

The Society for Conservation Biology
Answers to Questions of
The Committee on Energy and Commerce
On Options for Climate Change Legislation

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Thank you for the opportunity to offer our responses to your letter of February 27th on Climate Change on behalf of the Committee on Energy and Commerce. The Board of Governors of the Society for Conservation Biology has recently determined that climate change is the top priority for our policy work this year.¹ This paper is our response to that letter asking conservation and energy non-governmental organizations such as ours for our advice.

As the world's decision-makers explore the next steps in the climate challenge the Society for Conservation Biology can assist you by drawing upon the independent and collective research and wisdom of more than 12,000 professional conservation practitioners around the world with expertise in the biology, ecology, social sciences and law of the conservation of living natural resources. For example, as of early March, our leading journal, Conservation Biology, provided web access to its 731 peer reviewed articles that addressed climate change in one aspect or another.

Our members know only too well that climate change, with the warming of trout streams and the potential drying of western wetlands critical to successful bird migration – just two examples of many looming impacts on ecosystems - is unraveling generations of work in our joint effort to understand and to conserve nature. We appreciate your work in coauthoring the Endangered Species Act and the National Environmental Policy Act, and that of your father in laying the foundations of federal conservation law in such laws as the 1950 Dingell-Johnson Act. That Act provided federal aid for fish restoration through a tax on sport fishing equipment. The successful theory behind the Act, that those who use a resource most directly will support a small tax as one of several tools to conserve and restore that resource, may shed some light on one of the answers to today's question of how to address greenhouse gas emissions and climate change.

The natural systems of the earth – such as forests, grasslands, wetlands and coral reefs -- are significant parts of carbon cycle. How we manage the natural and human dominated

¹ www.conbio.org

landscapes can help or hinder solutions to climate disruption being caused by greenhouse gases.

Let us plan then, to turn this around.

Given the recent admissions that estimates of acceptable levels of greenhouse gases and destructive feedback loops have been too optimistic, you should avoid a rush to final judgment. **Take affirmative steps now but do not foreclose additional ones in the very near future as science and economics that have been too long suppressed or ignored unfold.** Our key recommendations² for the Energy and Commerce Committee this spring are that you:

1) **Include forests and other natural mitigation systems in your calculations so that their role in controlling the effects of greenhouse gases and their own changing status in the face of climate change is taken into account and addressed through conservation and restoration.** For example, even in setting caps on greenhouse gases we should factor in the impact here and abroad of excessive harvesting and of climate change on ecosystems' health and ability to successfully convert carbon dioxide into oxygen, to withstand more forceful storms, and more persistent attacks by native and non-native insects and diseases. This also means that we must respect the limits of nature and not convert so much land to the production of one or a few crops for biofuels that we lose more in biological diversity and its inherent stabilizing effects and services than we gain in energy production that could be better found elsewhere.

2) **Require conservation rates for energy utility services** with modest charges for essential services but escalating rates for larger amounts of use; time of day and seasonal adjustments to reduce peak demand; and adjustments to encourage utilities to offer and profit from efficiency investments, such as insulation, efficient appliances and industrial electric motors.

3) Studies, such as one by the Congressional Budget Office in September,³ and early reports by the DOE, and numerous think-tanks found that taxing greenhouse gases will be more effective than trading pollution allowances. Additional studies show pollution taxes to be most effective when their revenue is applied to increase energy efficiency and renewables production and to reduce other taxes. Therefore under your committee's jurisdiction, you may want to **consider applying such fees to use of pipelines and transmission lines. Fees could be set to reflect the pollution attributable to the oil and gas transmitted in pipelines and to the generation of electricity transmitted through power lines.**⁴ You could request that the CBO, Joint

² We recommend that you evaluate these options and others at this stage. We hope to work with you to provide scientific and technical assistance as you develop more specific legislative approaches later this spring and summer.

³ "Evaluating the Role of Prices and R&D in Reducing Carbon Dioxide Emissions". September 2006, a CBO Paper, by Terry Dinan, reviewed by seven CBO senior staff and other experts from academia, think tanks and industry. The other studies are identified and discussed below.

⁴ Electric power is sold by contracts with producers whose power supplies are known or can be determined by the FERC. This would allow assessing fees according to the level of pollution emitted by electric

Committee on Taxation, Congressional Research Service and others review the literature, including papers presented to the European Union and Commission and other practices concerning taxes or tariffs on goods and services⁵ from countries that do not have comparable controls on pollution and forest management. You could also **work with the Committee on Ways and Means to coordinate pollution limits imposed by Energy and Commerce with tariffs or limits to be imposed on imports whose production generates pollution that is less taxed or pollution at levels beyond undercuts the limits you allow.**⁶

4) Promote renewable energy through a renewable energy portfolio standard, better access to the grid and new efficient transmission lines, and tax shifts.

