goods, Federal action can help develop a more vibrant and cleaner economy.

The Carbon-Neutral Government Act of 2007 establishes the goals and the mechanisms to harness this potential. Under the legislation, Federal agencies must freeze emissions in 2010, reduce emissions to meet annual targets, and achieve zero net emissions by 2050.

To help Federal agencies meet these requirements, the bill contains specific complementary policies to lower emissions through reducing fuel use and increasing energy efficiency in Federal operations.

Nearly two thirds of all energy consumed by the Federal Government in 2005 was for fuel used for mobility—vehicles, planes, ships, and other equipment. The Carbon-Neutral Government Act will reduce these emissions from vehicles by requiring Government vehicles to meet the California standards for motor vehicle greenhouse gas emissions.

The bill also adopts recommendations by the Defense Science Board and others to ensure that agencies use the real cost of fuel when assessing the cost effectiveness of efficiency improvements in equipment. Fuel priced at $2.50 at the pump can cost an agency 15 times that or more once it is delivered to the point of use in a battlefield or remote location. Considering the real cost will drive agencies to acquire significantly more efficient equipment and enjoy substantial operational cost savings.

The Federal Government owns or leases over 500,000 facilities. The electricity and other energy used in these facilities accounts for nearly 45 percent of the Government's greenhouse gas emissions. The Carbon-Neutral Government Act tackles emissions from both new and existing facilities.

For new facilities, the bill sets ambitious but achievable goals recommended by the American Institute of Architects. For existing facilities, the bill requires Energy Star benchmarking and energy audits to identify opportunities for improvements.

The bill also strengthens the requirements for agencies to procure energy efficient products.

President Kennedy did not know exactly how we would get to the moon when he set that goal, but once committed to that goal, the Nation found the way. And in doing so we created new space age technologies that led the world.

That is the kind of Federal leadership we need to respond to the threat of global climate change.

I thank you, Mr. Chairman, for holding this hearing and for considering at this hearing opinions from the witnesses on how we can achieve what we all should want to achieve—a reduction in energy use and dependance on energy, as well as dealing with the climate change pollutants that are threatening our planet.

[The text of H.R. 2635 follows:]

I

110TH CONGRESS
1ST SESSION

H. R. 2635

To reduce the Federal Government's contribution to global warming through measures that promote efficiency in the Federal Government's management and operations, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

JUNE 7, 2007

Mr. WAXMAN introduced the following bill; which was referred to the Committee on Oversight and Government Reform, and in addition to the Committees on Energy and Commerce, Armed Services, Transportation and Infrastructure, Natural Resources, and Agriculture, for a period to be subsequently determined by the Speaker, in each case for consideration of such provisions as fall within the jurisdiction of the committee concerned

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A BILL

To reduce the Federal Government's contribution to global warming through measures that promote efficiency in the Federal Government's management and operations, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE.**

4 This Act may be cited as the "Carbon-Neutral Gov-
5 ernment Act of 2007".

SEC. 2. FINDINGS.

The Congress finds the following:

(1) The harms associated with global warming are serious and well recognized. These include the global retreat of mountain glaciers, reduction in snow cover extent, the earlier spring melting of rivers and lakes, the accelerated rate of rise of sea levels during the 20th century relative to the past few thousand years, and increased intensity of hurricanes and typhoons.

(2) The risks associated with a global mean surface temperature increase above 2 °C (3.6 °F) above preindustrial temperature are grave. According to the Intergovernmental Panel on Climate Change, such temperature increases would increase the severity of ongoing alterations of terrestrial and marine environments, with potentially catastrophic results. Ongoing and projected effects include more prevalent droughts in dry regions, an increase in the spread of disease, a significant reduction in water storage in winter snowpack in mountainous regions with direct and important economic consequences, a precipitous rise in sea levels by the end of the century, the potential devastation of coastal communities, severe and irreversible changes to natural ecosystems such as the bleaching and destruction of

much of the world's coral, and the potential extinction of 30 percent of all living species.

(3) That these climate change risks are widely shared does not minimize the adverse affects individual persons have suffered and will suffer because of global warming.

(4) To preserve the ability to stabilize atmospheric greenhouse gas concentrations at levels likely to protect against a temperature rise above 2 °C (3.6 °F) will require reductions of greenhouse gas emissions of 50 percent to 85 percent globally.

(5) Achieving such reductions will require a multitude of actions across the global economy that may each address a relatively minute quantity of emissions, but will be cumulatively significant.

(6) With only 5 percent of the world population, the United States emits approximately 20 percent of the world's total greenhouse gas emissions, and must be a leader in addressing global warming.

(7) The United States Government is the largest energy consumer in the United States and is responsible for roughly 100,000,000 metric tons of CO_2-equivalent emissions annually.

(8) A reduction in greenhouse gas emissions by Federal agencies would slow the increase of global

emissions and hence of global warming. In addition, Federal action would accelerate the pace of development and adoption of technologies that will be critical to addressing global warming in the United States and worldwide.

(9) A failure by any Federal agency to comply with the provisions of this Act requiring reductions in its greenhouse gas emissions would exacerbate the pace and extent of global warming and the harms caused by the agency beyond what would otherwise occur. Although the emissions increments involved could be relatively small, such a failure allowing incrementally greater emissions would injure all United States citizens.

(10) Improved management of Government operations, including acquisitions and procurement and operation of Government facilities, can maximize the use of existing energy efficiency and renewable energy technologies to reduce global warming pollution, while saving taxpayers' money, reducing our dependence on oil, enhancing national security, cleaning the air, and protecting pristine places from drilling and mining.

(11) Enhancing the accountability and transparency of Government operations through setting

milestones for agency activities, planning, measuring results, tracking results over time, and public reporting can improve Government management and make Government operations more efficient and cost effective.

TITLE I—FEDERAL GOVERNMENT INVENTORY AND MANAGEMENT OF GREENHOUSE GAS EMISSIONS

SEC. 101. INVENTORY OF FEDERAL GOVERNMENT GREENHOUSE GAS EMISSIONS.

(a) IN GENERAL.—Each agency shall, in accordance with the guidance issued under subsection (b), annually inventory and report its greenhouse gas emissions for the preceding fiscal year. Each such inventory and report shall indicate as discrete categories—

(1) any direct emission of greenhouse gas as a result of an activity of the agency;

(2) the quantity of indirect emissions of greenhouse gases attributable to the generation of electricity used by the agency and commercial air travel by agency personnel; and

(3) the quantity of emissions of greenhouse gases associated with the work performed for the agency by Federal contractors, comprising direct

1 emissions and indirect emissions associated with
2 electricity used by, and commercial air travel by,
3 such contractors.

4 (b) GUIDANCE; ASSISTANCE.—Not later than 3
5 months after the date of the enactment of this Act, the
6 Administrator shall issue guidance for agencies for con-
7 ducting inventories under this section and reporting under
8 section 102. Such guidance shall establish inventory and
9 reporting procedures that are at least as rigorous as the
10 inventory procedures established under the Environmental
11 Protection Agency's Climate Leaders program and shall
12 define the scope of the inventories of direct emissions de-
13 scribed in subsection (a)(1) to be complete and consistent
14 with the national obligation for reporting inventories
15 under the United Nations Framework Convention on Cli-
16 mate Change. The Administrator shall provide assistance
17 to agencies in preparing their inventories.

18 (c) INITIAL INVENTORY BY AGENCIES.—

19 (1) SUBMISSION.—Not later than 1 year after
20 the date of the enactment of this Act, each agency
21 shall submit to the Administrator and make publicly
22 available on the agency's website an initial inventory
23 of the agency's greenhouse gas emissions for the
24 preceding fiscal year.

1 (2) CERTIFICATION.—Not later than 6 months
2 after an agency submits an initial inventory under
3 paragraph (1), the Administrator shall review the in-
4 ventory for compliance with the guidance issued
5 under subsection (b) and—
6 (A) certify that the inventory is technically
7 valid; or
8 (B) decline to certify the inventory and
9 provide an explanation of the actions or revi-
10 sions that are necessary for the inventory to be
11 certified under subparagraph (A).
12 (3) REVISION.—If the Administrator declines to
13 certify the inventory of an agency under paragraph
14 (2)(B), the agency shall submit to the Administrator
15 and make publicly available on the agency's website
16 a revised inventory not later than 6 months after the
17 date on which the Administrator provides the agency
18 with the explanation required by such paragraph.
19 (d) FEDERAL LAND MANAGEMENT.—Beginning not
20 later than 2 years after the date of enactment of this Act,
21 the Secretary of the Interior and the Secretary of Agri-
22 culture shall include as a discrete category in any inven-
23 tory under this section any emission of greenhouse gas and
24 any biological sequestration of greenhouse gases associ-
25 ated with land managed by the Bureau of Land Manage-

1 ment or the Forest Service. Such emissions and biological
2 sequestration of greenhouse gases shall not be considered
3 for the purposes of setting or measuring progress toward
4 targets under section 102.

5 **SEC. 102. MANAGEMENT OF FEDERAL GOVERNMENT**
6 **GREENHOUSE GAS EMISSIONS.**

7 (a) EMISSION REDUCTION TARGETS.—Not later than
8 18 months after the date of the enactment of this Act,
9 the Administrator shall promulgate annual reduction tar-
10 gets for the total quantity of greenhouse gas emissions de-
11 scribed in section 101(a), expressed as carbon dioxide
12 equivalents, of all agencies, taken collectively, for each of
13 fiscal years 2010 through 2050.

14 (b) GOALS.—The targets promulgated under sub-
15 section (a) shall be calculated so as—

16 (1) to prevent the total quantity of greenhouse
17 gas emissions of all agencies in fiscal year 2011 and
18 each subsequent fiscal year from exceeding the total
19 quantity of such emissions in fiscal year 2010; and

20 (2) to reduce such greenhouse gas emissions as
21 rapidly as possible, but at a minimum by a quantity
22 equal to 2 percent of projected fiscal year 2010
23 emissions each fiscal year, so as to achieve zero net
24 annual greenhouse gas emissions from the agencies
25 by fiscal year 2050.

1 (c) PROPORTIONATE SHARE.—Each agency shall
2 limit the quantity of its greenhouse gas emissions de-
3 scribed in section 101(a) to its proportionate share so as
4 to enable the agencies to achieve the targets promulgated
5 under subsection (a). The Administrator shall promulgate
6 annual reduction targets to be met by each agency to com-
7 ply with this subsection.

8 (d) AGENCY PLANS FOR MANAGING EMISSIONS.—

9 (1) SUBMISSION.—Not later than 2 years after
10 the date of the enactment of this Act, each agency
11 shall develop, submit to the Administrator, and
12 make publicly available on the agency's website a
13 plan for achieving the annual reduction targets ap-
14 plicable to such agency under this section through
15 fiscal year 2020. Not later than 2 years before the
16 10-year period beginning in 2021 and each subse-
17 quent 10-year period, the agency shall develop, sub-
18 mit to the Administrator, and make publicly avail-
19 able an updated plan for achieving such targets for
20 the respective period. Each plan developed under
21 this paragraph shall—

22 (A) identify the specific actions to be taken
23 by the agency; and

1 (B) estimate the quantity of reductions of
2 greenhouse gas emissions to be achieved
3 through each such action.
4 (2) CERTIFICATION.—Not later than 6 months
5 after an agency submits a plan under paragraph (1),
6 the Administrator shall—
7 (A) certify that the plan is technically
8 sound and, if implemented, is expected to limit
9 the quantity of the agency's greenhouse gas
10 emissions to its proportionate share under sub-
11 section (c); or
12 (B) decline to certify the plan and provide
13 an explanation of the revisions that are nec-
14 essary for the plan to be certified under sub-
15 paragraph (A).
16 (3) REVISION.—If the Administrator declines to
17 certify the plan of an agency under paragraph (2),
18 the agency shall submit to the Administrator and
19 make publicly available on the agency's website a re-
20 vised plan not later than 6 months after the date on
21 which the Administrator provides the agency with
22 the explanation required by paragraph (2)(B).
23 (e) EMISSIONS MANAGEMENT.—
24 (1) REQUIREMENT.—Each agency shall manage
25 its greenhouse gas emissions to meet the annual re-

1 duction targets applicable to such agency under this
2 section.
3 (2) REVISION OF PLAN.—If any agency fails to
4 meet such targets for a fiscal year, as indicated by
5 the inventory and report prepared by the agency for
6 such fiscal year, the agency shall submit to the Ad-
7 ministrator and make publicly available on the agen-
8 cy's website a revised plan under subsection (d) not
9 later than March 31 of the following fiscal year. The
10 Administrator shall certify or decline to certify the
11 revised plan in accordance with subsection (d)(2) not
12 later than 3 months after receipt of the revised plan.
13 (3) OFFSETS.—
14 (A) PROPOSAL.—If no national mandatory
15 economy-wide cap-and-trade program for green-
16 house gases has been enacted by fiscal year
17 2010, the Administrator shall develop and sub-
18 mit to the Congress by 2011 a proposal to allow
19 agencies to meet the annual reduction targets
20 applicable to such agencies under this section in
21 part through emissions offsets, beginning in fis-
22 cal year 2015.
23 (B) CONTENTS.—The proposal developed
24 under subparagraph (A) shall ensure that emis-
25 sions offsets are—

1 (i) real, surplus, verifiable, permanent,
2 and enforceable; and
3 (ii) additional for both regulatory and
4 financial purposes (such that the generator
5 of the offset is not receiving credit or com-
6 pensation for the offset in another regu-
7 latory or market context).
8 (C) RULEMAKING.—If by 2012 the Con-
9 gress has not enacted a statute for the express
10 purpose of codifying the proposal developed
11 under subparagraph (A) or an alternative to
12 such proposal, the Administrator shall imple-
13 ment the proposal through rulemaking.
14 (f) MANAGEMENT STRATEGIES FOR LARGE TRACTS
15 OF PUBLIC LANDS.—The Forest Service, the Bureau of
16 Land Management, the National Park Service, and the
17 United States Fish and Wildlife Service shall—
18 (1) within 2 years after the date of the enact-
19 ment of this Act, conduct studies of the opportuni-
20 ties for management strategies, and identify those
21 management strategies with the greatest potential,
22 to—
23 (A) enhance net biological sequestration of
24 greenhouse gases on Federal lands they manage

1 while avoiding harmful effects on other environ-
2 mental values; and
3 (B) reduce negative impacts of global
4 warming on biodiversity, water supplies, forest
5 health, biological sequestration and storage, and
6 related values;
7 (2) within 3 years after the date of the enact-
8 ment of this Act, implement programs on selected
9 land management units in different parts of the Na-
10 tion to test the management strategies identified as
11 having the greatest potential to achieve the benefits
12 described in paragraph (1); and
13 (3) report to the Congress on the results of the
14 studies and the management strategies identified.
15 (g) STUDY ON URBAN AND WILDLAND-URBAN FOR-
16 ESTRY PROGRAMS.—Within 2 years of the date of enact-
17 ment of this Act, the Forest Service, in consultation with
18 appropriate State and local agencies, shall conduct a study
19 of the opportunities of urban and wildland-urban interface
20 forestry programs to enhance net biological sequestration
21 of greenhouse gases and achieve other benefits.
22 (h) REPORTING.—
23 (1) REPORTS BY AGENCIES.—Not later than
24 December 31 each fiscal year, each agency shall sub-
25 mit to the Administrator and make publicly available

on the agency's website a report on the agency's implementation of its plan required by subsection (d) for the preceding fiscal year, including the inventory of greenhouse gas emissions of the agency during such fiscal year.

(2) ANNUAL REPORT TO CONGRESS.—The Administrator shall review each report submitted under paragraph (1) for technical validity and compile such reports in an annual report on the Federal Government's progress toward carbon neutrality. The Administrator shall submit such annual report to the Committee on Oversight and Government Reform of the House of Representatives and the Committee on Governmental Affairs of the Senate and make such annual report publicly available on the Environmental Protection Agency's website.

(3) ELECTRONIC SUBMISSION.—In complying with any requirement of this title for submission of inventories, plans, or reports, an agency shall use electronic reporting in lieu of paper copy reports.

SEC. 103. PILOT PROJECT FOR PURCHASE OF OFFSETS AND CERTIFICATES.

(a) PILOT PROJECT.—Executive agencies and legislative branch offices may purchase qualified greenhouse gas offsets and qualified renewable energy certificates in any

1 open market transaction that complies with all applicable
2 procurement rules and regulations.

3 (b) QUALIFIED GREENHOUSE GAS OFFSETS.—For
4 purposes of this section, the term "qualified greenhouse
5 gas offset" means a real, additional, verifiable, enforce-
6 able, and permanent domestic—

7 (1) reduction of greenhouse gas emissions; or

8 (2) sequestration of greenhouse gases.

9 (c) QUALIFIED RENEWABLE ENERGY CERTIFI-
10 CATES.—For purposes of this section, the term "qualified
11 renewable energy certificate" means a certificate rep-
12 resenting a specific amount of energy generated by a re-
13 newable energy project that is real, additional, and
14 verifiable.

15 (d) GUIDANCE.—No later than 180 days after the
16 date of enactment of this section, the Administrator shall
17 issue guidelines, for Executive agencies, establishing cri-
18 teria for qualified greenhouse gas offsets and qualified re-
19 newable energy certificates, which shall—

20 (1) establish performance standards for green-
21 house gas offset projects that benchmark reliably ex-
22 pected greenhouse gas reductions from identified
23 categories of projects that reduce greenhouse gas
24 emissions or sequester carbon in accordance with
25 subsection (b); and

1 (2) establish criteria for qualified renewable en-
2 ergy certificates to ensure that energy generated is
3 renewable and is in accordance with subsection (c).
4 (e) REPORT.—The Comptroller General of the United
5 States shall evaluate the program established by this sec-
6 tion, including identifying environmental and other bene-
7 fits of the program, as well as its financial costs and any
8 disadvantages associated with the program. No later than
9 April 1, 2011, the Comptroller General shall provide a re-
10 port to the Committee on Oversight and Government Re-
11 form of the House of Representatives and the Committee
12 on Homeland Security and Governmental Affairs of the
13 Senate providing the details of the evaluation and any rec-
14 ommendations for improvement.
15 (f) ADDITIONAL DEFINITIONS.—In this section:
16 (1) Notwithstanding section 105(3) of this Act,
17 the term "Executive agency" has the meaning given
18 to such term in section 105 of title 5, United States
19 Code.
20 (2) The term "renewable energy" has the
21 meaning given that term in section 203(b) of the
22 Energy Policy Act of 2005 (42 U.S.C. 15852(b)(2)),
23 except that energy generated from municipal solid
24 waste shall not be renewable energy.

1 (g) AUTHORIZATION.—Of the amount appropriated
2 to each Executive agency or legislative branch office for
3 each of fiscal years 2009 and 2010, not more than 0.01
4 percent of such amount may be used for the purpose of
5 carrying out this section. Such funding shall be in addition
6 to any other funds available to the Executive agency or
7 legislative branch office for such purpose.

8 (h) SUNSET CLAUSE.—This section ceases to be ef-
9 fective at the end of fiscal year 2010.

10 **SEC. 104. SAVINGS CLAUSE.**

11 Nothing in this Act shall be interpreted to preempt
12 or limit the authority of a State to take any action to ad-
13 dress global warming.

14 **SEC. 105. DEFINITIONS.**

15 In this title:

16 (1) The term "Administrator" means the Ad-
17 ministrator of the Environmental Protection Agency.

18 (2) The term "carbon dioxide equivalent"
19 means, for each greenhouse gas, the quantity of the
20 greenhouse gas that makes the same contribution to
21 global warming as 1 metric ton of carbon dioxide, as
22 determined by the Administrator, taking into ac-
23 count the global warming potentials published by the
24 Intergovernmental Panel on Climate Change.

(3) The term "agency" has the meaning given to that term in section 551 of the National Energy Conservation Policy Act (42 U.S.C. 8259).