5) Given the serious ecological and climatic disruptions we are already experiencing, you should **cap emissions of all six major greenhouse gases near current levels and develop a program for rapid phase-out of the greatest sources of pollution and the least efficient plants in conjunction with reductions in caps every four to five years thereafter.** DOE and other research demonstrates that solutions are more numerous and less expensive than widely understood particularly when compared to the alternative expense of ecosystem dysfunction, drought, floods, disease, even if we manage to avoid the dozen or more tipping points that exist in key global regulatory systems from currents to ocean salinity to methane release in the boreal forests. Solving the problems of climate change, mitigation, and adaptation, etc. will probably require limitations on emissions and land management, tax adjustments, directed spending, international agreements and changes in development assistance, research and enforcement. In fact, this challenge actually offers great opportunities for the U.S. economy and environmental health. Therefore, you should work with other relevant committees such as Ways and Means, Natural Resources, Appropriations, Government Oversight, and the select committee on climate change to develop complementary legislation to meet the Speaker's June deadline while planning to refine the provisions over the course of this Congress. If we are wrong, caps can be lifted.

6) Direct the Federal Energy Regulatory Commission, DOE and other agencies to override regional discriminatory practices in grid management and **enhance energy transmission and policies** in consultation with the Fish and Wildlife Service and NOAA, **to encourage contributions by renewable sources**, such as wind, solar, low-head hydro, geothermal and biomass-based energy produced from sustainably managed, wildlife-friendly lands and waters and develop guidance for minimizing the impact of all energy sources, including fossil and nuclear power, on wildlife.

generating facilities. Transmission and pipeline fees would allow us to reflect the pollution attributable to imported energy and fuels as well in a manner that treats domestic and foreign sources comparably.

⁵ (E.g., foreign flights landing in France are now taxed to reflect their greenhouse gas emissions.)

⁶ U.S. agencies can use data from the International Energy Agency and solicit more from affected countries in attributing gases to production in a way that is GATT and WTO compatible. Proceeds can also be made available as loans or grants to help clean up production methods in the affected developing countries.

7) **Cut subsidies, direct and indirect, for any energy source, such as fossil fuel and nuclear energy production⁷ and use⁸ that does not produce the net public benefits currently needed. Likewise, revise federal policies on access to subsurface minerals on to ensure full restoration when vested rights are exercised and minimize leasing that compromises biological diversity. Redirect the savings toward implementation of conservation programs that enhance mitigation, adaptation and energy management that supports the conservation of biological diversity.**

Your letter is the beginning of a process of asking the right questions and making decisions based on the best scientific, economic and legal options available in a way that adapts to changes in the problem and the solutions available. There is no coincidence that your current committee process is like that required by your landmark legislation, the National Environmental Policy Act of 1969. That is, NEPA requires executive branch decisions that are likely to have a significant impact on the environment to be preceded by identifying all of the issues and resources affected (the scoping process) and, after public review and comment to proceed with the least harmful alternative, even if more harmful actions are permissible under law. Likewise, you have begun with a wide invitation to identify the issues and alternatives for action. Therefore, we begin our list of recommendations with that point.

We do not suggest that you report out one bill that will be referred sequentially to too many other committees, but we do suggest that you work with the others in designing legislation that uses more than one committee's authority in order to develop the most effective response to this serious challenge. Therefore we include comments that have to do with other committee's powers as well.

The following are short answers to your questions and short descriptions of some of the options that we believe should be considered carefully when addressing climate change. We are not yet recommending a finished set of responses or one level of cap or tax or ecosystem restoration, for example, but recommending that the Committee consider ways of implementing these options among others.

We have organized our answers to respond to the questions you pose, in the order you pose them, in your letter as summarized again below:

⁷ The life cycle of nuclear energy involves enriching the fuels, largely through coal-burning power plants to date, and considerable impacts as well as other risks and costs beyond that.

⁸ CRS estimated 4.25 billion dollars was allocated to direct fossil energy subsidies in FY2005. Recent studies of subsidies enjoyed by the nuclear power industry have found that 60-90% of their cost is paid or allowed by the federal government every year to the tune of several billion dollars per year. Other studies have shown that, from the late 1940's to the late 1990's, nuclear and fossil fuels received between \$115 and \$147 billion in subsidies compared to renewables' \$5 billion. ("Nuclear Power in the U.S.: Still Not Viable Without Subsidy", Doug Kaplow, Earthtrack, Institute for Nuclear Policy Research Symposium, Nov. 7, 2005.) <http://www.earthtrack.net/earthtrack/index.asp>. (Some of the material and references for this response to Chairman Dingell et al. are derived from papers prepared in 2006 by the author for the Institute for Policy Studies' Sustainable Energy and Economy Network with the permission of its co-director.)

1. Issues to be addressed in the committee's legislation, how they should be resolved, along what recommended timetable for Congressional consideration and enactment, and the impact of the policy recommendations on

a) emissions of greenhouse gases and the rate and consequences of climate change, and

b) the effects on the U.S. economy, consumer prices and jobs.

2. Thirteen questions about cap and trade

3. How well are existing authorities and voluntary systems working and what lessons can be learned from them?

4. How should potential mandatory domestic requirements be integrated with future obligations the U.S. may assume under the UNFCCC, and should U.S. domestic requirements be conditioned upon assumption of responsibilities by developing nations?