(4) The term "greenhouse gas" means—

(A) carbon dioxide;

(B) methane;

(C) nitrous oxide;

(D) hydrofluorocarbons;

(E) perfluorocarbons;

(F) sulfur hexafluoride; or

(G) any other anthropogenically-emitted gas that the Administrator, after notice and comment, determines contributes to global warming to a non-negligible degree.

SEC. 106. AUTHORIZATION OF APPROPRIATIONS.

There are authorized to be appropriated such sums as may be necessary to implement this title.

TITLE II—FEDERAL GOVERNMENT ENERGY EFFICIENCY

SEC. 201. FEDERAL VEHICLE FLEETS.

(a) AMENDMENTS.—Section 303 of the Energy Policy Act of 1992 (42 U.S.C. 13212) is amended—

(1) by redesignating subsection (f) as subsection (g); and

1 (2) by inserting after subsection (e) the fol-
2 lowing new subsection:
3 "(f) VEHICLE EMISSION REQUIREMENTS.—
4 "(1) PROHIBITION.—No Federal agency shall
5 acquire a light duty motor vehicle or medium duty
6 passenger vehicle that fails, on an individual vehicle
7 basis, to meet the numerical Greenhouse Gas Ex-
8 haust Mass Emission Requirement for the appro-
9 priate model year and vehicle type set out in section
10 1961.1(a)(1)(A) of title 13, California Code of Regu-
11 lations, taking into account the emissions allowances
12 and adjustment factors provided in that section.
13 "(2) GUIDANCE.—Each year, the Administrator
14 of the Environmental Protection Agency shall issue
15 guidance identifying the vehicle makes and model
16 numbers that satisfy the requirements of paragraph
17 (1).
18 "(3) DEFINITION.—For purposes of this sub-
19 section, the term 'medium duty passenger vehicle'
20 has the meaning given that term section 523.2 of
21 title 49 of the Code of Federal Regulations.".
22 (b) EFFECTIVE DATE.—The amendments made by
23 subsection (a) shall take effect on the date that the State
24 of California regulations referred to in the subsection

1 (f)(1) proposed to be inserted by subsection (a)(2) of this
2 section take effect and become enforceable.

3 **SEC. 202. AGENCY ANALYSES FOR MOBILITY ACQUISITIONS.**

4 (a) COST ESTIMATE REQUIREMENT.—Each Federal
5 agency that owns, operates, maintains, or otherwise funds
6 infrastructure, assets, or personnel to provide delivery of
7 fuel to its operations shall apply activity based cost ac-
8 counting principles to estimate the fully burdened cost of
9 fuel.

10 (b) USE OF COST ESTIMATE.—Each agency shall use
11 the fully burdened cost of fuel, as estimated under sub-
12 section (a), in conducting analyses and making decisions
13 regarding its activities that create a demand for energy.
14 Such analyses and decisions shall include—

15 (1) the use of models, simulations, wargames,
16 and other analytical tools to determine the types of
17 energy consuming equipment that an agency needs
18 to conduct its missions;

19 (2) life-cycle cost benefit analyses and other
20 trade-off analyses for determining the cost effective-
21 ness of measures that improve the energy efficiency
22 of an agency's equipment and systems;

23 (3) analyses and decisions conducted or made
24 by others for the agency; and

1 (4) procurement and acquisition source selec-
2 tion criteria, requests for proposals, and best value
3 determinations.

4 (c) REVISION OF ANALYTICAL TOOLS.—If a Federal
5 agency employs models, simulations, wargames, or other
6 analytical tools that require substantial upgrades to enable
7 compliance with this section, the agency shall complete
8 such necessary upgrades not later than 2 years after the
9 date of enactment of this Act.

10 (d) DEFINITION.—For purposes of this section, the
11 term "fully burdened cost of fuel" means the commodity
12 price for the fuel plus the total cost of all personnel and
13 assets required to move and, where applicable, protect, the
14 fuel from the point at which the fuel is received from the
15 commercial supplier to the point of use.

16 **SEC. 203. FEDERAL PROCUREMENT OF ENERGY EFFICIENT**
17 **PRODUCTS.**

18 (a) AMENDMENTS.—Section 553 of the National En-
19 ergy Conservation Policy Act (42 U.S.C. 8259b) is amend-
20 ed—

21 (1) in subsection (b)(1), by inserting "in a
22 product category covered by the Energy Star pro-
23 gram or the Federal Energy Management Program
24 for designated products" after "energy consuming
25 product";

(2) in subsection (b)(2)—

(A) by striking "in writing that" and all that follows through "(A) an Energy Star" and inserting "in writing that an Energy Star"; and

(B) by striking "account; or" and all that follows through "requirements of the agency" and inserting "account"; and

(3) in subsection (c)—

(A) by inserting "list in their catalogues, represent as available, and" after "Logistics Agency shall";

(B) by striking "where the agency" and inserting "where the head of the agency"; and

(C) by striking "writing that no Energy Star product" and all that follows through "requirements, or" and inserting "writing".

(b) CATALOGUE LISTING DEADLINE.—Not later than 6 months after the date of enactment of this Act, the General Services Administration and the Defense Logistics Agency shall ensure that the prohibition in the amendment made under subsection (a)(2)(A) has been fully complied with.

1 **SEC. 204. FEDERAL BUILDING ENERGY EFFICIENCY PER-**
2 **FORMANCE STANDARDS.**

3 (a) STANDARDS.—Section 305(a)(3) of the Energy
4 Conservation and Production Act (42 U.S.C. 6834(a)(3))
5 is amended by adding at the end the following new sub-
6 paragraph:

7 "(D) Not later than 1 year after the date of enact-
8 ment of the Carbon-Neutral Government Act of 2007, the
9 Secretary shall establish, by rule, revised Federal building
10 energy efficiency performance standards that require that:

11 "(i) For new Federal buildings and Federal
12 buildings undergoing major renovations:

13 "(I) The buildings shall be designed so
14 that the fossil fuel-generated energy consump-
15 tion of the buildings is reduced, as compared
16 with such energy consumption by a similar
17 building in fiscal year 2003 (as measured by
18 Commercial Buildings Energy Consumption
19 Survey or Residential Energy Consumption
20 Survey data from the Energy Information
21 Agency), by the percentage specified in the fol-
22 lowing table:

"Fiscal Year	Percentage Reduction
2010	60
2015	70
2020	80
2025	90
2030	100.

"(II) Sustainable design principles shall be applied to the siting, design, and construction of such buildings. For building types for which the United States Green Building Council Leadership in Energy and Environmental Design (LEED) certification for New Construction and Major Renovation is applicable, such buildings shall be designed to meet, at a minimum, the LEED silver level standard (or any successor standard thereto), or if any additional capital cost is projected to be recoverable through energy and other operational cost savings within 10 years, the LEED gold level standard (or any successor standard thereto).

"(ii) In addition to any use of water conservation technologies otherwise required by this section, water conservation technologies shall be applied to the extent that the technologies are life-cycle cost-effective.".

(b) DEFINITIONS.—Section 303 of the Energy Conservation and Production Act (42 U.S.C. 6832) is amended—

(1) in paragraph (6), by striking "which is not legally subject to State or local building codes or similar requirements." and inserting ". Such term

1 shall include buildings built for the purpose of being
2 leased by a Federal agency, and privatized military
3 housing."; and
4 (2) by adding at the end the following new
5 paragraph:
6 "(17) The term 'major renovation' means the
7 renovation of a major component or substantial
8 structural part of a building that materially in-
9 creases the value of the building, substantially pro-
10 longs the useful life of the building, or adapts the
11 building to a new or different use.".

12 **SEC. 205. MANAGEMENT OF FEDERAL BUILDING EFFI-**
13 **CIENCY.**

14 (a) BENCHMARKING AND RECOMMISSIONING.—Sec-
15 tion 543 of the National Energy Conservation Policy Act
16 (42 U.S.C. 8253) is amended by adding at the end the
17 following new subsections:
18 "(f) ENERGY PERFORMANCE BENCHMARKING.—
19 "(1) REQUIREMENTS.—Each Federal agency
20 shall, with respect to each of its Federal buildings
21 with greater than 40,000 square feet of space or
22 greater than $75,000 per year in energy costs, annu-
23 ally benchmark the energy efficiency performance of
24 the building and, where feasible, rate that perform-
25 ance compared to similar buildings.

1 "(2) BENCHMARKING AND RATING TOOL.—A
2 Federal agency shall use the Energy Star Portfolio
3 Manager Buildings Benchmark Tool in carrying out
4 paragraph (1). If the building is a type of building
5 for which that tool does not allow rating the build-
6 ing's comparative performance, and the Federal En-
7 ergy Management Program has identified an appro-
8 priate tool for rating the building's comparative per-
9 formance, the agency may use such tool to bench-
10 mark and rate the building's performance.
11 "(3) USE OF INFORMATION TO ENHANCE
12 BUILDING MANAGEMENT.—The Federal facilities
13 manager for each building subject to the require-
14 ments in paragraph (1) shall use the benchmark
15 performance, rating, and annual energy costs to
16 identify and evaluate opportunities for improving the
17 building's energy efficiency performance and reduc-
18 ing costs.
19 "(4) PUBLIC DISCLOSURE.—Each Federal
20 agency shall post the benchmarking information gen-
21 erated under this subsection, along with each build-
22 ing's annual energy use per square foot and energy
23 costs, on the agency's website. The agency shall up-
24 date such information each year, and shall include in
25 such reporting previous years' information to allow

1 changes in building performance to be tracked over
2 time.
3 "(g) RECOMMISSIONING AND DIAGNOSTIC ENERGY
4 AUDIT.—
5 "(1) REQUIREMENT.—Each Federal agency
6 shall each year recommission or retrocommission, as
7 applicable, and conduct a diagnostic energy audit
8 with respect to, approximately 20 percent of its Fed-
9 eral buildings with greater than 40,000 square feet
10 of space or greater than $75,000 per year in energy
11 costs, so that all such buildings are recommissioned
12 or retrocommissioned, as applicable, and audited at
13 least once every 5 years.
14 "(2) USE OF INFORMATION TO ENHANCE
15 BUILDING MANAGEMENT.—The Federal facilities
16 manager for each building and the agency official re-
17 sponsible for facilities management shall use the in-
18 formation produced from the energy audits under
19 paragraph (1) as a management tool for prioritizing
20 capital expenditures for maintenance and building
21 upgrades and allocating such expenditures within a
22 facility and across all of the agency's facilities, as
23 applicable.
24 "(h) LARGE CAPITAL ENERGY INVESTMENTS.—Each
25 Federal agency shall ensure that any large capital energy

1 investment in an existing building that is not a major ren-
2 ovation but involves replacement of installed equipment,
3 such as heating and cooling systems, or involves renova-
4 tion, rehabilitation, expansion, or remodeling of existing
5 space, employs the most energy efficient designs, systems,
6 equipment, and controls that are life-cycle cost effective.
7 Not later than 6 months after the date of enactment of
8 the Carbon-Neutral Government Act of 2007, each Fed-
9 eral agency shall develop a process for reviewing each such
10 large capital energy investment decision to ensure that the
11 requirement of this subsection is met, and shall report to
12 the Office of Management and Budget on the process es-
13 tablished. This process shall incorporate the information
14 produced under subsections (f) and (g). Not later than one
15 year after the date of enactment of the Carbon-Neutral
16 Government Act of 2007, the Office of Management and
17 Budget shall evaluate and report to Congress on each
18 agency's compliance with this subsection.".

19 (b) METERING.—Section 543(e)(1) of the National
20 Energy Conservation Policy Act (42 U.S.C. 8253(e)(1))
21 is amended by inserting "By October 1, 2016, each agency
22 shall also provide for equivalent metering of natural gas,
23 steam, chilled water, and water, in accordance with guide-
24 lines established by the Secretary under paragraph (2)."
25 after "buildings of the agency.".

1 **SEC. 206. LEASING.**

2 (a) IN GENERAL.—Except as provided in subsection
3 (b), effective 3 years after the date of enactment of this
4 Act, no Federal agency shall enter into a new contract
5 to lease space in a building that has not earned the Energy
6 Star label in the most recent year.

7 (b) EXCEPTION.—If—

8 (1) no space is available in such a building that
9 meets an agency's functional requirements, including
10 locational needs; or

11 (2) the agency is proposing to remain in a
12 building that the agency has occupied previously,

13 the agency may enter into a contract to lease space in
14 a building that has not earned the Energy Star label in
15 the most recent year if the lease contract includes provi-
16 sions requiring that, prior to occupancy, or in the case
17 of a contract described in paragraph (2) not later than
18 6 months after signing the contract, the space will be ren-
19 ovated for all energy efficiency improvements that would
20 be cost effective over a 5-year period or the life of the
21 lease, whichever is greater, including improvements in
22 lighting, windows, and heating, ventilation, and air condi-
23 tioning systems.

1 **SEC. 207. PROCUREMENT AND ACQUISITION OF ALTER-**
2 **NATIVE FUELS.**

3 No Federal agency shall enter into a contract for pro-
4 curement of an alternative or synthetic fuel, including a
5 fuel produced from non-conventional petroleum sources,
6 for any mobility-related use, other than for research or
7 testing, unless the contract specifies that the lifecycle
8 greenhouse gas emissions associated with the production
9 and combustion of the fuel supplied under the contract
10 must, on an ongoing basis, be less than or equal to or
11 less than such emissions from the equivalent conventional
12 fuel produced from conventional petroleum sources.

13 **SEC. 208. CONTRACTS FOR RENEWABLE ENERGY FOR EX-**
14 **ECUTIVE AGENCIES.**

15 Section 501(b)(1) of title 40, United States Code, is
16 amended—

17 (1) in subparagraph (B), by striking "A con-
18 tract" and inserting "Except as provided in subpara-
19 graph (C), a contract"; and

20 (2) by adding at the end the following new sub-
21 paragraph:

22 "(C) RENEWABLE ENERGY CONTRACTS.—
23 A contract for renewable energy may be made
24 for a period of not more than 20 years. For the
25 purposes of this subparagraph, the term 'renew-
26 able energy' has the meaning given that term in

1 section 203(b) of the Energy Policy Act of
2 2005 (42 U.S.C. 15852(b)(2)), except that en-
3 ergy generated from municipal solid waste shall
4 not be considered renewable energy.''.

5 **SEC. 209. GOVERNMENT EFFICIENCY STATUS REPORTS.**

6 (a) IN GENERAL.—Each Federal agency subject to
7 any of the requirements of this Act and the amendments
8 made by this Act shall compile and submit to the Director
9 of the Office of Management and Budget an annual Gov-
10 ernment efficiency status report on—

11 (1) compliance by the agency with each of the
12 requirements of this Act and the amendments made
13 by this Act; and

14 (2) the status of the implementation by the
15 agency of initiatives to improve energy efficiency, re-
16 duce energy costs, and reduce emissions of green-
17 house gases.

18 (b) SUBMISSION.—Such report shall be submitted—

19 (1) to the Director at such time as the Director
20 requires;

21 (2) in electronic, not paper, format; and

22 (3) consistent with related reporting require-
23 ments.

1 **SEC. 210. OMB GOVERNMENT EFFICIENCY REPORTS AND**
2 **SCORECARDS.**

3 (a) REPORTS.—Not later than April 1 of each year,
4 the Director of the Office of Management and Budget
5 shall submit an Annual Government Efficiency report to
6 the Committee on Oversight and Government Reform of
7 the House of Representatives and the Committee on Gov-
8 ernmental Affairs of the Senate, which shall contain—

9 (1) a summary of the information reported by
10 agencies under section 209;

11 (2) an evaluation of the Government's overall
12 progress toward achieving the goals of this Act and
13 the amendments made by this Act; and

14 (3) recommendations for additional actions nec-
15 essary to meet the goals of this Act and the amend-
16 ments made by this Act.

17 (b) SCORECARDS.—The Office of Management and
18 Budget shall include in any annual energy scorecard it is
19 otherwise required to submit a description of each agen-
20 cy's compliance with the requirements of this Act and the
21 amendments made by this Act.

22 **SEC. 211. AUTHORIZATION OF APPROPRIATIONS.**

23 There are authorized to be appropriated such sums
24 as may be necessary to implement this title.

1 **SEC. 212. JUDICIAL REVIEW.**

2 (a) FINAL AGENCY ACTION.—Any nondiscretionary
3 act or duty under this Act or any amendment made by
4 this Act is a final agency action for the purposes of judi-
5 cial review under chapter 7 of title 5, United States Code.
6 Except as inconsistent with this section, the provisions of
7 such chapter shall apply to actions under this section.

8 (b) CITIZEN SUITS.—Except as otherwise provided in
9 subsection (c), a person aggrieved within the meaning of
10 this Act may commence a civil action against any Federal
11 agency that has a responsibility under this Act or any
12 amendment made by this Act where there is an alleged
13 failure of such agency—

14 (1) to collect and report information to the pub-
15 lic via its website as required under this Act or any
16 amendment made by this Act, including collecting
17 and reporting such information according to the
18 schedules set forth in this Act or any amendment
19 made by this Act;

20 (2) to perform any nondiscretionary act or duty
21 under this Act or any amendment made by this Act
22 other than those duties identified in paragraph (1);
23 or

24 (3) to perform any nondiscretionary act or duty
25 according to the schedules set forth in this Act or

1 any amendment made by this Act other than those
2 duties identified in paragraph (1).
3 In a civil action under this subsection, the district courts
4 of the United States shall have jurisdiction, without re-
5 gard to the amount in controversy or the citizenship of
6 the parties, to order a Federal agency to perform such
7 act or duty. The courts shall advance on the docket, and
8 expedite the disposition of, all causes filed therein pursu-
9 ant to this subsection. If the court finds that a Federal
10 agency has failed to comply with a deadline established
11 in this Act or any amendment made by this Act, the court
12 shall have jurisdiction to order appropriate relief, includ-
13 ing relief that will ensure the Federal agency's compliance
14 with future deadlines for the same circumstances.
15 (c) LIMITATION.—No action may be commenced
16 under subsection (b) prior to 60 days after the date on
17 which the plaintiff has given notice of the alleged failure
18 to the Federal agency concerned.
19 (d) LITIGATION COSTS.—In any judicial proceeding
20 under this section, the court may award costs of litigation,
21 including reasonable attorney fees and expert fees, to any
22 substantially prevailing plaintiff or to any other plaintiff
23 whenever the court determines such an award is appro-
24 priate. Such an award, and an award under subsection
25 (e), is appropriate when such litigation contributes to a

1 Federal agency's compliance with this Act or any amend-
2 ment made by this Act.

3 (e) REMEDY.—With respect to a claim under sub-
4 section (b)(2) or (b)(3), in addition to any relief author-
5 ized under chapter 7 of title 5, United States Code, a
6 court may award a payment up to the amount provided
7 in section 1332(b) of title twenty-eight, United States
8 Code, for a significant violation of this Act, payable by
9 the United States Treasury, to a plaintiff to mitigate any
10 impact from global warming suffered by the plaintiff, or
11 to be used in a beneficial mitigation project selected by
12 the plaintiff that is consistent with this Act.

13 (f) PRESERVATION OF OTHER RELIEF.—Nothing in
14 this section shall restrict any right which any person, or
15 class of persons, may have under any statute or common
16 law to seek enforcement of this Act or any amendment
17 made by this Act, or any rule thereunder, or to seek any
18 other relief.

19 (g) DEFINITION.—For the purposes of this section,
20 and consistent with the findings in section 2, a person is
21 "aggrieved" if a Federal agency fails to reduce its green-
22 house gas emissions in accordance with the requirements
23 under this Act or any amendment made by this Act, or
24 if a Federal agency fails to collect and provide information

1 to the public as required by this Act or any amendment
2 made by this Act.