Our Recommendations:

1. What issues should be addressed, when, how and at what cost?

In a nutshell, the Congressional response should begin with the reform of spending and tax policies, such as tax credits for conservation, that do not require extensive administration interpretation this year. Also this year should come limitations upon what can be rejected by the current Administration in international negotiations in both UNFCCC and other complementary fronts, such as the G8, and in other UN bodies. Later this fall or early next year Congress should send to the President the remainder of a completed package of climate change responses requiring regulations to be promulgated in the Spring of 2009.

Given the competitive price of renewable energy and efficiency today, the net cost of climate change legislation will not be a cost, but a set of net benefits from household net income to environmental and public health, to national security. Congress should provide direct assistance beginning this year to workers and communities making the transition to energy efficiency, renewables and ecosystem conservation and restoration.

A) Expressly rely on, and do not preempt, key assessment procedures and other legal constraints on pollution.

The first admonition, repeated on the cover of the October – December, 2006 edition of our magazine, “Conservation in Practice” is the element of Hippocrates’ oath

that those who seek to correct a problem should “**First, do no harm.**” In any legislation you consider, therefore, please --

-- **Do not preempt key assessment procedures or other legal constraints on pollution.** In other words, do not allow the adoption of one method to reduce gases result in increases in other significant pollutants or the bypassing of laws based on assessment procedures for significant federal actions or those affecting protected species, including but not limited to the Endangered Species Act and NEPA. These are designed to avoid harm to protected species, the public and the environment from any cause. This Congress should explicitly state that it is not preempting existing federal law and review procedures that are mutually supportive of any new standards, and it should expressly allow stricter state standards.

In fact, the committee should **consider relying upon the NEPA process to sort out the best available technologies and policy options from among not just those in the hands of any one agency, but those that several agencies might bring to bear on any given question of energy supply, demand, transmission or greenhouse gas mitigation.**

B. Conserve ecosystems’ ability to convert greenhouse gas emissions and mitigate climate change, and do not assume continuing performance in the face of climate-driven stresses.

-- Ensure that the full capacity of biological systems to mitigate climate change and their relative lack of capacity to adapt to it are both addressed. That is, if lack of forests is roughly 20% of the problem with the earth’s inability to convert greenhouse gases, in particular carbon dioxide to oxygen, for example, and if forests are being degraded by climate change driven insect invasions, diseases, and other disruptions, then legislation should address that, both in protecting the ecosystems that protect us, and in calculating reduced tolerances for emissions from all sources, including methane released from perma-frost or nearby soils under unsustainable harvests of forests in the boreal or northern-most forest systems. This can begin with things outside of the committee’s jurisdiction, such as the proposed Farm bill’s shift toward conservation, wildlife, and renewables in agriculture, for example but it should not be omitted from the central climate legislation.

While forest management on public lands falls largely within the jurisdiction of the Committee on Natural Resources, the Committees on Agriculture and Ways and Means and others affect forest management as well. All forest programs, in order to address climate change, should take into account what forests do for its mitigation and what climate change does to forests. For example, while it may promote growth in some species and locations, it also allows insects to survive winters in areas once more resistant to them and combined with aggressive harvesting, it threatens to release greenhouse gases from the soil of boreal (northern) forests at unsustainable rates. That understanding,

in turn, must affect the levels at which caps on climate gases are set and the types and extent of forest harvests allowed, among other things.

Dr. Reed Noss, now President of our Society's North America Section, laid out some of these considerations in our peer reviewed journal, *Conservation Biology*, the article "Beyond Kyoto: Forest Management in a Time of Rapid Climate Change"⁹.

-- Ecosystem Restoration and Adaptation -- In addition to forests, there are other biological elements of climate change response, such as restoring degraded beachfront vegetation and assisting intelligently with adaptation and migration of key species threatened with climate change. This work can be funded directly through greenhouse gas taxes as well as indirectly if mitigation projects that are privately funded are well-designed, controlled, and understood against a baseline that is accurately set and monitored over time.

-- Beyond converting CO₂ to oxygen, forest, grasslands, shoreline and other ecosystem conservation and restoration can pay multiple roles and provide exponential benefits ranging from holding water, cleaning it, and releasing it slowly without losses in soil and with reduced flooding to hosting pollinators that multiply the effectiveness of agricultural efforts to providing wildlife and recreational opportunities for all.

C. Use Adaptive Management -- Incorporate Conservation Biology and Related Science as an on-going part of the Regulatory Process.

We suggest that you review the literature with the help of the Congressional Research Service, the agencies, and groups like SCB to determine effective allocations and controls over time, request additional in-put, and build a review and adaptive management loop into the process you enact as well.¹⁰

⁹ *Reed F. Noss*, *Conservation Biology*, Volume 15 Issue 3 Page 578 - June 2001-- Abstract: Policies to reduce global warming by offering credits for carbon sequestration have neglected the effects of forest management on biodiversity. ...[T]oday's fragmented and degraded forests are more vulnerable. Adaptation of species to climate change can occur [in different ways]. Among the land-use and management practices likely to maintain forest biodiversity and ecological functions during climate change are [nine key practices to protect and buffer diverse forest types] that differ little from good forest management [but require more definitive application].