○

Mr. TOWNS. Thank you very much, Chairman Waxman. Of course, we really appreciate your involvement in this hearing. And, of course, we would not be here today if it had not been for your involvement.

At this time, I would like to yield to the ranking member of the full committee, from the State of Virginia, Congressman Davis.

Mr. DAVIS OF VIRGINIA. Well, thank you very much, Chairman Towns.

Today, Mr. Issa, who is one of our ranking members on one of the subcommittees, and I have asked the Government Accountability Office to conduct a comprehensive review of greenhouse gas emission offset markets so we can understand better how these markets operate.

We think it is a timely request as more and more climate change legislation, including that under consideration today, relies upon purchasing offsets to reduce net greenhouse gas emissions.

Climate change is one the most urgent matters we face here in the Congress, and I think we need to be thoughtful as we look at legislation and appropriate offsets. Unfortunately, we have just seen the legislation for the first time last evening.

I hope that we will be able to hear from different Federal agencies before we mark this up so we can get an appropriate response from them now that we have a bill that is marked.

I look forward to the testimony from the advocates that are here today. I know that you have longstanding interest in this. I am particularly interested in some of the vehicle fleet requirements and some things we can do at the Federal level to utilize our purchasing power to try to drive markets.

So it is timely. I am not ready yet to make a decision one way or the other until we have heard from some of the other stakeholders on this and have had a chance to digest the legislation.

But I appreciate the chairman bringing this forward, and I appreciate you holding this hearing. Once again, I look forward to our witnesses.

Mr. TOWNS. Thank you, Tom, very much. Now I yield to Congressman Welch.

Mr. WELCH. Thank you, Mr. Chairman, and thank you Chairman Waxman.

The crisis of global warming, as you have said, is real, urgent, and requires immediate action. I am among those who believe that by embracing that challenge we can move forward with a pro-environment, pro-growth, pro-national security economy.

We can take concrete steps. This is a big bill and all of us are optimistic that if we accept the challenge that Chairman Waxman outlined, that we are going to make enormous progress for this country. But we can take small steps along the way.

My congressional office is now carbon-neutral. We did it by providing financial support for a couple of Vermont renewable energy projects. And by doing so I was able to offset the greenhouse gas emissions related to just the day to day activities of my office—turning the lights on, flying back and forth between Washington and Vermont, driving around my district when I am doing my work as a Member of Congress.

The legislation that we discuss today is a great example of how to take concrete steps forward. And by moving forward on a carbon-neutral Federal Government, we will be able to demonstrate the necessary leadership in action that is required to solve this problem.

And this Congress must be the Congress to finally, squarely, and aggressively address the significant threat that global warming is to our world. We started in January, we continue today, and we all have the obligation, working together, to be successful for the future.

Thank you.

Mr. TOWNS. Thank you very much. I now yield to a person who has the same birthday that I have. I knew he was special. Of course, Congressman Duncan.

Mr. DUNCAN. Well, thank you Mr. Chairman, and you know of my great admiration and respect for you.

Let me just say that I appreciate your calling this hearing. It is a very important topic, a very important subject. And in fact, I am not going to stay for much of this hearing because I sat through several hours of the hearing on this same topic yesterday in the Transportation and Infrastructure Committee.

This may be good legislation, but it does need to be thoroughly discussed and debated. Most of us on our side certainly have no objection to the debate; we think it should be carried out.

We do have some concerns, though, about the tenor of the debate. To show you what I mean, I will read something that Richard Lindzen, who is a professor of atmospheric science at MIT, wrote a few months ago about what he called the alarmism and feeding frenzy surrounding the climate change global warming debate.

He said, "But there is a more sinister side to this feeding frenzy. Scientists who dissent from the alarmism have seen their grant funds disappear, their work derided, and themselves libeled as industry stooges, scientific hacks, or worse. Consequently, lies about climate change gain credence, even when they fly in the face of the science that supposedly is their basis."

Professor David Deming, a geophysicist, wrote, "The media hysteria on global warming has been generated by journalists who don't understand the provisional and uncertain nature of scientific knowledge. Science changes."

And Robert Bradley, president of the Institute for Energy Research wrote that, "The emotional politicized debate over global warming has produced a fire, ready, aim mentality despite great and still growing scientific uncertainty about the problem." And he went on to say, "Still climate alarmists demand a multitude of do-somethings to address the problem they are sure exists and is solvable. They pronounce the debate over in their favor and call their critics names such as deniers, as in Holocaust-deniers. This has created a bad climate for scientific research and policymaking. In fact the debate is more than unsettled."

The reason I read those quotes is this: yesterday in our hearing, we were told by many, many witnesses from business and industry, trade associations, and environmental groups of all the great things that are being done to combat this problem at this time.

The witness from the American Association of Railroads, for instance, said that while all the trains in the United States use 4.6 billion gallons of fuel a year, that is 3.3 billion less than they would have without those improvements.

The witness from GE talked about dynamic braking, and how in train cars, buses, and cars, they are getting energy from braking systems now.

They are doing marvelous and miraculous things that could not have been done just a few years ago. We will have tremendous progress toward solving this problem if we do not over-regulate and socialize our economy. If we leave it up to the free enterprise, free market system we will make great progress.

The worst polluters in the world are the socialist and communist countries because their systems do not generate the excess funds that are needed to do the good things for the environment that all of us want done.

So with those few points, I thank you for calling this very important hearing.

Mr. TOWNS. Thank you very much. At this time I ask unanimous consent that the gentleman from California, Mr. Issa, participate in today's hearing. Without objection, so ordered.

With that in mind, I yield 5 minutes to the gentleman from California.

Mr. ISSA. I thank the chairman. I thank you very much for allowing me to participate today.

Through the work on my subcommittee of this full committee and also my time in Energy and Commerce, I have certainly have continued to have a keen interest in how we are going to lower emissions. And as somebody who believes that we do have to deal with CO_2, I regrettably come here today with a few maybe disconcerting remarks.

Most importantly net carbon emissions are going to be reduced through carbon offsets. These offsets are going to be purchased by households and by airline passengers and are being proposed for purchase by the Federal Government.

I am concerned about this legislation under consideration today and the process that has gotten us to this point because, as far as I am aware, the majority did not ask anyone from the Federal Government to testify. I do not see any administration witnesses before me. So how is the committee to make an informed decision on this legislation without hearing from the one entity that will be affected most?

On Monday afternoon we got the highlights of this bill. On Tuesday afternoon we got a draft of the bill which included the finding that individuals will suffer from global warming harms. And on Wednesday afternoon, we got another draft of the bill that includes an interesting section on judicial review.

As a member of the Judiciary Committee, and I just stepped out to come into here, let me tell you what the judicial review provision will be: Step one, say that you have been harmed by global warming, perhaps a sunburn; step two, find a Federal agency that has not complied with the terms of the act; step three, hire a lawyer; step four, file a suit in any district court in the United States. My vote would of course be Berkeley, CA; step five, win your case and

get $100,000 plus your attorney's fees and of course your expert witnesses; step six, repeat steps one through five.

This looks to me like full employment for the trial lawyers in the class action lawsuits. Perhaps John Edwards should reconsider his Presidential run.

Let me make it clear, I am not a global climate warming denier. Just the opposite. I recognize that we are going to have to work on a bipartisan basis to craft legislation that preserves our economy and our ability to be, in fact, a global leader in cleaning up the environment while maintaining a lifestyle that Americans have earned and come to expect.

I look forward to us including those not included today so that we can, in fact, come up with a system. If it includes cap and trade, then, in fact, we will work for all of that.

Mr. Chairman, once again, I want to thank you for giving me the opportunity to sit on the panel. I look forward to the witnesses. I yield back.

Mr. TOWNS. Thank you very much. I appreciate your comments, but I want to assure you that we will be hearing from others as we move forward. And I am certain that is the reason why we have these hearings. To get the experts to come in and share with us, and then after that we will be able to move forward.

This bill is not a bill that cannot be improved, or cannot be amended. I think what we need is to start somewhere. And that is the first step.

Mr. ISSA. I thank the chairman, and I will note that I no more than made my statement and suddenly the Government was here. I am going to take credit for that Mr. Chairman. Thank you.

Mr. TOWNS. Thank you. At this time I yield to a gentleman whom I have had the opportunity to work with now for many, many years. You know he was the Chair of the subcommittee, and of course, I had the opportunity to work with him. As always, it is a delight to see him, and now I would like to yield to him. Congressman Platts from Pennsylvania.

Mr. PLATTS. Thank you, Mr. Chairman. I appreciate your holding a hearing, and I apologize for coming in late and, as typical, not being able to stay.

I am not sure, I will throw out a question in the way the legislation is written, if it addresses the Federal Government's efforts in how we can reduce our impact on global warming, specifically on the fuel consumption of the Federal Government's fleet.

I am a strong supporter of increasing fuel efficiency and, in fact, I am the lead Republican, with Ed Markey as our lead sponsor, of the fuel efficiency legislation that would take us up to 35 miles per gallon for all passenger vehicles in 10 years, roughly. Is there an estimate, if we were able to do that in the Federal Government fleet, of what that alone would do? Are any of the witnesses aware of those numbers? Any guesstimates? Or is this too broad a question?

Mr. TOWNS. Let me make a note of it and you can probably respond.

Mr. PLATTS. Actually, Mr. Chairman, I thought you already had gone through the witness statements.

Mr. TOWNS. No, they have not been sworn in yet.

Mr. PLATTS. I was wondering why Mr. Issa was doing such a long statement on a question. I thought you started before the votes and I was catching up in the question period.

Mr. TOWNS. No, no, no, they have not been sworn in yet. After that, then you can ask the question.

Mr. PLATTS. After that? OK, I will think about that question. And we are going to come back to it.

My opening statement is thank you for allowing me to be here, Mr. Chairman. Thank you.

Mr. TOWNS. I am sure that they made notes of your comments, and I am certain that they will be responding in their answers.

I have always said that to solve our energy and environmental problems, we cannot look for one silver bullet. We have to combine several approaches to tackle such a big issue.

That is why I like this bill. It does not pick one thing and say it is the answer to all of our problems. It sets out long term goals and short term steps to get there. And it recognizes that we should look at efficiency, new technology, buildings, and transportation all together. We must look at all of this.

Our environment and our use of energy are some of the most important issues for the Federal Government. I am glad to be Chairing the hearing today where we will get information coming from the witnesses and be able to use this information to put together the kind of legislation that we know will benefit not only the Nation, but also the world, from what we might decide to do here.

Let me turn now to our witnesses. Let me say that it is committee policy that witnesses are always sworn in. So will you please stand and raise your right hands?

[Witnesses sworn.]

Mr. TOWNS. Let it be known that they all answered in the affirmative. You may be seated. Let me introduce our witnesses as we move forward here.

Emily Figdor is Director of the Federal Global Warming Program at the U.S. Public Interest Research Group. We are delighted to have you here today. She is the author of numerous reports on global warming and the role of energy efficiency technology in reducing human impacts on the climate.

Jeffrey Harris is vice president of programs at the Alliance to Save Energy. He worked for more than 25 years at the Lawrence Berkeley National Laboratory and has extensive experience in Government energy management and energy efficiency procurement practices. Welcome. We are delighted to have you here.

And we also have with us Marshal Purnell, who is the president-elect of the American Institute of Architects. Mr. Purnell has worked on such notable projects as the Washington, DC, Convention Center, the MCI Arena, and projects of the Department of State, U.S. Navy, and the Army Corps of Engineers. Welcome.

Let me just say up front, your entire statement will be included in the record. I would like to ask each witness to take 5 minutes, and, of course, after that be prepared for questions.

So why don't we begin with you, Ms. Figdor.

STATEMENTS OF EMILY FIGDOR, DIRECTOR, FEDERAL GLOBAL WARMING PROGRAM, U.S. PUBLIC INTEREST RESEARCH GROUP; JEFFREY HARRIS, VICE PRESIDENT FOR PROGRAMS, ALLIANCE TO SAVE ENERGY; AND MARSHALL PURNELL, FIRST VICE-PRESIDENT/PRESIDENT-ELECT, THE AMERICAN INSTITUTE OF ARCHITECTS

STATEMENT OF EMILY FIGDOR

Ms. FIGDOR. Thank you for the opportunity to share my views regarding Chairman Waxman's Carbon-Neutral Government Act.

My name is Emily Figdor and I am the director of the Federal Global Warming Program at U.S. Public Interest Research Group. USPIRG is the federation of State PIRGs and affiliated State environment groups, with a combined membership of nearly 1.3 million people nationwide.

I applaud the chairman for writing this important piece of legislation. This bill would catapult the U.S. Government, for too long a laggard in solving global warming, to being a leader and setting the example. My testimony will focus on the need for large, overall reductions in global warming emissions to avoid dangerous global warming and the role of this legislation in beginning to achieve those reductions.

Science is clear that the world faces dramatic consequences if we fail to rein in global warming emissions from the burning of fossil fuels. Yet science is also clear that what we do now can make a real difference and enable us to avoid the worst consequences of a warming world.

To prevent large-scale dangerous impacts of global warming, such as setting in motion the complete melting of the Greenland ice sheet and mass species extinctions, the United States must stabilize its emissions this decade, and then reduce them by at least 15 to 20 percent by 2020 and by at least 80 percent by 2050.

While preventing dangerous global warming is a daunting challenge, we already have the energy efficiency and renewable energy technologies needed to achieve the required short and medium-term reductions. But time is of the essence, which brings me to the Carbon-Neutral Government Act.

The bill, as we heard earlier, would freeze global warming emissions from the Federal Government at 2010 levels and then reduce them steadily each year through 2050, at which point the Federal Government would be carbon-neutral. This level of reduction in emissions is consistent with the pace and magnitude of the reductions demanded by the science.

The bill backs up its commitment to carbon-neutrality with a series of sound policy steps, including strong safeguards to ensure the integrity of any emission offsets used to meet the requirements of the bill, global warming emissions standards for Federal vehicle fleets, and other measures that would improve the energy efficiency of Federal operations.

The bill would have four major impacts. First, it would achieve significant reductions in U.S. global warming emissions. The Federal Government is the single largest energy consumer in the United States and the leading contributor to global warming emis-

sions. By making the Federal Government carbon-neutral by 2050, the bill would zero out these emissions.

Second, because the Federal Government is a major purchaser of goods and services, the bill would spur markets for the development of clean energy technologies that we will need in order to effectively address global warming.

Third, it would demonstrate the Federal Government's willingness to lead by example. A serious national effort to reduce emissions to stave off dangerous global warming will require effort on the part of all Americans in all sectors of the economy.

And fourth, the bill would show the international community that the United States is committed to taking the threat posed by global warming seriously. It would be a first step toward the kind of meaningful domestic action that can reestablish American leadership in the fight against global warming.

Because global warming emissions from cars and SUVs are rising very rapidly nationwide, I would like to spend a minute on the Federal fleet standards in the bill. The bill would put the purchasing muscle of the Federal Government behind the drive for cleaner cars. It would send a clear message to automakers that a significant market will exist for clean, energy efficient vehicles. Low emission vehicles also would reduce oil consumption, thereby enhancing America's energy security and protecting the interests of taxpayers.

In closing, global warming is a challenge of historic scale. A Federal commitment to carbon-neutrality would be an important first step in rising to the challenge. The next step is to pass Chairman Waxman's Safe Climate Act, which would limit total U.S. global warming emissions to the levels needed to prevent dangerous global warming.

The bottom line is that if we get started now, the United States can help stave off the biggest environmental threat of the 21st century. At the same time we can break our dependance on oil, enhance our long-term economic and national security, and once again lead the world as a positive force for change.

[The prepared statement of Ms. Figdor follows:]

Statement of Emily Figdor, MPH

Federal Global Warming Program Director

U.S. Public Interest Research Group

Before the Subcommittee on Government Management, Organization, and Procurement

Of the Committee on Oversight and Government Reform

U.S. House of Representatives

May 17, 2007

Introduction
Thank you for the opportunity to share my views regarding Chairman Waxman's Carbon-Neutral Government Act of 2007. My name is Emily Figdor, and I am the director of the Federal Global Warming Program at the U.S. Public Interest Research Group (U.S. PIRG). U.S. PIRG is the federation of state PIRGs and affiliated state environment groups. Our affiliated non-profit, non-partisan public interest advocacy organizations have a combined membership of nearly 1.3 million people nationwide.

Global warming is a challenge of historic scale. However, by adopting rigorous, science-based pollution limits – and using clean energy technologies to meet them – the United States can help stave off the biggest environmental threat of the 21st century, break our dependence on oil, enhance our long-term economic and national security, and once again lead the world as a positive force for change.

My testimony today will focus on the need for large, overall reductions in global warming emissions to prevent dangerous global warming, the role of this legislation in beginning to achieve those reductions, and the global warming emission standards for federal vehicle fleets included in the bill.

Chairman Waxman's proposal to freeze global warming emissions from federal government agencies at 2010 levels and reduce them steadily thereafter until the government becomes carbon neutral is a critical first step in rising to the challenge of global warming. The legislation would achieve substantial reductions in global warming emissions, drive the development and deployment of low-carbon technologies, and make the federal government a leader in the United States and worldwide.

Global Warming: A Severe Threat but Still Time to Act
Science is clear that the world faces dramatic consequences if we fail to rein in global warming emissions from the burning of fossil fuels. Yet, science is also clear that what we do now to reduce emissions can make a real difference and enable us to avoid the worst consequences of a warming world.

Earlier this year, the Intergovernmental Panel on Climate Change (IPCC) stated that the evidence of global warming is "unequivocal"[1] and concluded that it is very likely (>90 percent probability) that human activities – primarily the burning of fossil fuels – are responsible for most of observed increase in global average temperature since the mid-20th century.[2]

The IPCC's scientific assessments, including the *Fourth Assessment Report*, which is being released over the course of 2007, are unparalleled in their rigor, comprehensiveness, and extensive review by both scientists and governments worldwide, including the United States government. As such, its conclusions should be given the utmost consideration by policymakers.

The IPCC has found that global average surface temperature increased by more than 1.4° F (0.8° C) since the second half of the 19th century.[3] Since 1975, temperatures have been increasing at a faster rate of about 0.36° F per decade.[4] Globally, 11 of the last 12 years (1995-2006) rank among the 12 warmest years in the instrumental record.[5] According to data from the National Oceanic and Atmospheric Administration, the December 2006-February 2007 winter season was the warmest on record globally,[6] and 2006 was the second warmest year on record for the contiguous United States.[7]

The IPCC has concluded "with high confidence" that human-caused warming over the last three decades "has had a discernible influence on many physical and biological systems,"[8] pointing to, among other things, changes in snow, ice, and permafrost; increased run-off and earlier spring peak discharge in many glacier- and snow-fed rivers; earlier timing of spring events; poleward and upward shifts in ranges in plant and animal species; and earlier migrations of fish in rivers.[9] Other changes, such as the increase in intense tropical cyclone activity in the North Atlantic since about 1970,[10] are consistent with the kinds of changes scientists expect to occur on a warming planet and are harbingers of the dramatic climate shifts that await us, unless serious action is taken to reduce global warming emissions.