¹⁰ Congress could review some of the reports of its former Office of Technology Assessment to help in this process – for example, reports that confirmed the very large energy potential of U.S. woody biomass from biologically diverse forests and options for conserving biological diversity.

D. Limit (“cap”) emissions of all six major greenhouse gases near current levels and schedule reductions no less than every four or five years.¹¹ While most organizations call for limits or caps in carbon dioxide, some fail to recommend limiting the other major greenhouse gases. The Committee should consider how best to accomplish limitations on and reductions of all the major GHGs. California has accomplished much of this by increasing efficiency as well as through legal limits. It uses no more energy per person than it did in 1974. That efficiency has not only permitted but has helped bring about California’s continuing economic success, as it remains by itself among the top 8 “national” economies in the world even given the admittedly outmoded measures that make up the measurement of the Gross Domestic Product. That efficiency was achieved in large part with decades-old technologies and can be surpassed with the application of the latest technologies.

E. Exercise the Committee’s Jurisdiction over Interstate and International Trade with regard to greenhouse gases and other factors involving climate change such as forest conservation. Work also with the Ways and Means Committee to Reform Taxes to Address Climate Change. Trade and Tax Reform may be key tools in both efficiently controlling greenhouse gases and fundamentally altering the way we derive, deliver and use energy. Even within the confines of the current GATT and WTO, the Shrimp and Sea Turtle Appellate decisions of the WTO in the early 1990’s confirmed very significant powers nations have to control the importation of products produced with methods that threaten exhaustible living natural resources, particularly those protected by international conventions, when they apply fair standards with fair notice to both foreign and domestic producers.

Beginning with refundable or regular credits and deductions, and adding upstream taxes and tariffs on all greenhouse gases, the Congress actually reduce overall taxes while it primes the pump of efficiency and clean renewables. This can create a positive economic cycle that builds jobs in the U.S., in both energy and resource conservation and research, and keeps our money working in local economies, and helps citizens offset the rising direct and indirect costs of fossil and nuclear power. As discussed below the Congressional Budget Office has confirmed DOE and numerous think tank findings endorsing the efficiency of taxing carbon as an incentive to reduce emissions as recently as September 2006. GHG taxes have been implemented by Sweden and proposed as tariffs by France and others, and more recently as a source of funding to support forest conservation in the developing world.¹²

¹¹ See, for example, analysis and recommendations of NASA’s chief climate change expert, entitled Political Interference with Government Climate Change Science, Testimony of James E. Hansen, 4273 Durham Road, Kintnersville, PA, to the Committee on Oversight and Government Reform United States House of Representatives, 19 March 2007.

¹² SUBMISSION BY COSTA RICA ON BEHALF OF DOMINICAN REPUBLIC, GUATEMALA, HONDURAS, MÉXICO, PANAMÁ, PARAGUAY AND PERÚ, San José, Costa Rica 23 February, 2007, Subject: Reducing Emissions from Deforestation in Developing Countries -- http://unfccc.int/files/methods_and_science/lulucf/application/pdf/costa_rica.pdf. See also Carbon Tax

F. Revise Federal Efficiency Programs -- Most experts acknowledge that the US can achieve rapid increases in efficiency with the right economic signals and information, and using existing technology. The Congressional Office of Technology Assessment estimated, in 1993 and 1994 studies, that the US could reduce its electric energy use by 20-45% using existing efficiency technologies and that the federal government could reduce its facilities' energy use by at least 25% using commercially available, cost-effective technologies.¹³

1) Vehicle Efficiency & Transportation Planning -- Improve CAFE standards, for example, to 33 mpg for entire fleets, including SUVs and pick-up trucks within 4 years (except trucks owned by and used primarily in agriculture, construction and similar businesses requiring heavy payloads, which should have a parallel, gradual improvement as well). Require the holders of electric, hybrid and efficiency patents to make them available for use at reasonable market rates set by the Secretary of the Treasury in consultation with Transportation, Energy, and Commerce. Provide federal tax assistance, low interest loans and guarantees for qualified borrowers who seek to retrofit closed auto plants and hire unemployed auto workers or otherwise build electric, hybrid, or highly efficient vehicles for highway or rail or transit engines and cars in the United States.

The Federal government could also use the proceeds of a greenhouse gas tax to:

- a) extend the current short-term tax incentives and make available low interest loans for electric, pluggable hybrid, and hydrogen vehicle production and purchase;
- b) provide access, if necessary, by reviewing and waiving patents, for hybrid, hydrogen, electric and other efficiency technologies while ensuring payment of fair market value to any reluctant patent owners or distributors;
- c) increase direct federal support for inter-city traffic planning, mass transit and intra-city rail and mass transit, including the planning costs, emphasizing clean diesel and bio-diesel, electric and other clean technologies beginning with improvements that increase safety as well as speed and efficiency, such as track modernization;

¹³ U.S. Congress, Office of Technology Assessment, "Energy Efficiency in Federal Facilities: Update on Funding and Potential Savings", March 1994. Shortly thereafter, the Republican Congress elected in November of 1994 closed the OTA. After the natural gas shortage and price shocks in California in recent years, California reduced its consumption per capita and increased its efficiency on its own. California saved an estimated \$600 million by reducing electrical usage in the first six months of 2001 alone. California has a coordinated statewide program called "Flex Your Power" to assist all energy users (www.fypower.org). Similar results can be achieved across the country especially in areas where efficiency is still much lower.

- d) assist transportation planners in ensuring that transportation corridors, routes, and choices enhance rather than harm the potential for wildlife and plants to mitigate and adapt to the causes and effects of climate change.

2) **Building and Process Efficiency** -- Buildings and Industrial Processes can be much more climate friendly. From Passive solar design to modern photovoltaic arrays and green roofs and gardens to the full LEED standards, federal law should begin to set minimum expectations and provide assistance for not only public but federally subsidized and perhaps all buildings and industrial processes. Landscape architecture and safe grounds management can provide urban and suburban habitat for native species as well as controlling floods and storm run-off driven by weather extremes. Many of these elements are within the jurisdiction of the energy and commerce committee.

G. Enhance Renewable Energy Policies to Bring Out Their Potential To Be Our Leading Source of New Power -- For the past two years wind has been the second leading source of new electric generating capacity after natural gas but its development is still inhibited by discrimination in federal tax and other support and barriers to entry in utility grids, among other things. The Wall Street Journal published a special report on alternative energy on February 12th that covered many of these issues, such as the successful requirements in 20 states for more efficient appliances, buildings and renewable portfolio standards for utilities. In that report, the Journal noted that the DOE's Energy Information Agency has concluded that the costs of new power from wind does not differ much from that of coal or gas and is cheaper than nuclear.¹⁴ Department of Energy (DOE) and other studies demonstrated as early as 1991 that wind farms in a few states could produce all of the electric energy the United States needs while eliminating more than a third of the climate-changing and health-damaging air pollution US sources emit.¹⁵ At the time of the 1991 DOE wind study, electricity was not widely considered a potential source for liquid fuels for transportation energy, as it is now with the advent of hydrogen, electric, and plug-in hybrid vehicles.¹⁶

H. Require the Office of Trademarks and Patents, and request various engineering and scientific societies, **to report to Congress on the most promising pollution control, energy efficiency and renewable patents with recommendations concerning how their use might be expedited.**

I. Direct DOE, EPA, the Fish and Wildlife, National Marine Fisheries Services and NOAA to develop guidance for comparing and minimizing the direct and indirect impact of each energy source, including the full fossil and nuclear life cycles, on fish and wildlife.

2. Cap and Trade - SCB neither endorses nor opposes a cap and trade system, but raises questions that should be answered in each area and provided with remedies in case expectations fail, before relying on it for any overall application.

¹⁴ They were 5.58 cents per kilowatt hour for wind, 5.25 cents for natural gas, 5.31 for coal and 5.93 for nuclear. The price of wind is zero and the price of the other fuels is rising every year.

¹⁵ "An Assessment of the Available Windy Land Area and the Wind Energy Potential in the Contiguous United States, Pacific Northwest Laboratory, US DOE, 1991.

¹⁶ Further wind development beyond the windiest states was estimated in 1991 to have the potential to produce about 10.8 billion kilowatt hours, well more than twice the electric power the U.S. used in 2005. Since that study was conducted, wind turbine design has improved. Each new utility-scale turbine now produces more than twice the power that the average turbine produced in the 1990s at any given time and several times as much over the course of a year due to increased efficiency at lower wind speeds and larger turbine sizes. Any energy technology should be applied after carefully ensuring minimal wildlife impacts and it is likely that a shift to properly applied wind, solar and small hydro, backing out practices like mountain top removal for coal will result in greatly reduced net mortality.