As temperatures continue to rise, the effects of global warming will become more severe. In terms of the projected impacts in the United States, the IPCC warned of increasing droughts, floods, heat waves, water stress, forest fires, species extinctions, and coastal flooding. For instance:

- **Water Stress:** "Warming in western mountains is projected to cause decreased snowpack, more winter flooding, and reduced summer flows, exacerbating competition for over-allocated water resources."[11]
- **Forest Fires:** "Disturbances from pests, diseases, and fire are projected to have increasing impacts on forests, with an extended period of high fire risk and large increases in area burned."[12]
- **Heat Waves:** "Cities that currently experience heat waves are expected to be further challenged by an increased number, intensity, and duration of heat waves," threatening people's health, particularly that of the elderly.[13]

In addition, the IPCC pointed to the potential for large-scale climate events, including the at least partial deglaciation of the Greenland ice sheet, and possibly the West Antarctic ice sheet, raising sea levels by 13 to 20 feet or more over centuries to millennia. The complete melting of the Greenland and West Antarctic ice sheets would lead to sea-level rise of up to about 23 feet and 16 feet, respectively.[14]

Despite these dire predictions, the panel concluded that "many impacts can be avoided, reduced, or delayed" by reining in global warming emissions.[15]

The IPCC's best estimate is that, if historical trends in emissions continue, temperatures could rise by 3.1 to 7.2° F (1.8 to 4.0° C) by the end of the century.[16] Even at the low end of this threshold, the impacts could be significant, triggering the irreversible melting of the Greenland ice sheet and putting up to 30 percent of plant and animal species at risk of extinction.[17]

The United States has committed, as a signatory to the 1992 United Nations Framework Convention on Climate Change, to the goal of "[s]tabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system."[18] While the IPCC does not identify a specific temperature increase or stabilization level as "dangerous," the European Union and other policymakers have come to accept a 2° C rise in global average temperature over pre-industrial levels (which is equivalent to 3.6° F, or about 2° F over today's levels) as a rough threshold beyond which dangerous impacts from global warming will become inevitable.[19]

According to the IPCC, to limit the increase in global average temperature to about 2° C, global emissions must peak no later than 2015 and then decline by 50 to 85 percent below 2000 levels by 2050.[20] This level of reduction "can be achieved by deployment of a portfolio of technologies that are currently available today and those that are expected to be commercialized in coming

decades."[21] In particular, the IPCC highlighted the vast potential for energy efficiency and renewable energy, stating that energy efficiency in vehicles and buildings could significantly reduce global warming emissions "with net economic benefit" and "large co-benefits," but that "many barriers exist against tapping this potential."[22] The co-benefits include improved energy security, job creation, lower costs, and reduced air pollution.[23]

To avoid dangerous global warming, the United States will have to act quickly and decisively to reduce its emissions.

The United States is responsible for 28 percent of cumulative carbon dioxide emissions from energy sources through 2004, making it by far the largest contributor to the problem.[24] Yet, global warming emissions continue to rise each year in the United States, increasing by 17 percent between 1990 and 2005.[25] The largest sources of U.S. global warming emissions are coal-fired power plants and light-duty passenger vehicles.[26]

To do its fair share to reduce emissions quickly enough and deeply enough to prevent dangerous global warming, the United States must:

- stabilize emissions at or below today's levels by the end of this decade;
- reduce emissions by at least 15 to 20 percent below today's levels by 2020; and
- reduce emissions by at least 80 percent by 2050.

These reduction levels assume similarly aggressive efforts to reduce emissions by other Western countries, along with action by developing nations, such as China and India.[27] *In other words, should the United States fail to achieve global warming emission reductions at or beyond these levels, the chances of preventing dangerous, human-caused global warming will be further compromised or out of reach altogether.*

We Have the Tools to Act

Preventing dangerous climate change is a daunting challenge. But the United States has many tools at its disposal, including a history of technological innovation and a growing body of policy experience being developed in the states.

The United States already has the technology needed to achieve the short and medium-term emission reduction goals described above. For example, by achieving five simple and technologically feasible targets for energy efficiency and renewable energy development (along with keeping emissions of non-carbon dioxide global warming pollutants constant), the United States could reduce its global warming emissions by 19 percent below 2004 levels by 2020 (see table).[28]

Global Warming Emission Impacts in 2020 of Selected Energy Targets (Relative to 2004 Emissions)[29]

Strategy	Savings $MMTCO_2E$
Stabilize Vehicle Travel	0*
40 MPG Fuel Economy and Heavy-Duty Truck Fuel Economy Standards	383
10% of Transportation Fuel from Renewables	61
10% Reduction in Energy Consumption	400
20% of Electricity from New Renewables	511
Total Savings	**1355**
2004 U.S. Global Warming Emissions	7122
Reduction Relative to 2004	**19%**

* Avoids increase in emissions resulting from projected increases in vehicle travel between now and 2020.

The long-term goal of achieving an 80 percent reduction in U.S. global warming emissions also is feasible, given an aggressive push to improve energy efficiency and expand the production of renewable energy in the United States.[30]

Moreover, the United States already has models of effective policies that can be used to encourage a shift to cleaner and less-polluting sources of energy. In recent years, states have adopted a variety of innovative public policies to reduce global warming pollution. Among them are the following:

- Renewable energy standards for electricity that have been adopted in at least 21 states.
- Global warming emission standards for vehicles that have been adopted in 12 states.
- Enhanced appliance efficiency standards, building energy codes, and incentives for government-sector renewable energy use and "green" buildings.
- Incentive programs to enhance the market penetration of solar photovoltaic energy in states such as California and New Jersey.
- Ratepayer-funded energy efficiency programs and energy efficiency portfolio standards for electricity providers.

As a result of these and other state-driven efforts, there is a solid and growing body of real-world policy experience that points the way toward a "made in America" approach to climate policy that achieves aggressive reductions in global warming pollution while enhancing the nation's economy, energy security, health, and well-being.

First Step Needed Now: Carbon-Neutral Government Act

The United States must act now to reduce its global warming emissions, and the Carbon-Neutral Government Act would be a strong first step.

The bill would freeze global warming emissions from federal government agencies at 2010 levels and reduce them steadily each year through 2050, at which point the federal government would be carbon neutral. This level of reduction in emissions is consistent with the pace and magnitude of the reductions in global warming emissions demanded by the science.

The federal government currently is the single largest energy consumer in the United States.[31] The vast majority of the energy consumed by the government is from fossil fuel sources, which makes the federal government a leading contributor to U.S. global warming emissions.

However, the federal government has made strides in reducing emissions from some sources in recent years, reducing global warming emissions from federal facilities by 22.1 percent from FY 1990 to FY 2005. This reduction in emissions is largely due to a 35.1 percent reduction in emissions at the Department of Defense over the period.[32]

Federal agencies have made progress in improving the energy efficiency of buildings and in increasing the use of renewable energy. For instance, the government reported obtaining 6.9 percent of its electricity from new renewable energy sources in FY 2005,[33] which exceeded the national average.[34]

Federal agencies have made this progress as a result of specific policy directives to improve energy efficiency, reduce the use of petroleum-based fuels, increase the use of renewable energy, and reduce global warming emissions from federal facilities (though this last goal was revoked in January 2007).[35]

The Carbon-Neutral Government Act would build on this experience to make the federal government a model in the global effort to curb emissions and prevent dangerous global warming. The bill would have four major impacts:

- Achieve substantial reductions in U.S. global warming emissions. As stated above, the federal government is the single largest energy consumer in the United States and a leading contributor to global warming emissions. Federal government operations were responsible for approximately 100 million metric tons of carbon dioxide equivalent in FY 2005.[36] By making the federal government carbon neutral by 2050, the bill would zero out these emissions.

- Spur markets for innovative energy efficient and renewable energy technologies. The federal government is a major purchaser of goods and services. A federal commitment to clean energy technologies would help to support and encourage businesses to offer those products – not just to the federal government but to other purchasers as well.

- Demonstrate the federal government's willingness to "lead by example." A serious, national effort to reduce emissions enough to stave off dangerous global warming will require effort by all Americans in all sectors of the economy. A federal commitment to carbon neutrality would set a powerful example for businesses, state and local governments, and citizens to take similar steps.

- Show the international community that the United States is committed to taking the threat posed by global warming seriously. The United States continues to be a detractor, rather than a leader, in the global effort to curb global warming, as most recently evidenced by the U.S. effort to weaken a G-8 statement on global warming that is set to be unveiled at the G-8 meeting next month. The United States is trying to delete from the statement a pledge to limit the rise in global average temperature to 2° C over pre-industrial levels as well as an agreement to reduce global emissions by 50 percent below 1990 levels by 2050.[37] Adoption of the Carbon-Neutral Government Act would be a first step toward the kind of meaningful domestic action that can re-establish American leadership in the fight against global warming.

The Carbon-Neutral Government Act backs up its commitment to carbon neutrality with a series of sound policy steps, including:

- Strong safeguards to ensure the integrity of any emissions offsets used to meet the requirements of the bill.
- Global warming emissions standards for federal vehicle fleets (more below).
- A requirement that the federal government consider the full cost of fuel in federal procurement decisions.
- A declining cap on the energy intensity of new federal buildings and those undergoing major renovations.
- A requirement that new federal buildings at a minimum achieve Leadership in Energy and Environmental Design (LEED) Silver certification from the U.S. Green Buildings Council.
- A requirement for federal agencies to regularly benchmark the energy performance of their large buildings.

These measures make a strong contribution to improving the energy efficiency of federal operations – which is likely to be the least expensive way to reduce global warming emissions – and help spur the development of innovative technologies that can find their way into the broader economy.

Vehicle Fleet Requirement

Among the most significant steps in the Carbon-Neutral Government Act is the adoption of global warming emission standards for federal vehicle fleets.

Nationwide, global warming emissions from passenger vehicles are rising quickly. Between 1990 and 2004, carbon dioxide emissions from motor gasoline consumption increased by almost a quarter (22 percent).[38] Two of the major factors contributing to the rapid rise in carbon dioxide emissions from motor gasoline consumption are a dramatic increase in driving and the stagnating fuel economy of U.S. vehicles. Between 1990 and 2004, the number of miles driven in America increased by more than a third (38 percent),[39] while new cars and SUVs in 2005 had a lower average fuel economy than new vehicles in 1982.[40]

The federal government is a large purchaser of vehicles, and its vehicle purchases have the potential to influence the broader market. There were more than 630,000 vehicles in the federal vehicle fleet in 2006.[41] Nearly 30 percent of the almost 63,000 vehicles acquired by the government in 2006 were dedicated alternative fuel vehicles – the vast majority E85 vehicles.[42] The need to supply alternative fuel vehicles to federal agencies and state government purchasers – established in the Energy Policy Act of 1992 – has helped spur the development and marketing of vehicles capable of running on E85.

The Carbon-Neutral Government Act would require federal agencies to purchase vehicles for federal fleets that meet the California global warming emissions standards for light- and medium-duty vehicles. The California standards require a 30 percent reduction in global warming pollution by model year 2016. Because the standards have already been adopted by 12 states, comprising one-third of the nation's vehicle market, manufacturers will be producing a variety of vehicles with lower global warming emissions. Moreover, automakers have access to many off-the-shelf technologies that can improve fuel economy, allow for the use of low-carbon vehicle fuels, or reduce global warming pollution from air conditioning – all steps that can reduce vehicle global warming emissions and be used to comply with the standards.

By putting the purchasing muscle of the federal government behind the drive for cleaner cars, the Carbon-Neutral Government Act would achieve significant reductions in global warming emissions from vehicles. In addition, the federal fleet standards send a clear message to automakers that a significant market will exist for energy-efficient and low-global warming pollution vehicles in the United States, when and if manufacturers bring those vehicles to the market. Finally, investing in low-emission vehicles likely will reduce oil consumption by federal fleets – enhancing America's energy security and protecting the interests of taxpayers.

Conclusion

Global warming poses severe threats to our environment, economy, and way of life. The science is clear that the United States must take decisive action immediately in order to avoid the worst consequences of a warming world. A federal commitment to carbon neutrality would be an important first step in rising to this challenge. The next step is to pass Chairman Waxman's Safe Climate Act (H.R. 1590), which would limit total U.S. global warming emissions to the levels needed to prevent dangerous global warming.

The time to act is now. Delay will only increase the risks of global warming and the costs of emission reductions in the future. At least one-fourth of carbon dioxide emissions from burning fossil fuels remain in the atmosphere essentially forever (more than 500 years).[43] As a result, failure to act now will result in emissions that will continue to affect the climate for centuries to come and will force us to achieve steeper emission reductions in the future.

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[13] Ibid., 13.
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[21] Ibid., 25.
[22] Ibid., 19.
[23] Ibid., 19-20.
[24] Testimony of James E. Hansen, before the Select Committee on Energy Independence and Global Warming, U.S. House of Representatives, 26 April 2007, 16.
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Mr. TOWNS. Thank you very much, Ms. Figdor, for your comments. And, of course, we look forward to questions later on.

Mr. Harris, will you proceed?

STATEMENT OF JEFFREY HARRIS

Mr. HARRIS. Thank you, Mr. Chairman, for the opportunity to testify today and for the chance to work with the subcommittee's excellent staff to explore ideas and solutions to this important problem.

My name is Jeffrey Harris. I am the vice president of programs at the Alliance to Save Energy. The Alliance is a bipartisan, nonprofit coalition of more than 120 business, Government, environment, and consumer leaders. Our mission is to promote energy efficiency worldwide to achieve a healthier economy.

We are currently enjoying our 30th anniversary, having been founded in 1977 by Senators Charles Percy and Hubert Humphrey. We currently enjoy the leadership of Senator Mark Pryor as our Chair, with congressional Vice Chairs Congressman Ed Markey, Zach Wamp, and Ralph Hall, along with Senators Jeff Bingaman, Susan Collins, Larry Craig, and Byron Dorgan.

This year the Alliance Board of Directors formed a new committee, the Government Energy Leadership Action Team, to address the many important opportunities for Federal sector energy savings and, as several people have commented, Federal leadership.

I would like to begin with a few comments on the need and importance for energy efficiency and reduced energy waste in the Federal Government, and then turn to some specific provisions of Chairman Waxman's proposed Carbon-Neutral Government Act of 2007. As you have heard repeatedly, the U.S. Government is the world's single largest user of energy and also the largest waster of energy.

In 2005, Federal agencies accounted for about 2 percent of the country's total energy use, and this cost U.S. taxpayers about $14.5 billion. Of this total, about $5 billion goes to heat, cool, and power the 500,000 Federal buildings in the country. But the majority of the energy is used for mobility purposes. This includes light and heavy duty vehicles, military aircraft and ships, and a large variety of mobile systems that must be deployed and fueled wherever they are needed, whether for defense, disaster relief and recovery, scientific research, or a host of other Federal purposes.

Thanks to efforts by the Congress and by Federal agency leaders, Government as a whole has reduced its primary energy use 13 percent in the past 10 years, and reduced its energy bill 25 percent in real dollars. But there is a potential for greater savings, and far more to do, especially in mobility energy.

There are a number of existing targets, standards, and requirements that aim at reducing Federal energy use. Most of them currently deal with Federal buildings. And a number of them were put in place within the last 2 years, so achieving them fully remains a challenge and will require active involvement of Congress in three areas.

One particularly relevant to this subcommittee is oversight. A second is assuring adequate funding and, in a few cases,

supplementing or strengthening existing laws, as we have seen with the proposed legislation that we are discussing today.

The Alliance believes, though, that the most important first step in reducing Federal energy use is to make sure that the policies already in place are fully implemented. These include energy efficiency standards for new buildings, energy metering and savings targets for existing buildings, performance contracting for third party financing to improve efficiency in those buildings, energy efficient Government purchasing, and the use of life-cycle costs as the basis for investment decisions. Congress's first role here is to conduct thorough and sustained oversight to help focus the attention of Government officials on meeting their obligations and achieving their energy savings targets cost effectively.

Second, though, Congress has to assure adequate funding for energy efficiency improvements that will generate and sustain long-term savings. Billions of dollars of investments are needed and warranted to meet these energy targets. However, in recent years, actual appropriations for Federal agencies have fallen well short of these needs, ranging from about $100 million to $300 million a year. These appropriations need to be increased, but, at the same time, Congress can take steps to encourage Federal agencies to make much more aggressive use of the innovative financing tools that are available to them—energy savings performance contracts, or ESPCs, and utility energy service contracts, UESCs. I am sure you will hear more about this as you call on Federal agency representatives.

A third and equally critical role, though, for Congress is to consider new legislation that expands the scope and impact of Federal energy management. The Alliance supports a number of important energy efficient provisions in the Carbon-Neutral Government Act of 2007. First is the overall emissions inventory and reductions targets for greenhouse gases within the Federal sector. And it is very important that these cover both mobility energy use and fixed facilities.

Second, the requirements that we just spoke about that Federal agencies acquire more energy efficient and lower emitting fleet vehicles. Third, and another very important new provision, is that agencies use the fully burdened cost of fuel when planning and acquiring these mobile systems that will be deployed for defense and other purposes. And as was noted earlier by Chairman Waxman, this recommendation comes from the Department of Defense Science Board's path-breaking 2001 study.

A fourth provision that is very important is to increase the stringency of energy standards for new Federal buildings so that they match the goals of the AIA's Vision 2030 that you will hear about from Mr. Purnell, and also incorporate provisions of the U.S. Green Building Council's Leadership in Energy and Environmental Design [LEED], rating system.

There are a number of other provisions that are important. In the interest of time let me skip over those. They are covered in our testimony. But let me note in closing two other provisions that we think are very important. One is that we believe that agencies should be directed by statute to conduct regular energy savings evaluations for energy and water efficiency measures in their facili-

ties and to implement all measures that have paybacks of 15 years or less.

And a second one that we think would be an important addition to the provisions in the proposed law are to apply principles of smart growth in siting new Federal facilities so that these facilities are accessible to public transit, to bicyclists, to pedestrians, alternatives to single occupancy vehicles.

And with that, let me conclude my comments and I will be glad to answer questions.

[The prepared statement of Mr. Harris follows:]

Testimony of Jeffrey Harris
Vice President of Programs
Alliance to Save Energy

Government Management, Organization & Procurement Subcommittee of the House Oversight and Government Affairs Committee
May 17, 2007

Reducing Government Energy Waste

Introduction

The Alliance to Save Energy is a bipartisan, nonprofit coalition of more than 120 business, government, environmental and consumer leaders. The Alliance's mission is to promote energy efficiency worldwide to achieve a healthier economy, a cleaner environment, and greater energy security. The Alliance, founded in 1977 by Senators Charles Percy and Hubert Humphrey, currently enjoys the leadership of Senator Mark Pryor as Chairman; Duke Energy CEO James E. Rogers as Co-Chairman; and Representatives Ralph Hall, Edward J. Markey, and Zach Wamp along with Senators Jeff Bingaman, Susan Collins, Larry Craig, and Byron Dorgan as its Vice-Chairs. Attached to this testimony are lists of the Alliance's Board of Directors and its Associate members.

The Alliance has promoted effective federal energy management for many years. Recently we formed a new Board committee, the Government Energy Leadership Action Team, dedicated to achieving dramatic energy savings throughout the federal government. Thus the Alliance is pleased to testify at this important hearing on energy use in the federal government.

I will begin with some comments on the importance of energy efficiency in federal facilities and operations, in order to save taxpayers' money, reduce the government's energy-related greenhouse gas (GHG) emissions, and provide a powerful model for action by other energy users. Next, we will turn to specific provisions in current laws and policy guidance, emphasizing the importance of follow-up actions by Congress, the Administration, and federal agencies themselves to assure that energy saving activities are adequately funded and effectively implemented – and the results tracked and reported in a timely way. Last, I will comment on several of the important energy-efficiency provisions in the proposed "Carbon-Neutral Government Act of 2007," and suggest some further opportunities to extend federal energy-efficiency initiatives that build on accomplishments to date and establish the federal government as a true market leader in transforming the broader market for energy-efficient products and services.

Federal Energy Use and Waste

The United States federal government is the single largest consumer, and the single largest waster, of energy in the world. In 2005 the federal government overall used 1.6 quadrillion Btu of "primary" energy (including the fuel used to make the electricity it consumed), or 1.6 percent of total energy use in the United States. Taxpayers in this country paid $14.5 billion for that energy.

Almost half of that energy, and more than half of the cost, was for vehicles and equipment, primarily for military planes, ships, and land vehicles. The rest, 0.9 quadrillion Btu at a cost of $5.6 billion, was for heating, cooling, and powering more than 500,000 federal buildings around the country.