- a) All sectors should be covered by caps or limits in greenhouse gas emissions. Trading is another matter to be added potentially after questions are answered.
- b) The Committee should consider setting in statute the current U.S. levels of all six major gases plus a small percentage necessary to accommodate federal permits already granted as of the date of enactment. This should be followed by reductions thereafter every four years according to findings concerning the best available technologies.
- c) Upstream as far as possible.
- d) Nuclear should not receive any allocations or other subsidies beyond what common sense would allow after analyzing its full life cycle risks and benefits. Renewable energy technologies should receive allowances based on their output. Efficiency investments, in so far as they can be measured in kilowatt-hour-equivalents, should also receive allowances. Receiving allowances helps these global warming reducing technologies be recognized and valued in the marketplace. For example, if a utility undertakes a program to invest in its consumers' efficiency by helping them replace inefficient machines or to insulate, that is the near equivalent of creating clean energy but they should get allowances for this unless they are allowed to add these investments to their rate base in a regulated environment that guarantees a set rate of return on investment. The committee should do further research on how such allowances would be provided.
- e) Two forms of cap should be set. For tariff calculations, CO₂ equivalent intensity in the product or lacking data in the national economy should be the measure. For capping emissions in the U.S., tons of CO₂ equivalent emitted per plant, company, and sector should be used.
- f) As noted above, in light of leading scientists' recent recommendations, such as in the testimony of James Hansen, for many years a leading climate scientist for the National Aeronautics and Space Administration, submitted today to the Government Oversight Committee¹⁷, the committee should evaluate the impact of a cap for 2009 that is in essence no higher than that necessary to accommodate facilities already granted federal environmental permits under existing law as of the date of enactment. It should be reduced by no less than 2 per cent per year of current US emissions thereafter, until the world reaches 1900 global levels at which point global temperatures began to rise nearly every year. However, the level should be reduced further if better progress makes economic and biological sense, that is, if by combining elasticity or economic effectiveness and best available technologies we arrive at a reasonable result.
- g) All six greenhouse gases should be capped, taxed, (and if verifiable and enforceable, the allowances of those with less direct health impacts¹⁸ traded) and any new ones detected later.

¹⁷ **Political Interference with Government Climate Change Science**

Testimony of
 James E. Hansen, 4273 Durham Road, Kintnersville, PA
 to Committee on Oversight and Government Reform
 United States House of Representatives, 19 March 2007

¹⁸ Nitrous Oxide may be too much of a local threat, like Mercury, and HCFCs may have too much impact on the ozone layer to warrant the risks involved in accumulations that occur through traded allowances.

- h) The Committee should consider the consequences of providing credits for early reductions in GHG and of other incentives and disincentives, from liability for harm to requirements for ecological restoration.
- i) No, safety valves should not be used at this stage if by “safety valves” you mean dispensation to pollute more if permits are “too expensive.”
- j) Offsets must be studied carefully to ensure that they are effective and that a baseline is established and used consistently. Limiting them to local application is a possible first step. UNEP should be the international coordinator of any offsets internationally rather than the World Bank, which is conflicted by its heavy investment in fossil fuels. Offsets for biologically diverse forest conservation and restoration could be important but local community involvement in forest management and rewards are likely to be essential for the success of such offsets.
- k) Auctions, if any, should be federally controlled with the revenue devoted by the Congress to climate change reduction in a biologically and socially responsible manner.
- l) The output and conservation-based allowance system noted above would help bring new clean technologies to market.
- m) First, we should consider implementing a tariff on avoided costs and/or greenhouse gas attributes of imported goods and services. The proceeds could be offered to the countries tariffed and then to others to pay for improvements. Then we could apply firm caps to foreign emissions and consider embargoing goods from countries (perhaps sector by sector within countries) that exceed caps comparable to those in the U.S. and make too little progress after a three-to five-year warning period accompanied by tariffs, during which we could offer financial and technical assistance to reduce pollution at the source. This would probably be allowed under the Sea Turtle and Shrimp Appellate Decisions of the WTO of the early 1990s or under articles XX (b) and (g) of the GATT. Until there is a very effective system of international litigation that can be brought by affected persons to enforce the terms of allowances, offsets, trades, and the like, international trades and offsets should be approached with caution.

3. Using or Altering Existing Authorities

A) Require that all significant sources or reductions in gas conversion capacity be reviewed under NEPA and the least harmful alternative be chosen:

As your letter indicates, this is a complex problem that will require responses not just by Energy and Commerce, but also by several committees and agencies of governments at all levels. Late in your letter, for example you ask about the effectiveness of current mandatory or voluntary systems without limitation. We submit that the NEPA process, and other relevant review procedures, such as the Endangered Species Act, in addition to specific emissions limits, should be applied fully to decisions that will be likely to affect the levels of

These issues require further study while strict limits are enforced (see NY Times article of March 15, 2007 on US push for tighter controls on HCFCs.)

all six major greenhouse gases or appreciably reduce an ecosystems ability to mitigate climate change or adapt to the effects of climate change. Government decisions that alter the climate have environmental and economic impacts that affect interstate commerce, federal energy transmission and highway systems. Therefore, outmoded deference to state authority in these areas should not prevent us from considering all options available to address climate change, including but not limited to energy supply and demand options that may traditionally have been left until late in the process to state utility commissions, for example. While state requirements that are more demanding should be encouraged, they should be applied together with the federal review processes for efficiency's sake.

In other words, in addition to any cap or limit or tax, each proposal for a new or expanded or re-licensed generating or refining or LNG facility should be required to demonstrate in a NEPA or NEPA-like process that it is the best available option for controlling GHGs, conserving the natural environment and public health and meeting energy demand, including demand management options before a federal permit is granted.

B) Cut Pollution, Create Jobs, and Improve Security through tax reform:

Impose taxes and tariffs to reflect the full health and climate costs of fuel and processes using it. Use the proceeds to assist taxpayers, consumers, industry and other countries to adopt the best available efficiencies and control technologies so that the net impact of the tax is neutral on low to moderate income payers and encourages effective investment for higher bracket taxpayers through credits and deductions. Numerous federal and private studies have confirmed that this joint approach is highly effective and rapid in the cutting energy waste and pollution and creating productive employment.

DOE, EPA, Congressional Budget Office, Economic Policy Institute and other studies have shown that we can save consumers and taxpayers money and speed up the conversion process to a clean, secure energy future if we impose a carbon tax of roughly \$20/ton¹⁹, and if we phase out the subsidies for non-renewables and tax non-renewables at that rate and devote the proceed to supporting efficiency and renewables, restoring degraded natural systems and reducing the out of pocket consumer costs as well as broader social and environmental costs imposed by many years of subsidies for non-renewables.²⁰ Applied to encourage

¹⁹ The CBO reported on carbon taxes in 1990 and in 1992 the World Resources Institute also recommended them along with other green fees in a publication entitled *Green Fees*. \$20 per ton amounts to about \$37 Billion a year in proceeds and would cost oil companies the equivalent of less than six cents per gallon of gasoline, which they now sell for many times that more per gallon than they did before Hurricane Katrina.

²⁰ Such as recent reductions in the royalties oil companies pay for offshore oil production and the virtual elimination of royalties on oil from shale and other tax breaks for oil production (enhanced recovery, depletion allowances, etc.).

conservation and renewables a greenhouse gas tax²¹ and its proceeds could create hundreds of thousands of new jobs and reduce US carbon emissions to half the current level in twenty years.²²

C) Together with House Natural Resources and Ways and Means, protect public and private forests and other eco-systems that are critical to climate change mitigation in ways that reward landowners and managers. This can include adding plants to the Lacey Act's existing prohibition against the importation of illegally harvested wildlife, so that wood that is imported should have a certifiable chain of custody showing it was not harvested in violation of the law in order to be imported into the US. The Senate approved a similar measure in the Foreign Operations Appropriations bill for FY05, which was dropped in conference when Rep. Pombo objected.

D) Require conservation rates for energy utility services with modest charges for essential services but escalating rates for larger amounts of use; time of day and seasonal adjustments to reduce peak demand; and adjustments to encourage utilities to offer and profit from efficiency investments, such as insulation.

E) Increase personnel and resources in order to collect all royalties and fines owed by energy companies to governments. Direct the IRS, DOE, and Justice to work with state and local governments and Native American communities in this process.²³

F) End public subsidies for domestic and foreign fossil fuel production and use and replace low income energy assistance programs with greater net assistance to

²¹ The tax could be adjusted if necessary but several studies indicate that between 20 and 50 dollars per ton of carbon, depending on how the proceeds are reinvested, would do the job of not only capping but cutting greenhouse gases virtually in half. Technologies have also improved markedly in just the past few years.

²² The Congressional Budget Office estimated in 1990, for example, that a tax on the order of \$30 per ton of carbon in coal, oil, and natural gas might have stabilized emissions of CO₂ at 1990 levels by 2000.

In a 2002 study by the Economic Policy Institute (EPI), Center for a Sustainable Economy and the Tellus Institute, James Barrett and others modeled a set of policies in which devoted 15% of the revenues from a carbon "charge" to income tax reduction, energy efficiency, renewables and related initiatives more than eliminated the adverse impacts on energy prices, as consumers spent less on energy -- 30% less on petroleum, almost 50% less on electricity and about 25% less on natural gas. The EPI study found that providing additional information and policy guidance resulted in greater efficiency, less pollution and increased energy independence. Most importantly, the EPI group found that a \$50 dollar per ton tax on carbon devoted to incentives for renewables would achieve reductions of carbon emissions of roughly 10% below 1990 levels by 2010, and by 2020 would reduce oil imports by the amount we now import from all members of the Organization of Petroleum Exporting Countries at no net cost to the taxpayer.²² That would exceed our Kyoto targets and lead to enough of a reduction in our need for oil from overseas to achieve practical independence from foreign oil producers.

²³ The GAO, House Government Reform Committee and DOE Inspector General have found vast underpayments over the past decade (see, "Blowing the Whistle on Big Oil" *N.Y. Times*, Page 1, Business Sunday, December 3, 2006.)

reduce waste and purchase renewable energy. (This would be done in part by the Finance and Appropriations Committees with regard to multilateral development banks – see below.)

G) Use all means possible, from the Farm Bill to the SEC to address the problem described as already having much more damaging effects than once predicted for current levels of GHGs, in a draft report of the IPCC soon to be released.²⁴ The Farm bill provides an opening to address large sources of both methane and nitrous oxide, which are many times more powerful than CO₂, have other deleterious effects and risks, and come in large quantities from livestock. Feedlots, barns and other gathering points can collect greenhouse gases of such intensity and re-sell them or use them on-site in some cases.

²⁴ The following excerpts from an Associated Press story describe the next IPCC report in draft form, yet to be edited by the Bush Administration and other governments' representatives. The Committee may want to request a copy of the current unedited version and request that the Bush Administration report to Congress on any changes it has asked its scientists to make in the drafting of the report.