Repeated efforts over the last two decades have resulted in dramatic energy and cost savings, but large cost-effective savings remain available. Overall federal primary energy use decreased by 13 percent from 1985 to 2005, and the federal energy bill decreased by 25 percent in real terms, even after the 27 percent jump in fuel prices in the United States in 2005. Federal "standard" buildings reduced their primary energy intensity by about 13 percent, while "site" energy declined by 30 percent ("Standard" buildings are those not exempted due to industrial uses or national security needs; "energy intensity" is energy use per square foot of building space; "site" energy is measured at the point of use, excluding electricity system losses). Congress and the president have set even more aggressive targets for future savings that could yield well over $1 billion in energy cost savings each year from federal buildings alone.

It is important to place this savings potential in context. As the world's largest energy consumer, the federal government could play a unique role as a market transformer through the early adoption of new, energy-efficient technologies and practices. Still, the federal government accounts for just two percent of U.S. oil use and a similar portion of U.S. greenhouse gas emissions. Thus, addressing federal energy use is but one of many congressional actions that are necessary to solve the many critical energy issues facing our country. A number of federal policies and funding decisions, such as appliance efficiency standards, tax incentives, and energy-efficiency research and development must be undertaken – in addition to ending federal energy waste – if we are to ensure Americans a sustainable energy future.

Notwithstanding the need for these broader actions, the federal government's own energy-savings potential is significant, the taxpayer savings are worth pursuing, and it is valuable to establish the government as a successful role model for actions by state and local governments the private sector, and consumers in general. There is extraordinary interest in Congress right now in addressing federal energy use, from greening the Capitol buildings to improving the energy efficiency of weapons and support systems that will in turn reduce the need for fuel supply convoys in Iraq. I will talk first about implementing, overseeing, and funding the policies that are already in place, and then about new initiatives to make the government even more efficient.

Meeting Current Federal Requirements and Targets

There already are a number of targets, standards, and requirements intended to reduce energy use by federal agencies. Together, they set a reasonably ambitious agenda for reducing energy use, at least in standard federal buildings, but many of these requirements have been initiated within the last two years and not yet fully implemented; achieving them remains a challenge. Among the more important of these existing requirements are:

- Agencies were required by 2005 to install in federal buildings all energy and water conservation measures with payback periods of less than ten years (Energy Policy Act of 1992, Sec. 152). This has not been fully accomplished.

- All new federal buildings must be designed to achieve energy use at least 30 percent below the national model building energy codes (EPAct 2005, Sec. 109), if such improvements are cost-effective. The Department of Energy (DOE) just issued interim final rules in December 2006.

  Section 204 of the "Carbon-Neutral Government Act of 2007" would significantly raise the level of energy efficiency to be met by new federal buildings in future years and add requirements for sustainable siting, design, and construction based on the Leadership in Energy and Environmental Design (LEED) rating system. These provisions will establish a clear federal leadership role in energy-efficient and sustainable building construction for many years to come.

- Agencies must purchase efficient Energy Star or FEMP-designated products unless suitable energy-efficient products are not available or are not cost-effective in a specific case (EPAct 2005, Sec. 104). DOE has not yet issued final regulations to implement this provision, and the federal supply agencies, GSA (General Services Administration) and DLA (Defense Logistics Agency) continue to supply their federal customers with inefficient as well as efficient energy-using products. The proposed legislation before this committee would strengthen current provisions, as discussed below.

- All federal buildings must be metered for energy use by 2012, using advanced meters that record electricity use by time when practicable (EPAct 2005, Sec. 103). DOE issued metering guidelines in 2006, but limited the metering requirements to electricity use, excluding natural gas, steam, and hot or chilled water. Most agencies have prepared implementation plans, but will need funding from appropriations or alternative finance contracts to implement these metering plans. Section 205 of the "Carbon-Neutral Government Act of 2007" clarifies this important issue by explicitly extending the metering requirements to all major forms of energy used in federal facilities (electricity, natural gas, steam, chilled water) as well as to metering of domestic water use.

- Each agency is to reduce the energy use intensity of its buildings by 3 percent per annum, or 30 percent by 2015 (Executive Order 13423). Agencies mostly met earlier targets culminating in a 30 percent reduction between 1985 and 2005; however, total energy use reductions have been smaller as energy-intensive facilities are excluded from these targets

and as the savings targets are interpreted as applying to site energy – thus excluding losses from the growing use of electricity.

- Each agency is to reduce the water use intensity of its buildings by 2 percent per year or 16 percent by 2015 (EO 13423). This is the first quantitative target for water efficiency in federal buildings.

- Each agency is to reduce the petroleum-based fuel use by its vehicle fleet by 2 percent per year through 2015 (EO 13423).

The most important step in reducing federal energy use is to **implement fully the policies that are already in place**, including those listed above for federal building standards, procurement requirements, savings targets, cost-effectiveness guidelines, and others. Energy use and decision-making are dispersed among many people at dozens of federal agencies. Agency leaders, of course, have many mission responsibilities, financial constraints, legal requirements, stakeholder demands, and impending crises that compete for attention. Energy efficiency must be adopted as a primary goal and embodied in action throughout the government if we are to meet the targets already established.

For example, while procurement of energy-efficient products has been required since a 1991 Executive Order and by law in EPAct 1992, that requirement has never been fully implemented in the complex processes and multiple paths of federal procurement. Product specifications in competitive solicitations often do not include the efficiency requirements. GSA product schedules still include inefficient and outdated equipment, including inefficient air conditioners, refrigerators, lighting, and other products. However, Section 203 of the "Carbon-Neutral Government Act of 2007" would address this issue by directing both GSA and DLA to comply with energy-efficient procurement requirements within 6 months of enactment. Also, Section 205 of the Act would clarify requirements for assuring that replacements of large energy-using equipment in federal facilities include energy-efficiency upgrades to the maximum extent that are life-cycle cost-effective.

The requirement in the new Executive Order 13423 that each agency appoint a senior civilian officer to be in charge of implementing the Order may help focus attention on energy efficiency. However, the responsibilities of that designated official are now broadened to include other aspects of environmental management, not just energy efficiency. Moreover, government officials may be held responsible for an energy-efficiency project gone awry, but no one is ever held responsible for wasted energy due to inaction. There may be debate about the amount of energy savings from a project, but no one ever measures the energy <u>not</u> saved by failing to make a new building "green" or from delays in replacing old equipment with the best new technologies.

We believe Congress's first duty and most important role in improving federal energy management is effective and sustained oversight. Through requiring regular reports, questioning agency heads at hearings, sending letters to agencies in committee jurisdictions, and/or initiating Government Accountability Office studies, Congress can focus the attention of key officials at all agencies on energy use, and demand accountability for meeting energy savings and cost-effectiveness targets.

This continuing oversight also helps keep the attention of top agency officials focused on energy efficiency, and makes it easier for energy managers in the field to get a positive response, from their own chain of command, to energy-saving ideas and recommended actions.

Provisions in Sections 207 and 208 of the "Carbon-Neutral Government Act of 2007" for annual agency reporting to the Office of Management and Budget (OMB), additional criteria to be included in the OMB annual scorecards for each agency, and the requirements for OMB to submit an Annual Government Efficiency Report to the House and Senate oversight committees represent important steps in the right direction. At the same time, these new reporting requirements should build on, rather than duplicate, the existing reporting requirements of Section 548 of the Energy Policy Act of 1992 and previous legislation. These provisions direct agencies to submit annual data on their energy consumption and energy-efficiency programs to FEMP for use in the Annual Report to Congress on Federal Energy Management and Conservation.

Funding for Federal Energy-Efficiency Measures

While energy-efficiency measures save taxpayers money in lower federal energy bills, they often require an up-front expenditure. It is already government policy to look at total life-cycle cost, not just first cost, when making decisions on new buildings, retrofits, equipment and vehicle purchases, weapon design, and more (Section 544, Energy Policy Act of 1992). Life-cycle cost considers both the initial purchase price of a product **and** the estimated future costs of energy use, operation and maintenance (O&M), and repair over the life of the product. This life-cycle-cost perspective is used for some large capital and military systems procurements, but not all. And, regardless of policy, in practice agencies trying to use this approach face hard limits on the availability of appropriated funds to pay the up-front costs for an energy-saving investment, along with many competing priorities.

Billions of dollars of investment will be needed to meet the current energy targets and reap the associated energy savings. However, in recent years annual appropriations for energy efficiency, water conservation, and renewable energy projects in existing federal buildings have ranged from only about $100 million to $300 million. But in order to meet the new targets and conduct all cost-effective improvements several times this level of investment—$1–2 billion each year—is needed. Funding for energy efficiency through appropriations must be increased. If we do not provide more funding for energy-efficiency measures, federal agencies may fail to meet their energy targets and are assured of spending even more money on energy bills. We must invest more to save more.

Increased funding also is needed for DOE's Federal Energy Management Program (FEMP), the primary source of technical assistance, training, and policy coordination for energy managers throughout the federal agencies. FEMP is the office responsible for issuing and updating rules, guidelines, and reports to implement the many legal mandates. FEMP funding has been cut for years, despite increasing responsibilities, and its technical resource base of DOE National Laboratory experts and outside contractors has been greatly curtailed. More funding and more management attention are needed to restore this vital program.

But if we focus only on increasing appropriations, while we wait we will be letting money escape out the window (and also out of poorly insulated walls and roofs!). That's why Congress has authorized the use of private, third-party financing so that agencies can upgrade buildings with no up-front cost to the government. Energy Service Companies (ESCOs) finance and help implement energy-saving projects through Energy Savings Performance Contracts (ESPCs). The contractor is paid out of the resulting stream of energy bill savings. By law, the savings must be at least as great as the contractor payments—if the savings are not realized, the contractor does not get paid. Many electric and gas utilities also offer financing for energy-efficiency projects through Utility Energy Service Contracts (UESCs), as well as rebates and technical assistance to federal agencies as part of their demand-side management (DSM) programs. Similar to ESPCs, utility investments under UESCs are repaid from the utility bill savings resulting from the projects.

ESPCs and UESCs used to provide more than $500 million per year for energy-efficiency investments in federal buildings. But in September 2003 authority to enter into new ESPCs lapsed, and despite being re-authorized by Congress in 2004 and 2005, the use of these innovative and effective financing tools has not recovered to their earlier levels. In fiscal year 2005 ESPCs provided $97 million, and UESCs $76 million.

A number of barriers have prevented ESPCs and UESCs from reaching their full potential. Ultimately, successful use of such innovative financing requires a champion—a committed agency official who is willing to "stick his neck out"—to overcome bureaucratic bottlenecks, lack of support, and the concerns over audits and other special scrutiny. If the projects fall short of expected savings goals, they are criticized. In contrast, energy- efficiency projects implemented with appropriated funds receive comparatively little oversight. And, as I said before, there is no systematic process of oversight for facilities in which the improvements are never made and that are allowed to simply go on wasting energy.

In short, government energy managers are seldom rewarded, either financially or professionally, for achieving energy savings, nor is there much risk in failing to seize energy-saving opportunities. Proper oversight of ESPC and UESC contracts is needed, but there must also be recognition of the major costs of **inaction**. The focus should be on maximizing energy and cost savings, rather than requiring perfection and avoiding any possible risk in the use of alternative financing and the introduction of promising new ways to save energy.

A New Paradigm for Improvements to Existing Federal Buildings

In addition to oversight and funding of existing federal energy management policies and programs, new legislation is needed to expand the scope of federal energy management and to make the federal government a true example of leadership in energy efficiency. The proposed "Carbon-Neutral Government Act of 2007" takes some very important steps in this direction, and properly focuses attention on energy efficiency as a principal means to reduce federal GHG emissions in a highly cost-effective manner. At the same time, it is important that these new initiatives not reduce attention and funding for existing activities, but support and build on them.

In order to make the necessary increase in investment in energy savings in existing federal buildings, we think that a new paradigm and a new structure are needed. Energy waste should

not be allowed to continue until appropriations happen to be available or an energy manager is willing to take the effort and the risk needed to push through an ESPC or UESC. Federal agencies should not wait to take all cost-effective steps to reduce energy use. Appropriations should be increased, but federal agencies should also make more aggressive use of alternative financing through ESCO and utility performance contracts, to implement all energy-saving measures that make economic sense. And regardless of the funding source, agencies must have in place effective procedures for operations and maintenance, measurement and verification of savings, and monitoring and benchmarking to make sure the measures are implemented correctly and continue to work as intended.

Thus, we recommend the following package of policies:

- All large federal buildings and facilities should conduct comprehensive energy and water savings evaluations ("energy audits") to identify and prioritize all economic opportunities for investments to reduce energy and water use. These evaluations should consider both capital investments, such as a new boiler or chiller, and operational improvements, such as checking and adjusting lighting or mechanical system controls. Updated energy audits and building system diagnostics should be conducted every few years. Section 205 of the "Carbon-Neutral Government Act of 2007" includes provisions requiring these important analysis and investment actions.

- Agencies should implement all measures identified in the energy and water evaluations that have a simple payback of fifteen years or less. The calculation of cost savings should consider not only energy and water costs but also reduced costs of building operations, maintenance, repair, and equipment replacement. "Externality" costs, such as the added value of avoided air pollution or reduced greenhouse gas emissions, could also be incorporated in these payback estimates as an adder to the value of energy saved. While it does not include a provision for explicitly adding externality costs when calculating paybacks on federal energy saving projects, the "Carbon-Neutral Government Act of 2007" does create explicit and aggressive goals for agencies to reduce their GHG emissions.

- It is critical that the agencies not only make the capital investments but also make sure that the measures work, and keep on working. Start-up commissioning, and periodic re-commissioning, are an essential part of all measures to ensure that they work as intended – followed by effective operation, maintenance, and repair as well as measurement and evaluation of savings. Once again, the "Carbon-Neutral Government Act of 2007" would add important provisions for periodic recommissioning and diagnostic energy audits of federal facilities.

- Sustained oversight is needed to ensure that every agency is identifying all cost-effective energy savings opportunities, investing in them with either appropriated funds or third-party financing, and following through with good commissioning, O&M, and tracking of savings. While congressional action is important, the first level of oversight should be agency self-certification through a web-based tracking system that makes both the process and the agency's progress transparent to all. Larger federal buildings and facilities should also benchmark their energy and water use, so all can see how well they are doing. And implementation of these requirements should be incorporated in the agency energy

scorecards that the Office of Management and Budget already prepares. The same section of the "Carbon-Neutral Government Act of 2007" discussed above would mandate that larger federal facilities regularly benchmark their energy use in comparison with similar buildings, and publicly disclose the results in a transparent and accessible way.

- Both the energy-savings evaluations and the measures themselves should be funded through a combination of increased appropriations and private financing through ESPCs and UESCs. To that end, a number of arbitrary impediments on ESPCs should be removed by: permanently extending authority for federal agencies to enter into ESPCs; allowing the combined use of appropriations and performance contracts to fund a single project; and ending any self-imposed agency caps on the duration of ESPC contracts (i.e., projects should "dig deeper" to include all measures that are life-cycle cost-effective, up to the statutory 25-year ESPC limit) and on total obligations under ESPCs.

Together, we think this set of policies could help ensure that all large federal facilities identify and implement actions to reduce their energy and water waste, that initial funding is available for all cost-effective measures, and that the necessary follow-up is done – regardless of the funding source – to ensure that the expected savings are actually realized.

Expanding the Scope of Federal Energy Savings: Further Comments on the "Carbon-Neutral Government Act of 2007"

Almost all of the current federal requirements and programs focus on energy use in federally owned "standard" buildings, with less attention paid to "energy intensive" facilities that house industrial processes, as well as other "exempt" facilities (often exempted for national security reasons). This focus on fixed facilities **neglects more than half of all energy use** by the federal government, for transportation and mobile equipment. Also overlooked is the energy use and potential savings by federal contractors, many of whom perform "outsourced" functions that would otherwise be the direct responsibility of a federal agency.

The proposed "Carbon-Neutral Government Act of 2007" addresses a number of important new or expanded provisions for federal sector energy savings, as one of the principle means for achieving cost-effective reductions in federal greenhouse gas emissions. In particular, Section 201 of the proposed legislation would require federal agencies to purchase light-duty and medium-duty passenger vehicles with reduced GHG emissions – in effect, more energy-efficient models. Also, Section 202 would require agencies to take into account the "fully burdened cost of fuel" when considering the design, acquisition, and field deployment of energy-using systems other than in fixed facilities. This very important provision would apply to all federal agencies that provide disaster relief, rescue services, homeland defense and military capability – and must also pay for the people, equipment and infrastructure to deliver fuel to the systems used to carry out their missions in the field.

The costs of actually delivering this fuel to the point of use, along with any protection needed for those fuel supplies (either from nature or from hostile forces) are **not** currently used in determining the value of improving the efficiency of final energy-consuming equipment. The result is distorted decision-making that significantly under-values the dollars-and-cents benefits of energy-saving technologies that are part of "deployed systems." In the case of DoD systems,

this was first observed in 2001 in a Defense Science Board task force report "More Capable Warfighting Through Reduced Fuel Burden," but it also applies to many other agencies that operate equipment or systems that will need refueling while operating in the field, especially with high mobility requirements, in remote locations, or under hazardous or uncertain conditions.

With the nation's long-term concerns for national security and disaster response, it makes no sense for partial and outmoded cost-accounting practices to handicap promising technologies with the potential to improve energy efficiency. According to the 2001 Defense Science Board report, in-flight refueling costs about $26 to $42 per gallon (depending on whether today's air tanker fleet is considered a sunk cost), but available technologies to improve the efficiency of aircraft have been valued only at the commodity price for fuel – about $2.50 per gallon. This in-flight refueling example shows that technologies that improve efficiency have been handicapped by at least an order of magnitude, compared with their actual value to the armed forces and to the nation. The report cites other examples of this pricing distortion. Technologies that may not appear to be cost-effective at $2.50 per gallon of saved jet fuel could be highly cost-effective at $26 per gallon.

This bill seeks to correct this distortion when federal agencies analyze the economics of energy efficiency, and make decisions on the development, acquisition, and use of major "deployed systems" for both military and civilian purposes. By accurately valuing the energy saved, agencies will invest more in new energy-efficient technologies, and will also be sending more accurate market signals to the private sector suppliers of these new systems and equipment – thereby unleashing the creativity of private industry to develop innovative new solutions. This will not only produce more efficient systems for federal agencies, but many of the technologies developed for those systems will also find their way into the economy at large.

While it's difficult to quantify in advance the benefits of this seemingly technical but very significant correction to Federal accounting and system planning practices, use of this new approach to valuing energy efficiency will unleash the creativity of engineers and scientists both in government and in the private sector, leading to new cost-effective ways to save energy and to help make US industry more competitive.

The Alliance also supports several other provisions in the "Carbon-Neutral Government Act of 2007" that will help wring out energy waste and capture additional energy savings and GHG reductions in the federal government. These include:

- A government-wide energy savings target or a savings target aimed specifically at all vehicles and equipment ("mobility" energy). In addition to the target for federal buildings, Executive Order 13423 includes a 10 percent reduction in oil consumption by federal fleet vehicles – but if this is narrowly interpreted to apply to wheeled vehicles it represents only about 10 percent of total federal mobility energy, the vast majority of which is used for aircraft, ships, and military "deployed systems." In addition, the executive order rescinded the only target that directly addressed greenhouse gas (GHG) reductions for the federal sector: Executive Order 13123 previously called for a 30 percent reduction of GHG emissions from federal buildings, from 1990 to 2010. If Congress chooses to reinstate a similar performance target for federal agencies, it should apply to energy-related GHG emissions from **all** federal energy use, including buildings, vehicles, and equipment.

The provisions in Sections 101 and 102 of the "Carbon-Neutral Government Act of 2007" would establish such a government-wide GHG reduction goal, and provide for an initial inventory and annual reporting of progress toward that goal. Since energy production and use are the dominant source of federal GHG emissions, we expect this goal to add new urgency to the need to further improve energy efficiency and eliminate wasteful consumption practices in both federal facilities and mobile systems.

- Energy savings requirements for buildings leased by the federal government. The current building standards and energy-saving targets apply only to government-owned buildings. However, the government also leases a large number of buildings, many of which are built specifically for use by federal agencies based on long-term lease commitments. One way or another, federal taxpayers pay for the energy used in these buildings, and the federal government should demand that they be energy-efficient. Other buildings, such as privatized military housing, also are built for the government and often with government assistance, and should be required to be energy-efficient as well.

  We are pleased to note that Section 204 of the "Carbon-Neutral Government Act of 2007" clearly includes built-to-lease buildings and privatized military family housing in the definition of buildings covered by the federal building energy standards. Energy efficiency in federal leases of existing buildings is also covered in Section 206.

- Smart growth or "locational efficiency" policies. Just as building design impacts the energy use in federal buildings, the location of federal buildings can have a dramatic impact on the energy use of employees in commuting and other driving. This impact, for good or bad, is often multiplied as federal buildings often attract additional residential and commercial development and infrastructure. Moving federal facilities to far suburbs or other areas outside of cities encourages sprawl, more driving, and greater oil use. Requiring a transportation energy impact assessment for all major new federal facilities could positively influence decisions on where to locate major new or expanded federal facilities. A provision along these lines could be added to Section 204 of the proposed legislation, to extend the concept of "sustainable siting" of new federal facilities already called for in that section.

- A directive to encourage federal contractors to improve their own energy efficiency. Some industry leaders, including Wal-Mart, are not only dramatically reducing their own energy use but also requiring their suppliers to improve efficiency, both to lower costs and reduce environmental impacts. Federal agencies could encourage and assist their large contractor base to reduce their own energy use, through procurement preferences or requirements.

  This objective is partly addressed by provisions in the "Carbon-Neutral Government Act of 2007" for a GHG emissions inventory and emissions reduction goals, since the definition of federal GHG emissions includes indirect emissions associated with work by contractors for the federal government.

- Application of energy-saving policies, requirements, and savings targets to Congress. Congress could take an important symbolic step by applying all the agency energy savings

targets and requirements to its own buildings, vehicle use, and procurement—making the Capitol complex a model for energy efficiency.

Successful federal energy management also can further vital federal goals by influencing others to use energy wisely. The federal government could:

- Challenge state and local governments and major businesses to match the federal commitment to energy efficiency. Many federal programs, including ESPCs and procurement requirements, have been models for other levels of government. The federal government should challenge other major energy users – both public and private – to commit to aggressive energy savings goals and policies at least comparable to the federal ones. Federal agencies might be encouraged (or required) to report on these positive "spillover benefits" from their policies and programs, and should get some recognition for their market-leading actions that save energy outside the federal sector, as well as for savings in their own facilities and operations.

- Support state and utility energy-efficiency and demand-side management (DSM) programs. Utility DSM programs have been among the most effective public tools to reduce energy use, and many federal facilities have taken advantage of state and utility energy-efficiency rebates, technical assistance, and other programs. Conversely, the federal customer base has been essential to building the important infrastructure of energy service companies and other energy service providers. When utilities and state regulators are considering new or expanded DSM programs, all federal agencies and their representatives should strongly support cost-effective utility DSM programs and the associated surcharges to pay for them.

Conclusion

Federal energy management is only one piece of the solution to the economic, environmental, and security challenges to clean, reliable, and sustainable energy use in this country. But the federal government, as the nation's and the world's single largest energy user, can and should be the most influential model for using advanced energy-efficient technologies and practices. Congress has an important role to play. First, sustained congressional oversight is needed to focus agencies' top management attention on maximizing energy savings. Second, sufficient funding is needed to pay for the necessary initial costs to achieve long-term savings, along with continued support for alternative financing mechanisms. Third, new legislation could expand the scope and savings of federal energy management activities to all large federal buildings, other facilities, and to federal vehicles and uses of "mobility" energy. These actions will save taxpayer dollars, help save the planet, and at the same time inspire many others to act.

The Alliance to Save Energy is please to support the many important provisions in the "Carbon-Neutral Government Act of 2007" that would significantly strengthen existing provisions for energy efficiency in federal facilities, establish new energy-saving policies and procedures for the large federal "mobility" sector, and set forth a clear and transparent basis for tracking and reporting progress to support continuing oversight both within the Administration and by Congress.

Mr. TOWNS. Thank you very much, Mr. Harris. Now, Mr. Purnell.

STATEMENT OF MARSHALL PURNELL

Mr. PURNELL. Mr. Chairman, members of the subcommittee, good afternoon. My name is Marshall Purnell. I am president-elect of the American Institute of Architects. On behalf of our 81,000 members and the 281,000 Americans who work for architectural firms nationwide, I would like to thank you for the opportunity to appear here today.

I would like to share the thoughts of our Nation's architects on energy consumption and how it relates to the most overlooked sector in the greenhouse gas debate—buildings, the buildings in which our people live, work, and play. I have submitted written testimony to the subcommittee, but I would like to stress those points the AIA feels are important.

I commend you for holding this hearing to examine strategies that would reduce the amount of fossil fuel generated energy consumed by the Federal Government. Furthermore, I would like to convey the AIA's strong support for the legislation being discussed here today. The Carbon-Neutral Government Act of 2007 makes major strides toward reducing the amount of fossil fuel-generated energy our Government consumes. This bill will improve the Federal Government's energy efficiency, as well as decrease the amount of greenhouse gas we produce.

In particular, the AIA strongly supports Section 204, which establishes energy performance standards for new Federal buildings and buildings undergoing major renovations. This section builds upon an AIA policy position which calls for carbon-neutral buildings by 2030. We are extremely pleased to see that the committee has included our 2030 goals in this bill, and our timetable.

According to the U.S. Department of Energy, buildings and their construction are responsible for nearly half of all greenhouse gas emissions in the United States every year. The building sector alone accounts for nearly 39 percent of the total U.S. energy consumption, more than either the transportation or the industry sectors. Buildings consume 71 percent of U.S. electricity production, and buildings in the United States account for 9.8 percent of carbon dioxide emissions worldwide. Put another way, U.S. buildings account for nearly the same amount of carbon emissions as the entire economies of Japan, France, and the United Kingdoms, combined.

If we want to be serious about energy use reductions, buildings must become a significant part of the discussion. And by including energy reduction targets for new Federal buildings in this bill, it is clear this committee understands this. The AIA believes that architects must advocate for the sustainable use of our Earth's resources. We have adopted an official position establishing energy reduction targets in buildings. Architects across the country have embraced this position and are expanding the use of design practices that enhance design quality as they increase the environmental performance of buildings.

Federal building energy efficiency. The AIA is pleased to see that Section 204 closely mirrors our recommendations to require Federal agencies to immediately ensure that new buildings and build-

ings undergoing major renovations consume no more than half the fossil fuel energy that a similar Federal building consumed in the year 2003.

Beginning in 2010, agencies should be required to meet a declining cap on energy consumption, such that they meet minimum energy reductions compared to the 2003 baseline. We propose that by 2010, new and significantly renovated Federal buildings be required to reduce fossil fuel generated energy by 60 percent. By 2015, the cap should be lowered to a 70 percent reduction, continuing until 2030 when we should achieve a 100 percent reduction in fossil fuel generated energy in all Federal buildings.

These energy reduction targets are included in this bill and we applaud the committee for their leadership on this issue. Setting declining caps on energy usage is not a new idea. In the past, Congress has passed similar legislation. And recently several States have adopted energy reduction targets. These are important first steps. Energy reduction requirements have shown a record of success, as referenced in my written testimony. It demonstrates that the energy reduction targets within this legislation are readily achievable.

Furthermore, the technology needed to design carbon-neutral buildings exists. Architects across the country are designing high performance green buildings that are environmentally responsible, healthy, and productive places to work. My written testimony provides many details on sustainable design techniques, and I am happy to answer any questions from the subcommittee on this subject.

The AIA also supports the development of green building rating systems and standards. They often promote energy efficiency and conservation. While we do not endorse any specific rating system or product, green rating systems and standards are often the easiest and most cost-effective way to achieve energy efficiency in buildings. The ratings serve as a checklist to ensure that a building or project actually meets energy reduction and environmental protection goals.

The cost of building green. In my experience, the primary concern I hear from clients about building green is first cost. It is true that some energy efficient building systems may cost slightly more than their traditional counterparts. However, once the building is in operation, the savings in energy expenditures alone often far outweigh the initial cost of installing green systems, especially to long-term owners.

There is increasing evidence confirming this, and the AIA is currently working with economists to research the economic benefits of energy efficient Federal buildings. This study will analyze the estimated energy and dollar savings the Federal Government will realize by implementing our energy reduction goals for Federal buildings over their lifespan. We expect to complete the study by this summer and would be happy to submit it for the record.

America is ready. Polls show that the American public believes the time is now to reduce energy usage and reduce the risk of climate change. They increasingly believe it is in the best interest of our Nation and the planet to reduce our reliance on fossil fuel-generated energy and move toward a sustainable future. Reducing en-

ergy use in Federal buildings would be a major step in redesigning the future.

Once again, we commend the work of the committee for producing this bill and I welcome your questions. Thank you, Mr. Chairman and members of the subcommittee.

[The prepared statement of Mr. Purnell follows:]

THE AMERICAN INSTITUTE OF ARCHITECTS

STATEMENT OF
MARSHALL E. PURNELL, FAIA
FIRST VICE PRESIDENT

"ENERGY EFFICIENT FEDERAL BUILDINGS"

United States House of Representatives
Committee on Oversight and Government Reform

-

May 17, 2007
Rayburn House Office Building

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Introduction

Mr. Chairman, Members of the Committee — good afternoon. I am Marshall Purnell, the First Vice President of the American Institute of Architects.

On behalf of our more than 80,000 members and the 281,000 Americans who work for architecture firms nationwide, I would like to thank you for the opportunity to appear today. I would like to share some of our nation's architects' thoughts on energy consumption and energy efficiency, and how these important topics relate to the most overlooked sector in the climate change debate, buildings: the buildings in which our people live, work, and play.

I commend you for holding this hearing to examine strategies that would reduce the amount of fossil-fuel generated energy consumed by the federal government. Furthermore, I would like to convey the AIA's strong support for the legislation being discussed here today. "The Carbon-Neutral Federal Government Act of 2007" makes major strides towards reducing the amount of fossil-fuel generated energy our government consumes. This bill will improve the federal government's energy efficiency as well as decrease the amount of greenhouse gas we produce. In particular, the AIA strongly supports Section 204 which establishes energy performance standards for new federal buildings and buildings undergoing major renovations. This section builds upon an AIA policy position which calls for carbon neutral buildings by 2030. We are extremely pleased to see that the Committee has included our 2030 goals in this bill.

It is vital that any serious discussions intended to reduce the carbon footprint of the federal government—and thus mitigating the effects of climate change--must include a dynamic conversation about our nation's buildings. It is critical for this Committee to understand the role of the built environment as it relates to climate change and energy usage, particularly as this committee has jurisdiction over the operations of the federal government. I feel it would be both useful and interesting for the Committee to learn how buildings designed in an energy-efficient manner can significantly reduce energy consumption and greenhouse gas emissions. These buildings can slow the effects of climate change and make the federal government less reliant on fossil fuel generated energy.

According to the Department of Energy's Energy Information Administration, buildings and their construction are responsible for nearly half of all greenhouse gas emissions produced in the U.S. every year. DOE's recently released Building Energy Data Book reveals that the building sector accounts for 39 percent of total U.S. energy consumption, more than both the transportation and industry sectors.[1] The same study found that buildings are responsible for 71 percent of U.S. electricity consumption and that *buildings in the United States alone account for 9.8 percent of carbon dioxide emissions worldwide.*[2]

In fact, according to the Department of Energy, U.S. *buildings account for nearly the same amount of carbon emissions as all sectors of the economies of Japan, France, and the United Kingdom combined.*[3]

3.1.1 Carbon Dioxide Emissions for U.S. Buildings, by Year (10^6 metric tons of carbon) (1)

	Buildings				U.S.			
	Site Fossil	Electricity	Total	Growth Rate 2004-Year	Total	Growth Rate 2004-Year	Buildings % of Total U.S.	Buildings % of Total Global
1980	172.0	255.2	427.1	-	1281.7	-	33%	8.5%
1990	153.7	317.2	470.9	-	1359.7	-	35%	8.1%
2000	167.4	426.2	593.5	-	1581.3	-	38%	9.1%
2004	**164.7** (2)	**443.4**	(2) **608.1**	-	**1610.2**	-	**38%**	**9.8%** (3)
2010	168.0	502.5	670.5	1.6%	1737.1	1.3%	39%	8.6%
2015	174.8	535.3	710.1	1.4%	1833.4	1.2%	39%	7.7%
2020	179.6	577.2	756.8	1.4%	1942.9	1.2%	39%	7.5%
2025	182.5	627.0	809.5	1.4%	2070.6	1.2%	39%	7.4%
2030	186.0	686.2	872.2	1.4%	2214.8	1.2%	39%	7.3%

Note(s): 1) Excludes emissions of buildings-related energy consumption in the industrial sector. Emissions assume complete combustion from energy consumption and exclude energy production activities such as gas flaring, coal mining, and cement production. 2) Emissions differ from EIA, AEO 2006, Feb. 2006 by less than 0.1%. 3) U.S. buildings emissions approximately equal the combined carbon emissions of Japan, France, and the United Kingdom.

Source(s): EIA, Emissions of Greenhouse Gases in the U.S. 1985-1990, Sept. 1992, Appendix B, Tables B1-B6, p. 73-74 for 1990; EIA, Emissions of Greenhouse Gases in the U.S. 2003, Dec. 2004, Tables 7-11, p. 29-31 for 1990 and 2000; EIA, Assumptions to the AEO 2006, May 2006, Table 2, p. 9 for carbon coefficients; EIA, AEO 2006, Feb. 2006, Table A2, p. 124-125 for 2004-2030 energy consumption and Table A18, p. 180 for 2004-2030 emissions; EIA, International Energy Outlook 2006, June 2006, Table A10, p. 95 for 2003-2030 global emissions; and EIA, International Energy Annual 2004, July 2006, Table 41, www.eia.doe.gov for 1980-2003 global emission.

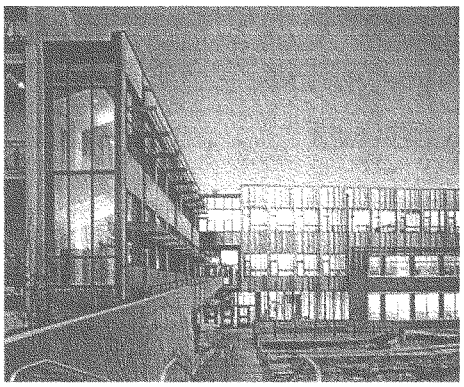
Therefore, if we in the United States want to be serious about energy efficiency and energy reductions, buildings *must* become a significant part of the discussion.

Annual U.S. energy consumption is projected to increase by 32 percent over the next twenty five years[4]. The AIA believes strongly that now is the time to act to reverse this course and start making significant reductions in the amount of fossil-fuel generated energy our nation consumes through its buildings.

The data shows that the building sector is only going to become more critical to the discussion. Over the next 30 years, the character of the built environment will change dramatically. Currently, U.S. building stock sits at 300 billion square feet. Experts predict that between now and 2035, 52 billion square feet will be demolished, 150 billion square feet will be remodeled, and another 150 billion square feet will be newly

constructed.[5] Because buildings are such a major producer of greenhouse gases, the AIA believes that if Congress and our nation want to address climate change, confronting energy consumption in the next generation of buildings is a vital endeavor. We believe that the federal government can and must take the lead to change the way our buildings use energy.

SHOWING THE PROMISE OF GREEN BUILDING
Sidwell Friends School
Washington, DC



The renovation and addition to the middle school transforms a 55-year-old facility into a school that teaches environmental responsibility by example. The 39,000 ft2 addition more than doubled the size of the existing building, while retaining and enhancing the value of the existing structure. The building was sited to take advantage of passive solar design. Together with high-efficiency lighting, photo sensors, and occupancy sensors, daylighting minimizes energy use. Solar-ventilation chimneys, operable windows, and ceiling fans minimize the need for mechanical cooling. A photovoltaic array generates about 5 % of the building's electricity needs. A green roof and constructed wetland reduce stormwater runoff, improve the quality of infiltrated runoff, and reduce municipal water use. The wetland treats wastewater for reuse in cooling tower.

To reduce energy consumption in the building sector, the AIA believes that architects must advocate for the sustainable use of our earth's resources through their work for clients. To support this principle, in December 2005, the AIA Board of Directors approved an official Institute position stating that all new buildings and major renovations to existing buildings be designed to meet an immediate 50 percent reduction in fossil fuel-generated energy (compared to a 2003 baseline) and that at five year intervals, that reduction target be increased by at least 10 percent until new and renovated

buildings achieve carbon neutrality in 2030. Architects across the country have embraced this principle and are currently utilizing design practices that integrate built and natural systems that enhance both the design quality and environmental performance of the built environment. But in order to truly revolutionize the way our nation designs buildings, the public sector, especially the federal government, must also play a role. This committee alone has jurisdiction over a sizable portion of all buildings in the U.S.[6] Through a combination of both regulation and incentives, we can achieve the goals of greatly reducing fossil fuel generated energy and improving energy efficiency nationwide.

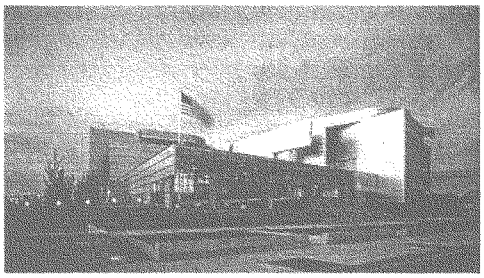
It is important for the federal government to show that energy efficient buildings are both realistic and cost-efficient. Requiring significant energy reduction targets in new and renovated federal buildings will demonstrate to the private sector that the federal government is leading by example. It would help spur the development of new materials, construction techniques, and technologies to make buildings more energy efficient. And it will help show that significant energy reductions are both practical and cost-effective.

The AIA strongly urges Congress to take the lead in the fight against climate change by establishing new energy consumption standards for federal buildings. As Congress has jurisdiction over all federal buildings, Congress can literally show the way for the private sector to attain energy consumption reductions by the built environment.

Federal Building Energy Efficiency

The AIA proposes that federal agencies be required to ensure that new buildings and buildings undergoing major renovations today consume no more than half the fossil fuel generated energy that a similar federal building consumed in 2003.

SHOWING THE PROMISE OF GREEN BUILDING
Wayne L. Morse United States Courthouse
Eugene, OR



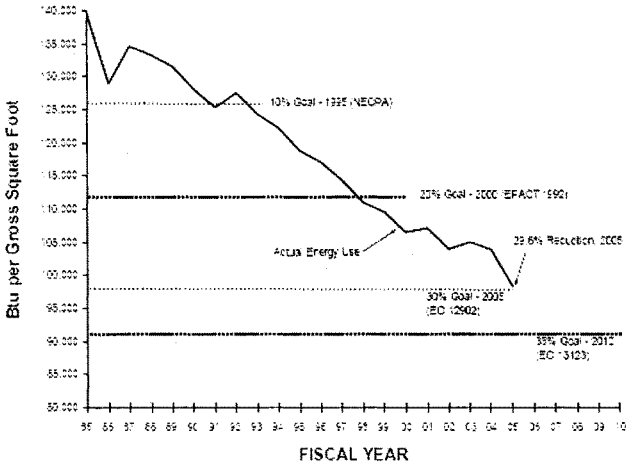
Because the courthouse works with high-risk law enforcement and intelligence agencies, courts, judicial offices and highly sensitive government records, the facility has stringent and complex security requirements to protect against bombings as well as ballistic, biological, and chemical attacks. Despite these design challenges, the building provides an architectural expression of judicial presence at a healthy, human scale. The project's energy use was also reduced by approximately 40% through the use of extensive daylighting, shading, high-performance glazing, efficient electric lighting, displacement ventilation, and radiant-floor heating and cooling. At night, air from the building is replaced with ambient air, reducing the cooling load. The building is certified as LEED Gold.