**Scientists Offer Dire Forecast for Earth
Climate Report Warns of Global Warming Effects**
By SETH BORENSTEIN

WASHINGTON (March 10) - The harmful effects of global warming on daily life are already showing up, and within a couple of decades hundreds of millions of people won't have enough water, top scientists will say next month at a meeting in Belgium.

At the same time, tens of millions of others will be flooded out of their homes each year as the Earth reels from rising temperatures and sea levels, according to portions of a draft of an international scientific report obtained by The Associated Press.

Tropical diseases like malaria will spread. By 2050, polar bears will mostly be found in zoos, their habitats gone. Pests like fire ants will thrive. ...

The draft document by the authoritative Intergovernmental Panel on Climate Change focuses on global warming's effects and is the second in a series of four being issued this year. Written and reviewed by more than 1,000 scientists from dozens of countries, *it still must be edited by government officials.*

...

"Changes in climate are now affecting physical and biological systems on every continent," the report says, in marked contrast to a 2001 report by the same international group that said the effects of global warming were coming. ...

"Things are happening and happening faster than we expected," said Patricia Romero Lankao of the National Center for Atmospheric Research in Boulder, Colo., one of the many co-authors of the new report.

The draft document says scientists are highly confident that **many current problems -- change in species' habits and habitats, more acidified oceans, loss of wetlands, bleaching of coral reefs, and increases in allergy-inducing pollen -- can be blamed on global warming.**

For example, the report says North America "has already experienced substantial ecosystem, social and cultural disruption from recent climate extremes," such as hurricanes and wildfires.

...

And co-author Terry Root of Stanford University said: "We truly are standing at the edge of mass extinction" of species.

...

4. International Cooperation

The Committee may want to send a letter to the President noting that the Congress will decide what legislation, if any, will implement any agreement that his delegations who are now negotiating climate change agreements within the G8+5, preparatory meeting under the UNFCCC, and other international commitments such as those on development assistance. **Request that the President instruct those delegations not to reject options at this point, but report to the relevant Committees now concerning the various options. Request that he** inform other countries' delegations that Congress is likely to remove subsidies for fossil fuel use in development assistance as Congress has begun to do domestically. Ask that the U.S. delegations brief Congress on how well various options being discussed would work with the existing U.S. legal framework, globally to include all nations, and how they would support the implementation of existing international legal duties and development goals.

A) Instruct US negotiators at the G8+5 talks beginning on Friday March 16th and continuing through June and into the Conference of the Parties near year's end not to rule out any options, as Congress has just begun to speak on this matter, will fund our work in this matter, and must not be handed a *fait accompli* by an Administration that will be out of office long before 2012.

B) Instruct US negotiators to other treaties and trade negotiations to press for the protection of forests and other climate mitigating and heavily affected ecosystems using or adding to the provisions of those agreements.

C) End public subsidies now for domestic and foreign fossil fuel production and use in by-lateral aid and business and other development assistance (USAID, EX-IM, OPIC) and replace them with greater net assistance to reduce waste, restore degraded ecosystems, and increase the proportion of sustainably-derived renewable energy.

D) Despite managing the Global Environment Facility, and despite the recommendations of its own Extractive Industries Review, for decades the World Bank has funded many times more greenhouse gas releases (including large dams that can be GHG sources in themselves) than it has captured. In the process it has absorbed both demand and capital and blocked the growth of gentler energy technologies and sources worldwide. The Committee, together with the House Finance Committee, should consider directing Treasury now to advise MDB Members and Officials that in the reauthorization of appropriations to replenish the World Bank's funding (IDA) the Congress may be inclined to fund replenishment only to the extent that renewables are represented in MDBs' overall energy portfolios and to the extent that ecosystem restoration/climate mitigation are represented in their overall agriculture and forestry portfolios.

E) For a century we have supported other countries' conservation laws by banning the importation of illegally harvested wildlife through the Lacey Act. Given

forests' critical role in combating climate change, the continuing importation of illegally harvested wood products, and advances in the systems available for tracking and certifying such products developing countries, the U.S. should ban the importation of illegally harvested plants and press other nations to do the same. In the process of improving inspections of wood imports invasive species that are weakening our forests can also be more readily detected and halted before they are introduced. Energy and Commerce should work with the Ways and Means and Natural Resources Committees to achieve these results.²⁵

Thank you for this opportunity to contribute to this important discussion. We look forward to working with the Committee on this matter.

²⁵ Studies prepared by Seneca Creek, Inc. for the American Forests and Paper Association show that international trade in illegally harvest wood products (poached from national parks, cut beyond permit limits, etc.) cause estimated losses of one billion dollars a year to U.S. producers who are undercut in the market. Many believe this has led many smaller wood lot and forest owners to abandon the industry and sell their forests for development or other uses in recent years. Rep. Blumenauer has recently introduced legislation to address this issue. See also reports by Environmental Investigation Agency, NRDC, and Defenders of Wildlife, e.g. www.eia-international.org.