Beginning in 2010, the agencies should then follow a declining cap on energy consumption such that they meet a minimum energy performance reduction when compared to the 2003 baseline. We propose that by 2010, new and significantly renovated federal buildings be required to reduce fossil fuel generated energy by 60 percent. By 2015, the cap would lower to a 70 percent reduction, continuing until 2030 when we would achieve a 100 percent reduction in fossil fuel generated energy in all new federal buildings.

Setting declining caps on energy usage is not a new idea. In 1999, President Clinton issued an executive order requiring energy consumption reductions in all federal buildings; The Energy Policy Act of 2005 extended and deepened these reduction goals, and last year, Governor Bill Richardson of New Mexico signed an executive order calling for a 50 percent reduction in energy consumption for new and renovated public buildings in the state. And just last month, President Bush issued an executive order requiring federal agencies to reduce energy use by almost a third over a 2003 baseline by 2015. These are important first steps, but we need an aggressive commitment to long term energy reductions for new buildings and major renovations, well into the future.

Energy reduction requirements like these have shown a record of success, as demonstrated by DOE's recently submitted annual report to Congress on Energy Management and Conservation programs. DOE's report found that in 2005, federal agencies responding to President Clinton's 1999 Executive Order had reduced their consumption levels by 29.6 percent, narrowly missing the goal established by President Clinton's Executive Order by only .4 (point 4) percent [see graph below]. This makes it clear that when they are required to do so, federal agencies have the ability to meet reduced energy consumption targets.

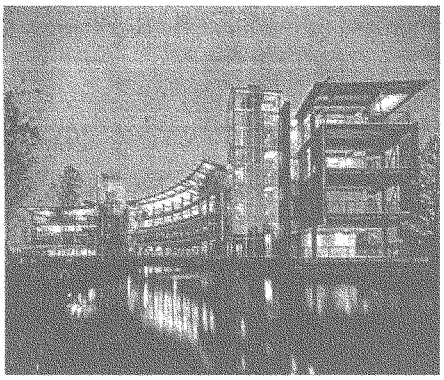
Overall Government Progress Toward the Energy Efficiency Goals for Standard Buildings, FY 1985 through FY 2005
(Certain types of renewable energy purchases are treated as energy reductions)



We encourage Congress to build upon these sound policy steps by taking an even more aggressive stance. Congress should also focus energy reduction goals on new construction and buildings undergoing significant renovations. It is far easier and more cost-effective to address energy usage issues beginning with the design stage of the building process.

Requiring all new and significantly renovated federal buildings to consume significantly less fossil-fuel generated energy is a bold idea, but one whose time has come. It would show the world and the private sector that the United States government believes that climate change is real and that aggressive action is needed in order to reverse its course. It demonstrates that the AIA-recommended energy reduction targets are achievable in

new and significantly renovated buildings, often through little or no additional life cycle costs.



SHOWING THE PROMISE OF GREEN BUILDING
Heifer International Headquarters
Little Rock, Arkansas

This building is designed to use up to 55% less energy than a conventional office building. The narrow, semicircular floor plan provides daylight and views to the adjacent riverfront park and wetland for all 474 employees. A stated goal that zero water leave the site led to the restoration of a wetland on an abandoned railroad switching yard; the wetland collects and cleans stormwater for reuse.

Architects across the country are designing high performance "Green Buildings" that are environmentally responsible, healthy, and productive places to work. Today, architects can design carbon neutral office buildings using available technologies and design strategies. Clearly, the building site - including its climatic zone, its orientation toward the sun, its roof area, its proximity to other structures and numerous other variables- will impact how such a design is developed. But certain features will be common to all new carbon neutral buildings. The objective is to minimize energy usage to the maximum extent possible, and then supply what energy is required through renewable sources.

Designing an efficient building envelope (walls, windows, roofs, etc.) can significantly reduce loss of heat in the winter and absorption of heat in the summer, contributing to reduced energy consumption. Architects will place small windows on the north sides of

structures and large windows on the south side. Glazing can incorporate coatings that transmit visible light, but block infrared radiation in order to minimize air conditioning load. Overhangs or sun shades can be used to admit winter sun but block heat in the summer. Use of vegetation on-site, especially deciduous trees, provide summer shade but are leafless and therefore allow sunlight to pass in the winter. Light scoops and skylights maximize natural light and diminish the need for artificial light. Windows should be operable so that during temperate weather fresh air can obviate the need for artificially heated or cooled air.

Recent developments in the insulation of the building shell can significantly reduce the thermal transmissivity of walls. Incandescent lighting should be avoided; fluorescent or LED lighting is much more efficient and cost effective. Modern HVAC systems can be scaled to the heat load generated by people and equipment in the building and operated using sensors that monitor heat load and curtail heating and cooling system use when appropriate. Building design should incorporate energy efficient appliances to minimize the "plug loads" within the structure.

Heating and cooling can be facilitated by the use of ground source heat pumps. By circulating water and coolant (glycol) in a closed loop between the building and the ground beneath the building, a uniform temperature can be achieved all year round. Energy to augment these heat pumps can be derived from on-site passive solar, solar photovoltaic or other renewable energy sources. Electrical resources needed beyond

these sources can be purchased from utility companies' portfolio of renewable energy generation.

The AIA's Committee on the Environment (COTE) annually recognizes such accomplishments in its Top 10 Awards for Sustainable Design. Federal buildings can and should be built in ways that reduce energy consumption and decrease the amount of greenhouse gases they produce, as demonstrated through COTE's Top 10 Awards.

Standards

The AIA strongly supports the transparent, consensus-based development of green building rating systems and standards as they often promote energy efficiency and conservation. The AIA supports standards that incorporate LCA (life-cycle assessments), acknowledge and address regional and bio-climactic differences as well as building type differences, and require measurable reductions in GHG emissions attributable to the built environment. Green rating systems or standards are the easiest and most cost effective way to achieve energy efficiency in buildings. The ratings serve as a checklist to ensure that a building or project actually meets energy reduction and environmental protection goals.

Rating systems encourage and promote green design. As many existing programs offer multiple levels of certification, the design/building community is encouraged to continually strive for more far-reaching sustainability goals. Governments need to institutionalize these standards to not only reap the benefits of high-performance

technology, but to incentivize building green. By offering a system with which to compare buildings, standards are developed and quality is assured.

The AIA believes that rating systems should be developed and renewed through a consensus-based process with the participation of all interested parties. Further, they should require documentation to demonstrate compliance, independent third party validation and the utilization of life cycle assessment data as the basis for design and construction decision making.

The Cost of Building Green

In my professional experience, the primary concern I hear from clients about building "green" is cost. It is true that some energy efficient building systems may cost slightly more than their traditional counterparts. However once the building is in operation, the savings in energy expenditures alone often far outweigh the initial costs of installing "green" systems. While there have been some studies to date that show this, the AIA is currently working with a team of economists to research the economic benefits of energy efficient federal buildings. This study will analyze the estimated energy and dollar savings that federal government would realize by implementing our energy reduction goals for federal buildings over the lifespan of the building. We expect to have the study complete by this summer and we would be happy to submit it for the record. Other sources, most importantly the noted cost consultant Davis Langdon, argue that the cost of sustainability is statistically insignificant to a project's total cost.[7]

The economic value of energy reductions from federal buildings can be seen by looking at previous energy reduction mandates in federal buildings. Because of federal legislation and President Clinton's 1999 Executive Order, federal agencies consumed nearly 30 percent less energy per square foot in 2005 compared to 1985. As a result of this improved energy efficiency, the federal government saved approximately $2.2 billion on energy costs in standard federal buildings in 2005 when compared to 1985. While there are clearly other factors aside from federal energy management activities that go into this reduced spending, improved energy efficiency and energy reduction clearly played a large role.

America is Ready

Finally, the American public believes the time is now to reduce energy usage and reduce the impacts of climate change. The Tarrance Group and Lake Research Partners recently conducted a nationwide poll of voters and found that 74 percent of those polled agreed that "the government should take the lead in promoting real estate development that conserves our natural resources." In addition, 71 percent of voters agreed that "the government should immediately put into effect new energy policies that drastically reduce greenhouse gas emissions." The American public supports conserving our precious resources, and believes that it is in the best interests of our nation and the world to reduce our reliance on fossil fuel produced energy and move towards a sustainable future. Reducing energy use in federal buildings would be a major step towards that goal.

We encourage Congress to consider our proposal, and I welcome any questions from the committee. Thank you Mr. Chairman and members of the committee.

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[1] http://buildingsdatabook.eere.energy.gov/docs/1.1.3.pdf
[2] http://buildingsdatabook.eere.energy.gov/docs/3.1.1.pdf
[3] http://buildingsdatabook.eere.energy.gov/docs/3.1.1.pdf
[4] http://www.eia.doe.gov/oiaf/ieo/pdf/ieoreftab_1.pdf
[5] http://www.architecture2030.com
[6] http://www.eia.doe.gov/emeu/cbecs/cbecs2003/introduction.html
[7] Matthissen, Lisa and Morris, Peter. "Costing Green: A Comprehensive Cost Database and Budgeting Methodology. June, 2004; Davis Langdon.

Mr. TOWNS. Thank you very much, Mr. Purnell, for your statement. At this time I would like to yield for an opening statement to the ranking member, Congressman Bilbray from California. And then, we will go in this order, then I will come back to the author of the bill and have him to open for questions. Congressman Bilbray.

Mr. BILBRAY. Thank you, Mr. Chairman. I appreciate the chance of having this hearing and having the witnesses before us.

Having tried to retrofit and work on a lot of different issues myself previous to my life here, I served on the Air Resources Board of California, which has one of the most successful environmental programs in the history of the world. I mean, California today has air that is twice as clean as it was 30 years ago with twice as many people. And I think that is an accomplishment.

But some tough, very tough things were done. And a lot of sacred cows, even environmental sacred cows, were slaughtered to be able to get to that benefit. And I think that there are too many people that talk about climate change today, and in the Science Committee I have raised this issue, that want to talk about changing lightbulbs but not changing power plants, that want to talk about requiring insulation of a building but not mandating that Government allow alternative construction techniques.

I have seen so often in my 30 years, 40 years, of working on environmental issues that the greatest barrier to allowing individuals to do what is environmentally responsible has not been money, it has been Government regulation. And sadly, we have stood in the way. And so I look forward to the questions, especially to the representative of the AIA, specifically to some issues like how we can do it from the building side of it.

But I think there are some tough decisions that need to be made and I just ask that we keep an open mind and sort of abandon our old prejudices that we thought were environmentally good. I think global climate change is going to make us all rethink. I think those of us involved in the environmental community think it is the business community and Government that have to change their attitudes. There are a lot of us on the green side that have to change our attitudes, too. And I yield back, Mr. Chairman.

Mr. TOWNS. Thank you very much, Congressman Bilbray. At this time I yield to the author of the bill, Congressman Waxman, chairman of the full committee.

Mr. WAXMAN. Thank you very much, Mr. Chairman. As Mr. Bilbray pointed out, we have to look at a more comprehensive approach and we have to use our imagination to get to the goals that we want to achieve. The goal in this bill is a pretty tough one. It calls for carbon-neutrality by 2050.

Now, some can say that is a long way off and we do not have to worry about it, we can just take a few steps and then we will see where we go. But it is a goal. And it is a goal that is not just a wish, it is a goal that we are going to put in place to force action.

Is it a realistic goal? I would be interested in the witnesses' views. Is this a realistic goal, and do you think we could meet this goal? Where do you think we will face the biggest challenges? Just go down the line. Ms. Figdor.

Ms. FIGDOR. Thank you, Mr. Chairman. I do think it is a realistic goal. As you said in your opening statement, when President Kennedy set the goal of reaching the moon, we did not know exactly how we were going to get there, but it was important to set the goal initially.

We do know that we have the technologies today, the renewable energy and energy efficient technologies to meet the short-term and medium-term reductions that will be required in order to avoid dangerous global warming more broadly, and certainly to meet the reductions required by this legislation. If we aggressively move forward toward developing and deploying renewable energy technologies and energy efficiency technologies, we should be able to achieve the 2050 goals as well.

Mr. TOWNS. Thank you. Mr. Harris.

Mr. HARRIS. I certainly agree with my colleague here that it is achievable, but a real challenge. Our view is that it is going to take a lot of effort to do the job that needs doing, even with the goals that we currently have. And so looking ahead in the timeframe of this legislation, we need to make sure that the Federal Government and in fact the whole economy are investing in technology innovation, to pick up on the comment a little bit earlier from Congressman Bilbray.

That is certainly a needed component and we believe that more has to be done with Federal leadership but not exclusively by the Federal Government. The Alliance to Save Energy, for example, is working with the AIA, with ASHRAE, with the U.S. Green Building Council, and with the World Business Council on Sustainable Development on a new initiative that would address energy efficiency in commercial buildings of the sort that the Federal Government has, and create the technology base not just to get to the 30 percent or 50 percent, but to get all the way to carbon-neutrality. And that is going to be a major investment in the pipeline that we know is 10, 15, 20 years long, to get a new technology introduced and in the marketplace on a large scale. So I think the first area I would emphasize is new technology and aggressive efforts to make sure that technology gets deployed as it is developed.

Mr. WAXMAN. So we need a long-term, sustained effort by the Federal Government in order to achieve this goal. But you think it is achievable?

Mr. HARRIS. That I do. You asked a second question, and that is what is the toughest——

Mr. WAXMAN. I want to hear from Mr. Purnell and then I am going to have some other questions.

Mr. PURNELL. I would tend to agree. It will take a long-term sustained effort, and it is not just about reduction. It is about new technology and research to develop that technology. When the AIA looked at it, we set a goal for carbon-neutral buildings in 2030, not 2050. We were looking at 2050, hoping that by 2050 not only would the buildings be carbon-neutral, that we would be putting power back into the grid for sale. So that is what we think we can accomplish by 2030.

We think we can get to carbon-neutral in the commercial sector. I would imagine that if anything, the Federal sector has pretty much always led the commercial sector in terms of procurement

and in building types and innovation. I would hope that whatever the Federal Government's investment in this is, that we would look at a goal to get there as soon as possible and not just to keep looking at 2050. Because it is a long way off and if we look at let us get there as soon as we can, we are likely to be successful.

Mr. WAXMAN. It is interesting, the comment made by Ms. Figdor, that we already have existing technologies and strategies that we can put into effect right now to get some of the early achievements that we want, but we are going to have to then go to other technologies down the road. But we do not have to worry about them right now. We need to press forward to develop them. Is that your feeling?

Mr. PURNELL. I think we can realize enormous savings immediately but as we start reducing more and more and more, it will take more technology and more time to get to those final reductions. Once we get past 60, 70 percent, it is going to take seemingly more time to get that reduced to carbon-neutrality. We can get to 50, 60 percent with existing technology within the next 2, 3 years.

Mr. WAXMAN. Thank you all very much. Thank you, Mr. Chairman.

Mr. TOWNS. Thank you very much. Now I yield to Congressman Bilbray, the ranking member.

Mr. BILBRAY. Ms. Figdor, can we take a look at the terminology? And let me just tell you something. Maybe I am a nitpicker but these are important things that we start using the right terminology. I keep hearing, Mr. Chairman, the term "renewable." Renewable is not necessarily clean. And I think people are assuming it is renewable.

One of our biggest challenges of air pollution is wood burning stoves. That is renewable. Can we be careful with the terminology used? I think I much prefer, personally, "zero-emission generators." And I know that there are people who get used to these terms as if somehow they are always environmentally responsible if you can grow it again and go into it. But they can be major problems.

Let me sort of back up a second. Let me go over the AIA's position. In America today, we have a national minimum standard for building buildings, do we not?

Mr. PURNELL. A minimum standard?

Mr. BILBRAY. Yes.

Mr. PURNELL. ASHRAE standards, yes. But commercially those are not necessarily achieved.

Mr. BILBRAY. Right. Unified building code probably is one of the most successful government regulations we have ever had. And it is kind of an interesting thing because it is a code put together through a consensus of building inspectors who are kind of unique, Mr. Chairman, in government because they are people who have actually been out there building. Most building inspectors do not come from college and go right into government. Most of them have been in the business, done it.

What is the AIA doing to work with, to change the Unified Building Code to try to push that more over? Because I will just tell you personally, I have run into situations where the Code has stood in the way of using alternative building techniques and different materials. They literally say it is unapproved material, even though

it is environmentally great, sorry, you cannot use it because it is easier for us to turn it down. Is there a real effort to re-engineer the Unified Building Code and get that consensus from the men and women who are actually going to make the decisions on what you can build, and that is the building inspectors?

Mr. PURNELL. We are working with Code officials around the country at the State and local level.

Mr. BILBRAY. Right. Mr. Harris, do you have any idea what will be the cost of this bill to implement?

Mr. HARRIS. We have not analyzed that cost, Mr. Bilbray. But I think as a matter of principle, and it is a longstanding principle, that all the measures that are put in place for energy efficiency at least need to be cost-effective. Now, my personal view is that cost-effectiveness needs to take into account the full cost and the full value of saving energy. And that is what one of the important provisions in this bill would do.

Mr. BILBRAY. Yes, that is one of the concerns I have with the short-term time lines. One of the things that, as Mr. Waxman knows, really made us successful in California is we not only allow looking at cost-effectiveness, we mandate it. So you give priority to the most cost-effective because for a dollar saved on one project as you go into time, all at once things change and you can actually get the biggest bang for the buck. Let us just say that. And always understanding that, like it or not, we are always going to be deficient so we need to give that priority and from the environmental point of view.

My question is that when we talk about zero, how do we get to zero as long as we are buying dirty coal-fired electricity? Well, I do not understand how you get to zero on that unless you are talking about buying off somebody else's reduction as a way to buy indulgences, something that even the Catholic Church does not do any more. How do we get to zero?

Mr. HARRIS. Well, I do not have a detailed blueprint of that for you, but I would say in concept the first and most important thing to do, as you were suggesting a moment ago, is to invest in the energy saving measures that are cost-effective. And we believe that over time, given the time to both fully deploy today's technology and to develop the new generations of technology that we were talking about, we can get down to at least 75 percent, maybe 80 percent reduction in energy use in a typical building today.

That remaining 20 percent will have to come from a non-polluting source, as you were suggesting, and there are several options available. One is renewable resources that are available onsite. Solar is the most obvious. Second is renewable energy that is available offsite. And the third, of course, would be to purchase offsets from action in other areas.

Mr. BILBRAY. Yes, and see, the offset issue is where I have a real problem. I can see that out in the open market, but I think for us to be buying up the offsets is then taking that out of the pool that may be able to be used by the private sector. And I think that we have an added burden as a public agency go onto it.

I just do not see why we are not negotiating right now, looking at not buying any more coal, not buying any more dirty electricity, and instead of talking 5 percent reduction we talk 100 percent re-

duction because we do not buy from people that are putting out greenhouse gases. And I know that sounds like a tough one to toe but, as you know, you would go to prison in California for generating electricity the way it is generated in this town if you tried that in California. I yield back, Mr. Chairman.

Mr. TOWNS. Thank you very much. I yield to Congressman Welch.

Mr. WELCH. Thank you, Mr. Chairman. Ms. Figdor, thank you for testifying today. I want to ask you about legislation that I have recently proposed, and I understand you have had a chance to review. I launched an initiative, and this is small compared to what Chairman Waxman has initiated but something that as a Member of Congress I could do, and that was to make my office carbon-neutral. I did it by working to first reduce my office's energy use and then by offsetting the remaining carbon emissions.

And I am offsetting the greenhouse gas emissions related to my office activities by providing some financial support to two Vermont renewable energy projects, and the end result making my office carbon-neutral. Because of the existing law that applies to congressional budgets, I used my own personal funds to do this and was glad to do it. But it seems to me we may get broader participation from other offices if we give flexibility so that offices can use their existing funds, not new money, but existing funds to do this. So my question is are you familiar with my bill?

Ms. FIGDOR. Yes, I am.

Mr. WELCH. Has the environmental community, of which you are a part, had the opportunity to review it?

Ms. FIGDOR. Yes.

Mr. WELCH. Do you have a view about whether this legislation would provide a meaningful contribution to our efforts? Meaningful but limited, I understand that. But a meaningful contribution to our efforts to address global climate change if we would add language that addressed the issue that some of my friends in the environmental community on the other side are raising, that would guarantee that the credits do have long-term integrity? Language that would ensure that the offsets are real, that they are additional energy that is renewable, that they are verifiable, that they are enforceable, and that they are permanent? Do you have an opinion on that?

Ms. FIGDOR. Yes. In the short-term before a mandatory national cap and trade program is up and running, a limited offsets program definitely has a role to play. It could provide a positive contribution by reducing the Federal Government's carbon footprint and also providing the EPA much needed experience in figuring out how to develop and implement a sound offsets program.

As you stated, there are critical safeguards that we need to include in any such legislation to ensure the long-term integrity of the offsets. In addition to criteria you mentioned, we would also need to ensure that there is surplus, that credit would not be given for actions that would have been taken anyway. And then also ensuring that EPA is the agency that is developing and implementing the program.

Mr. WELCH. Thank you. So the EPA would be the right agency to be doing this?

Ms. FIGDOR. Absolutely. They are the appropriate agency to implement this.

Mr. WELCH. OK, and with the addition of those criteria we would have the confidence that the offsets and credits were actually providing a lasting benefit to the environment, ensure that taxpayer money was well spent, not being wasted, and provide us with experience going forward to achieve some of these goals in the chairman's bill? If we put those changes in that you have suggested and I have discussed, then would that be legislation that your organization could support?

Ms. FIGDOR. Yes, we would be pleased to support that legislation and work with you on it.

Mr. WELCH. OK, thank you. Mr. Harris, although the GSA and Defense Logistics Agency are required to provide only energy efficient products in catalogs in which they are readily available, the system apparently is not working. In some cases it can be hard to find Energy Star or other efficient products in catalogs where they should be available. In some other cases the catalogues claim that products are Energy Star certified even though the Energy Star program does not even apply to those types of products. Can you help us understand this situation? Why is it so easy for products to be falsely identified as Energy Star compliant in the government procurement schedules and why are these schedules still prominently listing inefficient products?

Mr. HARRIS. Let me give you an introduction to that topic. I think it is also important that the subcommittee hear directly from GAS and DLA on that part of your oversight function. There is a tremendously complex system of Federal procurement, and you have mentioned the two largest Federal supply agencies, the General Services Administration and the Defense Logistics Agency. They supply literally tens of thousands of different products. Since this provision was put in law, and even prior to that, similar provisions have been part of executive orders for a number of years.

I would say that both agencies have made limited efforts to transform their systems, but there is a lot more to be done. The Defense Logistics Agency, in particular, has been forward thinking and more aggressive in changing the way that they code these thousands and thousands of products in their data bases so that you can easily identify the efficient from the less efficient ones. In the case of GSA, there is a somewhat different system that applies to most of the energy using products that they provide. And that is a system where they do not directly purchase wholesale and sell retail to agencies, but they arrange contract price and conditions. That is the GSA schedules. And the GSA position, as I understand it, has been that they really do not control the quality of the data that describe those products. That is the vendor's responsibility. They simply set up a marketplace and set up the terms of exchange and it is up to the buyer to watch out for him or herself.

I think personally that more can be done. This is a world of highly automated systems online. It should be possible, with some effort, to design checks and controls into the online systems that are increasingly used so that it is easier for a Federal buyer to know which product is efficient and which is not, to know which ones meet the law and which do not. So there is a lot more to be done

and I think that is something the subcommittee should address directly to the GSA.

Mr. WELCH. OK, thank you. I yield back the balance of my time.

Mr. TOWNS. Thank you very much. I now yield to Congressman Issa.

Mr. ISSA. Thank you, Mr. Chairman. This is a really good hearing. I appreciate the opportunity to sit in. It is kind of interesting, I did not mention in my opening remarks but I am in the Cannon Office Building. And although I respect the Member's statement that he is carbon-neutral, I have never been in a less environmentally friendly building. You can imagine, it has a 1939 air conditioning add-on that does not work right, windows are open everywhere, they are single pane and they are historic, meaning they leak. One of my first questions, and it is not that I am complaining, Mr. Chairman, you are here in Rayburn, are you not?

Mr. TOWNS. I must admit, I am.

Mr. ISSA. Specifically, one of the things not mentioned in the bill but I would like to bring up, do you believe that this committee should first of all hold the House of Representatives to the highest standards at the earliest date and if so should we include either in this or in companion legislation bringing the House of Representatives at least up to, Mr. Purnell, what one might call today's standards?

Mr. PURNELL. Well, I will speak for the AIA because we looked at ourselves and we are in the process right now of greening our headquarters building at 1735 New York Avenue and bringing it up to today's standards. The building was completed in 1974, not quite 1939, and although it appears——

Mr. ISSA. No, no, we were 1907. They put in the air conditioning in 1939 which is when we stopped being closer to carbon-neutral.

Mr. PURNELL. Well, we are sort of getting our own house in order so that we can walk the walk and talk the talk with some certainty and say this is how you do it with an existing building. It does take an investment of both time and resources. And our members have suggested that this is what they would like to see and our Board has made that commitment. So to your question, yes, I think you should.

Mr. ISSA. Do you think we should amend the historic preservation portions to allow for further modernization than presently is allowed for many buildings, including the ones that we are in?

Mr. PURNELL. I do not know without looking at the building from a design standpoint which preservations you would need to be relieved from.

Mr. ISSA. Well, for example, the Architect of Capitol does not allow the windows to be changed either on the Capitol or on the Cannon House Office Building, which by definition means they leak even when painted shut.

Mr. PURNELL. As far as I know, in the Department of the Interior regulations, there is nothing that says you cannot change the windows. You cannot change the profile of the windows or the material of the windows, but you certainly can make them leak-free and thermal pane. It will cost more, but you can do that. And you can do it in such a way that you will not know that the windows now are thermal pane.

Mr. ISSA. Thank you for making the record complete on that. I will use it. I think probably the biggest question I have, and it is following up on the earlier questions, is the business of distorting the market. Would I be correct in saying that in our legislation we should ensure that 100 percent of any offsets we buy are new production? That we not simply go out and buy nuclear energy or go out and buy wind energy that is already there and thus deny the private sector and meet our goals by, if you will, cherry-picking the market? Only the disagreers need respond.

[No response.]

Mr. ISSA. The case of the automobile fleet, I would be the first to say that we have way too many Suburbans hanging around Washington, DC, even the unarmored one. But does anyone know how much improvement we could make today if we simply went to the most energy efficient automobiles available within, let us say, reasonable use? I mean, you cannot use a Chevy sedan to do big truck lifting, but how wasteful are we today? In other words, how many quick gains, Ms. Figdor?

Ms. FIGDOR. I do not know the answer precisely off the top of my head, but there is about one third of the vehicle market that currently meets the California emissions standards, the greenhouse gas standards that would be required for the Federal fleet in this bill. And that requires an overall reduction of about 30 percent by 2016.

Mr. ISSA. And following up, do you support nuclear as part of reaching this goal?

Ms. FIGDOR. No, we do not support the use of nuclear power.

Mr. ISSA. Do you support carbon sequestration or what we often call clean coal?

Ms. FIGDOR. We think it is important to continue the research into carbon sequestration and see if it is a viable technology that can be part of our strategy to address global warming.

Mr. ISSA. Great. I am sure we will continue this for many days to come. Mr. Chairman, thank you very much.

Mr. TOWNS. Thank you very much for your questions. Let me begin with you, Ms. Figdor. You say the time to act is now. What will happen if we wait a few years? And let me put the flip side to it, how would we be in better position if we had started doing things say 5, 7 years ago?

Ms. FIGDOR. We would be in a much better position if we had started 5, 7 years ago. About a fourth of all carbon dioxide emissions remain in the atmosphere essentially forever, for at least 500 years. So our actions and any delay that we take in starting to reduce our emissions has enormous consequences for future generations in terms of the actions that they will need to take in order to avoid the worst consequences of global warming.

Mr. TOWNS. Thank you. Let me just say to my colleagues that I do have some good news. In response to a call from Speaker Pelosi, the Chief Administrative Officer of the House has issued a preliminary report on greening the Capitol. So I just wanted to let you know there is some thinking about it.

Mr. BILBRAY. I have read it.

Mr. TOWNS. Yes, thank you very much. Mr. Harris, you say that even before we start following new requirements, Federal agencies

need to follow the laws already on the books. What can Members of the U.S. Congress do to have these agencies follow the law?

Mr. HARRIS. Well, as I was mentioning earlier, Mr. Chairman, there are two critical areas. One is oversight and there are new provisions in the proposed legislation by Chairman Waxman that would create a flow of information through the Office of Management and Budget to the Congress in addition to the information that already comes in the annual report to Congress that is prepared by the Department of Energy's Federal Energy Management Program. So frankly I think that looking at those reports, asking questions, holding hearings, getting the Federal representatives in, asking them what is important to help them solve the problem is critical.

The second area is assuring adequate appropriations and stability of appropriations so that agencies are not facing ups and downs in their budget every year. And it is true, they do have alternative sources of financing as I mentioned in my comments and in our written testimony, but that baseline of annual appropriations to hire staff, to get staff trained and experienced, and to make sure there is long-term management for these programs and some continuity are absolutely essential to carrying out any of these provisions.

Mr. TOWNS. Right. Thank you very much, Mr. Harris. Let me move to you, Mr. Purnell. In the past we have heard a lot of comments about aesthetics in terms of people, in terms of the general feel of green buildings. We have heard these comments down through the years. I was hoping you would sort of set the record straight today. Could you describe how a typical green building differs from a standard building we would be more accustomed to? And how would working in a green building be different for the average person than a standard building?

Mr. PURNELL. Well, to answer the last part of that, it would probably be healthier to be in a green building because of the emissions that would not be generated from using certain types of carpets or paint or fabrics in a building that is not a green building.

And let me say that green does not have to imply that it is an ugly building aesthetically. I mean, we heard the same arguments when the Americans with Disabilities Act was being implemented, that the ADA is that we are going to have all of these ugly ramps and these ugly door pulls and the poles in the bathrooms are going to be looking crazy. And I would suggest today in a modern building that meets all of the ADA standards there is nothing that is apparently ugly or unattractive about it in that it does meet all of the requirements. As a matter of fact it is pretty much transparent to the average user that the building is handicapped accessible.

That would be the same with probably a green building in time. You may have a green roof that appears to be sort of unique when a person goes out there but in time, after other buildings are implementing the same sorts of strategies, things that are obvious today in a couple years will be normal and in use. I mean, look at what we have done with the automobile industry in alternate fuel cars. They are integrating that same technology in body styles that now look just like every other car on the street. So, I do not see that there will be an impact, or a negative impact, with aesthetics.

Mr. TOWNS. Thank you very much. If this bill becomes law, Federal agencies will have a couple of years to prepare to reduce their greenhouse gas emissions. Let me begin with you, Mr. Harris. I am wondering what discrete measures you would advise Federal facility managers to consider to reduce the emissions associated with their facilities. What can they do right now, what would be the impact on our energy bottom line?

Mr. HARRIS. Well, let me focus on the energy saving activities. There are some other provisions that might help to reduce greenhouse gas emissions, perhaps choosing different fuel sources, but that often involves a more significant capital investment. I think that if you look at energy efficiency in existing facilities, there are study after study and case after case that show that in almost any Federal facility, just like non-Federal facilities, commercial buildings, you can typically find 15 maybe 20 percent savings out of relatively low cost, simple things just making sure that the buildings and their systems are operating right.

There is a process called commissioning, which means that you go through a building, you check out its systems, and you make sure that what was designed into them is what is still there, that changes have not been made, perhaps inadvertently over the years. That the dampers that bring in outside air are not stuck open or stuck closed when you do not want them to be. So there is a range of activities that are fairly well established that involve energy analyses or energy audits of operation and maintenance improvements and the commissioning or recommissioning of these mechanical systems. So I think that is an important short-term step.

A second step, though, is to make sure that the occupants of those buildings understand how the building works and understand what they can do as occupants in their own way to make the building work as intended. Not opening the windows at the wrong time or closing them if they should be open to let in fresh air. Not fiddling with the thermostats or getting up on their desks and changing the settings in the air ducts. Turning off the lights, something as simple as that. Turning off their office equipment.

So there is a very important educational effort for Federal employees and there are examples of how this has worked very well in certain sites and in certain Federal agencies. And for that matter, I would add it to the agenda for greening the congressional buildings. Helping the occupants of those buildings, Members of Congress and the staffs to understand how to use their buildings and their equipment as efficiently as possible.

So those are the two things, I think. Short-term measures operations and maintenance to get that first 15 or 20 percent and then helping the occupants of the building to make those measures succeed over the long-term.

Mr. TOWNS. Right. Thank you very much, Mr. Harris. Let me ask you, Ms. Figdor and also Mr. Purnell, do you have any suggestions for a Federal facilities manager who is thinking about how to meet the goals? Do you? Let us start with you, Ms. Figdor, and then I will come to you, Mr. Purnell.

Ms. FIGDOR. I think as Mr. Harris alluded to, employing the technologies that we already have at our fingertips but are not using. I mean, there really are enormous opportunities that we are

just passing up at this point, and then just being smarter about the decisions that we are making.

Mr. PURNELL. Many of the decisions are sometimes management and operational decisions, like when the building is cleaned. In some cases you wait until everyone is out of the building, therefore you are running the entire system for the building for heat or air and lights while you have a very skeletal maintenance crew within a building. You could maybe start that whole process earlier in the day. You could design it in such a way, design the building systems in such a way that you do not have to run the complete systems or run a whole floor for a skeletal crew that is in there or for an employee who wants to work late on night. That you are not heating or cooling an entire floor or third of the building based upon the temperature controls for that particular building. Those are things that could be looked at in terms of just operational things that are happening not only in the Federal Government but are happening in the commercial sector as well, the private sector.

Mr. TOWNS. Thank you very much. Let me yield now to the ranking member, Congressman Bilbray.

Mr. BILBRAY. Yes, thank you very much. Ms. Figdor, do you believe, well let me stop a second. Now, I am sort of looking at this. I appreciate the fact that you have talked about smart growth and about non-point source emissions that are always missed out, that the real footprint is missed out. I will tell you, every time I am in a hearing on greenhouse gases, I look at the fact that we are having trucks bring our water in to us and us have an on-source purification. Now, I know that seems nitpicking, but after spending 18 years looking at deodorants to try to stop emissions you really do get down to those kind of nitpicking.

Ms. Figdor, I have a question for you. Do you believe that, speaking of automobiles and emissions stuff, that corn-based ethanol is part of the answer to fight greenhouse gases?

Ms. FIGDOR. I think it can help as a transition fuel, but we need to move quickly to cellulosic ethanol that will get us a lot more reductions and be a lot more sustainable overall.

Mr. BILBRAY. Do you believe that corn-based ethanol is a net reduction in greenhouse gases?

Ms. FIGDOR. If it is sustainably produced and converted into fuel, yes.

Mr. BILBRAY. OK, I just want you to know for over 12 years we have been asking the Federal Government to stop the mandate to use it for environmental reasons. And I know that there are people in this town that defended it. Do you understand that the first thing that a farmer does when they plant their corn is put nitrogen into the soil? Do you realize where that nitrogen comes from? Do you know the source?

Ms. FIGDOR. Yes.

Mr. BILBRAY. What is the source?

Ms. FIGDOR. Sir, I fully agree with you. Like I said——

Mr. BILBRAY. It is natural gas.

Ms. FIGDOR. It does have to be sustainably produced.

Mr. BILBRAY. OK, I am just saying not just that, but the fuel used to produce this stuff, I just wish that some of us that claim to be environmentalists are willing to stand up and say the em-

peror has no clothes. And remember the ethanol and methanol mandate. I got trashed because I stood up against that mandate and now the wells are polluted around here and people who claim to be environmentalist supported that mandate. But if you cannot even say that Archer Daniels Midland selling, that corn-based ethanol just does not pencil out, not just economically but also environmentally. I got a real problem with your credentials if we cannot even agree on something as basic as the fact the environmental community made a mistake. And this is what I meant by business has to change their attitudes and reassess their values. The environmental community has to do this, and I am very concerned if you can still defend corn-based ethanol sitting before this committee.

Ms. FIGDOR. USPIRG was a strong supporter of California's waiver of the ethanol requirement, and that was something that we worked and were very——

Mr. BILBRAY. What year did you support it?

Ms. FIGDOR. A few years back, now.

Mr. BILBRAY. A few years back? Well let me tell you. In 1995, 1996, 1997, 1998, 1999, and 2000 you attacked the proposal. It was not until after 2000 and the wells were polluted that you reversed your position. So if I am bitter here, it is because I was strung up as being anti-environmental when I was carrying a bill for the Air Resources Board, which I think you would agree is not somebody who is in the pocket of polluters. So I would just ask that we get a concern on that. I only bring that up because it really concerns me that we rethink what you have been taught because we have to rethink everything.

Mr. Harris, I really appreciate your talk about smart growth because the one thing we have not talked enough about is the fact that we do not do enough to get government and local government to take on the special interests and the active opposition to smart growth. You know my district, it is a very environmentally sensitive district along the California coast. They are so environmentally sensitive, Ms. Figdor, they recycle the Congressmen.

But the same people who claim to be environmentalists will oppose intensification of development around the train station. And nobody calls them down on the fact that this, I have not seen an environmental group stand up and really fight for smart growth when it means intensification to do all of it. And I want to thank you very much for bringing that up.

Mr. HARRIS. Could I suggest that our colleagues at the Natural Resources Defense Council also feel very strongly about smart growth strategies.

Mr. BILBRAY. Yes. Mr. Chairman, I would really ask that we have another hearing. I think that is really important because you have people that have the concept here but I would like to have the hearing of those who are actually doing procurement, actually doing the leases, actually out there. And let us have a dialog with them about the practical barriers. You have the theoretical approach here. Now we have to get the practical people in to try to put them together, and I think that can really make this a possibility. Thank you very much, I appreciate it.

Ms. Figdor, I appreciated the chance to be able to vent my frustration. You can imagine standing up for the environment and having people trash you and say that you are trying to pollute the air when you have spent most of your life fighting for that clean air. And I appreciate the ability to work with you in the future. Thank you.

Mr. TOWNS. Thank you very much, Congressman Bilbray. Let me thank the witnesses. I really appreciate you coming and sharing with us. I think this is the way we really come up with strong, practical, and important legislation. It was said many, many years ago that Benjamin Franklin, I am sorry, it was Thomas Jefferson who read a book on how to swim. And he read it, how to pull his legs and kick and pull his arms, and he jumped in the deep water and almost drowned.

I think that we do this here in the Congress quite often, that we do not get enough input in our legislation before we jump and we do it. So I want to thank you for coming and sharing with us. And of course, we hope that as we continue to talk and dialog that we will be able to get strong legislation that will move us in the right direction. Because this is a very important issue and I think this is the way we get it right. Thank you so much for coming.

And on that note, this subcommittee is adjourned.

[Whereupon, at 3:40 p.m., the subcommittee was adjourned.]